Final Program Environmental Impact Report Solid Waste Integrated Resources Plan

City of Los Angeles, California

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Prepared for

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ACRONYMS AND ABBREVIATIONS

AAI	All Appropriate Inquiry
AAQS	Ambient Air Quality Standards
AB	Assembly Bill
ACHP	Advisory Council on Historic Preservation
ADT	Average daily trips
AIRFA	American Indian Religious Freedom Act
APCD	Air Pollution Control District
AQMD	Air Quality Management District
AQMP	Air Quality Management Plan
ARMR	Archaeological Resources Management Report
ASTM	American Society of Testing Materials
AVAQMD	Antelope Valley Air Quality Management District
BLM	Bureau of Land Management
BMPs	Best Management Practices
BNSF	Burlington Northern Santa Fe
C&D	Construction and demolition
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CARB	California Air Resources Board
CASQA	California Stormwater Quality Association
CCR	California Code of Regulations
CDFA	California Department of Food and Agriculture
CDFG	California Department of Fish and Game
Cal EPA	California Environmental Protection Agency
CAL FIRE	California Department of Forestry and Fire Protection
CalRecycle	California Department of Resources Recycling and Recovery
Caltrans	California Department of Transportation
CASQA	California Stormwater Quality Association
CBC	California Building Code
CDF	California Department of Forestry and Fire Protection
CDFA	California Department of Food and Agriculture
CEC	California Energy Commission
CERCLA	Comprehensive Environmental Response and Liability Act
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFCs	Chlorofluorocarbons
CFR	Code of Federal Regulations
CH_4	Methane
CHC	Cultural Heritage Commission
CHRIS	California Historic Resources Information System
CiSWMPP	City's Solid Waste Management Policy Plan
City	City of Los Angeles
CIWMB	California Integrated Waste Management Board
CMAQ	Congestion and Mitigation and Air Quality Program
CMP	Congestion Management Plan

CNEL	Community Noise Equivalent Level
CNG/LNG	Compressed Natural Gas/Liquified Natural Gas
CO	Carbon Monoxide
CO_2	Carbon dioxide
CO_2e	CO_2 equivalents
Cortese List	Hazardous Waste and Substances Sites List
CPU	Computer Central Processing Units
CPUC	California Public Utilities Commission
CR	County Road
CRA	Community Redevelopment Agency
CRHR	California Register of Historical Resources
CRT	Cathode ray tube
CSHC	California State Highway Code
CTPG	California Transmission Planning Group
CUP	Conditional Use Permit
CUPA	Certified Unified Program Agency
CWA	Clean Water Act
dB	Decibels
dBA	A-weighted decibels
DEHP	Diethylhexylphthalate
DOF	Department of Finance (California)
DOGGR	Division of Oil, Gas, and Geothermal Resources (Department of Conservation)
DOMS	DOGGR Online Mapping System
DOT	Department of Transportation
DPW	Department of Public Works
DSM	Demand Side Management
DTSC	Department of Toxic Substances Control
DVD	Digital Versatile Disc
EDD	Employment Development Department (California)
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
EKCAPCD	Eastern Kern County Air Pollution Control District
EMFAC	EMission FACtors
EPA	Environmental Protection Agency
EPCRA	Emergency Planning & Community Right to Know Act
EPR	Extended Producer Responsibility
EPS	Expanded polystyrene
ESA	Environmental Site Assessment
FEMA	Federal Emergency Management Agency
FERC	Federal Energy Regulatory Commission
FESA	Federal Endangered Species Act of 1973
FIFRA	Federal Insecticide, Fungicide & Rodenticide Act
FIRM	Flood Insurance Rate Map
FIS	Flood Insurance Study
FMMP	Farmland Mapping and Monitoring Program
FSZ	Farmland Security Zones

FTA	Federal Transit Administration
GHG	Greenhouse gas
Gwh	Gigawatt hours
Gwh/yr	Gigawatts per year
H_2S	Hydrogen sulfide
HABS	Historic American Building Survey
HCFC	Hydro-chlorofluorocarbons
HCM	Highway Capacity Manual
HCP/NCCP	Habitat Conservation Plan/Natural Community Conservation Plan
HFC	Hydro fluorocarbons
HHW	Household Hazardous Waste
HHWE	Household Hazardous Waste Element
HI	Hazard Index
HMTA	Hazardous Materials Transportation Act
HPOZ	Historic Preservation Overlay Zone
HRA	Health risk assessment
Hz	Hertz
I	Interstate freeway
IA	Implementing Agreement
IRP	Integrated Resource Plan
IWMD	Industrial Waste Management Division
IWMP	Integrated Waste Management Plan
JPA	Joint Powers Authority
KCOG	Kern Council of Governments
LACDPW	Los Angeles County Department of Public Works
LACFCD	Los Angeles County Flood Control District
LACMTA	Los Angeles County Metropolitan Transportation Authority
LACSD	Sanitation Districts of Los Angeles County
LADOT	Los Angeles Department of Transportation
LADWP	Los Angeles Department of Water and Power
LAFD	Los Angeles Fire Department
LAMC	Los Angeles Municipal Code
LAPD	Los Angeles Police Department
LAPL	Los Angeles Public Library
LARA	Los Angeles Regional Agency
LASAN	City of Los Angeles Bureau of Sanitation
LAUSD	Los Angeles Unified School District
lb/cuft	Pounds per cubic foot
L_{dn}	Day-Night Sound Level
LEAs	Local Enforcement Agencies
LEED	Leadership in Energy and Environmental Design
LEMC	Local Emergency Management Committee
L_{eq}	Equivalent Sound Level
$L_{eq}(h)$	Hourly Equivalent Sound Level

LESA	Land Evaluation and Site Assessment
LID	Low Impact Development
LOS	Level of service
MBHCP	Metropolitan Bakersfield Habitat Conservation Plan
MBTA	Migratory Bird Treaty Act
MDAB	Mojave Desert Air Basin
MDAQMD	Mojave Desert Air Quality Management District
MEP	Maximum Extent Practicable
Metro	Metropolitan Transit Authority
mgd	Million gallons per day
MGY	Million gallons per year
MMP	Mixed material processing
MMT	Million metric tons
mph	Miles per hour
MPO	Metropolitan Planning Organization
MRF	Material Recovery Facility
MRZ	Mineral Resource Zone
MS4s	Municipal Separate Storm Sewer Systems
MSCP	Multiple Species Conservation Program
MSHCP	Multiple Species Habitat Conservation Plan
msl	Mean sea level
MSW	Municipal solid waste
MW	Megawatt
Mwh	Megawatt hours
Mwh/yr	Megawatt hours per year
N_2O	Nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NCAP	Newport Coast Archaeological Project
NCCP	Natural Community Conservation Planning
NCPP	New Community Plan Program
NDFE	Non-disposal Facility Element
NEPA	National Environmental Policy Act
NFIP	National Flood Insurance Program
NHMLAC	Natural History Museum of Los Angeles County
NHPA	National Historic Preservation Act
NO	Nitric oxide
NO_x	Nitrogen oxides
NO_2	Nitrogen dioxide
NOA	Notice of Availability
NOP	Notice of Preparation
NO_x	Nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NPS	National Park Service
NRHP	National Register of Historic Places

O_3	Ozone
OEHHA	Office of Environmental Health Hazard Assessment (California)
OHP	Office of Historic Preservation (California)
OPR	Office of Planning and Research
PAYT	Pay As You Throw
Pb	Lead
pc/mi/ln	Passenger cars, per mile, per lane
PCBs	Polychlorinated biphenyls
PCE	Passenger car equivalent
PEIR	Program Environmental Impact Report
PFC	Perfluorocarbons
$PM_{2.5}$	Particulate matter 2.5 microns or less
PM_{10}	Particulate matter 10 microns or less
POTW	Publicly Owned Treatment Works
ppm	Parts per million
PRC	Public Resources Code
RAD	Regulatory Affairs Division
RCPG	Regional Comprehensive Plan and Guide
RCRA	Resource Conservation and Recovery Act
RDF	Refuse-Derived-Fuel
RENEW L.A.	Recovering Energy, Natural Resources and Economic Benefit from Waste for Los Angeles
RHNA	Regional Housing Needs Allocation
RHNP	Regional Housing Need Plan
ROG	Reactive organic gas
RRC	Resource Recovery Center
RWQCB	Regional Water Quality Control Board
RTP	Regional Transportation Plan
SAFE	Solvents/Automotive/Flammables/Electronics
SANDAG	San Diego Association of Governments
SB	Senate Bill
SBACPC	Santa Barbara Air Pollution Control District
SBCAG	Santa Barbara County Association of Governments
SCAB	South Coast Air Basin
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCCAB	South Central Coast Air Basin
SCCIC	South Central Coastal Information Center
SCH	State Clearinghouse
SDAB	San Diego Air Basin
SDAPCD	San Diego Air Pollution Control District
SDWA	Safe Drinking Water Act
SEA	Significant Ecological Area
SF_6	Sulfur hexafluoride
SFHA	Special Flood Hazard Area
SHL	State Housing Law

SHRC	State Historical Resources Commission
SIP	State Implementation Plan
SJVAB	San Joaquin Valley Air Basin
SJVAPCD	San Joaquin Valley Air Pollution Control District
SLOCOG	San Luis Obispo Council of Governments
SMARA	Surface Mining and Reclamation Act of 1975
SO_2	Sulfur dioxide
SoCalGas	Southern California Gas Company
SPAN	Student/Parent Access Network
SR	State Route
SRCRD	Solid Resources Citywide Recycling Division
SRRE	Source Reduction and Recycling Element
SSMP	Sewer System Management Plan
STIP	State Transportation Improvement Program
STLC	Soluble Threshold Limit Concentration
SUSMP	Standard Urban Stormwater Mitigation Plan
SWIRP	Solid Waste Integrated Resources Plan
SWMP	Storm Water Management Plan
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	Toxic air contaminant
TCP	Traditional Cultural Place
TCRP	Traffic Congestion Relief Program
TEUs	Twenty-foot equivalent units
TMDL	Total Maximum Daily Load
tpd	Tons per day
TSCA	Toxic Substances Control Act
TTLC	Total Threshold Limit Concentration
UBC	Uniform Building Code
UP	Union Pacific
URBEMIS	Urban emissions software
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
USC	United States Code
USDI	United States Department of the Interior
USFWS	U.S. Fish and Wildlife Service
USGS	United States Geological Survey
UWMP	Urban Water Management Plan
VCAPCD	Ventura Air Pollution Control District
VCR	Videocassette Recorders
VFHCP	Kern County Valley Floor Habitat Conservation Plan
VHT	Vehicle hours traveled
VMT	Vehicle miles traveled
VOC	Volatile Organic Compounds

WARM	Waste Reduction Model
WCB	Wildlife Conservation Board
WDR	Waste discharge requirements
WQMP	Water Quality Management Plan
WTE	Waste to Energy
YBP	Years Before Present
ºF	Fahrenheit
μg/m^3	micrograms per cubic meter

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0.1 INTRODUCTION AND SUMMARY

This Final Program Environmental Impact Report (Final PEIR) has been prepared in accordance with the California Environmental Quality Act (CEQA) as amended (Public Resources Code Section 21000 et seq.), and CEQA Guidelines (California Administrative Code Section 15000 et seq.).

According to CEQA Guidelines §15132, the Final PEIR shall consist of the following:

a) The Draft Program Environmental Impact Report (Draft PEIR) or a revision of the Draft;
b) Comments and recommendations received on the Draft PEIR, either verbatim or in summary;
c) A list of persons, organizations, and public agencies commenting on the Draft PEIR;
d) The responses of the Lead Agency to significant environmental points raised in the review and consultation process; and
e) Any other information added by the Lead Agency.

In accordance with these requirements, the Solid Waste Integrated Resources Plan Final PEIR is composed of the following:

- The Draft PEIR, October 2013 (SCH No. #2010081061); and
- This Final PEIR document, November 2014 that incorporates the information required by §15132, including revisions to the text of the Draft PEIR as a result of responses to comments received on the Draft PEIR.

Format of the Final PEIR

This document is organized as follows:

Section 0.1 **Introduction and Summary**
This section describes CEQA requirements and content of this Final PEIR.

Section 0.2 **Corrections and Additions**
This section provides a list of those revisions made to the PEIR text, tables and figures as a result of comments received and/or clarifications subsequent to release of the Draft PEIR for public review.

Section 0.3 **Response to Comments**
This section provides copies of the comment letters received and individual responses to written comments. In accordance with Public Resources Code 21092.5, copies of the written proposed responses to public agencies will be forwarded to the agencies at least 10 days prior to certifying an EIR. The responses will conform to the legal standards established for response to comments on EIRs.

Section 0.4 **Mitigation Monitoring and Reporting Program**
This section includes the Mitigation Monitoring and Reporting Program (MMRP) which identifies the mitigation measures, timing and responsibility for implementation of the measures.

0.2 CORRECTIONS AND ADDITIONS

This section of the Final Program Environmental Impact Report (EIR) identifies the location of, or contains revisions to, information included in the Draft PEIR dated October 2013, based upon additional or revised information required to prepare a response to a specific comment. The information added to the PEIR does not meet the requirements for recirculation pursuant to Section 15088.5 of the State California Environmental Quality Act (CEQA) Guidelines.

0.2.1 REVISED AND SUPPLEMENTAL TEXT

Changes to the PEIR were made in response to comments received on the Draft PEIR. The new information provides corrections to information presented in the Draft PEIR. Text that has been added to the document appears in an underline format. Text that has been deleted appears with ~~strikeout~~.

The table below identifies the changed Draft PEIR section and accompanying page numbers in the Final PEIR.

Table 0.2-1. Changes to the SWIRP Draft PEIR

Final PEIR Section	Page Number
Section 4.3 Air Quality	4.3-36, 4.3-45, 4.3-46, 4.3-47, 4.3-54

0.2.2 ADDITIONAL INFORMATION

Based on a comment letter received, the following updated information was developed to supplement the information included in SWIRP Appendix D Facility Analysis. The following table provides an update of the permitted capacities of the facilities included in the SWIRP facility surveys conducted in 2008. This information does not affect the environmental impact analyses included in the Draft PEIR and no changes have been made to the Final PEIR based on this information.

Table 0.2-2. SWIRP Facility Survey Capacity Updates

Facility/Location	Permitted Capacity – 2008 (tons per day)	Permitted Capacity – 2014 (tons per day)
Mixed Materials Processing Facilities and Transfer Stations (Black Bin)		
Athens Sun Valley Material Recovery Facility and Transfer Station 11121 Pendleton St. Sun Valley, CA 91352	400	1,500
Clean Material Recovery Facilities (Blue Bin)		
Allan Company 2411 Delaware Av. Santa Monica, CA 90404	150	Closed
Angelus Western 2474 Porter St. Los Angeles, CA 90021	750	650
Potential Industries 922 East E Street Wilmington, CA 90744	No permit	5,000

Facility/Location	Permitted Capacity – 2008 (tons per day)	Permitted Capacity – 2014 (tons per day)
Compost Facilities (Green Bin)		
Griffith Park 5400 Griffith Park Dr. Los Angeles CA 90027	1,000 cubic yards/day	200 cubic yards/day
Lopez Canyon Environmental Center 11950 Lopez Canyon Road Los Angeles, CA 91342	1,000	12,500 cubic yards/day
Chipping and Grinding Facilities (Green Bin)		
Athens Sun Valley Material Recovery Facility and Transfer Station 11121 Pendleton St. Sun Valley, CA 91352	400	1,500
Griffith Park 5400 Griffith Park Dr. Los Angeles CA 90027	1,000 cubic yards/day	200 cubic yards/day
Lopez Canyon Environmental Center 11950 Lopez Canyon Road Los Angeles, CA 9134	1,000	12,500 cubic yards/day
Norwalk Industries 13780 East Imperial Highway Santa Fe Springs, CA 90670	200	499
WMI Bradley 9227 Tujunga Bl. Los Angeles, CA 91352	No permit - 1,260	1,532
Construction and Demolition Material Recovery Facilities (C&D)		
Athens Sun Valley Material Recovery Facility and Transfer Station 11121 Pendleton St. Sun Valley, CA 91352	400	1,500

0.3 RESPONSE TO COMMENTS

This section contains responses to all comment letters received on the Draft Program Environmental Impact Report (PEIR). Seven (7) letters were received during the comment period. A copy of each letter with bracketed comment numbers on the right margin is followed by the response for each comment as indexed in the letter. The comment letters are listed in Table 0.3-1.

Table 0.3-1. Comment Letters – SWIRP PEIR

Letter No.	Commenter	Letter Date
1	Mary Benson	November 2, 2013
2	Helen S. Murphy	November 11, 2013
3	Potential Industries Inc., Dan Domonoske	November 20, 2013
4	Joyce Dillard	December 19, 2013
5	Los Angeles Alliance for a New Economy, Jackie Cornejo	December 20, 2013
6	Athens Services, Greg Loughnane	December 20, 2013
7	South Coast Air Quality Management District, Ian MacMillan	January 24, 2014

Letter No. 1

From: **Mary Benson** <c-maryb@msn.com>
Date: Sat, Nov 2, 2013 at 11:58 PM
Subject: FW: NOTICE OF COMPLETION AND AVAILABILITY FOR THE SWIRP DRAFT PEIR
To: Ronaldo GREENWASTE Milo <ronaldo.milo@lacity.org>

Ronaldo, 1-1

#1 Another location for the hard copy of the document should be at the Sun Valley Library. None of the sites or hearings are going to be in Sun Valley, despite the fact that ULTIMATELY a good portion of the waste collected will be diverted here.

#2 Breaking the City into waste sheds does not preclude the fact that almost all of the material will ultimately be trucked here to Sun Valley. ALL of the major City Contractors either have BOTH their yards AND transportation facilities here IE 1-2 1-3
RAMCO, Waste Management, Crown(Community Recycling) Disposal, Athens Waste, Looney Bins, Sun Valley Paperstock. Plus Allied Waste and BFI both have their truck fleets parked within a 5 mile radius of residential homes.

#3 Waste Management, Athens Waste & hopefully Community Recycling And Sun Valley Paperstock have agreed to mitigation in the terms of tipping fees. Much of this money needs to be put into removing and upgrading our streets damaged by such heavy truck traffic and beautifying the streetscapes. In terms of Public Works and Street Services, these routes should be given priority for some kind of upgraded paving by Public Works. 1-4

#4 This is NOT a rant against these companies, far from it. I am requesting an acknowledgement that mitigation should be focused on the one area that has been and will continue to be heavily impacted. As a City, we need to work with these companies to provide the City with a State of the Art system that will keep pace with increased requirements on the way to zero waste. Many local residents are employees of these companies and the community economy is based on the large numbers of jobs the recycling industry creates in M3 zoning. 1-5 1-6 1-7
BUT operating a recycling facility doesn't require that the area look like a 3rd world country. Requirements should be in effect to keep all aspects of the business including containers, materials (including those illegally dumped) and vehicles off the City streets and all of the recycling sorting and baling activity totally enclosed with 4 walls and a roof. This is especially important because prevailing winds blow loose and dry particulates (PM10's) into the air, giving Sun Valley some of the worst air quality in the City. 1 temporary fix would be to use mitigation fees to bring recycled water into the area for dust mitigation. Permanent dust mitigation is now an approved use for recycled water in the State of California. 1-8 1-9

#5 I would like to point out something in terms of City revenue. There are some of these companies whose corporate and financial business is done outside the City, Notably RAMCO, who moved their corporate (and business tax revenue) to Riverside, and Athens Waste, whose total payroll and billing is done through their City of Industry office. Companies like Waste Management and Sun Valley Paperstock should be able to get some kind of credit for their paying that 1% gross receipts as long as it is still in effect - After all Doing business with LA Companies should apply to the City as well. 1-10

Thank you
Mary Benson
818-720-7062

Letter No. 1 – Response to Comments

Letter Date: November 2, 2013

From: Mary Benson via email
c-maryb@msn.com

Comment 1-1:
Another location for the hard copy of the document should be at the Sun Valley Library. None of the sites or hearings are going to be in Sun Valley, despite the fact that ULTIMATELY a good portion of the waste collected will be diverted here.

Response to Comment 1-1:
Per Ms. Benson's recommendation, a hard copy of the SWIRP EIR was placed at the Sun Valley Library. Additionally, the City made the Draft PEIR available on the City's Zero Waste Webpage and also placed the Draft PEIR in libraries located within each wasteshed of the City (a listing of libraries is available on the SWIRP website). The City held seven informational meetings (one in each wasteshed and one downtown) about the Draft PEIR when it was initially released for public review between October 31, 2013-December 20, 2013. Public meetings were held throughout November and were also advertised on the SWIRP website (http://lacitysan.org/srssd/swirp/get_involved/calendar.html). Furthermore, at this time, facility locations have not been identified. Once specific sites and facilities have been identified or proposed, then project-level CEQA analyses and reveiws would proceed.

Comment 1-2:
Breaking the City into wastesheds does not preclude the fact that almost all of the material will ultimately be trucked here to Sun Valley.

Response to Comment 1-2:
The Draft PEIR analyzes the potential impact of implementation of policies and programs identified in SWIRP as well as the future needs of potential facilities to meet expected goals. The Draft PEIR is a broader programmatic level document. At this time, specific facility locations have not been identified. Once specific sites and facilities have been identified or proposed, then project-level CEQA analyses and reviews would proceed.

Comment 1-3:
ALL of the major City Contractors either have BOTH their yards AND transportation facilities here IE RAMCO, Waste Management, Crown(Community Recycling) Disposal, Athens Waste, Looney Bins, Sun Valley Paperstock. Plus Allied Waste and BFI both have their truck fleets parked within a 5 mile radius of residential homes.

Response to Comment 1-3:
Parking requirements would be considered on a project-specific basis depending on the requirements of the jurisdiction that is approving the future facility. Chapter 4.0, Section 4.15 (Transportation/Traffic) includes a mitigation measure requiring adequate parking at future facilities for employees, customers, and any collection vehicles (if kept onsite).

Comment 1-4:
Waste Management, Athens Waste & hopefully Community Recycling And Sun Valley Paperstock have agreed to mitigation in the terms of tipping fees. Much of this money needs to be put into removing and

upgrading our streets damaged by such heavy truck traffic and beautifying the streetscapes. In terms of Public Works and Street Services, these routes should be given priority for some kind of upgraded paving by Public Works.

Response to Comment 1-4:
Prior to the approval of any potential future facility site, a project-level traffic impact report shall be prepared by a qualified traffic consultant. The report shall be prepared to the standard of the local jurisdiction that would be providing approvals for the project. The report shall include existing traffic information, thresholds of significance, construction and operation-related trip generation, a cumulative-level analysis, and shall identify mitigation measures to reduce project- and cumulative-level impacts to the maximum extent practicable. Such mitigation measures may include roadway and intersection improvements, payment of traffic impact fees, timing of collection truck schedules to avoid peak hours, encouraging ride-sharing or alternative transportation for employees through the use of incentives.

Comment 1-5:
This is NOT a rant against these companies, far from it. I am requesting an acknowledgement that mitigation should be focused on the one area that has been and will continue to be heavily impacted.

Response to Comment 1-5:
At this time, specific facility locations have not been identified. SWIRP makes note of the number of each facility type that would be needed to meet future waste processing needs, but does not identify specific locations. At the time a facility site is identified, subsequent environmental review would be required.

Comment 1-6:
As a City, we need to work with these companies to provide the City with a State of the Art system that will keep pace with increased requirements on the way to zero waste.

Response to Comment 1-6:
The views and concerns presented in each comment letter will be reviewed and considered by decision makers. Although CEQA only requires a written response to Draft EIR comments dealing with significant environmental issues, comments expressing personal opinion, recommendations, or concerns are still a part of the environmental record.

Comment 1-7:
Many local residents are employees of these companies and the community economy is based on the large numbers of jobs the recycling industry creates in M3 zoning.

Response to Comment 1-7:
The SWIRP Facility Plan document notes that job creation and economic benefit is a key aspect of the policies, programs, and facilities selected. A calculation of the green jobs expected to be generated through implementation of SWIRP is included in the SWIRP Facility Plan document.

Comment 1-8:
BUT operating a recycling facility doesn't require that the area look like a 3rd world country. Requirements should be in effect to keep all aspects of the business including containers, materials (including those illegally dumped) and vehicles off the City streets and all of the recycling sorting and baling activity totally enclosed with 4 walls and a roof.

Response to Comments 1-8:

LASAN has an Illegal Dumping Program. Residents may call 311 to request that illegally dumped items be collected by the City. Future facilities shall include design features that allows the facility to blend in with nearby buildings and meet regulatory requirements. Rooftop mechanical equipment, garbage dumpsters, and other outdoor equipment shall be screened from public view. Future facilities shall adhere to minimum adopted parking requirements for the type of use proposed, including adequate parking for employees, customers, and any collection vehicles that remain on-site.

Comment 1-9:
This is especially important because prevailing winds blow loose and dry particulates (PM10's) into the air, giving Sun Valley some of the worst air quality in the City. 1 temporary fix would be to use mitigation fees to bring recycled water into the area for dust mitigation. Permanent dust mitigation is now an approved use for recycled water in the State of California.

Response to Comments 1-9:
Future facilities within the SCAQMD shall prepare and implement a fugitive dust control program pursuant to the provisions of SCAQMD Rules 402 and 403 prior to any ground disturbance. For future facilities outside of the SCAQMD, adherence to any applicable fugitive dust control programs shall be required.

Comment 1-10:
I would like to point out something in terms of City revenue. There are some of these companies whose corporate and financial business is done outside the City, Notably RAMCO, who moved their corporate (and business tax revenue) to Riverside, and Athens Waste, whose total payroll and billing is done through their City of Industry office. Companies like Waste Management and Sun Valley Paperstock should be able to get some kind of credit for their paying that 1% gross receipts as long as it is still in effect - After all Doing business with LA Companies should apply to the City as well.

Response to Comments 1-10:
The views and concerns presented in each comment letter will be reviewed and considered by decision makers. Although CEQA only requires a written response to Draft EIR comments dealing with significant environmental issues, comments expressing personal opinion, recommendations, or concerns are still a part of the environmental record.

Letter No. 2

WRITTEN COMMENT FORM

City of Los Angeles
Solid Waste Integrated Resources Plan
Draft Program Environmental Impact Report (PEIR)

On the lines provided below, please provide your comments on the Draft PEIR, and/or list the environmental issues or concerns you feel need to be addressed as part of the response to comments and Final Program Environmental Impact Report (Final PEIR) for the Solid Waste Integrated Resources Plan. Please be as specific and detailed as possible so that the responses to your written comments on the Draft PEIR may address all of your concerns or issues. ***If necessary, please attach additional pages.*** Once completed, please submit your written comments to: Reina Pereira, Senior Environmental Engineer, Solid Resources Support Services Division, Bureau of Sanitation, 1149 South Broadway, 5th Floor, Mail Stop 521, Los Angeles, CA 90015. Your comments must be postmarked by **December 20, 2013**. (Please print legibly)

I think the Draft PEIR is a good one.

It will help the environment.

The Zero Waste Plan is good.

I hope we reach our goal.

Please provide more blue bins. 2-2

2-1

Submitted by (please print legibly):

Name:	Agency/business/group name (if applicable):
Helen S. Murphy 21001 Plummer St. Spc 73 Chatsworth, CA 91311-0573	Phone number: (818) 341-5819
City/state/zip:	Date: 11.19.13
Email: hsmurph@yahoo.com	

Letter No. 2 – Response to Comments

Letter Date: November 19, 2013

From: Helen S. Murphy
21001 Plummer Street #73
Chatsworth, CA 91311-0573

Comment 2-1:
I think the Draft PEIR is a good one. It will help the environment. The Zero Waste Plan is good. I hope we reach our goal.

Response to Comment 2-1:
The views and concerns presented in each comment letter will be reviewed and considered by decision makers. Although CEQA only requires a written response to Draft EIR comments dealing with significant environmental issues, comments expressing personal opinion, recommendations, or concerns are still a part of the environmental record.

Comment 2-2:
Please provide more blue bins.

Response to Comment 2-2:
Chapter 2.0 of the Draft PEIR identifies the programs to be implemented through SWIRP. One of the programs, "Provide More Public Area Recycling" will significantly increase the number of blue bins available throughout the City. The City currently provides extra blue bin capacity to residential curbside customers at no additional charge.

The views and concerns presented in each comment letter will be reviewed and considered by decision makers. Although CEQA only requires a written response to Draft EIR comments dealing with significant environmental issues, comments expressing personal opinion, recommendations, or concerns are still a part of the environmental record.

Letter No. 3

WRITTEN COMMENT FORM

City of Los Angeles
Solid Waste Integrated Resources Plan
Draft Program Environmental Impact Report (PEIR)

On the lines provided below, please provide your comments on the Draft PEIR, and/or list the environmental issues or concerns you feel need to be addressed as part of the response to comments and Final Program Environmental Impact Report (Final PEIR) for the Solid Waste Integrated Resources Plan. Please be as specific and detailed as possible so that the responses to your written comments on the Draft PEIR may address all of your concerns or issues. ***If necessary, please attach additional pages.*** Once completed, please submit your written comments to: Reina Pereira, Senior Environmental Engineer, Solid Resources Support Services Division, Bureau of Sanitation, 1149 South Broadway, 5th Floor, Mail Stop 521, Los Angeles, CA 90015. Your comments must be postmarked by **December 20, 2013**. (Please print legibly)

COLLECTION METHODS SHOULD INCLUDE A TWO BIN RESIDENTIAL OPTION FOR WET (GREEN, FOOD, SOILED PAPER) AND DRY (RECYCLABLES + LOW MOISTURE CONTENT MATERIALS)

FACILITY TYPES SHOULD INCLUDE TWO ADDITIONAL OPTIONS
WET - PRE PROCESSING FOR COMPOST OR ENERGY RECOVERY
DRY - TRADITIONAL RECYCLABLES, INERT, FUEL PRODUCT, RESIDUALS

NOTE: WET + DRY COLLECTION IS CONSIDERED TO BE SOURCE SEPARATED BECAUSE SEPARATION IS DONE BY RESIDENTS PRIOR TO COLLECTION; SINCE WET + DRY COLLECTION IS NOT MIXED THE SORTING FACILITIES WHICH RECEIVE WET OR DRY MATERIALS ARE NOT "DIRTY" MRF NOR ARE THEY MIXED WASTE PROCESSING FACILITIES

Submitted by (please print legibly):

Name:	Agency/business/group name (if applicable):
DAN DOMONOSKE	POTENTIAL INDUSTRIES INC
Street address:	Phone number:
922 EAST E STREET	310 864 1816
City/state/zip:	Date:
WILMINGTON CA 90744	NOV 20, 2013
Email:	
ddomonoske@potentialindustries.com	

Letter No. 3 – Response to Comments

Letter Date: November 20, 2013

From: Dan Domonosky
Potential Industries, Inc.
922 East E Street
Wilmington, CA 90744

Comment 3-1:
Collection methods should include a two bin residential option for Wet (green, food, soiled paper) and Dry (recyclables & low moisture content materials).

Response to Comment 3-1:
The views and concerns presented in each comment letter will be reviewed and considered by decision makers. Although CEQA only requires a written response to Draft EIR comments dealing with significant environmental issues, comments expressing personal opinion, recommendations, or concerns are still a part of the environmental record.

Comment 3-2:
Facility types should include two additional options (1) Wet: preprocessing for compost or energy recovery (2) Dry: traditional recyclables, inert, fuel product, residuals. Note: wet and dry collection is considered to be source separated because separation is done by residents prior to collection; since wet & dry collection is not mixed the sorting facilities would receive wet or dry materials are not "dirty" MRF nor are they mixed wasted processing facilities.

Response to Comment 3-2:
No specific processing technologies are proposed at this time. Once specific sites and technologies have been identified or proposed then project-level CEQA analyses and reviews would proceed.

Letter No. 4

From: "Joyce Dillard" <dillardjoyce@yahoo.com>
Date: Dec 19, 2013 3:41 PM
Subject: Comments to BOS Draft PEIR SOLID WASTE INTEGRATED RESOURCES PLAN (SWIRP) due 12.20.2013
To: "Reina Pereira" <reina.pereira@lacity.org>
Cc:

You state:

> *SWIRP, which is a Master Plan with no site specific development proposed at this time, identifies the potential future development of 10 to 15 facilities that would address the City's solid waste infrastructure needs through 2030 (one large or six small composting facilities, three clean material recovery facilities, one resource recovery center for self-haul materials, and five alternative technology facilities for treating residual waste).*
>
> *The analysis in the Draft PEIR identified potentially significant impacts, including impacts to aesthetics and visual resources, agricultural and forestry resources, biological and cultural resources, geology and soils, hazardous materials, hydrology and water quality, land use and planning, mineral resources, noise, population and housing, public services and recreation.*
>
> *All of these impacts could be mitigated to below a level of significance. There are also some potentially significant, unmitigable air quality and traffic impacts related to the construction and operation of solid waste facilities at the program level of analysis.*

Comments:

Air Quality is federally regulated by the Clean Air Act and should be taken seriously enough for mitigation. State Implementation Plan-South Coast Air Quality Management District SCAQMD is not in federal compliance in areas that should be identified and addressed.

Since traffic is a contributor to Air Quality, mitigation is necessary for the federal compliance issues with the Clean Air Act. 4-1

The Hollywood Community Plan was rescinded by Court Order (attached-2013_12-10_Statement_Of_Decision_Judge Goodman). SCAG Southern California Association of Governments population projections need to be included in this report and applied realistically. 4-2

The Draft Programmatic Environmental Report has no application without the proper statistics and mitigation measures. 4-2 cont.

Zero Waste is directly related to the population and the Community Plans as well as the Housing Element.

Housing Element is stacked with density around TOD Transit-Oriented Developments such as Wilshire, Hollywood, Westlake, South Los Angeles, South East Los Angeles, West Adams, and North Hollywood.

Needed for this PEIR are the number of single-family homes, multi-family residences and commercial and industrial properties.

Community Scale Facilities cannot be addressed without proper placement based on need, property analysis and property cost (for acquisition or replacement). 4-3

Bulky items, in the low-to-moderate income areas, are a source of a problem, yet are not identified by Community Plan or wasteshed. 4-4

Wasteshed information needs to be converted into Community Plan information. 4-5

Regional scale facilities would only be appropriate in the properly zoned industrial areas. Those areas are shrinking in the City of Los Angeles. 4-6

Watershed issues including pollutant loads need to be addressed. 4-7

The PEIR has little significance as a *Policy, Program, and Facility Plan* without location identification and the finite statistics behind it. 4-8

Joyce Dillard
P.O. Box 31377
Los Angeles, CA 90031

Attachment:

2013_12-10_Statement_Of_Decision_Judge Goodman

2

Letter No. 4 – Response to Comments

Letter Date: December 19, 2013

From: Joyce Dillard via email
dillardjoyce@yahoo.com

Comment 4-1:
Air Quality is federally regulated by the Clean Air Act and should be taken seriously enough for mitigation. State Implementation Plan-South Coast Air Quality Management District SCAQMD is not in federal compliance in areas that should be identified and addressed. Since traffic is a contributor to Air Quality, mitigation is necessary for the federal compliance issues with the Clean Air Act.

Response to Comment 4-1:
Environmental analyses are at a programmatic level, based upon general assumption of the number of facilities and their size. Subsequent project-level CEQA reviews will be conducted, which will provide a more detailed traffic analysis once sites are selected for the facilities. Such project-level analysis would include specific roadway segment and intersection analysis, traffic impacts, and impacts associated with greenhouse gases. The Draft PEIR proposes measures to reduce the amount of vehicle traffic to and from future facilities. This could include provisions such as encouraging employees to rideshare or carpool to the project site, or incentives for employees to use alternative transportation.

Comment 4-2:
The Hollywood Community Plan was rescinded by Court Order (attached-2013_12-10_Statement_Of_Decision_Judge Goodman). SCAG Southern California Association of Governments population projections need to be included in this report and applied realistically. The Draft Programmatic Environmental Report has no application without the proper statistics and mitigation measures.

Response to Comment 4-2:
Chapter 4.0, Section 4.12 (Population and Housing) utilized the most recent SCAG forecasts. Through mitigation measures in the Draft PEIR, general siting parameters are identified. While the mitigation measures do not identify specific locations for facilities at this time, they encourage sites that would not impact sensitive resources (e.g., sensitive biological resources, cultural resources, floodplains, etc.).

Comment 4-3:
Zero Waste is directly related to the population and the Community Plans as well as the Housing Element. Housing Element is stacked with density around TOD Transit-Oriented Developments such as Wilshire, Hollywood, Westlake, South Los Angeles, South East Los Angeles, West Adams, and North Hollywood. Needed for this PEIR are the number of single-family homes, multi-family residences and commercial and industrial properties. Community Scale Facilities cannot be addressed without proper placement based on need, property analysis and property cost (for acquisition or replacement).

Response to Comment 4-3:
SWIRP uses demographic information, including population and employment projections over the planning period through 2030 to project future program and facility need. The views and concerns presented in each comment letter will be reviewed and considered by decision makers. Although CEQA only requires a written response to Draft EIR comments dealing with significant environmental issues, comments expressing personal opinion, recommendations, or concerns are still a part of the environmental record.

Comment 4-4:
Bulky items, in the low-to-moderate income areas, are a source of a problem, yet are not identified by Community Plan or wasteshed.

Response to Comment 4-4:
Bulky item collection is an existing service LASAN provides. The collection system description can be found at: http://www.lacitysan.org/solid_resources/refuse/services/bulky_items.htm (accessed November 5, 2014).
The views and concerns presented in each comment letter will be reviewed and considered by decision makers. Although CEQA only requires a written response to Draft EIR comments dealing with significant environmental issues, comments expressing personal opinion, recommendations, or concerns are still a part of the environmental record.

Comment 4-5:
Wasteshed information needs to be converted into Community Plan information.

Response to Comment 4-5:
The Draft PEIR identified the City's six collection districts or "wastesheds." These wastesheds include East Valley, West Valley, Western, North Central, South Los Angeles, and Harbor. Regulations set forth in the City's General Plan, Land Use Element, and applicable Community Plan(s) would be used as the primary documents to identify the existing goals, policies, and objectives at the time the location of a proposed facility is identified. Outside of the City, the applicable General Plan or Community Plan for the respective jurisdiction would serve as the regulatory document for Land Use and Community Planning matters.

Comment 4-6:
Regional scale facilities would only be appropriate in the properly zoned industrial areas. Those areas are shrinking in the City of Los Angeles.

Response to Comment 4-6:
At this time, specific facility locations have not been identified. Due to the urban nature of the City, there are some types of facilities that are not likely to be accommodated within the City boundaries, such as large-scale composting sites. The Draft PEIR includes a 100-mile radius study area for analyses, since there is a potential that some facilities could be located outside the City boundaries. Chapter 4.0, Section 4.9 (Land Use and Planning) provides mitigation measures for the most appropriate land use and zoning designation with the City. For potential sites located outside of the City, the designated jurisdiction would provide their land use and zoning designated locations.

Comment 4-7:
Watershed issues including pollutant loads need to be addressed.

Response to Comment 4-7:
The Draft PEIR addresses watershed issues with applicable permits, policies, and programs. Once specific sites have been identified or proposed then project-level CEQA analyses and reviews would proceed.

Comment 4-8:
The PEIR has little significance as a Policy, Program, and Facility Plan without location identification and the finite statistics behind it.

Response to Comment 4-8:
The Draft PEIR analyzes the potential impact of implementation of policies and programs identified in SWIRP as well as the future needs of potential facilities to meet proposed goals of the program. The Draft PEIR is at the broader Programmatic level in nature. Once specific sites have been proposed or identified then project-level CEQA analyses and reviews would ensue.

Letter No. 5

laane
A NEW ECONOMY FOR ALL

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December 20, 2013

Mr. Enrique Zaldivar, Director
Ms. Reina Pereira, Senior Environmental Engineer
Solid Resources Support Services Division, Bureau of Sanitation
Public Works Building (PWB) MS 521
1149 South Broadway, 5th Floor
Los Angeles, CA 90015
Sent via email

Re: CITY OF LOS ANGELES SOLID WASTE INTEGRATED RESOURCES PLAN and DRAFT PROGRAM ENVIRONMENTAL IMPACT REPORT 10-026-BS

Dear Mr. Zaldivar and Ms. Pereira:

We write regarding the Solid Waste Integrated Resources Plan ("SWIRP") Draft Environmental Impact Report ("EIR"). We appreciate Los Angeles' goals to dramatically reduce the amount of materials it sends to landfills. This reduction in the need for landfill space is exactly the type of planning necessary to protect future generations and protect our planet from the harms of improper materials management. Accordingly, we are pleased to see several aspects of the SWIRP such as the expansion of recycling and composting programs, the commercial and multi-family exclusive franchise system, consumer and manufacturer responsibility, and robust educational programs. We are also deeply interested in the proposals and environmental analysis related to additional facilities to process materials to reduce our reliance on landfills. 5-1

The discussions about facilities can often be difficult because of a range of viewpoints. For example, we are very supportive of many of the "blue bin" and "green bin" facilities such as clean material recovery facilities, organics processing facilities, and resource recovery facilities. In addition, we are supportive of some of what the SWIRP refers to as "black bin processing facilities," such as anaerobic digestors and mixed material processing of black bin waste (though only within the context of a source-separated, three-bin system). Obviously, these types of facilities must be state-of-the-art, held to high standards, and sited in places that don't exacerbate environmental injustice. 5-2

At the same time, we are deeply concerned about other "black bin" facilities in the SWIRP such as Advanced Thermal Recycling (i.e. waste to energy) and Alternative Technology – Thermal (Plasma Arc/ Gasification/ Pyrolysis). We think proceeding with planning and development of these facilities is premature because basic material recovery facilities, organics processing facilities, and anaerobic digestors should receive priority attention in terms of facility development. These are the facilities that will provide the greatest gains to achieving Los Angeles' zero waste vision, as well as providing substantial economic benefits through lower processing costs and greater job creation possibilities. 5-3

464 Lucas Ave., Suite 202, Los Angeles, CA 90017 » E info@laane.org » T 213.977.9400 » F 213.977.9666 www.laane.org

Given this reality, we recommend pausing any work related to deploying facilities using alternative thermal technologies and advanced thermal recycling. Instead, focus should be placed on supporting development of state-of-the art facilities for material recovery and organics processing. Once these facilities have been developed, then the City could decide whether to embark on the discussion related to these more expensive and risky alternatives. 5-4

The EIR should look at an alternative that includes strictly the proposed "blue bin" and "green bin" facilities, as well as anaerobic digestors and mixed material processing of source-separated black bin waste. Given the general lack of controversy about the efficacy of these types of facilities, it is reasonable to include this alternative to determine how it would meet the project objectives. The SWIRP projects diversion exceeding the 90% diversion goal in scenarios utilizing mixed material processing, composting, and anaerobic digestion – without relying on controversial and expensive advanced thermal and alternative thermal technologies (p. 77, Volume II: Solid Waste Integrated Resources Plan). 5-5

Moreover, in the interim, we need to understand our waste stream better before any discussion of alternative technologies should proceed. To facilitate that understanding, we recommend that the City engage in an updated waste characterization study. Without understanding what types of materials we are dealing with, it is difficult to have a meaningful discussion of these alternative technologies. 5-6

We appreciate your consideration of these comments, and please do not hesitate to contact us if you have questions.

Sincerely,

Jackie Cornejo, Project Director
Los Angeles Alliance for a New Economy

Adrian Martinez, Staff Attorney
Earth Justice

CC: Matt Petersen, Chief Sustainability Officer, City of Los Angeles
Greg Good, Director of Infrastructure, Office of Mayor Eric Garcetti
Alex Helou, Solid Resources Management Assistant Director

Letter No. 5 – Response to Comments

Letter Date: December 20, 2013

From: Jackie Cornejo
Los Angeles Alliance for a New Economy
464 Luca Avenue, Suite 202
Los Angeles, CA 90017

Comment 5-1:
We write regarding the Solid Waste Integrated Resources Plan ("SWIRP") Draft Environmental Impact Report ("EIR"). We appreciate Los Angeles' goals to dramatically reduce the amount of materials it sends to landfills. This reduction in the need for landfill space is exactly the type of planning necessary to protect future generations and protect our planet from the harms of improper materials management. Accordingly, we are pleased to see several aspects of the SWIRP such as the expansion of recycling and composting programs, the commercial and multi-family exclusive franchise system, consumer and manufacturer responsibility, and robust educational programs. We are also deeply interested in the proposals and environmental analysis related to additional facilities to process materials to reduce our reliance on landfills.

Response to Comment 5-1:
At this time, specific facility locations have not been identified. SWIRP makes note of the number of each facility type that would be needed to meet future waste processing needs, but does not identify specific locations. At the time a facility site is identified, subsequent environmental review would be required. The views and concerns presented in each comment letter will be reviewed and considered by decision makers. Although CEQA only requires a written response to Draft EIR comments dealing with significant environmental issues, comments expressing personal opinion, recommendations, or concerns are still a part of the environmental record.

Comment 5-2:
The discussions about facilities can often be difficult because of a range of viewpoints. For example, we are very supportive of many of the "blue bin" and "green bin" facilities such as clean material recovery facilities, organics processing facilities, and resource recovery facilities. In addition, we are supportive of some of what the SWIRP refers to as "black bin processing facilities," such as anaerobic digesters and mixed material processing of black bin waste (though only within the context of a source-separated, three-bin system). Obviously, these types of facilities must be state-of-the-art, held to high standards, and sited in places that don't exacerbate environmental injustice.

Response to Comment 5-2:
The Draft PEIR identifies Blue Bin Facilities, Green Bin Facilities, and Black Bin Facilities. Black Bin Facilities would be capable of processing residual waste from residential black bins, commercial waste sources, or residual waste from processing facilities. These facilities are also known as alternative technology facilities. Examples of black bin facilities include, but are not limited to, automated mixed material processing facilities, advanced thermal recycling (second generation waste-to-energy), thermal facilities (such as gasification and pyrolysis), and anaerobic digestion facilities for residual waste. The views and concerns presented in each comment letter will be reviewed and considered by decision makers. Although CEQA only requires a written response to Draft EIR comments dealing with significant environmental issues, comments expressing personal opinion, recommendations, or concerns are still a part of the environmental record.

Comment 5-3:
At the same time, we are deeply concerned about other "black bin" facilities in the SWIRP such as Advanced Thermal Recycling (i.e. waste to energy) and Alternative Technology – Thermal (Plasma Arc/ Gasification/ Pyrolysis). We think proceeding with planning and development of these facilities is premature because basic material recovery facilities, organics processing facilities, and anaerobic digesters should receive priority attention in terms of facility development. These are the facilities that will provide the greatest gains to achieving Los Angeles' zero waste vision, as well as providing substantial economic benefits through lower processing costs and greater job creation possibilities.

Response to Comment 5-3:
Advanced Thermal Recycling (i.e., second generation waste to energy) and Alternative Technology/Thermal (Plasma Arc/Gasification/Pyrolysis) are of concern to the commenter. If all of the SWIRP policies and programs are fully implemented then five black bin facilities would be required to process all residual waste generated within the City. The specific technologies (for facilities) have not been identified at this time and no facility has been sited. Once specific sites have been proposed or identified then project-level CEQA analyses and reviews would proceed.

Comment 5-4:
Given this reality, we recommend pausing any work related to deploying facilities using alternative thermal technologies and advanced thermal recycling. Instead, focus should be placed on supporting development of state-of-the art facilities for material recovery and organics processing. Once these facilities have been developed, then the City could decide whether to embark on the discussion related to these more expensive and risky alternatives.

Response to Comment 5-4:
The views and concerns presented in each comment letter will be reviewed and considered by decision makers. Although CEQA only requires a written response to Draft EIR comments dealing with significant environmental issues, comments expressing personal opinion, recommendations, or concerns are still a part of the environmental record.

Comment 5-5:
The EIR should look at an alternative that includes strictly the proposed "blue bin" and "green bin" facilities, as well as anaerobic digesters and mixed material processing of source-separated black bin waste. Given the general lack of controversy about the efficacy of these types of facilities, it is reasonable to include this alternative to determine how it would meet the project objectives. The SWIRP projects diversion exceeding the 90% diversion goal in scenarios utilizing mixed material processing, composting, and anaerobic digestion – without relying on controversial and expensive advanced thermal and alternative thermal technologies (p. 77, Volume II: Solid Waste Integrated Resources Plan).

Response to Comment 5-5:
Throughout Phase 1 of the SWIRP planning process, stakeholders discussed facility options and toured local facilities. During Phase 2, stakeholders identified the specific facility needs resulting from implementation of SWIRP, including options for maximizing diversion through residual waste separation and processing. Black bin processing facilities target residential and commercial residual waste, and residual waste that remains after recycling and composting (materials disposed of in blue bins and green bins that are unsuitable for processing). The specific technologies (for facilities) have not been identified at this time and could include a mix of facilities or could include those types of facilities identified by the commenter.

CEQA Guidelines Section 15126.6 requires that the City evaluate alternatives to SWIRP, including the "No Project Alternative." None of the alternatives considered were environmentally superior to the proposed project because they do not meet all the project goals and objectives. Thus, full Implementation of SWIRP was preferred which includes expansion of existing programs, new downstream (reuse, recycling, and composting) policies and programs, mandatory policies and programs, upstream (waste prevention and producer responsibility) policies and programs, and blue, green and black bin infrastructure.

Comment 5-6:
Moreover, in the interim, we need to understand our waste stream better before any discussion of alternative technologies should proceed. To facilitate that understanding, we recommend that the City engage in an updated waste characterization study. Without understanding what types of materials we are dealing with, it is difficult to have a meaningful discussion of these alternative technologies.

Response to Comment 5-6:
Implementation of the policies and programs identified in SWIRP is anticipated to change the composition of the residual waste. The SWIRP planning model takes these changes into account to project future composition and diversion rates. The specific technologies (for facilities) have not been identified at this time and would be evaluated in the future based on the then-current and projected composition of the feedstocks to be directed to the facilities.

Letter No. 6



14048 Valley Blvd.
P.O. Box 60009
City of Industry, CA 91716-0009
Fax (626) 330-4686
(626) 336-3636

December 20, 2013

Reina Pereira
Senior Environmental Engineer
Solid Resources Support Services Division
Bureau of Sanitation
1149 South Broadway, 5th Floor
Mail Stop 521
Los Angeles, CA 90015

Re: Comments regarding the Draft EIR for the Solid Waste Integrated Resources Plan

Dear Ms. Pereira:

Athens Services ("Athens") is proud to be a long and valued partner with the City of Los Angeles (the "City"), and we are pleased to offer our comments and observations on the Draft Program Environmental Impact Report ("EIR") for the City's Solid Waste Integrated Resources Plan ("SWIRP"). These comments are presented in a spirit of cooperation and support for the City as it navigates the difficult process of devising and implementing an efficient, sensible plan for achieving its Zero Waste goals.

At Athens, our primary focus is on landfill diversion and recycling. Our company already has invested tens of millions of dollars in state-of-the-art recycling, composting, and food waste processing infrastructure and technology that we believe can be an important part of the solution to the solid waste challenges facing the City.

While we submit to the City the comments in this letter in their entirety, the following Executive Summary provides a summary of those comments. A more detailed analysis follows the Executive Summary.

1

EXECUTIVE SUMMARY:

I. Infrastructure & Capacity

The data presented in the EIR describing Athens' waste processing capacity is out of date. We believe an opportunity exists to include updated statistics about current and future waste processing capacity that will be beneficial to the larger policy discussion about the SWIRP plan.

Specifically, Athens has more than 8,000 tons per day (TPD) in waste processing capacity that is unrecognized in the SWIRP EIR. This, alone, represents a significant majority of the City's waste processing needs.

6-1

II. Flexible Planning for Infrastructure Needs

The SWIRP EIR demonstrates that Source Separated recycling is hindered by low participation and chronic contamination in the materials collected in the blue bins, which include 25%[1] to 41%[2] residual waste. The contamination results in a lower recovery percentage for Source Separation recycling and it raises questions about the kinds of materials recovery facilities (MRF's) the City will need in the future.

6-2

The distinction between "clean" and "dirty" MRF's is becoming less pronounced due to this chronic contamination. Therefore, the City should—in the interest of maximizing diversion-- explore the need for more flexible recycling infrastructure that can process both Source Separated and mixed waste recycling.

6-3

[1] Appendix C, Page C-3-12
[2] Appendix C, Page C-3-5

2

III. An Opportunity to Study More Effective Recycling Methods

Source Separation has served the City well, and in some cases, may be the best recycling approach for a hauler and its customers. However, the environmental impacts of a Source Separation *mandate* should be weighed against its overall effectiveness in achieving diversion, recovery, and Zero Waste. 6-4

The EIR acknowledges that there will be environmental impacts associated with a Source Separation mandate, but states that those impacts are unquantifiable. In the recently released Draft EIR for the Exclusive Commercial Franchise[3] (the "Franchise EIR"), which was published after the SWIRP EIR, the City does quantify the environmental impacts of a Source Separation mandate, and therefore, an opportunity now exists to strengthen the SWIRP EIR by including that data in the final document. 6-5

IV. Alternative Deserving Further Study

In the interest of advancing the concept of flexible recycling infrastructure and maximizing diversion, it would be constructive for the final EIR to study an additional alternative, whereby the City requires a specific diversion percentage and gives haulers the flexibility to meet that target using whatever recycling technologies/processes they deem appropriate (*i.e.*, Source Separation, mixed waste processing, or both). 6-6

[3] http://san.lacity.org/pdf/2013/Draft_Program_EIR_11182013.pdf

3

SUPPORTING ANALYSIS:

The following observations and comments seek to expand on the points raised in the Executive Summary:

I. **Infrastructure & Capacity**

Athens concurs with the EIR's conclusion that a robust and *flexible* recycling infrastructure is needed for the City to achieve its Zero Waste goals.

As noted in Appendix C of the SWIRP EIR, Athens currently operates two major facilities within the Study Area. However, the SWIRP EIR does not accurately reflect the capacities of these facilities, nor does the EIR take into account our company's ongoing and very significant investments in recycling and diversion.

Athens requests that the EIR be amended to reflect its accurate existing and future capacity.

6-7

Existing Facilities:

(a) Sun Valley

In the SWIRP Facilities Analysis[4], Athens' Sun Valley Facility is listed as a Solid Waste Processing Facility, permitted for 400 TPD, with expansion plans up to 1,500 TPD, of which the City estimates 250 to 500 TPD can be allocated to meeting the recovery and disposal needs of the City.

The facility presently in construction is designed to be flexible. It can process 1,500 TPD of either mixed waste (all waste disposed of in one bin) or Source Separated materials, from either a commercial/multifamily or a single family residential stream.

6-8

[4] Appendix D, Page D-3-3

4

The 1,500 TPD of flexible capacity can be dedicated entirely to City's needs. (See below for more detail)

6-8 cont.

(b) City of Industry

The Facilities Analysis describes Athens' facility in the City of Industry as a Transfer Station[5], when in fact it is a mixed waste processing facility, where transfer activities *may* occur.

Athens' Materials Recovery Facility in the City of Industry is permitted to process 4,000 TPD. This capacity figure will be increased to 5,000 TPD by January 2014. Of this, Athens recovers nearly 30 percent of the materials we process from trash containers, little of which is source separated. Approximately 15,000 tons per month of City's one-bin (non Source Separated) commercial and multifamily waste is being delivered to this facility.

6-9

(c) Victorville

The Victor Valley Regional Composting Facility ("California Biomass") is identified in the EIR, but the document states that tonnage statistics are not available. In fact, this data is available: This facility, which Athens acquired in 2009, can process 700 TPD of organic materials such as yard trimmings and food waste. Presently over 1,000 tons per month of restaurant food waste from the City is sent to this facility for composting. This facility can take at least 250 TPD more food waste and green waste from the City.

6-10

[5] Appendix C, Page C-1-2

5

Planned and Permitted Facilities:

(a) Expansion of the Sun Valley Materials Recovery Facility

Athens has received approvals from the City to build a new, state-of-the-art Materials Recovery Facility at its Sun Valley location, where Athens' Construction & Demolition processing facility formerly operated. This new facility is designed to be *flexible*, with the ability to process both mixed waste and Source Separated waste streams.

Once built, this facility should be able to process 1,500 TPD of mixed waste or Source Separated materials. However, the Facilities Analysis does not recognize this new/additional recycling capacity. Rather, it factors in 500-1,000 TPD as transfer activity. Construction has begun on this facility, which is set to open in 2014.

The EIR does not include this new/additional recycling capacity.

6-11

(b) Irwindale

In addition to Athens' Sun Valley and City of Industry operations, our company is in the process of developing a third major Materials Recovery Facility in the city of Irwindale. This facility will use state-of-the art technology to recover the maximum amount of materials possible and minimize residual waste sent to landfills.

The new Irwindale Materials Recovery Facility has full support from the City and the EIR is scheduled to be reviewed and certified in 2014; once approved and built, it will add an additional 6,000 TPD of recycling capacity, which is not reflected in the SWIRP Facilities Analysis.

6-12

6

II. **Capabilities: New Technologies, Source Separation, and Mixed Waste Processing**

Investment in New Recycling Technologies:

Because Athens is a recycling company, first and foremost, and because we do not own landfills, our primary goal is to minimize the residual waste that exits our facilities. Athens currently is studying waste-to-energy; anaerobic digestion technologies that can significantly increase landfill diversion by capturing much of the organic material that remains after standard recycling processes have captured traditional recyclable materials. (See below for more details.)

Mixed Waste Processing vs. Source Separated Recycling:

Athens encourages the City to adopt policies that are forward-looking and that acknowledge the proven effectiveness of mixed waste processing, which will continue to improve with time and technology. Committing the City exclusively to Source Separation may result in lost opportunities for diversion and recovery as technology evolves, and also result in more vehicle trips and miles which results in more traffic and pollution.

6-13

As it stands, the SWIRP EIR Facilities Analysis shows that the contents of the residential curbside blue bin collection include between 25%[6] to 41%[7] residual waste. In fact, most "clean" MRF's require solid waste facility permits because of this high level of residual waste. This is evidence that contamination is just as likely to occur in a Source Separated waste stream as in a mixed materials waste stream, thereby blurring the lines between "Clean MRF's" processing Blue Bin waste, and "Dirty MRF's" which process the entire waste stream. Existing and new Materials Recovery Facilities must recover more from the waste stream, including recyclable materials and compostable organics.

[6] Appendix C, Page C-3-12
[7] Appendix C, Page C-3-5

7

In fact, the City and Cal Recycle have emphasized that recovery of food waste and organics is one of their highest priorities. Athens is in the process of utilizing techniques and equipment to remove organics from mixed waste streams by processing residual organics that are screened out at our MRF's, and utilizing them in compost and anaerobic digestion. Clean MRFs that process Source Separated materials cannot accomplish this separation effectively.

Athens contends that the City should "encourage" existing Clean Materials Recovery Facility operators to re-design and operate with an eye towards flexibility, so as to be able to process disparate waste streams and recover more material. It seems counterproductive not to fully utilize MRFs with solid waste facility permits that have the ability to process more diverse waste streams, because more diversion from the waste stream is tantamount to the City meeting its goal.

Therefore, as the City looks to integrate its new Commercial and Multi-Family Franchise system with the SWIRP plan, *Athens encourages City leaders to make participants in the process "connect-the-dots" between their proposed Franchise waste-sheds and existing and proposed MRFs that are solid waste processing facilities.* 6-14

First, the City should establish specific diversion targets for each waste shed. Rather than focusing on "how" haulers achieve those targets, the City's focus should be "that" they achieve those targets. Haulers should be given the flexibility to employ whatever recycling technologies they determine are best to achieve the diversion targets. This could include both source separation and mixed waste processing.

Second, vertically-integrated companies that have already demonstrated a willingness to invest in the processing and recycling infrastructure described in the EIR and needed to implement SWIRP, are in the best position to assist the City in achieving its Zero Waste goals. They should be treated as partners with the City in the SWIRP process, and be given priority in the subsequent franchise allocation process.

8

While Athens has made flexibility a priority in its infrastructure development— it is undeniable that companies will factor the degree of certainty about the kind of waste streams they will be required to process into their future infrastructure investment decisions.

Therefore, in order to ensure the kind of recycling infrastructure development the SWIRP EIR concludes is necessary to advance the City's Zero Waste goals and create green jobs, the City should strive to eliminate uncertainty by adopting a policy that gives companies flexibility to use multiple recycling processes and technologies—including mixed waste processing—to achieve recycling and diversion mandates set by the City. 6-15

III. **An Opportunity Missed to Study Most Effective Recycling Methods**

As the Bureau of Sanitation has made clear in its call for an "integrated waste management approach[8]," meeting the City's Zero Waste goals is a complicated process. At its core, this process is about infrastructure, investment, and jobs, and meeting policy goals that are interrelated.

For decades, Source Separation has been an important part of the City's recycling programs. It has helped the City reach its 75% Diversion Goal for 2013, and is clearly a favorable alternative to landfilling. Certain Source Separation opportunities exist to service customers effectively, and Source Separation should be included in the City's recycling plans. However, Athens believes that the EIR should be viewed as an opportunity to evaluate thoughtfully the efficacy and the environmental impacts of Source Separation, as compared to mixed waste processing. 6-16

In fact, data presented in the franchise EIR and Appendix C of the SWIRP EIR demonstrates that mixed waste processing can be more effective than Source Separation, particularly in multifamily services. Many apartment associations have gone on record indicating that often apartment buildings have no room for multiple containers, and the

[8] October 13, 2103 BOS Staff Report: City's Recycling (Diversion) Rate – Update Report

9

logistics of picking up waste and recycling from underground parking garages and chute rooms makes Source Separation impractical and challenging. 6-16 cont.

Convenient and Effective Recycling Goals:

In the SWIRP EIR, Alternative 5 (full implementation of SWIRP with no Source Separation mandate) is dismissed as insufficient in meeting the Program Goal to, "*Make the City a leader in implementing Zero Waste practices,*" because this alternative lacks mandatory Source Separation programs. 6-17

Furthermore, it is also declared insufficient in meeting the Program Goal to, "*Find solutions that are both economically efficient and environmentally preferable,*" because it lacks mandatory programs and the concomitant jobs that would be created from the route duplication caused by Source Separation.[9] 6-18

We believe these assertions undermine the credibility of the Environmental Review analysis in two ways: 6-19

1) Making "Mandatory Source Separation" a Goal in and of itself, biases the EIR's analysis of any Alternatives that do not include a mandate.

2) By the City's own calculations, <u>any</u> of the five Alternatives can achieve the Zero Waste Goal of 90% Diversion, and in a maximum diversion scenario, Alternative 5 achieves the same 98% diversion rate as full implementation of SWIRP. 6-20

Negative Impacts of Source Separation Mandates:

The SWIRP EIR acknowledges negative impacts of a Source Separation mandate in the areas of air quality, noise and traffic; however, we believe the SWIRP EIR's analysis of these impacts is inadequate. 6-21

[9] SWIRP Draft Program EIR, Table 5-5-3

For example, in its analysis of mandatory Source Separation programs, the document states:

> *"Implementation of this policy/program will result in additional recycled material pick up as the program requires mandatory recycling separation for all waste generators (residential and commercial businesses). This may result in additional blue bin pickups. At this time, the number of trucks and their ultimate destination for the increased blue bin materials is unknown, thus a policy-specific air quality analysis cannot be conducted...*[10]*"*

6-22

In fact, the Franchise EIR *does* estimate the traffic impacts of a Source Separation mandate within a franchise when it compares the traffic impacts of "No Project" and a "Non-Exclusive Franchise System" (Franchise EIR Alternative 1).[11]

TABLE 4-2
FORECAST 2030 VMT AND VHT

Alternatives	2030 VMT	% Change	% Change (No Project vs. Project Alternatives)	2030 VHT	% Change	% Change (No Project vs. Project Alternatives)
2012 Existing Conditions	9,143,221			853,608		
2030 Alternatives						
No Project	10,488,034	15%	-	992,597	16%	-
Proposed Project	10,287,273	13%	-2%	1,073,843	26%	10%
Alt 1. Non-Exclusive	16,107,380	76%	61%	1,587,034	86%	70%
Alt 2. Exclusive, Multiple Franchised Haulers	16,056,981	76%	61%	1,582,618	85%	69%
Alt 3. City Collection	10,287,273	13%	-2%	1,073,843	26%	10%

The only relevant difference between "No Project" and "Alternative 1" in the Franchise EIR Analysis is a mandate for Source Separation being imposed on haulers. As the City's own data shows, that Source Separation mandate will result in a net 61% increase in Vehicle Miles Traveled and 70% increase in Vehicle Hours Traveled, resulting in potentially significant impacts to the environment in terms of transportation.[12/13]

6-23

[10] SWIRP Program Draft EIR, Table 4.3-14
[11] Franchise Draft Program EIR, Page 4-5
[12] Franchise Draft Program EIR, Page 4-11

The City's claim—in the SWIRP EIR—that the additional vehicle miles and hours that would result from a Source Separation mandate are unknown and therefore less than significant, is directly contradicted by the City's claim in the Franchise EIR that a Source Separation mandate will result in significant increases in vehicle miles and hours--60% and 70%, respectively.

6-23 cont.

Finally, in the Franchise EIR, the City presents data that shows that Source Separation generates lower levels of recovery and contains a high level of contamination[14]:

- An analysis of the data provided in the SWIRP EIR shows that City-operated Source Separated recycling programs recover significantly less materials than mixed-waste processing[15].

    i. In 2006, the City's residential curbside program recovered 184,000 tons out of a 1,172,000 ton waste-stream, for a recovery rate of 15.7%[16]

    ii. In 2006, the City's Multifamily recycling programs recovered 13,000 tons out of a 555,000 ton waste-stream, for a recovery rate of 2.3%[17]

6-24

[13] Were the Franchise EIR to hypothetically analyze a fourth alternative, a non-Exclusive system with mixed waste pprocessing and no Source Separation mandate, the Analysis likely would show roughly the same Vehicle Miles Traveled and fewer Vehicle Hours Traveled than the Proposed Project. Furthermore an exclusive franchise without a Source Separation mandate would result in hundreds of thousands fewer Vehicle Miles Traveled.

[14] Franchise Draft Program EIR, Page 2-13

[15] The City of Los Angeles does not operate comprehensive commercial recycling services similar to those it offers to residential family curbside and multifamily housing. The data in Appendix C of the SWIRP EIR includes construction and demolition debris in the commercial waste stream, therefore making it impossible to determine the efficacy of voluntary Source Separation in the commercial sector.

[16] SWIRP Draft Program EIR, Pages C-7, C-17-25
[17] *loc cit*

12

iii. The City's Mixed Waste Materials Recovery Facilities are certified to recover between 19% and 32% of the solid waste they process.[18]

iv. The "clean MRFs" that process the Bureau's residential curbside blue bin materials report that between 24% and 41% of the waste stream is residual waste. This significant residual waste will lead to contamination of recoverable materials; therefore there is no advantage to Source Separation compared to mixed waste processing in this regard.

6-24 cont.

Comparing Source Separation to Mixed Materials Processing:

A comparative analysis of Source Separation and mixed waste processing demonstrates that a Source Separation mandate shows no benefit in achieving diversion goals, recovers less material, and puts more vehicles on the roads:

	Source Separation Mandate	**Mixed Materials Processing**
Does it meet the City's Zero Waste Goals?	YES	YES
Maximum Diversion Estimated by SWIRP EIR	98%	98%
Net Increase n Vehicle Miles Traveled	61%	-
Net Increase in Vehicle Hours Traveled	70%	-
Recycling Recovery Rate	Residential Curbside: 15.7% Multi-Family Blue Bin: 2.3%	Materials Recovery Facilities Certified to recover: 19% to 32%

6-25

Source Separation has served the City well, and in some cases, such as certain office or manufacturing environments, may be a preferred option for a hauler and its customers. However, the environmental costs of a Source Separation mandate should be weighed against its comparative efficacy in achieving diversion, recovery and Zero Waste.

[18] Franchise Draft Program EIR, Page 2-13

13

In light of, what we believe to be the SWIRP EIR's deficiencies in adequately studying the environmental impacts of the route duplication caused by Source Separation mandates, and data showing that mixed waste processing is more effective at recovering materials than source separation, Athens requests that the City further study an Alternative which mandates performance by setting diversion percentages with which haulers must comply, but that gives haulers the flexibility to determine how best to meet those percentages through technologies and processes of their choosing. 6-25 cont.

CONCLUSION

Athens supports, the City's commitment to chart a path to Zero Waste. The various Alternatives that were studied in the EIR all accomplish the fundamental Zero Waste goal of 90% diversion, and multiple Alternatives reach a maximum of 98% diversion. The environmental review process, therefore, should be given great weight by the City. 6-26

With respect to the EIR, Athens respectfully suggests:

1. The EIR should be amended to accurately reflect Athens-- as well as other facilities-- current and future waste processing capacity. 6-27
2. The EIR should study an additional alternative, whereby the City sets a specific diversion percentage and gives haulers the flexibility to meet that target using whatever recycling technologies/processes they deem appropriate. 6-28
3. The EIR is deficient in its study of the environmental impacts of a Source Separation recycling mandate because there is new data submitted in the Franchise EIR that is not included in the SWIRP EIR. 6-29
4. The City should encourage more processing at existing Materials Recovery Facilities that can be re tooled and re-permitted to process both mixed waste 6-30

14

and Source Separated materials. This will maximize diversion and avoid the difficulty of siting new facilities. 6-30 cont.

Athens reiterates its desire to be a valued partner with the City and we look forward to engaging in a productive dialogue that will result in the most effective, efficient, and environmentally sound solution to the solid waste challenges facing the City of Los Angeles.

Very truly yours,

Greg Loughnane
Executive Vice President

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Letter No. 6 – Response to Comments

Letter Date: December 20, 2013

From: Greg Loughnane
Athens Services
14048 Valley Boulevard
City of Industry, CA 91716-0009

Comment 6-1:
The data presented in the EIR describing Athens' waste processing capacity is out of date. We believe an opportunity exists to include updated statistics about current and future waste processing capacity that will be beneficial to the larger policy discussion about the SWIRP plan.

Specifically, Athens has more than 8,000 tons per day (TPD) in waste processing capacity that is unrecognized in the SWIRP EIR. This, alone, represents a significant majority of the City's waste processing needs.

Response to Comment 6-1:
Appendix C of the SWIRP Facility Plan summarizes the results of the facility surveys conducted in 2007 and 2008. SWIRP identifies the City's future facility needs, but does not specify whether this new capacity will be developed by the City or the private sector. The Draft PEIR identifies the potential impacts should these facilities be developed in the future. The availability of existing regional capacity will be taken into account prior to the development of new facilities. A table listing updates to the permitted capacities of the surveyed facilities is included in Chapter 0.2 Corrections and Additions.

Comment 6-2:
The SWIRP EIR demonstrates that Source Separated recycling is hindered by low participation and chronic contamination in the materials collected in the blue bins, which include 25% to 41% residual waste. The contamination results in a lower recovery percentage for Source Separation recycling and it raises questions about the kinds of materials recovery facilities (MRF's) the City will need in the future.

Response to Comment 6-2:
The views and concerns presented in each comment letter will be reviewed and considered by decision makers. Although CEQA only requires a written response to Draft EIR comments dealing with significant environmental issues, comments expressing personal opinion, recommendations, or concerns are still a part of the environmental record.

Comment 6-3:
The distinction between "clean" and "dirty" MRF's is becoming less pronounced due to this chronic contamination. Therefore, the City should--in the interest of maximizing diversion-- explore the need for more flexible recycling infrastructure that can process both Source Separated and mixed waste recycling.

Response to Comment 6-3:
The views and concerns presented in each comment letter will be reviewed and considered by decision makers. Although CEQA only requires a written response to Draft EIR comments dealing with significant environmental issues, comments expressing personal opinion, recommendations, or concerns are still a part of the environmental record.

Comment 6-4:
Source Separation has served the City well, and in some cases, may be the best recycling approach for a hauler and its customers. However, the environmental impacts of a Source Separation mandate should be weighed against its overall effectiveness in achieving diversion, recovery, and Zero Waste.

Response to Comment 6-4:
One project objective is to, "Increase recycling by providing convenient opportunities for residents, businesses, and institutions to participate...This alternative includes programs and policies that would meet this project objective." Source Separation is intended to motivate all generators within the City to separate recyclable materials from the waste they generate at their home or business and place it in the appropriate blue bin or recycling collection bin on a regular basis for collection. Stakeholder objectives were established during Phase 2 of the SWIRP planning process (refer to Chapter 5.0).

Comment 6-5:
The EIR acknowledges that there will be environmental impacts associated with a Source Separation mandate, but states that those impacts are unquantifiable. In the recently released Draft EIR for the Exclusive Commercial Franchise (the "Franchise EIR"), which was published after the SWIRP EIR, the City does quantify the environmental impacts of a Source Separation mandate, and therefore, an opportunity now exists to strengthen the SWIRP EIR by including that data in the final document.

Response to Comment 6-5:
The SWIRP PEIR evaluates potential environmental impacts at the programmatic level. The specific details of the Franchise Initiative were not evaluated within the SWIRP PEIR. Therefore, the City elected to undertake a separate EIR for the Franchise Initiative. It is anticipated that additional program and project-specific EIRs will be undertaken as the City moves forward implementing the other policies, programs, and infrastructure identified in SWIRP.

Comment 6-6:
In the interest of advancing the concept of flexible recycling infrastructure and maximizing diversion, it would be constructive for the final EIR to study an additional alternative, whereby the City requires a specific diversion percentage and gives haulers the flexibility to meet that target using whatever recycling technologies/processes they deem appropriate (i.e., Source Separation, mixed waste processing, or both).

Response to Comment 6-6:
Full implementation of SWIRP includes the expansion of existing programs, new downstream policies, mandatory policies or programs, and upstream policies and programs. Full implementation also achieves all of SWIRP's objectives (Chapter 5.0, Project Alternatives, Table 5.0-1). The five alternatives do not achieve all of SWIRP's objectives. Furthermore, under CEQA Guidelines 15126.6(a), a Draft PEIR is required to “describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives.”

Comment 6-7:
Athens concurs with the EIR's conclusion that a robust and flexible recycling infrastructure is needed for the City to achieve its Zero Waste goals.

As noted in Appendix C of the SWIRP EIR, Athens currently operates two major facilities within the Study Area. However, the SWIRP EIR does not accurately reflect the capacities of these facilities, nor

does the EIR take into account our company's ongoing and very significant investments in recycling and diversion.

Athens requests that the EIR be amended to reflect its accurate existing and future capacity.

Response to Comment 6-7:
Appendix C of the SWIRP Facility Plan summarizes the results of the facility surveys conducted in 2007 and 2008. SWIRP identifies the City's future facility needs, but does not specify whether this new capacity will be developed by the City or the private sector. The Draft PEIR identifies the potential impacts should these facilities be developed in the future. The availability of existing regional capacity will be taken into account prior to the development of new facilities. A table listing updates to the permitted capacities of the surveyed facilities is included in Chapter 0.2 Corrections and Additions.

Comment 6-8:
In the SWIRP Facilities Analysis, Athens' Sun Valley Facility is listed as a Solid Waste Processing Facility, permitted for 400 TPD, with expansion plans up to 1,500 TPD, of which the City estimates 250 to 500 TPD can be allocated to meeting the recovery and disposal needs of the City.

The facility presently in construction is designed to be flexible. It can process 1,500 TPD of either mixed waste (all waste disposed of in one bin) or Source Separated materials, from either a commercial/multifamily or a single family residential stream.

The 1,500 TPD of flexible capacity can be dedicated entirely to City's needs. (See below for more detail).

Response to Comment 6-8:
Appendix C of the SWIRP Facility Plan summarizes the results of the facility surveys conducted in 2007 and 2008.

Appendix C, page C-4-1 lists the planned expansion activity and Appendix D, page D-3-3 lists the estimated processing capacity.

SWIRP identifies the City's future facility needs, but does not specify whether this new capacity will be developed by the City or the private sector. The Draft PEIR identifies the potential impacts should these facilities be developed in the future. The availability of existing regional capacity will be taken into account prior to the development of new facilities. A table listing updates to the permitted capacities of the surveyed facilities is included in Chapter 0.2 Corrections and Additions.

Comment 6-9:
The Facilities Analysis describes Athens' facility in the City of Industry as a Transfer Station, when in fact it is a mixed waste processing facility, where transfer activities may occur.

Athens' Materials Recovery Facility in the City of Industry is permitted to process 4,000 TPD. This capacity figure will be increased to 5,000 TPD by January 2014. Of this, Athens recovers nearly 30 percent of the materials we process from trash containers, little of which is source separated. Approximately 15,000 tons per month of City's one bin (non Source Separated) commercial and multifamily waste is being delivered to this facility.

Response to Comment 6-9:

Appendix C of the SWIRP Facility Plan summarizes the results of the facility surveys conducted in 2007 and 2008.

Appendix C, page C-1-2 describes the increase in processing capacity at the facility and the increase in tonnage amounts delivered to the facility from City sources from 2006 to 2007.

Appendix D, page D-3-3 lists the permitted capacity and the estimated processing capacity available to the City at the time of the survey.

SWIRP identifies the City's future facility needs, but does not specify whether this new capacity will be developed by the City or the private sector. The Draft PEIR identifies the potential impacts should these facilities be developed in the future. The availability of existing regional capacity will be taken into account prior to the development of new facilities. A table listing updates to the permitted capacities of the surveyed facilities is included in Chapter 0.2 Corrections and Additions.

Comment 6-10:
The Victor Valley Regional Composting Facility ("California Biomass") is identified in the EIR, but the document states that tonnage statistics are not available. In fact, this data is available: This facility, which Athens acquired in 2009, can process 700 TPD of organic materials such as yard trimmings and food waste. Presently over 1,000 tons per month of restaurant food waste from the City is sent to this facility for composting. This facility can take at least 250 TPD more food waste and green waste from the City.

Response to Comment 6-10:
The Victor Valley Regional Composting Facility (“California Biomass”) is listed in the SWIRP Facility Plan on Table 13, page 46 and in Appendix C, page C-5-9. The capacity is listed at 700 TPD which is consistent with the information provided by the commenter.

Appendix C of the SWIRP Facility Plan summarizes the results of the facility surveys conducted in 2007 and 2008. SWIRP identifies the City's future facility needs, but does not specify whether this new capacity will be developed by the City or the private sector. The Draft PEIR identifies the potential impacts should these facilities be developed in the future. The availability of existing regional capacity will be taken into account prior to the development of new facilities. A table listing updates to the permitted capacities of the surveyed facilities is included in Chapter 0.2 Corrections and Additions.

Comment 6-11:
Athens has received approvals from the City to build a new, state-of-the-art Materials Recovery Facility at its Sun Valley location, where Athens' Construction & Demolition processing facility formerly operated. This new facility is designed to be flexible, with the ability to process both mixed waste and Source Separated waste streams.

Once built, this facility should be able to process 1,500 TPD of mixed waste or Source Separated materials. However, the Facilities Analysis does not recognize this new/additional recycling capacity. Rather, it factors in 500-1,000 TPD as transfer activity. Construction has begun on this facility, which is set to open in 2014.

The EIR does not include this new/additional recycling capacity.

Response to Comment 6-11:

Appendix C of the SWIRP Facility Plan summarizes the results of the facility surveys conducted in 2007 and 2008.

Appendix C, page C-4-1 lists the planned expansion activity and Appendix D, page D-3-3 lists the estimated processing capacity in addition to the transfer capacity.

SWIRP identifies the City's future facility needs, but does not specify whether this new capacity will be developed by the City or the private sector. The Draft PEIR identifies the potential impacts should these facilities be developed in the future. The availability of existing regional capacity will be taken into account prior to the development of new facilities. A table listing updates to the permitted capacities of the surveyed facilities is included in Chapter 0.2 Corrections and Additions.

Comment 6-12:
In addition to Athens' Sun Valley and City of industry operations, our company is in the process of developing a third major Materials Recovery Facility in the city of Irwindale. This facility will use state-of-the art technology to recover the maximum amount of materials possible and minimize residual waste sent to landfills.

The new Irwindale Materials Recovery Facility has full support from the City and the EIR is scheduled to be reviewed and certified in 2014; once approved and built, it will add an additional 6,000 TPD of recycling capacity, which is not reflected in the SWIRP Facilities Analysis.

Response to Comment 6-12:
Appendix C of the SWIRP Facility Plan summarizes the results of the facility surveys conducted in 2007 and 2008.

The commenter notes that new capacity is being developed regionally.

SWIRP identifies the City's future facility needs, but does not specify whether this new capacity will be developed by the City or the private sector. The Draft PEIR identifies the potential impacts should these facilities be developed in the future. The availability of existing regional capacity will be taken into account prior to the development of new facilities. A table listing updates to the permitted capacities of the surveyed facilities is included in Chapter 0.2 Corrections and Additions.

Comment 6-13:
Because Athens is a recycling company, first and foremost, and because we do not own landfills, our primary goal is to minimize the residual waste that exits our facilities. Athens currently is studying waste-to-energy; anaerobic digestion technologies that can significantly increase landfill diversion by capturing much of the organic material that remains after standard recycling processes have captured traditional recyclable materials. (See below for more details.)

Athens encourages the City to adopt policies that are forward-looking and that acknowledge the proven effectiveness of mixed waste processing, which will continue to improve with time and technology. Committing the City exclusively to Source Separation may result in lost opportunities for diversion and recovery as technology evolves, and also result in more vehicle trips and miles which results in more traffic and pollution.

As it stands, the SWIRP EIR Facilities Analysis shows that the contents of the residential curbside blue bin collection include between 25% to 41% residual waste. In fact, most "clean" MRF's require solid

waste facility permits because of this high level of residual waste. This is evidence that contamination is just as likely to occur in a Source Separated waste stream as in a mixed materials waste stream, thereby blurring the lines between "Clean MRF's" processing Blue Bin waste, and "Dirty MRF's" which process the entire waste stream. Existing and new Materials Recovery Facilities must recover more from the waste stream, including recyclable materials and compostable organics.

Response to Comment 6-13:
The views and concerns presented in each comment letter will be reviewed and considered by decision makers. Although CEQA only requires a written response to Draft EIR comments dealing with significant environmental issues, comments expressing personal opinion, recommendations, or concerns are still a part of the environmental record.

Comment 6-14:
In fact, the City and CalRecycle have emphasized that recovery of food waste and organics is one of their highest priorities. Athens is in the process of utilizing techniques and equipment to remove organics from mixed waste streams by processing residual organics that are screened out at our MRF's, and utilizing them in compost and anaerobic digestion. Clean MRFs that process Source Separated materials cannot accomplish this separation effectively.

Athens contends that the City should "encourage" existing Clean Materials Recovery Facility operators to re-design and operate with an eye towards flexibility, so as to be able to process disparate waste streams and recover more material. It seems counterproductive not to fully utilize MRFs with solid waste facility permits that have the ability to process more diverse waste streams, because more diversion from the waste stream is tantamount to the City meeting its goal.

Therefore, as the City looks to integrate its new Commercial and Multi-Family Franchise system with the SWIRP plan, Athens encourages City leaders to make participants in the process "connect-the-dots" between their proposed Franchise wastesheds and existing and proposed MRFs that are solid waste processing facilities.

First, the City should establish specific diversion targets for each waste shed. Rather than focusing on "how" haulers achieve those targets, the City's focus should be "that" they achieve those targets. Haulers should be given the flexibility to employ whatever recycling technologies they determine are best to achieve the diversion targets. This could include both source separation and mixed waste processing.

Second, vertically-integrated companies that have already demonstrated a willingness to invest in the processing and recycling infrastructure described in the EIR and needed to implement SWIRP, are in the best position to assist the City in achieving its Zero Waste goals. They should be treated as partners with the City in the SWIRP process, and be given priority in the subsequent franchise allocation process.

Response to Comment 6-14:
The views and concerns presented in each comment letter will be reviewed and considered by decision makers. Although CEQA only requires a written response to Draft EIR comments dealing with significant environmental issues, comments expressing personal opinion, recommendations, or concerns are still a part of the environmental record.

Comment 6-15:

While Athens has made flexibility a priority in its infrastructure development- it is undeniable that companies will factor the degree of certainty about the kind of waste streams they will be required to process into their future infrastructure investment decisions.

Therefore, in order to ensure the kind of recycling infrastructure development the SWIRP EIR concludes is necessary to advance the City's Zero Waste goals and create green jobs, the City should strive to eliminate uncertainty by adopting a policy that gives companies flexibility to use multiple recycling processes and technologies-including mixed waste processing-to achieve recycling and diversion mandates set by the City.

Response to Comment 6-15:
SWIRP Facility Plan, page ES-4, identifies the need for both source-separated “blue bin” facilities and mixed material “black bin” processing facilities. SWIRP identifies the City's future facility needs, but does not specify whether this new capacity will be developed by the City or the private sector.

Comment 6-16:
As the Bureau of Sanitation has made clear in its call for an "integrated waste management approach," meeting the City's Zero Waste goals is a complicated process. At its core, this process is about infrastructure, investment, and jobs, and meeting policy goals that are interrelated.

For decades, Source Separation has been an important part of the City's recycling programs. It has helped the City reach its 75% Diversion Goal for 2013, and is clearly a favorable alternative to landfilling. Certain Source Separation opportunities exist to service customers effectively, and Source Separation should be included in the City's recycling plans. However, Athens believes that the EIR should be viewed as an opportunity to evaluate thoughtfully the efficacy and the environmental impacts of Source Separation, as compared to mixed waste processing.

In fact, data presented in the franchise EIR and Appendix C of the SWIRP EIR demonstrates that mixed waste processing can be more effective than Source Separation, particularly in multifamily services. Many apartment associations have gone on record indicating that often apartment buildings have no room for multiple containers, and the logistics of picking up waste and recycling from underground parking garages and chute rooms makes Source Separation impractical and challenging.

Response to Comment 6-16:
Throughout Phase 1 of the SWIRP planning process, stakeholders discussed facility options and toured local facilities. During Phase 2, stakeholders identified the specific facility needs resulting from implementation of SWIRP, including options for maximizing diversion through residual waste separation and processing. Black bin processing facilities target residential and commercial residual waste, and residual waste that remains after recycling and composting (materials disposed of in blue bins and green bins that are unsuitable for processing). The specific technologies (for facilities) have not been identified at this time and could include a mix of facilities or could include those types of facilities identified by the commenter.

CEQA Guidelines Section 15126.6 requires that the City evaluate alternatives to SWIRP, including the “No Project Alternative.” None of the alternatives considered were environmentally superior to the proposed project because they do not meet all the project goals and objectives. Thus, full Implementation of SWIRP was preferred which includes expansion of existing programs, new downstream (reuse, recycling, and composting) policies and programs, mandatory policies and programs, upstream (waste

prevention and producer responsibility) policies and programs, and blue, green and black bin infrastructure.

The views and concerns presented in each comment letter will be reviewed and considered by decision makers. Although CEQA only requires a written response to Draft EIR comments dealing with significant environmental issues, comments expressing personal opinion, recommendations, or concerns are still a part of the environmental record.

Comment 6-17:
In the SWIRP EIR, Alternative 5 (full implementation of SWIRP with no Source Separation mandate) is dismissed as insufficient in meeting the Program Goal to, "Make the City a leader in implementing Zero Waste practices," because this alternative lacks mandatory Source Separation programs.

Response to Comment 6-17:
Full implementation of SWIRP includes the expansion of existing programs, new downstream policies, mandatory policies or programs, and upstream policies and programs. Full implementation also achieves all of SWIRP's objectives (Chapter 5.0, Project Alternatives, Table 5.0-1). Alternative five (5) does not achieve all of SWIRP's objectives. Furthermore, under CEQA Guidelines 15126.6(a), a Draft PEIR is required to “describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives.”

Comment 6-18:
Furthermore, it is also declared insufficient in meeting the Program Goal to, "Find solutions that are both economically efficient and environmentally preferable," because it lacks mandatory programs and the concomitant jobs that would be created from the route duplication caused by Source Separation.

Response to Comment 6-18:
The program goal the commenter quoted should read: "Find diversion solutions that are both economically efficient and environmentally preferable". The objectives of SWIRP (listed on page 5-1 and 5-2 of the Draft PEIR) are representative of City policies and guiding principles that were identified during the stakeholder process (refer to Chapter 5.0, Project Alternatives). Mandatory Participation programs are included in SWIRP (refer to Chapter 2.0, Project Description, Section 2.3.3).

Comment 6-19:
We believe these assertions undermine the credibility of the Environmental Review analysis in two ways:

1) Making "Mandatory Source Separation" a Goal in and of itself, biases the EIR's analysis of any Alternatives that do not include a mandate.

Response to Comment 6-19:
One project objective is to, "Increase recycling by providing convenient opportunities for residents, businesses, and institutions to participate...This alternative includes programs and policies that would meet this project objective". Source Separation is intended to motivate all generators within the City to separate recyclable materials from the waste they generate at their home or business and place it in the appropriate blue bin or recycling collection bin on a regular basis for collection. Stakeholder objectives were established during Phase 2 of SWIRP. None of the alternatives considered are environmentally superior to the proposed project because they do not meet all the project goals and objectives. The objectives of SWIRP represent the City’s policies, and the guiding principles identified during an

extensive stakeholder outreach process conducted during the preparation of SWIRP. The vision articulated in the guiding principles and achievement of the City's goals of 75 percent diversion by 2013 and 90 percent diversion by 2025, can be realized through a series of SWIRP policies, programs, and facilities that would be required through 2030. The identification of project objectives is required per the State CEQA Guidelines (Section 15126.6). The EIR must describe and evaluate the comparative merits of a range of reasonable alternatives to the project (SWIRP), or to the location of the proposed project(s), that could feasibly attain most of the basic objectives of the project.

Comment 6-20:
2) By the City's own calculations, any of the five Alternatives can achieve the Zero Waste Goal of 90% Diversion, and in a maximum diversion scenario, Alternative 5 achieves the same 98% diversion rate as full implementation of SWIRP.

Response to Comment 6-20:
Full implementation of SWIRP includes the expansion of existing programs, new downstream policies, mandatory policies or programs, and upstream policies and programs. Full implementation also achieves all of SWIRP's objectives. The five alternatives do not achieve all of SWIRP's objectives. Furthermore, per CEQA Guidelines 15126.6(a), a Draft PEIR is required to "describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives". Under Alternative 5, two blue bin facilities, one small compost facility and eight black bin facilities would need to be built in order to reach the highest diversion goals set by the City. This alternative has fewer environmental impacts than the proposed project based on the total number of facilities needed (11 versus 10-15); however, recycling and composting diversion is not fully achieved. This alternative will only partially meet the project's goals and objectives.

Comment 6-21:
The SWIRP EIR acknowledges negative impacts of a Source Separation mandate in the areas of air quality, noise and traffic; however, we believe the SWIRP PEIR analysis of these impacts is inadequate.

Response to Comment 6-21:
The Mandatory Recycling Separation program and SWIRP PEIR analysis (of air quality, noise, and traffic) determined that program impacts would be less than significant or identified no impacts. With regard to air quality, the analysis addressed SCAQMD Rule 1193 (Clean On-Road Residential and Commercial Refuse Collection Vehicles) which requires solid waste collection fleet operators to acquire alternative-fuel refuse collection vehicles when procuring or leasing these vehicles, which will result in additional reductions of NOx and PM_{10}. Additionally, increasing the amount of materials diverted from the landfill results in a decrease in landfill-related emissions. Therefore, impacts were determined to be less than significant. With regard to noise, noise associated with solid waste collection is governed by LAMC Chapter 11, Section 113.01 (Rubbish and Garbage Collection) which addresses operational hours of solid waste collection activities (if within 200 feet of any residential building). Therefore, impacts are expected to be less than significant. With regards to transportation/traffic, implementation of this program is expected to result in additional materials placed in blue bins and less material in black bins. Additional truck trips are not expected, since trucks already pick up the blue bins. The change will be the quantity of material in each bin. It is assumed that voluntary commercial recycling would already be underway. Since additional trucks are not anticipated, no traffic impacts are identified.

Comment 6-22:

For example, in its analysis of mandatory Source Separation programs, the document states:

"Implementation of this policy/program will result in additional recycled material pick up as the program requires mandatory recycling separation for all waste generators (residential and commercial businesses). This may result in additional blue bin pickups. At this time, the number of trucks and their ultimate destination for the increased blue bin materials is unknown, thus a policy-specific air quality analysis cannot be conducted..."

In fact, the Franchise EIR does estimate the traffic impacts of a Source Separation mandate within a franchise when it compares the traffic impacts of "No Project" and a "Non-Exclusive Franchise System" (Franchise EIR Alternative 1).

Response to Comment 6-22:
The SWIRP PEIR evaluates potential environmental impacts at the programmatic level. The specific details of the Franchise Initiative were not evaluated within the SWIRP PEIR. Therefore, the City elected to undertake a separate EIR for the Franchise Initiative. It is anticipated that additional program and project-specific EIRs will be undertaken as the City moves forward to implement the other policies, programs, and infrastructure identified in SWIRP.

Comment 6-23:
The only relevant difference between "No Project" and "Alternative 1" in the Franchise EIR Analysis is a mandate for Source Separation being imposed on haulers. As the City's own data shows, that Source Separation mandate will result in a net 61% increase in Vehicle Miles Traveled and 70% increase in Vehicle Hours Traveled, resulting in potentially significant impacts to the environment in terms of transportation.

The City's claim-in the SWIRP EIR-that the additional vehicle miles and hours that would result from a Source Separation mandate are unknown and therefore less than significant, is directly contradicted by the City's claim in the Franchise EIR that a Source Separation mandate will result in significant increases in vehicle miles and hours--60% and 70%, respectively.

Response to Comment 6-23:
The comment addresses data from the City of Los Angeles City-wide Exclusive Franchise System for Municipal Solid Waste Collection Draft PEIR (SCH #2013021052, November 2013) in relation to SWIRP Draft PEIR. Due to the uncertainty of where future facilities will be located, it cannot be determined, conclusively, if the project will result in a significant cumulative impact. Given the fact that there are many roadways and intersections in the project study area are already impacted by traffic, it is possible that future facilities could contribute to a potentially significant cumulative impact. However, if mitigation measures TR-1 and TR-2 are implemented, potential project-level impacts would be minimized and would be less than significant to a cumulative impact. Upon determination of the facility location, a project-level CEQA analysis will be required to determine if construction of the facilities will have a cumulative impact. However, with mitigation measures imposed the cumulative impacts would be less than significant.

Comment 6-24:
Finally, in the Franchise EIR, the City presents data that shows that Source Separation generates lower levels of recovery and contains a high level of contamination:

An analysis of the data provided in the SWIRP EIR shows that City-operated Source Separated recycling programs recover significantly less materials than mixed-waste processing.

i. In 2006, the City's residential curbside program recovered 184,000 tons out of a 1,172,000 ton waste-stream, for a recovery rate of 15.7%

ii. In 2006, the City's Multifamily recycling programs recovered 13,000 tons out of a 555,000 ton waste-stream, for a recovery rate of 2.3%

iii. The City's Mixed Waste Materials Recovery Facilities are certified to recover between 19% and 32% of the solid waste they process

iv. The "clean MRFs" that process the Bureau's residential curbside blue bin materials report that between 24% and 41% of the waste stream is residual waste. This significant residual waste will lead to contamination of recoverable materials; therefore there is no advantage to Source Separation compared to mixed waste processing in this regard.

Response to Comment 6-24:
The views and concerns presented in each comment letter will be reviewed and considered by decision makers. Although CEQA only requires a written response to Draft EIR comments dealing with significant environmental issues, comments expressing personal opinion, recommendations, or concerns are still a part of the environmental record.

Comment 6-25:
A comparative analysis of Source Separation and mixed waste processing demonstrates that a Source Separation mandate shows no benefit in achieving diversion goals, recovers less material, and puts more vehicles on the roads:

Source Separation has served the City well, and in some cases, such as certain office or manufacturing environments, may be a preferred option for a hauler and its customers. However, the environmental costs of a Source Separation mandate should be weighed against its comparative efficacy in achieving diversion, recovery and Zero Waste.

In light of, what we believe to be the SWIRP EIR's deficiencies in adequately studying the environmental impacts of the route duplication caused by Source Separation mandates, and data showing that mixed waste processing is more effective at recovering materials than source separation, Athens requests that the City further study an Alternative which mandates performance by setting diversion percentages with which haulers must comply, but that gives haulers the flexibility to determine how best to meet those percentages through technologies and processes of their choosing.

Response to Comment 6-25:
The SWIRP PEIR evaluates potential environmental impacts at the programmatic level. The specific details of the Franchise Initiative were not evaluated within the SWIRP PEIR. Therefore, the City elected to undertake a separate EIR for the Franchise Initiative. It is anticipated that additional program and project-specific EIRs will be undertaken as the City moves forward to implement the other policies, programs, and infrastructure identified in SWIRP.

Comment 6-26:
Athens supports, the City's commitment to chart a path to Zero Waste. The various Alternatives that were studied in the EIR all accomplish the fundamental Zero Waste goal of 90% diversion, and multiple Alternatives reach a maxim of 98% diversion. The environmental review process, therefore, should be given great weight by the City.

Response to Comment 6-26:
The views and concerns presented in each comment letter will be reviewed and considered by decision makers. Although CEQA only requires a written response to Draft EIR comments dealing with significant environmental issues, comments expressing personal opinion, recommendations, or concerns are still a part of the environmental record.

Comment 6-27:
1. The EIR should be amended to accurately reflect Athens-- as well as other facilities-- current and future waste processing capacity.

Response to Comment 6-27:
Appendix C of the SWIRP Facility Plan summarizes the results of the facility surveys conducted in 2007 and 2008. SWIRP identifies the City's future facility needs, but does not specify whether this new capacity will be developed by the City or the private sector. The Draft PEIR identifies the potential impacts should these facilities be developed in the future. The availability of existing regional capacity will be taken into account prior to the development of new facilities.

Comment 6-28:
2. The EIR should study an additional alternative, whereby the City sets a specific diversion percentage and gives haulers the flexibility to meet that target using whatever recycling technologies/processes they deem appropriate.

Response to Comment 6-28:
Full implementation of SWIRP includes the expansion of existing programs, new downstream policies, mandatory policies or programs, and upstream policies and programs. Full implementation also achieves all of SWIRP's objectives (Chapter 5.0, Project Alternatives, Table 5.0-1). The five alternatives do not achieve all of SWIRP's objectives. Furthermore, per CEQA Guidelines 15126.6(a), a Draft PEIR is required to “describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives.”

Comment 6-29:
3. The EIR is deficient in its study of the environmental impacts of a Source Separation recycling mandate because there is new data submitted in the Franchise EIR that is not included in the SWIRP EIR.

Response to Comment 6-29:
The SWIRP PEIR evaluates potential environmental impacts at the programmatic level. The specific details of the Franchise Initiative were not evaluated within the SWIRP PEIR. Therefore, the City elected to undertake a separate EIR for the Franchise Initiative. It is anticipated that additional program and project-specific EIRs will be undertaken as the City moves forward to implement the other policies, programs, and infrastructure identified in SWIRP.

Comment 6-30:

4. The City should encourage more processing at existing Materials Recovery Facilities that can be re tooled and re-permitted to process both mixed waste and Source Separated materials. This will maximize diversion and avoid the difficulty of siting new facilities.

Response to Comment 6-30:
No new facilities have been identified at this time. SWIRP identifies the City's future facility needs, but does not specify whether this new capacity will be developed by the City or the private sector. The Draft PEIR identifies the potential impacts should these facilities be developed in the future. The availability of existing regional capacity will be taken into account prior to the development of new facilities.

Letter No. 7

South Coast
Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4182
(909) 396-2000 • www.aqmd.gov

SENT VIA USPS AND E-MAIL:
ronaldo.milo@lacity.org

January 24, 2014

Mr. Ron Milo, Environmental Engineer Associate II
City of Los Angeles, Bureau of Sanitation
Solid Resources Support Services Division
1149 South Broadway, 5th Floor, Mail Stop 521
Los Angeles, CA 90015

Draft Program Environmental Impact Report (Draft PEIR) for the Proposed City of Los Angeles Solid Waste Integrated Resources Plan (SWIRP) SCH #2010081061)

The South Coast Air Quality Management District (SCAQMD) staff appreciates the opportunity to comment on the above-mentioned document. The following comments are meant as guidance for the Lead Agency and should be incorporated into the Final CEQA document.

The lead agency proposes goals meant to maximize waste prevention, recycling, resource recovery, and to reduce urban land filling under the lead agency's long-range Solid Waste Integrated Resources Plan (SWIRP) in order to achieve its goal of 75 percent diversion of solid waste generated within its boundaries by 2013 and 90 percent diversion by 2025. The proposed project would include construction of facilities at locations that are not yet identified that will meet the City of Los Angeles's recycling and solid waste infrastructure needs through 2030. With full implementation, post-processed project residual waste is estimated to be approximately 1.5 million tons of materials annually. The residual waste would then be transported directly to a landfill by refuse collection trucks, loaded to transfer trucks at local transfer stations for movement to a landfill or hauled by rail to landfills outside of the local region. Infrastructure would also include construction of rail transfer stations, intermodal facilities, rail tracks and spurs, and other related infrastructure.

Operational Thresholds of Significance and Operational Emission Estimates

Although the Draft PEIR shows the SCAQMD Air Quality Significance Thresholds in Table 4.3-11, the SCAQMD recommended daily significance operational thresholds are incorrectly stated in Table 4.3-21(Olinda Alpha Landfill Operation Emissions for NOx, ROC, PM10 and CO). Although corrections to the SCAQMD threshold portion of Table 4.3-21 may not change the lead agency's determination of significance, the SCAQMD thresholds listed under NOx, ROC, PM10 and CO should be revised in the Final PEIR. Corrections to the SCAQMD thresholds of significance in Table 4.3-22 (Anticipated Vehicular Emissions for Each Facility), however, show that operational impacts for the

7-1

7-2

Composting and Resource Recovery facility types will exceed the SCAQMD recommended daily significance threshold for NOx. Further, the cumulative impacts of all the facilities operating together should be presented and compared against the SCAQMD thresholds of significance.

7-2 cont.
7-3

In addition, emission estimates for PM2.5 were not included in the operational estimates in Table 4.3-21. In order to demonstrate that PM2.5 emissions are less than significant, PM2.5 impacts should be estimated, compared with the applicable threshold, and included in the Final CEQA document.

7-4

Localized Significance Threshold Analyses

In the project description on page 2-1, the lead agency identifies the number and types of SWIRP facilities but did not identify specific site locations at this point in the planning process. In addition to the future environmental review including health risk effects mentioned on page 4.3-46, the SCAQMD staff also recommends that localized air quality impacts be estimated when future facilities are proposed to ensure that any nearby sensitive receptors are not adversely affected by the proposed construction or operational activities occurring in close proximity, within one-quarter mile of sensitive receptors.

SCAQMD guidance for performing a localized air quality analysis can be found on the SCAQMD web page.[1] Should the lead agency conclude after its analyses that construction or operational localized air quality impacts exceed the SCAQMD daily significance thresholds, staff has compiled mitigation measures in addition to those measures listed starting on page 4.3-51 of the Draft PEIR that can be implemented if the air quality impacts are determined to be significant.[2]

7-5

Use of CalEEMod Land Use Model to Estimate Baseline and Project Emissions

In its air quality analysis, the lead agency estimated project emission impacts using the URBEMIS2007 land use computer model. The SCAQMD staff no longer recommends using URBEMIS2007 to estimate project impacts. Instead, a more comprehensive land use model with updated mobile source emission rates is available, the California Emissions Estimator model (CalEEMod)[3]. The current version of CalEEMod (Version 2013.2.2) uses the new EMFAC2011 and OFFROAD2011 emission factors rather than the outdated EMFAC2007 and OFFROAD2007 emission rates used in URBEMIS2007 and earlier versions of CalEEMod. In addition, CalEEMod provides updated methods and emission factors for non-vehicular sources. For a more current estimate, the SCAQMD staff therefore recommends revising the air quality analysis in the Final Draft PEIR using the CalEEMod land use model.

7-6

[1] http://www.aqmd.gov/ceqa/handbook/LST/LST.html
[2] http://www.aqmd.gov/ceqa/handbook/mitigation/MM_intro.html
[3] The current California Emission Estimator Model (CalEEMod) accessible at www.caleemod.com

On-Site Emissions

Finally, based on review of Section 4.3 Air Quality and the URBEMIS2007 modeling output sheets in Appendix C, the regional air quality analysis does not include on-site emission estimates in the Draft PEIR. Although Table 4.3-22 shows regional estimates from transfer trucks and employee trips for each facility type, on-site emission estimates for trucks and off-road equipment operating at the facilities as well as fugitive emissions from waste are not included in the regional analysis. These emissions should be included in the Final PEIR and compared with applicable significance thresholds to account for all project emissions. 7-7

Pursuant to Public Resources Code Section 21092.5, please provide the SCAQMD staff with written responses to all comments contained herein prior to the adoption of the Final Environmental Impact Report. The SCAQMD staff is available to work with the Lead Agency to address these issues and any other air quality questions that may arise. Please contact Gordon Mize, Air Quality Specialist – CEQA Section, at (909) 396-3302, if you have any questions regarding these comments.

Sincerely,

Ian MacMillan
Program Supervisor, Inter-Governmental Review
Planning, Rule Development & Area Sources

IM:GM

LAC131101-07
Control Number

Letter No. 7 – Response to Comments

Letter Date: January 24, 2014

From: Ian MacMillan
South Coast
Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765-4182

Comment 7-1:
Operational Thresholds of Significance and Operational Emission Estimates
Although the Draft PEIR shows the SCAQMD Air Quality Significance Thresholds in Table 4.3-11, the SCAQMD recommended daily significance operational thresholds are incorrectly stated in Table 4.3-21(Olinda Alpha Landfill Operation Emissions for NOx, ROC, PM10 and CO). Although corrections to the SCAQMD threshold portion of Table 4.3-21 may not change the lead agency's determination of significance, the SCAQMD thresholds listed under NOx, ROC, PM10 and CO should be revised in the Final PEIR.

Response to Comment 7-1:
The emissions displayed in Table 4.3-21 were obtained from the Olinda Alpha Landfill DEIR and used as an example of the potential emission reductions provided by the SWIRP facilities, since there was no data available at the time of the analysis to determine the amount of emissions that each facility would generate. The SCAQMD threshold portion of the Table 4.3-21 will be updated to properly reflect the current SCAQMD thresholds.

Comment 7-2:
Corrections to the SCAQMD thresholds of significance in Table 4.3-22 (Anticipated Vehicular Emissions for Each Facility), however, show that operational impacts for the Composting and Resource Recovery facility types will exceed the SCAQMD recommended daily significance threshold for NOx.

Response to Comment 7-2:
Table 4.3-22 will be updated to properly reflect the anticipated exceedance for NOx.

Comment 7-3:
Further, the cumulative impacts of all the facilities operating together should be presented and compared against the SCAQMD thresholds of significance.

Response to Comment 7-3:
Table 4.3-22 will be updated to present the cumulative impacts of all of the facilities operating together.

Comment 7-4:
In addition, emission estimates for PM2.5 were not included in the operational estimates in Table 4.3-21. In order to demonstrate that PM2.5 emissions are less than significant, PM2.5 impacts should be estimated, compared with the applicable threshold, and included in the Final CEQA document.

Response to Comment 7-4:
The Olinda Alpha EIR did not provide results for PM2.5 , therefore PM2.5 emissions cannot be quantified for inclusion in Table 4.3-21. The Draft PEIR evaluates impacts at a programmatic level, based upon

general assumption of the number of facilities and their size. Subsequent project-level CEQA reviews will be conducted, which will provide more detailed analyses, including emission estimates for PM2.5.

Comment 7-5:
Localized Significance Threshold Analyses
In the project description on page 2-1, the lead agency identifies the number and types of SWIRP facilities but did not identify specific site locations at this point in the planning process. In addition to the future environmental review including health risk effects mentioned on page 4.3-46, the SCAQMD staff also recommends that localized air quality impacts be estimated when future facilities are proposed to ensure that any nearby sensitive receptors are not adversely affected by the proposed construction or operational activities occurring in close proximity, within one-quarter mile of sensitive receptors. SCAQMD guidance for performing a localized air quality analysis can be found on the SCAQMD web page.1 Should the lead agency conclude after its analyses that construction or operational localized air quality impacts exceed the SCAQMD daily significance thresholds, staff has compiled mitigation measures in addition to those measures listed starting on page 4.3-51 of the Draft PEIR that can be implemented if the air quality impacts are determined to be significant.

Response to Comment 7-5:
The Draft PEIR evaluates impacts at a programmatic level, based upon general assumption of the number of facilities and their size. Subsequent project-level CEQA reviews will be conducted, which will provide more detailed analyses, including localized air quality impact analyses.

Comment 7-6:
Use of CalEEMod Land Use Model to Estimate Baseline and Project Emissions
In its air quality analysis, the lead agency estimated project emission impacts using the URBEMIS2007 land use computer model. The SCAQMD staff no longer recommends using URBEMIS2007 to estimate project impacts. Instead, a more comprehensive land use model with updated mobile source emission rates is available, the California Emissions Estimator model (CalEEMod)3. The current version of CalEEMod (Version 2013.2.2) uses the new EMFAC2011 and OFFROAD2011 emission factors rather than the outdated EMFAC2007 and OFFROAD2007 emission rates used in URBEMIS2007 and earlier versions of CalEEMod. In addition, CalEEMod provides updated methods and emission factors for non-vehicular sources. For a more current estimate, the SCAQMD staff therefore recommends revising the air quality analysis in the Final Draft PEIR using the CalEEMod land use model.

Response to Comment 7-6:
During the development of the air quality analysis, URBEMIS2007 was the recommended land use emissions model for estimating emissions for construction and operation emissions generated by the proposed facilities. The Draft PEIR evaluates impacts at a programmatic level. Subsequent project-level CEQA reviews will be conducted, which will provide more detailed analyses, including use of CalEEMod (Version 2013.2.2).

Comment 7-7:
On-Site Emissions
Finally, based on review of Section 4.3 Air Quality and the URBEMIS2007 modeling output sheets in Appendix C, the regional air quality analysis does not include on-site emission estimates in the Draft PEIR. Although Table 4.3-22 shows regional estimates from transfer trucks and employee trips for each facility type, on-site emission estimates for trucks and off-road equipment operating at the facilities as well as fugitive emissions from waste are not included in the regional analysis. These emissions should be

included in the Final PEIR and compared with applicable significance thresholds to account for all project emissions.

Response to Comment 7-7:
Site-specific information for each proposed facility is not available, as no new facilities are proposed at this time. Therefore, on-site emissions estimates for each facility could not be calculated. The Draft PEIR evaluates impacts at a programmatic level. Subsequent project-level CEQA reviews will be conducted, which will provide more detailed analyses, including the calculation of on-site emissions estimates for trucks and off-road equipment operating at the facilities, as well as fugitive emissions from waste, that are not included in the regional analysis. During the project-level CEQA review, information such as operating hours, a list of equipment used at the proposed facility, equipment manufacture information, indoor/outdoor use of equipment, and other facility equipment related information would be identified. The estimated on-site emissions will then be compared with applicable significance thresholds to determine if an on-site impact will occur.

0.4 MITIGATION, MONITORING, AND REPORTING PROGRAM

Solid Waste Integrated Resources Plan (SWIRP)
(SCH No. 2010081061)

0.4.1 INTRODUCTION

Pursuant to Section 21081.6 of the Public Resources Code and the *California Environmental Quality Act* (CEQA) *Guidelines* Section 15097, public agencies are required to adopt a monitoring or reporting program to assure that the mitigation measures and revisions identified in the Program Environmental Impact Report (PEIR) are implemented. As stated in Section 21081.6 of the Public Resources Code:

> *"…the public agency shall adopt a reporting or monitoring program for the changes made to the project or conditions of project approval, adopted in order to mitigate or avoid significant effects on the environment."*

Pursuant to Section 21081(a) of the Public Resources Code, findings must be adopted by the decision-maker in conjunction with certification of the PEIR. The Mitigation, Monitoring, and Reporting Program (MMRP) must be adopted when making the findings (at the time of approval of the project). As defined in the CEQA Guidelines, Section 15097, "reporting" is suited to projects that have readily measurable or quantitative measures or which already involve regular review. "Monitoring" is suited to projects with complex mitigation measures, such as wetland restoration or archaeological protection, which may exceed the expertise of the local agency to oversee, are expected to be implemented over a period of time, or require careful implementation to assure compliance. Both reporting and monitoring would be applicable to the proposed project.

0.4.2 PURPOSE OF THE MITIGATION, MONITORING, AND REPORTING PROGRAM

This MMRP has been prepared to ensure that all required mitigation measures are implemented and completed according to schedule and maintained in a satisfactory manner during construction and implementation activities pursuant to SWIRP, as required. A summary table, Table 0.4-1, located at the end of this section, has been prepared to assist the responsible parties in implementing the MMRP. Table 0.4-1 identifies individual mitigation measures, monitoring/mitigation timing, responsible person/agency for implementing the measure, monitoring procedures, and a record of implementation of the mitigation measures. The numbering of mitigation measures follows the numbering sequence found in the PEIR.

0.4.3 ROLES AND RESPONSIBILITIES

Unless otherwise specified herein, the City is responsible for taking all actions necessary to implement the mitigation measures according to the specifications provided for each measure and for demonstrating that the action has been successfully completed. The City at its discretion may delegate implementation responsibility or portions thereof to other parties such as a project applicant or licensed contractor. The City will be responsible for overall administration of the MMRP and for verifying that City staff or other responsible party has completed the necessary actions for each measure. The City will designate a project manager to oversee implementation of the MMRP.

0.4.4 MITIGATION, MONITORING, AND REPORTING PROGRAM SUMMARY TABLE

Table 0.4-1, MMRP Summary Table, that follows should guide the City in its evaluation and records of the implementation of mitigation measures.

The column categories identified in the MMRP Summary Table are described below:

- Mitigation Number — lists the mitigation measures by number.
- Mitigation Measure — provides the text of the mitigation measures identified in the PEIR.
- Timing/Schedule — lists the time frame in which the mitigation will take place.
- Implementation Responsibility — identifies the entity responsible for complying with the requirements of the mitigation measure.
- Implementation and Verification — verifies compliance. These fields are to be completed as the MMRP is implemented. The "Action" column describes the type of action taken to verify implementation. The "Date Completed" column is to be dated and initialed by the project manager, or his/her designee, based on the documentation provided by implementing parties, or through personal verification by City representatives.

Table 0.4-1. Mitigation, Monitoring, and Reporting Program Summary Table

Mitigation Measure	Time Frame for Implementation & Monitoring	Responsible Monitoring Agency	Verification of Compliance		
			Initials	Date	Remarks
Aesthetics and Visual Resources					
VR-1 Future facilities shall be sited within the zoning districts outlined in Table 4.1-4 of the PEIR and designed in accordance with all applicable land use planning documents. For areas outside of the City, facilities shall be sited in accordance with all applicable zoning and planning restrictions. To the greatest extent possible, future facilities shall be sited in areas not identified as visually significant or historic.	Prior to construction	For projects within the City of Los Angeles -Department of City Planning			
VR-2 Future facilities shall include design features that allow the facility to blend in with nearby buildings. These design features may include but are not limited to: • Landscape screening (i.e., use of tall trees or shrubs around the perimeter) • Neutral wall or fencing that obstructs the view of the facility from the nearby roads • Use of varying facades to break up bulk and scale • Building materials that minimize glare potential • Shielded lighting so as to minimize spillage to adjacent parcels and minimize night sky pollution • Modifying structure design to eliminate or screen contrasting/detracting features Utilizing architectural styles, materials, scale, massing, setbacks, signage, circulation patterns, pedestrian orientation, streetscape amenities, and landscaping common to and/or consistent with the character of existing surrounding uses	Prior to construction	For projects within the City of Los Angeles -Department of City Planning			

Mitigation Measure	Time Frame for Implementation & Monitoring	Responsible Monitoring Agency	Verification of Compliance		
			Initials	Date	Remarks
VR-3 Existing natural aesthetic features proposed for removal shall be replaced.	During construction	For projects within the City of Los Angeles -Department of City Planning			
VR-4 Grading of natural and semi-natural open space shall be minimized to the maximum extent.	During construction	For projects within the City of Los Angeles -Department of City Planning			
VR-5 New utilities shall be placed underground, where appropriate.	During construction	For projects within the City of Los Angeles -Department of City Planning			
VR-6 Design features shall be incorporated into the project which effectively integrates natural aesthetics (i.e., cluster development, greenbelts, landscaping, etc.).	Prior to and during construction	For projects within the City of Los Angeles -Department of City Planning			
VR-7 Rooftop mechanical equipment, garbage dumpsters, and other outdoor equipment shall be screened from public view.	Prior to and during construction	For projects within the City of Los Angeles -Department of City Planning			
Agriculture and Forestry Resources					
AG/FOR-1 Future facilities shall be sited away from Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. If facilities are sited on such farmland, impacts to the farmland shall be mitigated at a 1:1 ratio or through payment of fees into an agricultural conservation trust. Proof of agricultural land acquisition or fee payment shall be provided to the local jurisdiction that is issuing the grading permit. The Planning Director of that local jurisdiction shall confirm that the land has been acquired or fees paid.	Prior to construction	For projects within the City of Los Angeles -Department of City Planning			
AG/FOR-2 Future facilities shall be sited away from lands under a Williamson Act Contract or within a Farmland Security Zone to the maximum extent possible.	Prior to construction	For projects within the City of Los Angeles -Department of City Planning			
AG/FOR-3 Future facilities (except for composting facilities) shall be sited away from areas that are zoned for agricultural use to the maximum extent possible.	Prior to construction	For projects within the City of Los Angeles -Department of City Planning			

Mitigation Measure		Time Frame for Implementation & Monitoring	Responsible Monitoring Agency	Verification of Compliance		
				Initials	Date	Remarks
AG/FOR-4	Future facilities shall be sited away from areas zoned for Timberland Production to the maximum extent. If facilities are sited on such farmland, impacts to the farmland shall be mitigated at a 1:1 ratio or through payment of fees into a forest conservation trust.	Prior to construction	For projects within the City of Los Angeles -Department of City Planning			
Air Quality and Greenhouse Gases						
AQ-1	Future facilities within the SCAQMD shall prepare and implement a fugitive dust control program pursuant to the provisions of SCAQMD Rules 402 and 403 prior to any ground disturbance. For future facilities outside of the SCAQMD, adherence to any applicable fugitive dust control programs shall be required.	Prior to construction	For projects within the City of Los Angeles -Department of City Planning			
AQ-2	Minimize combustion emissions during construction activities.	During construction	For projects within the City of Los Angeles -Department of City Planning			
AQ-3	Low volatile organic compound (VOC) paints and coatings shall be used on future facilities.	During construction	For projects within the City of Los Angeles -Department of City Planning			
AQ-4	Excavation, grading, and other construction activity is limited to one activity or phase at a time.	During construction	For projects within the City of Los Angeles -Department of City Planning			
AQ-5	Hours of operation of heavy-duty equipment shall be limited to a maximum of 8 hours per day, 5 days per week.	During construction and operation	For projects within the City of Los Angeles -Department of City Planning			
AQ-6	Fossil-fueled equipment shall be replaced with electrically driven equivalents (provided they are not run via a portable generator set), to the maximum extent practicable.	During construction and operation	For projects within the City of Los Angeles -Department of City Planning			

Mitigation Measure		Time Frame for Implementation & Monitoring	Responsible Monitoring Agency	Verification of Compliance		
				Initials	Date	Remarks
AQ-7	All diesel engines shall be shut off when not in use to reduce emissions from idling.	During construction and operation	For projects within the City of Los Angeles -Department of City Planning			
AQ-8	Curtail construction during periods of high ambient pollutant concentrations; this may include ceasing construction activity during the peak hour of vehicular traffic on adjacent roadways and "Spare the Air Days" declared by the San Joaquin Valley Air Pollution Control District (SJVAPCD). Note that land within the 100-mile project study area falls within the SJVAPCD.	During construction	For projects within the City of Los Angeles -Department of City Planning			
AQ-9	Implement activity management (e.g., rescheduling activities to reduce short-term impacts) to minimize concurrent operation of construction equipment and concurrent construction of project phases.	During construction	For projects within the City of Los Angeles -Department of City Planning			
AQ-10	During the smog season (May through October), lengthen the construction period to minimize the vehicles and equipment operating at the same time.	During construction	For projects within the City of Los Angeles -Department of City Planning			
AQ-11	Minimize the obstruction of traffic on adjacent roadways.	During construction and operation	For projects within the City of Los Angeles -Department of City Planning			
AQ-12	Power construction equipment with diesel engines fueled by alternative diesel fuel blends or ultra-low sulfur diesel. Only fuels that have been certified by the California Air Resources Board (ARB) shall be used. The ARB has verified specific alternative diesel fuel blends for nitrogen oxide (NO_x) and particulate matter (PM) emission reduction. ARB-certified alternative fueled compressed natural gas, liquid propane gas, electric motors, or other ARB-certified off-road technologies in construction equipment shall be used where practicable.	During construction	For projects within the City of Los Angeles -Department of City Planning			
AQ-13	Use construction equipment that meets the current off-road engine emission standard (as certified by the ARB) or that is re-powered with an engine that meets this standard. Tier I, Tier II, and Tier III engines have significantly less NO_x and PM emissions compared with uncontrolled engines.	During construction	For projects within the City of Los Angeles -Department of City Planning			

Mitigation Measure		Time Frame for Implementation & Monitoring	Responsible Monitoring Agency	Verification of Compliance		
				Initials	Date	Remarks
AQ-14	During the facility design phase, a review of local Air Quality Management District rules shall be conducted to determine site-specific permit requirements for waste processing or handling facilities that may emit or potentially emit VOCs, particulates, carbon monoxide (CO), NO_x, or, sulfur oxide (SO_x). Emissions of non-conventional pollutants[1] and hazardous air pollutants (HAPs) (Title V-Major Sources) shall comply with federal and state permitting rules.	Prior to construction	For projects within the City of Los Angeles -Department of City Planning			
AQ-15	Future facility applicant(s) shall properly maintain reactive organic gas emission control devices within the gasoline dispensing station.	During construction and operation	For projects within the City of Los Angeles -Department of City Planning			
AQ-16	Future facility applicant(s) shall ensure combustion operational emissions are minimized.	During construction and operation	For projects within the City of Los Angeles -Department of City Planning			
AQ-17	All diesel truck operators shall strictly abide by the applicable state law requirements for idling. Idling of the primary engine shall be limited to five minutes.	During construction and operation	For projects within the City of Los Angeles -Department of City Planning			

[1]Air pollutants other than PM, CO, VOCs, NOx, and SOx (conventional pollutants).

Mitigation Measure		Time Frame for Implementation & Monitoring	Responsible Monitoring Agency	Verification of Compliance		
				Initials	Date	Remarks
AQ-18	An odor analysis shall be prepared as part of future project-specific air quality analysis. Should the odor analysis identify the potential for impacts, the facility shall incorporate odor-reducing design features. Such features could include, but are not limited to: • Provision of exhaust fans to provide multiple air exchanges every hour. • Treatment of air leaving the building by an odor neutralizing misting system. • Maintaining negative pressure at the building entrances to minimize the amount of untreated air leaving the building. • Adding an odor neutralizer with dust control water in the ceiling-mounted misting systems for extra odor mitigation.	Prior to construction	For projects within the City of Los Angeles -Department of City Planning			
AQ-19	Energy-efficient design will be provided for buildings, including automated control systems for heating and air conditioning and energy efficiency beyond California Code of Regulations Title 24 (California Building Standards Code) requirements, lighting controls and energy-efficient lighting in buildings, increased insulation beyond Title 24 requirements, and light-colored roof materials to reflect heat.	Prior to construction	For projects within the City of Los Angeles -Department of City Planning			
AQ-20	Landscaping shall be used to maximize building protection from energy-consuming environmental conditions and to shade paved areas. Such landscaping could include planting of shade trees to shade 50% of paved areas within 15 years and planting deciduous trees on the south- and west-facing sides of buildings.	During construction and operation	For projects within the City of Los Angeles -Department of City Planning			
AQ-21	Implement measures to reduce the amount of vehicle traffic to and from future facilities. This could include provisions such as encouraging employees to rideshare or carpool to the project site, or incentives for employees to use alternative transportation.	During construction and operation	For projects within the City of Los Angeles -Department of City Planning			

Mitigation Measure		Time Frame for Implementation & Monitoring	Responsible Monitoring Agency	Verification of Compliance		
				Initials	Date	Remarks
Biological Resources						
BIO-1	Prior to the approval of any new project component or facility that could result in earth-disturbing activities (e.g., grubbing, grading), a qualified Biologist shall conduct a habitat assessment to evaluate the site's potential to support special-status plant and wildlife species and jurisdictional wetlands/waters. To the extent feasible, the location(s) of all new project facilities shall be on previously disturbed or developed sites and shall avoid undisturbed, high-quality, natural habitat that supports special-status biological resources, areas that are used for regional or local wildlife movement, and jurisdictional wetlands and associated waters. If the habitat assessment determines that there is the potential for significant impacts to any biological resources, additional surveys and/or documentation would be required pursuant to CEQA and Mitigation Measure BIO-2.	Prior to construction	For projects within the City of Los Angeles -Department of City Planning			
BIO-2	If it has been determined that a proposed project component or facility has the potential for significant impacts to any biological resources, then prior to commencement of any earth-moving activities, the City shall conduct the appropriate focused survey(s) to determine the presence or absence of special-status species (i.e., plant and/or wildlife surveys) that could be significantly impacted by the proposed project. If special-status species are identified on or adjacent to the facility site, then appropriate avoidance and/or mitigation measures shall be implemented, as approved by the resource agencies with jurisdiction over that species and subject to the necessary permits under the Federal Endangered Species Act, the California Endangered Species Act, the California Fish and Game Code, and other applicable regional or local regulations or plans, and ensure that impacts would be less than significant after mitigation. If any jurisdictional wetlands or associated waters are identified, appropriate avoidance and/or mitigation measures shall be implemented as approved by the resource agencies, and subject to the necessary permits under Section	Prior to construction	For projects within the City of Los Angeles -Department of City Planning			

Mitigation Measure		Time Frame for Implementation & Monitoring	Responsible Monitoring Agency	Verification of Compliance		
				Initials	Date	Remarks
	404 of the Clean Water Act issued by the U.S. Army Corps of Engineers, Section 401 of the Clean Water Act (Water Quality Certification) issued by the Regional Water Quality Control Board, and Section 1600 of the California Fish and Game Code, and ensure that impacts would be less than significant after mitigation.					
BIO-3	All project-related ground-disturbing activities shall comply with all applicable federal, state, regional, and local biological resource protection regulations to avoid and/or minimize potential impacts to biological resources including, but not limited to, use of Best Management Practices (BMPs) during construction and in the design of project facilities; protection of native trees as required by local tree ordinances; and pre-construction nesting bird surveys and nesting raptor surveys (if appropriate based on season and habitat present) in compliance with the Migratory Bird Treaty Act and/or California Department of Fish and Game regulations.	During construction and operation	For projects within the City of Los Angeles -Department of City Planning			
Cultural Resources						
CR-1	Future SWIRP projects that would result in earth-disturbing activities within native sediments with the potential for producing archaeological materials, or projects located near known cultural resources, shall implement the following:	Prior to construction	For projects within the City of Los Angeles -Department of City Planning			

Mitigation Measure	Time Frame for Implementation & Monitoring	Responsible Monitoring Agency	Verification of Compliance		
			Initials	Date	Remarks
1. Prior to commencement of any earth-disturbing activities, a Phase 1 study shall be undertaken to evaluate the current conditions of a project site. The study shall consist of: (1) an initial records search including records, maps, and literature housed at the appropriate Archaeological Information Center depending on the specific county that the project is within; (2) a Sacred Lands check with the Native American Heritage Commission (NAHC) and initial scoping with interested Indian Tribes and individuals identified by the NAHC; (3) a pedestrian field survey by a qualified Archaeologist to determine the presence or absence of surficial artifactual material and/or the potential for buried resources; and (4) a technical report describing the study and offering management recommendations for potential further investigation. 2. If archaeological sites or resources are discovered as a result of the Phase I study, a Phase II study of the significance of any prehistoric material that is present shall be undertaken. The evaluation shall include further archival research, ethnographic research, and subsurface testing/excavation to determine the site's horizontal and vertical extent, the density and diversity of cultural material, and the site's overall integrity. The evaluation shall include a technical report describing the findings and offering management recommendations for sites determined to be significant. Non-significant resources would require no further study. 3. If the Phase II study indicates that a significant site is present, the qualified Archaeologist shall determine appropriate actions, in cooperation with the City, for preservation and/or data recovery of the resource. Preservation in place is the preferred manner of mitigation, as provided in the California Code of Regulations, *Title* 14 Section 15126.5(b)(3). This could include: (1) avoidance of					

	Mitigation Measure	Time Frame for Implementation & Monitoring	Responsible Monitoring Agency	Verification of Compliance		
				Initials	Date	Remarks
	resources; (2) incorporation of resources into open space; (3) capping the resource with chemically stable sediments; and/or (4) deeding the resource into a permanent conservation easement. To the extent that a resource cannot be preserved in place, a Phase III data recovery excavation shall be completed to recover the resource's scientifically consequential information. A technical report shall be completed that adheres to the Office of Historic Preservation's (OHP) Archaeological Resources Management Report (ARMR) guidelines. 4. Monitoring of ground-disturbing activities shall be undertaken by a qualified Archaeologist as a final mitigation measure in areas that contain or are sensitive for the presence of cultural resources.					
CR-2	Future SWIRP projects that would excavate into alluvial sediments (e.g., Older Quaternary Alluvium deposits) or bedrock formations shall implement the following: 1. Prior to commencement of any earth-disturbing activities, an archival records search shall be undertaken at the Natural History Museum of Los Angeles County, San Bernardino County Museum, or other appropriate institution to determine the depositional environment within the project area and to evaluate the likelihood of fossils being present. 2. A field survey shall be undertaken prior to ground-disturbing activities in areas of potential but unknown sensitivity to evaluate the site for the presence of significant fossil resources and to establish the need for paleontological salvage and/or monitoring. 3. If significant fossils are discovered as a result of a field survey or during monitoring operations, a qualified Paleontologist shall determine appropriate actions, in cooperation with the City, for the preservation and/or salvage of the resource.	Prior to construction	For projects within the City of Los Angeles -Department of City Planning			

	Mitigation Measure	Time Frame for Implementation & Monitoring	Responsible Monitoring Agency	Verification of Compliance		
				Initials	Date	Remarks
	4. Any monitoring activities shall be accomplished by a qualified Paleontologist so that fossils discovered during grading can be scientifically and efficiently recovered and preserved. 5. A qualified Paleontologist shall prepare collected specimens to the point of identification and place the prepared fossils in the appropriate institution for permanent curation. Upon completion of recovery and curation, all studies and actions shall be described in a paleontological technical report prepared by a qualified Paleontologist.					
CR-3	If human remains are encountered during SWIRP-related projects, no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains shall occur until the County Coroner has determined the appropriate treatment and disposition of the human remains, in accordance with Section 7050.5 of the California Health and Safety Code. Section 5097.98 of the Public Resources Code states that if remains are determined by the Coroner to be of Native American origin, the Coroner must notify the NAHC within 24 hours, which in turn must identify the person or persons it believes to be the most likely descended from the deceased Native American. The descendants shall complete their inspection within 48 hours of being granted access to the site. The designated Native American representative would then determine, in consultation with the property owner, the disposition of the human remains.	During construction and operation	For projects within the City of Los Angeles -Department of City Planning			

Mitigation Measure		Time Frame for Implementation & Monitoring	Responsible Monitoring Agency	Verification of Compliance		
				Initials	Date	Remarks
CR-4	Implementation of SWIRP could include development near historical resources or resources considered to be potential historical resources. This development has the potential to result in significant impacts to individual historical resources within the project area, including resources listed in or eligible for listing in the National Register of Historic Places, California Register of Historical Resources, and local registers. This could include the delisting or loss of eligibility of such resources. In addition, there is the potential for significant impacts to buildings or structures of historic age (45 years old or older), or buildings or structures which may eventually be of historic age, and which may qualify as historical resources pursuant to CEQA. Prior to development of future facilities that would demolish or alter buildings or structures 45 years old or older or affect their historic setting, the project applicant shall employ a cultural resource professional who meets the Secretary of the Interior's Professional Qualifications Standards for Architectural History to determine if the project would cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5 of the *CEQA Guidelines*. The cultural resource professional, in conjunction with the City, shall determine an appropriate scope of investigation including archival research, if necessary, an updated records search at any of the appropriate California Historical Resources Information System information centers, and a pedestrian survey of the project area to determine if any significant historical resources would be adversely affected by the proposed development. A technical report shall be completed per the OHP's ARMR guidelines which evaluates any historical resources within the project area and includes recommendations for eliminating or reducing impacts to historical resources. The technical report shall be submitted to the Lead Agency for approval. As determined necessary by the Lead Agency, environmental documentation (e.g., CEQA documentation) prepared for future development within the project site shall utilize the findings and	Prior to construction	For projects within the City of Los Angeles -Department of City Planning			

Mitigation Measure	Time Frame for Implementation & Monitoring	Responsible Monitoring Agency	Verification of Compliance		
			Initials	Date	Remarks
recommendations of the technical report. The project applicant shall be responsible for implementing methods for eliminating or reducing impacts to historical resources. Such methods could include, but not be limited to: (1) preparing a preservation plan or element which provides guidelines to ensure that the project conforms to the standards for rehabilitation established by the Secretary of the Interior and the OHP; (2) requiring new construction to be compatible with historical resources on the site and in the vicinity (e.g., mass, height, materials, setback, retention of mature landscaping); (3) requiring the project sponsor to relocate the historical resource or offer it for relocation by another individual or organization (provided that eligibility will be maintained following the relocation); (4) requiring the project sponsor to adaptively reuse the historical resource or incorporate it into the project; (5) undertaking documentation according to the requirements of the Historic American Building Survey such as large format photography, measured drawings, and written narrative; (6) making copies of this documentation available to the Los Angeles Public Library and local preservation organizations and historical societies; or (7) requiring the project sponsor to allow local preservation organizations and historical societies to document the resource and/or remove significant historic elements for archives.					
Geology and Soils					
GS-1 Future facilities shall not be located within a mapped Alquist-Priolo Earthquake Fault Zone. Placement of structures for human occupancy shall be restricted from areas designated as an Alquist-Priolo Earthquake Fault Zone.	Prior to construction	For projects within the City of Los Angeles -Department of City Planning			
GS-2 At the time a site is selected for a facility, a site-specific geotechnical report shall be prepared in areas subject to earthquake-induced landslides or liquefaction as mandated by the State Seismic Hazard Mapping Act. Mitigation measures and design recommendations identified in those site-specific reports	Prior to construction	For projects within the City of Los Angeles -Department of City Planning			

	Mitigation Measure	Time Frame for Implementation & Monitoring	Responsible Monitoring Agency	Verification of Compliance		
				Initials	Date	Remarks
	shall be implemented to minimize the potential for injury and loss related to earthquake-induced landslides, liquefaction, or seismic hazards.					
GS-3	Future facilities shall not be located within an area known for or designated with a high liquefaction potential. Placement of structures for human occupancy shall be restricted from areas known for ground failure or liquefaction.	Prior to construction	For projects within the City of Los Angeles -Department of City Planning			
GS-4	Future facilities shall not be located in areas mapped as a landslide or mudslide hazard area in local planning documents (e.g., General Plans).	Prior to construction	For projects within the City of Los Angeles -Department of City Planning			
Hazards and Hazardous Materials						
HAZ-1	If future facilities are sited within an area governed by an airport land use plan or within two miles of a public or private airport, analysis shall be undertaken to assess if the proposed facility would result in any impacts to airport operations or if it would subject people to a significant risk due to airport operations. If potential impacts are identified, a different site shall be selected or mitigation measures shall be implemented during the project-level environmental analysis to reduce the potential impact to airport operations to below a level of significance. Such mitigation measures could include maintaining certain percentages of low-occupancy areas (e.g., undeveloped areas, parking areas), building heights, and building lights.	Prior to construction	For projects within the City of Los Angeles -Department of City Planning			

Mitigation Measure		Time Frame for Implementation & Monitoring	Responsible Monitoring Agency	Verification of Compliance		
				Initials	Date	Remarks
HAZ-2	Prior to siting waste facilities, a Phase I Environmental Site Assessment (ESA) shall be conducted in conformance with industry-accepted practices, American Society of Testing Materials Designation E1527-05, and the Environmental Protection Agency All Appropriate Inquiry Rule (40 Code of Federal Regulations §312). Based on the Phase I ESA findings, recommendations for further assessment or mitigation measures shall be recommended, as appropriate, to assess or mitigate potential environmental impacts.	Prior to construction	For projects within the City of Los Angeles -Department of City Planning			
HAZ-3	Barriers shall be provided that contain hazards (e.g., appropriate buffers between land uses or air curtains of sufficient strength to control insect vectors).	During construction and operation	For projects within the City of Los Angeles -Department of City Planning			
HAZ-4	Hazardous substances shall be stored away from site boundaries.	During construction and operation	For projects within the City of Los Angeles -Department of City Planning			
HAZ-5	Upon approval of future facilities proposed under SWIRP, an applicable community emergency plan shall be developed, reviewed and updated, as needed, to account for new waste facilities and updated routes for the transportation of hazardous wastes.	Prior to construction and during operation	For projects within the City of Los Angeles -Department of City Planning			
HAZ-6	A Health and Safety Plan shall be developed in accordance with local, state, and federal occupational health regulations.	Prior to construction and during operation	For projects within the City of Los Angeles -Department of City Planning			
HAZ-7	Spill containment measures shall be developed and implemented on site for any new SWIRP facility.	Prior to construction and during operation	For projects within the City of Los Angeles -Department of City Planning			

Mitigation Measure	Time Frame for Implementation & Monitoring	Responsible Monitoring Agency	Verification of Compliance		
			Initials	Date	Remarks
Hydrology and Water Quality					
HWQ-1 Prior to entitlement of any future facility and to assist in preparation of final engineering documents, a project-specific drainage study will be required for development of any facility demonstrating the impacts on local and regional hydrology. The drainage study shall include a review of the existing drainage facility capacity and demonstrate that site runoff will not overwhelm existing drainage capacities. Any increase in runoff above the existing drainage facility capacity would require hydraulic analysis to determine alternatives to safely convey the design storm. Future facilities shall implement improvements to the drainage system if the analysis concludes that existing capacity is not adequate.	Prior to construction	For projects within the City of Los Angeles -Department of City Planning			
HWQ-2 Future facilities shall include construction of new or improved stormwater management facilities to reduce or retard the amount of peak runoff from the facility sites. Such measures may include the construction of detention basins or other structures that will slow down or delay the peak flow of stormwater runoff from the site.	Prior to construction	For projects within the City of Los Angeles -Department of City Planning			
HWQ-3 Ensure facilities shall reduce impervious surfaces and materials and maximize landscaped and natural areas.	Prior to construction	For projects within the City of Los Angeles -Department of City Planning			
HWQ-4 Prior to entitlement of any future facility and to assist in preparation of final engineering documents, a project-specific water quality study would be required to address impacts on water quality and identify potential mitigation measures. The project-specific water quality study shall identify downstream water bodies, their beneficial uses, and any impairment. The water quality report shall identify permanent BMPs to mitigate water quality impacts, including hydromodification.	Prior to construction	For projects within the City of Los Angeles -Department of City Planning			
HWQ-5 Specific and detailed BMPs shall be required and included in the Stormwater Management Plan. BMPs will need to address the	Prior to construction and during	For projects within the City of Los Angeles -Department of			

	Mitigation Measure	Time Frame for Implementation & Monitoring	Responsible Monitoring Agency	Verification of Compliance		
				Initials	Date	Remarks
	site design, source control, and treatment. Potential BMP options are identified in Table 4.8-9 of the PEIR. Individual facility development shall review and implement the local jurisdictional BMP standards. Project development will be required to implement all site design, source control, and treatment BMPs to the maximum extent practicable. A number of counties and cities are emphasizing low impact development (LID) design features as a way to address water quality concerns through the use of multiple sustainable BMP alternatives at the local level. To facilitate this sustainable approach, development should aim to maximize the number of LID mitigation alternatives implemented in site design. In addition to the use of BMPs, an acceptable operation and maintenance plan must be established to demonstrate long-term performance of the features. Typically, part of the operation and maintenance discussion for BMPs will include a funding source and identify the entity responsible for implementing the operation and maintenance plan.	operation	City Planning			
HWQ-6	Prior to construction of any future facilities, construction stormwater quality will need to be addressed in a Stormwater Pollution Prevention Plan (SWPPP), in accordance with the State General Construction Permit. The SWPPP shall provide a plan for addressing water quality associated with construction activities. SWPPPs are intended to be dynamic and change as a project undergoes various stages of construction. SWPPPs are prepared during final engineering; however, new General Construction Permit post-construction BMP requirements will need to be considered during entitlement and final engineering.	Prior to construction	For projects within the City of Los Angeles -Department of City Planning			
HWQ-7	If a future facility is proposed within a floodplain, a floodplain study shall be prepared to address Federal Emergency Management Agency (FEMA) or jurisdictional floodplain management requirements. The floodplain study shall be completed during entitlement and final engineering. The	Prior to construction	For projects within the City of Los Angeles -Department of City Planning			

Mitigation Measure		Time Frame for Implementation & Monitoring	Responsible Monitoring Agency	Verification of Compliance		
				Initials	Date	Remarks
	floodplain study shall investigate the hydrology of the river system and develop a hydraulic model to quantify existing and proposed water surface elevations and velocities. The study shall identify feasible mitigation measures to meet FEMA water surface elevation requirements.[2] These mitigation measures shall be implemented as part of the project design and/or construction.					
HWQ-8	Future facilities shall be designed so that structures and other important facilities that would be adversely affected by flooding are no longer located within flood hazard areas or so that the floodway open space is preserved.	Prior to construction	For projects within the City of Los Angeles -Department of City Planning			
HWQ-9	Future facilities shall raise the building pad or ground floor of proposed structures to an elevation above flood prone areas.	Prior to construction	For projects within the City of Los Angeles -Department of City Planning			
Land Use and Planning						
LU-1	Future facilities shall be sited in locations that support the appropriate General Plan and Zoning designations for the use being proposed. The project's proposed land use shall be modified to be consistent with designated land uses, zoning classification, and/or General Plan element(s).	Prior to construction	For projects within the City of Los Angeles -Department of City Planning			
LU-2	Future facilities shall be fully enclosed to the maximum extent practicable to minimize nuisance issues such as noise, odor, and visual impact and achieve maximum compatibility with surrounding land uses. If a nuisance is found to occur as result of facility operations, certain restrictions on the operational	Prior to construction	For projects within the City of Los Angeles -Department of City Planning			

[2] These requirements are based on Title 44 Code of Federal Regulations: Emergency Management and Assistance, Chapter 1: Federal Emergency Management Agency, Department of Homeland Security.

Mitigation Measure		Time Frame for Implementation & Monitoring	Responsible Monitoring Agency	Verification of Compliance		
				Initials	Date	Remarks
	characteristics of the facility shall be implemented to reduce or eliminate impacts, such as limiting hours of operation or placing restrictions on specific types of uses or activities proposed for the facility.					
LU-3	Project design, configuration, visual screening, setbacks, building heights, etc., shall be compatible with surrounding uses.	Prior to construction	For projects within the City of Los Angeles -Department of City Planning			
LU-4	The site shall be designed to provide buffer(s) (such as a decorative wall or landscaping) if residential uses are adjacent to a proposed facility. The buffer(s) shall be included in the site plan for the future facilities, and reviewed and approved by the local jurisdiction that will issue the building and/or occupancy permit for the facility.	Prior to construction	For projects within the City of Los Angeles -Department of City Planning			
Mineral Resources						
MR-1	Future facilities shall be sited so as to avoid areas mapped as MRZ-2, MRZ-3, and MRZ-3a by the California Mineral Land Classification System. Other known or potential mineral resource areas shall be avoided to the maximum extent.	Prior to construction	For projects within the City of Los Angeles -Department of City Planning			
MR-2	Future facilities shall be sited so as to avoid active oil, gas, or geothermal operations. The project shall be designed so that no, or only nonpermanent, structures are atop or blocking the mineral resource area.	Prior to construction	For projects within the City of Los Angeles -Department of City Planning			
MR-3	Future facilities shall be sited so as to avoid areas mapped as locally important mineral resources on General Plans, specific plans, or other land use plans.	Prior to construction	For projects within the City of Los Angeles -Department of City Planning			
MR-4	Easements shall be established, when necessary, to preserve possible future use of mineral resources.	Prior to construction	For projects within the City of Los Angeles -Department of City Planning			

	Mitigation Measure	Time Frame for Implementation & Monitoring	Responsible Monitoring Agency	Verification of Compliance		
				Initials	Date	Remarks
Noise						
N-1	A noise study shall be prepared for future facilities. The noise study shall include measurements of the existing noise environment and quantify the facility's noise contribution to the ambient environment for both the construction and operation phase. If impacts are identified, mitigation measures shall be implemented to reduce sound levels to a level that is consistent with the applicable jurisdiction's noise ordinance or noise element. Such mitigation measures could include, but are not limited to fencing, noise walls, or increasing the distance between noise-generating equipment and off-site sensitive receptors. The noise study shall be submitted to, and approved by, the Planning Director, or designee, of the jurisdiction where the facility will be constructed.	Prior to construction	For projects within the City of Los Angeles -Department of City Planning			
N-2	Prior to construction, the construction contractor shall obtain authorization approval to exceed the ambient base noise level by more than five A-weighted decibels at the property boundary for industrial zoned land use.	Prior to construction	For projects within the City of Los Angeles -Department of City Planning			
N-3	Construction activities shall be limited to 7:00 AM to 7:00 PM, Monday through Saturday. If the local jurisdiction has more stringent construction timing limits, those limits shall be applied.	Prior to construction	For projects within the City of Los Angeles -Department of City Planning			
N-4	The construction contractor shall operate and maintain a City-approved haul truck traffic route along major traffic arteries.	Prior to and during construction	For projects within the City of Los Angeles -Department of City Planning			
N-5	All construction equipment shall be equipped, operated, and maintained with manufacturer-recommended mufflers or the equivalent.	During construction	For projects within the City of Los Angeles -Department of City Planning			
N-6	Mobile and stationary construction equipment shall be turned-off when not in operation.	During construction and operation	For projects within the City of Los Angeles -Department of City Planning			

Mitigation Measure		Time Frame for Implementation & Monitoring	Responsible Monitoring Agency	Verification of Compliance		
				Initials	Date	Remarks
N-7	All construction equipment powered by gasoline or diesel engines shall be required to have sound-control devices at least as effective as those originally provided by the manufacturer; no equipment will be permitted to have an un-muffled exhaust.	During construction	For projects within the City of Los Angeles -Department of City Planning			
N-8	All stationary noise-generating construction equipment, such as pumps and generators, shall be located as far as possible from nearby noise-sensitive receptors. Noise-generating equipment shall be shielded from nearby noise sensitive receptors by noise-attenuating buffers, such as structures or haul truck trailers. Water tanks and equipment storage, staging, and warm-up areas will be located as far from noise sensitive receptors as possible.	During construction	For projects within the City of Los Angeles -Department of City Planning			
N-9	Operational activities at future facilities shall not produce noise levels at the property line that exceed the levels identified in the applicable jurisdiction's noise ordinance. If proposed activities are forecast to exceed property line levels, noise attenuation measures shall be implemented to reduce the property line noise levels to the appropriate level. Such measures could include, but are not limited to, fencing, sound walls, and screening of mechanical equipment.	During operation	For projects within the City of Los Angeles -Department of City Planning			
N-10	If future facilities are proposed within two miles of a public or private airport, the project-specific noise study shall include an analysis of the potential for the facility's adjacency to an airport to result in exposure of employees to excessive noise levels. If excessive noise levels are identified, mitigation measures shall be implemented to reduce the interior noise levels to acceptable levels. Such mitigation could include, but is not limited to, enhanced insulation or dual-paned windows.	Prior to construction	For projects within the City of Los Angeles -Department of City Planning			
Population and Housing						
PH-1	If future facilities result in the displacement of existing residential units or persons, appropriate compensation to property owners or relocation of displaced people shall occur.	Prior to construction	For projects within the City of Los Angeles -Department of City Planning			

Mitigation Measure		Time Frame for Implementation & Monitoring	Responsible Monitoring Agency	Verification of Compliance		
				Initials	Date	Remarks
PH-2	If future facilities result in the demolition of residential units, construction of new residential units, including units deemed "affordable" under state law, would lessen the impact to population and housing to a level below significance. If acquisition of public or private residences will be necessary, all applicable federal, state, and local laws regarding acquisition of property, compensation to displaced property owners or tenants, and relocation assistance and benefits for persons who may be displaced shall be adhered to or exceeded, as appropriate.	Prior to construction	For projects within the City of Los Angeles -Department of City Planning			
Public Services, Utilities and Service Systems						
WS-1	Future processing facilities shall incorporate water conservation design features. These features may include, but are not limited to, the following: • Landscaping plans shall incorporate planting water-efficient, well-adapted, and/or native shrubs, trees, and grasses (i.e., drought and heat tolerant). • Use recycled water as landscaping irrigation to the maximum extent practicable. • Use high-efficiency/low-flow toilets and sink faucets. • If truck washing will occur on-site, a water recycling system shall be implemented to reduce water demand.	Prior to construction and during operation	For projects within the City of Los Angeles -Department of City Planning			
WS-2	Development applications for future SWIRP facilities greater than 40 acres of land, having more than 650,000 square feet of floor area, or employing more than 1,000 persons shall include a water supply assessment. The water supply assessment shall be prepared by the water agency serving the facility and shall: (1) document wholesale water supplies; and (2) identify and quantify the existing and planned sources of water availability to the water supplier in 5-year increments for the 20-year projection. For each identified supply, the assessment shall: (1) detail the quantity available and whether it is a water supply entitlement, water right,	Prior to construction and during operation	For projects within the City of Los Angeles -Department of City Planning			

Mitigation Measure		Time Frame for Implementation & Monitoring	Responsible Monitoring Agency	Verification of Compliance		
				Initials	Date	Remarks
	or water service contract; (2) document the project demand; (3) document dry year supplies; (4) document dry year demand; and (5) determine if projected water supply is sufficient or insufficient for the proposed facility.					
ES-1	Future processing facilities shall be required to incorporate energy efficient design features. These features shall include, but are not limited to, the following: • Energy efficient light fixtures • Energy efficient equipment/machinery • Alternative energy source (i.e., solar power, wind power, thermal)	Prior to construction	For projects within the City of Los Angeles -Department of City Planning			
Recreation						
REC-1	If future facilities are located on a site that results in an impact to existing recreation facilities, replacement recreation facilities shall be acquired or constructed prior to demolition of existing recreational facilities. Replacement recreational facilities shall be located in the general vicinity of the demolished recreational facility.	Prior to construction	For projects within the City of Los Angeles -Department of City Planning			

	Mitigation Measure	Time Frame for Implementation & Monitoring	Responsible Monitoring Agency	Verification of Compliance		
				Initials	Date	Remarks
Transportation/Traffic						
TR-1	Prior to the approval of any future facility, a project-level traffic impact report shall be prepared by a qualified traffic consultant. The report shall be prepared to the standard of the local jurisdiction that would be providing approvals for the project. The report shall include existing traffic information, thresholds of significance, construction and operation-related trip generation, and a project and cumulative-level analysis. The traffic report shall identity mitigation measures to reduce project- and cumulative-level impacts to the maximum extent practicable. Such mitigation measures could include roadway and intersection improvements, payment of traffic impact fees, timing of collection truck schedules to avoid peak hours, encouraging carpool, van pool, or alternative transportation for employees through the use of incentives.	Prior to construction	For projects within the City of Los Angeles -Department of City Planning			
TR-2	Future facilities shall adhere to minimum adopted parking requirements for the type of use proposed, including adequate parking for employees, customers, and any collection vehicles that are stored on-site.	Prior to construction and during operation	For projects within the City of Los Angeles -Department of City Planning			

ES.0 EXECUTIVE SUMMARY

ES.1 INTRODUCTION

The City of Los Angeles (City) has developed a long-range Solid Waste Integrated Resources Plan (SWIRP) to manage solid waste generated in the City. The development of SWIRP incorporates a long history of public policy initiatives to maximize waste prevention, recycling, and resource recovery, and reduce urban landfilling. The policies, programs, and infrastructure described in SWIRP are consistent with City Council policy.

The City and its elected officials have been leaders in environmental stewardship, and have issued several important directives, including the following:

- In 2005, former Councilmember Greig Smith developed the Recovering Energy, Natural Resources and Economic Benefit from Waste for Los Angeles (RENEW L.A.) Plan which established a goal of 90 percent diversion by 2025
- In 2006, the City established a goal of 70 percent diversion by 2013, which has since been accelerated to 75 percent by 2013[1]
- The RENEW L.A. Plan was adopted unanimously by the City Council in 2006, including the adoption of a Zero Waste Goal
- The City embarked on a comprehensive planning and stakeholder engagement process to develop SWIRP, which was initiated in 2007

The planning process undertaken to develop SWIRP included the participation of stakeholders throughout Los Angeles. SWIRP reflects the long-term vision of the City's leaders, and the goals and guiding principles of the City's residents and businesses.

The programs and policies identified in SWIRP apply to all residential, commercial, industrial, and institutional generators in the City, including City government generators. Some of the elements of the plan include incentives for reducing waste and recycling or composting previously discarded materials, while others require the construction of facilities to recover recyclable materials, energy, and byproducts from waste.

Details of the policies, programs, and future facilities to meet the City's recycling and solid waste infrastructure needs through 2030 are described in SWIRP. For a description of the project, refer to Chapter 2.0, Project Description, of this report. The complete SWIRP documents are included in Appendix A.

ES.2 CEQA REQUIREMENTS

This "Program Environmental Impact Report (PEIR)" has been prepared in accordance with the California Environmental Quality Act (CEQA), State *CEQA Guidelines*, and the *City of Los Angeles CEQA Thresholds Guide* to address the potential environmental impacts associated with the implementation of SWIRP.

[1] The City reached 76.4 percent diversion in 2011, as documented in the Zero Waste Progress Report, March 2013.

Given that SWIRP is a broad master plan that provides guidance for future actions, it was determined that a PEIR is the appropriate document to address the CEQA requirements.

A PEIR analyzes potential impacts of the project at a program level and provides the basis for future project-level CEQA analysis at a later time, if needed. To ensure that the decision-makers and the public have been informed of the potential impacts at this master plan level, the analysis must be conducted in a conservative manner assuming a "worst case" scenario. Since the details of the future projects are not known, CEQA requires that the impact analysis be based on typical programs and facilities currently in operation. Future site-specific projects under SWIRP will be evaluated through subsequent project-level environmental reviews.

This Final PEIR has been prepared in accordance with CEQA, Public Resources Code Section 21000 et seq., the *CEQA Guidelines* (Section 15000 et seq.) as promulgated by the California Resources Agency and the Governor's Office of Planning and Research, and the *City of Los Angeles CEQA Thresholds Guide*. Per Section 15367 of the *CEQA Guidelines*, a Lead Agency is defined as "the public agency which has the principal responsibility for carrying out or approving a project." The City is the Lead Agency for compliance with CEQA for this Final PEIR.

CEQA (Section 15002) states that the purpose of an EIR is to:

(1) Inform the public and decision-makers of the potential environmental impacts of a project

(2) Identify methods that could reduce the magnitude of a potentially significant impact of a project

(3) Identify alternatives that could reduce the magnitude of environmental impacts or propose more effective uses of the project site[2]

The principal use of this Final PEIR is to evaluate and disclose potential environmental impacts associated with the implementation of SWIRP at the program level. It is an informational document that evaluates the potential environmental impacts of the proposed program. It does not determine the merits or recommend approval or disapproval of the program.

CEQA requires that the Lead Agency for the EIR solicit input from the public, and non-governmental and governmental agencies on the scope, focus, and content of the EIR. In accordance with these requirements, the City completed a Notice of Preparation (NOP) that was circulated beginning August 12, 2010, through September 16, 2010. Scoping meetings were held on August 26, 2010 (one at 1:30 PM and one at 6:30 PM) at the City of Los Angeles Public Works Building. The purpose of the scoping meetings was to provide members of the public and other interested parties with an opportunity to learn about the project and to provide input on the scope, focus, and content of the Final PEIR.

The Draft PEIR was circulated for public comment and all comments were addressed in the Final PEIR.

The Final PEIR will be transmitted to the City Council for certification as the Lead Agency. As the Lead Agency, in accordance with CEQA, the City Council must complete the following actions:

- Determine if the PEIR adequately addresses all components of the project (SWIRP) and identifies the potential cumulative-level impacts
- Determine if the benefits of the project (SWIRP) outweigh the potential for any significant and unmitigated impacts

[2] Refer to City of Los Angeles, General Plan Framework Element, Policy 3.1.9, pages 3-8.

- Determine if the proposed project (SWIRP) should be adopted or if any of the alternatives is preferred from an environmental standpoint

ES.3 SWIRP PROJECT GOALS/OBJECTIVES

The objectives of SWIRP represent the City's policies, and the guiding principles identified during an extensive stakeholder outreach process[3] conducted during the preparation of SWIRP. The objectives identified are as follows:

- Achieve a 75 percent landfill diversion rate for solid waste by 2013[4]
- Achieve a 90 percent landfill diversion rate for solid waste by 2025
- Protect public health and the environment
- Make the City a leader in implementing Zero Waste practices
- Promote manufacturer and consumer responsibility
- Provide incentives for reducing, reusing, and recycling
- Increase recycling by providing convenient opportunities for residents, businesses, and institutions to participate
- Find diversion solutions that are both economically efficient and environmentally preferable
- Promote education and conduct outreach to decrease wasteful consumption and to increase recycling
- Invest in new, safe alternative technologies for energy and resource recovery
- Provide solutions that are equitable and do not unfairly reward or penalize one community over another

The identification of project objectives is required per the State *CEQA Guidelines* (Section 15126.6). The EIR must describe and evaluate the comparative merits of a range of reasonable alternatives to the project (SWIRP), or to the location of the proposed project(s), that could feasibly attain most of the basic objectives of the project.

State *CEQA Guidelines* further require that the discussion focus on alternatives capable of avoiding or substantially lessening any potential significant effects. A key requirement is to include the "No Project Alternative" in the analysis.

As such, this PEIR evaluates the ability of the different alternatives, including the "No Project Alternative," to attain the basic objectives stated above, while minimizing any environmental impacts.

ES.4 DESCRIPTION OF PROPOSED PROJECT – FULL IMPLEMENTATION OF SWIRP

To realize the vision articulated in the guiding principles and to reach the City's goals of 75 percent diversion by 2013 and 90 percent diversion by 2025, SWIRP recommends a series of policies, programs, and facilities that would be required through 2030. They include the following:

[3] The SWIRP stakeholder process included 42 regional workshops and 3 citywide conferences during Phase 1. Phase 2 included 21 regional workshops and 1 citywide conference. Additionally, the City held 109 key constituent meetings, 27 house meetings, and 75 business meetings (Volume I SWIRP, Phase 1, page 24, included in Appendix A).

[4] The City achieved 76.4 percent diversion in 2011 as documented in the Zero Waste Progress Report, March 2013.

(1) Expansion of Existing Residential and Commercial Programs (Section ES.4.1)

(2) Implementation of New Downstream Policies and Programs (Section ES.4.2)

(3) Implementation of Mandatory Participation Programs (Section ES.4.3)

(4) Adoption of Upstream Policies (Section ES.4.4)

(5) Development of Processing Facilities (Section ES.4.5)

(6) Disposal of Remaining Residual Waste[5] at Local or Remote Landfills (Section ES 4.6)

The following sections provide a more detailed discussion of these six components of the proposed project (full implementation of SWIRP).

ES.4.1 Expansion of Existing Residential and Commercial Programs

The City has many successful programs in place for managing residential and commercial solid waste and diverting waste from landfills. Under SWIRP, these programs would be expanded, as appropriate, to further improve solid waste management, increase landfill diversion, and accommodate growth. Some of these programs include:

- Four-bin collection program for residential curbside customers[6] (blue bin for commingled recycling, green bin for yard trimmings, black bin for residual waste, and brown bin for horse manure[7])
- Multi-family blue bin recycling available to all multi-family buildings in the City
- Bulky item collection available to all single-family and multi-family generators
- Blue bin recycling program and classroom recycling presentations available to all schools in the City within the Los Angeles Unified School District
- Restaurant food scraps collection available to all restaurants in the City
- Mandatory processing of all construction and demolition (C&D) loads at certified C&D facilities
- Environmentally Preferred Procurement (EPP) ordinance requiring City procurement of environmentally preferred services and products, as called for in RENEW L.A.
- Commercial recycling technical assistance available to all commercial and institutional generators in the City
- Alternative Clean Fuel Program for powering the City's collection vehicles with clean burning engines
- City Department recycling available to all City offices and facilities
- Seven Solvents/Automotive/Flammables/Electronics (S.A.F.E.) centers for proper management of household hazardous wastes located throughout the City
- Processing, mulching, and composting of yard trimmings and making the mulch available free of charge to City residents at City giveaway locations

[5] "Residual waste" refers primarily to the discarded materials that remain after reducing, reusing, recycling, and composting; or after processing the materials through a mixed materials processing facility.

[6] Residential curbside customers include generators in single-family residences and some multi-family residences, primarily with four units or less, serviced by the Bureau of Sanitation (LASAN).

[7] Horse manure is considered part of the "green bin material" program, as the materials are composted.

Since the initiation of the SWIRP planning process in April 2007, most of the above policies and programs have been expanded. Three of the more recent policies and programs include: (1) implementing the food scrap pilot program for 8,700 households; (2) implementing the Environmentally Preferred Purchasing ordinance (approved by the City Council on June 12, 2009);[8] and (3) adopting the C&D ordinance (approved by the City Council on December 17, 2010).[9]

Commercial and Multi-Family Private Hauler Franchise Initiative

The City currently manages a private hauler permit system for the commercial and multi-family sector of the City, which includes industrial and institutional generators. Additionally, the City manages a multi-family recycling program that is available to all multi-family buildings in the City, and managed through three recycling contracts. Effective July 2012, Assembly Bill (AB) 341 requires mandatory recycling for commercial businesses and public entities that generate four cubic yards or more of solid waste per week and multi-family complexes with five units or more.

In 2012, the City Council indicated its intention to move from the current private waste hauler permit system to a franchise system for the collection of waste from both multi-family and commercial properties, not collected by the City of Los Angeles Bureau of Sanitation (LASAN). The franchise system is intended to help the City reach its Zero Waste goals, and may contain elements such as maximum disposal amounts per zone, aggressive diversion programs, including outreach and education, clean fuel requirements, and worker health and safety requirements, to be administered by LASAN.

In November 2012, the City Council directed LASAN to begin the project-specific environmental review process pursuant to CEQA for the commercial and multi-family private hauler franchise initiative adopted by Council, to return with an implementation plan for the franchise system, and requested the City Attorney to draft required ordinances for the project.[10] On April 25, 2013 the City Council approved LASAN's Implementation Plan, adopted the 10 goals of the Franchise program, and directed LASAN to proceed with the development of a Request for Proposals (RFP). A separate environmental review is being conducted for the private hauler franchise initiative. The City Council is expected to consider the commercial and multi-family private hauler franchise ordinance and associated CEQA documentation in early 2014.

As described in Chapter 2.0, Project Description of this report, several SWIRP policies and programs fall under the private hauler franchise initiative including requiring all private haulers to provide recycling services to their customers and requesting that all businesses have recycling service.

ES.4.2 Implementation of New Downstream Policies and Programs

"Downstream" policies and programs address collection, processing, diversion, and disposal of materials after they are generated. The City has identified additional downstream programs that would be needed to achieve Zero Waste, including: adding textiles to the blue bin program or partnering with non-government organizations to divert textiles; adding food scraps to the green bin program; and requiring private solid waste collection service providers to ensure that their multi-family and commercial customers have access to recycling collection services (as anticipated by the private hauler franchise initiative).

[8] City of Los Angeles Environmentally Preferred Purchasing Ordinance http://www.environmentla.org/pdf/2010/EPP_Ordinance.pdf (accessed September 30, 2013).
[9] The C&D Ordinance is available through the City of Los Angeles Council File 09-3029.
[10] The Private Hauler Franchise Initiative documentation is available through City of Los Angeles Council File 10-1797.

ES.4.3 Implementation of Mandatory Participation Programs

Mandatory participation programs represent a major shift in recycling collection programs, and are intended to motivate all waste generators within the City (single-family and multi-family residential generators, and commercial, governmental, institutional, and industrial generators) to separate materials at their homes or businesses, and place them in the appropriate blue bin, green bin, or other appropriate collection bins on a regular basis. Some of the mandatory participation programs include mandatory recycling and organics separation; requiring transfer stations and landfills to provide resource recovery centers; and increased diversion requirements at C&D facilities. To provide more assurances as to the effectiveness of these programs, the City would implement enforcement and education (i.e., through recycling ambassadors) and increased direct technical assistance.

ES.4.4 Adoption of Upstream Policies

"Upstream" describes policies that would minimize the amount of waste prior to the point of generation. Upstream policies would affect design of the product or package prior to manufacturing. Extended Producer Responsibility (EPR) is a strategy for encouraging manufacturers to take responsibility for the end-of-life of their products. Upstream policies may include material bans, such as the City facilities expanded polystyrene (EPS) foam ban and the reusable bag policy that the City Council adopted in May 2012.[11]

The following are the City's priority upstream policies:

(1) Advocate for legislation making businesses responsible for their products, which if inappropriately disposed, can release toxics into the environment. Toxics include such items as pharmaceuticals, used needles (sharps), fluorescent lights, household batteries, treated wood, and other materials banned from disposal statewide

(2) Advocate for legislation making businesses responsible for their products that are difficult to recycle such as disposable diapers, composite materials, appliances, durable goods, and food packaging

(3) Advocate for legislation making businesses responsible for their packaging, including alternatives to EPS foam (containers, "peanuts," and "blocks"), single-use bags, and support for reusable shipping containers

(4) Adopt a citywide reusable bag policy at designated supermarkets and retail establishments

(5) Advocate for businesses to develop life-cycle analyses for products and packaging, taking into account all environmental impacts of the product from manufacturing to the end of its useful life

(6) Advocate for legislation to incentivize manufacturers to use local reuse and recycling markets for the products they manufacture

ES.4.5 Development of Processing Facilities

An essential component of SWIRP is to identify and develop future facilities to meet the City's waste management needs through 2030. Throughout Phase 1 of the SWIRP planning process, stakeholders

[11] On May 23, 2012 the City Council adopted a policy to ban distribution of single-use plastics bags and impose a 10-cent fee on single-use paper bags at supermarkets and select retail stores within the City. The City policy on single-use carryout bags is available through City of Los Angeles Council File 11-1531.

discussed facility options and toured local facilities. During Phase 2, stakeholders identified the specific facility needs resulting from implementation of SWIRP, including options for maximizing diversion through residual waste separation and processing. The facilities considered are categorized as follows:

- **Blue Bin Facilities –** Facilities capable of processing source-separated recyclable and reusable materials, including materials recovered from the City's blue bin program and source-separated commercial recycling. Other facilities for source-separated materials were also discussed within this category; including resource recovery centers for self-hauled materials. Examples of blue bin facilities include material recovery facilities (MRFs) for commingled recyclable materials, and resource recovery centers for self-hauled materials.
- **Green Bin Facilities –** Facilities capable of processing yard trimmings, food scraps, and other compostable materials (e.g., food-soiled paper), either source-separated by generators or sorted from other waste at a mixed material processing facility. Examples of green bin facilities include mulching, composting, and anaerobic digestion facilities for source-separated organics.
- **Black Bin Facilities –** Facilities capable of processing residual waste from residential black bins, commercial waste sources, or residual waste from processing facilities described above. These facilities are also known as alternative technology facilities. Examples of black bin facilities include, but are not limited to, automated mixed material processing facilities, advanced thermal recycling (second generation waste-to-energy), thermal facilities (such as gasification and pyrolysis), and anaerobic digestion facilities for residual waste.

Full implementation of the SWIRP policies and programs would require the construction and operation of the following additional blue bin, green bin, and black bin facilities:

(1) One large-scale composting facility or six small-scale composting facilities

(2) Three clean material recovery facilities

(3) One resource recovery center

(4) Five alternative technology facilities

No additional C&D facilities would be needed, as there is adequate capacity at existing facilities (*SWIRP Phase 2 Policy, Program, and Facility Plan,* Section 4.5, included in Appendix A).

Black bin processing facilities target residential and commercial residual waste, and residual waste that remains after recycling and composting (materials disposed of in blue bins and green bins that are unsuitable for processing). Even with the implementation of all the policies and programs identified in SWIRP, residents and businesses in the City would still produce over 1.5 million tons of residual waste annually that would need to be disposed in landfills or processed for further recycling and energy recovery. If all of the SWIRP policies and programs are implemented, up to five additional black bin processing facilities would be required to maximize diversion from landfills.

ES.4.6 Disposal of Remaining Residual Waste at Local or Remote Landfills

After implementing various policies, programs, and constructing as needed facilities to achieve the goals of SWIRP, there will be a need to transport and dispose residual waste to landfills. Local and remote landfills are categorized as follows:

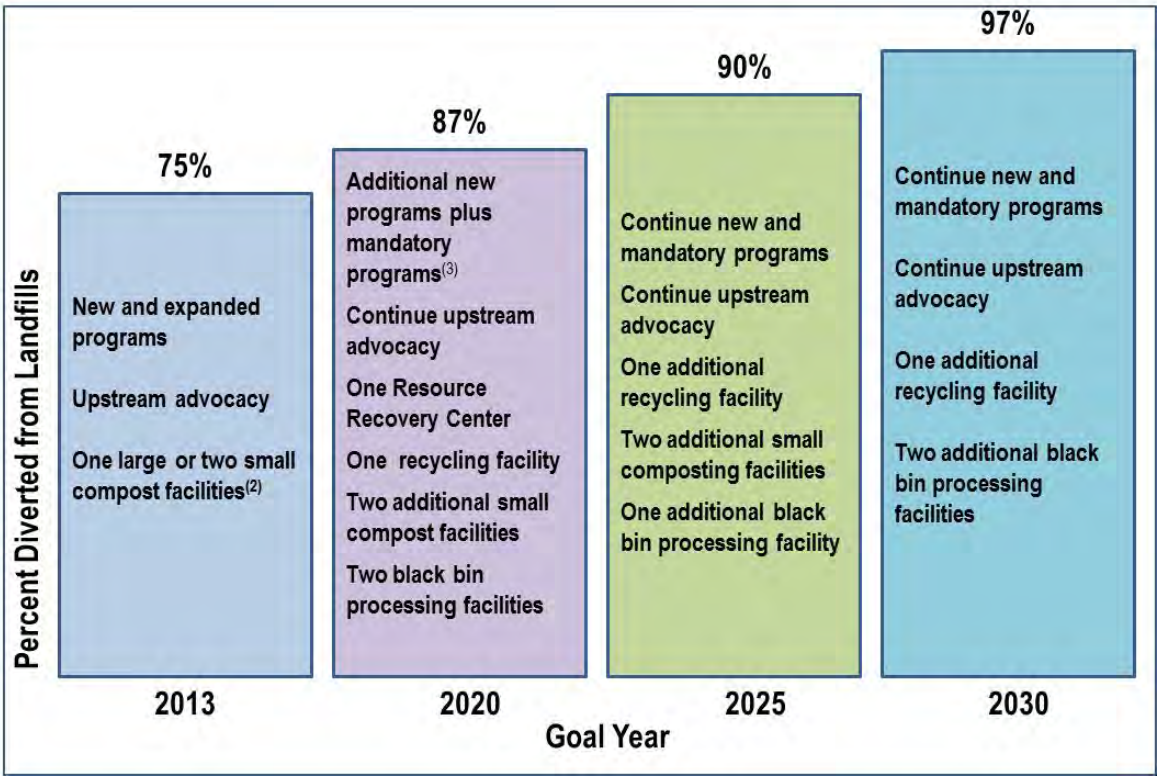
- **Local Landfill, Truck Haul –** Landfills located within the local region that can accept residual waste transported from the City. This residual waste can either be direct-hauled to the landfill by refuse collection trucks, or trans-loaded to transfer trucks at local transfer stations.

- **Remote Landfills, Truck Haul** – Landfills located outside the local region that can accept residual waste from the City. This residual waste is transported by transfer trucks from local transfer stations to remote landfills.
- **Remote Landfill, Rail Haul –** Landfills located outside the local region that can accept residual waste from the City. This residual waste is transported by rail. Rail haul infrastructure may include, but is not limited to the construction of new and/or expanded facilities such as rail transfer stations, intermodal facilities, rail yards, rail tracks and spurs, loading docks, rail right of way and service contracts, and other associated infrastructure.

ES.4.7 Policy, Program, and Facility Phasing

The phasing schedule for SWIRP is shown in Figure ES.4-1. This schedule takes into account the diversion and disposal tonnage projections that would result from implementation of the policies and programs, and identifies the number and type of facilities that would be needed. The policy, program, and facility phasing approach would achieve the City's goals of 75 percent diversion by 2013[12] and 90 percent diversion by 2025.

Figure ES.4-1. Policy, Program, and Facility Phasing(1)



(1) Phasing assumed under *SWIRP Phase 2 Policy, Program, and Facility Plan*, Sections 3.5 and 4.6 may not reflect actual implementation and/or roll-out of specific policies, programs and/or facilities.
(2) Facilities may be implemented by either the public or private sector, or by joint public-private partnerships, and may also include expansions to existing facilities. Refer to *SWIRP Phase 2 Policy, Program, and Facility Plan*, Section 4.6, included in Appendix A, and SWIRP PEIR, Chapter 2.0, Tables 2.3-3-2.3-4.
(3) Statewide mandatory commercial recycling for commercial customers generating four cubic yards or greater of solid waste per week was implemented in July 2012. Mandatory recycling and composting for all generators will be implemented locally by 2020.

[12] The City achieved 76.4 percent diversion in 2011 as documented in the Zero Waste Progress Report, March 2013.

ES.5 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental impacts for the project relate to the number and type of facilities that would be needed to reduce landfilling and enable the City to achieve 90 percent or more diversion.

A detailed discussion of existing environmental conditions, environmental impacts, and recommended mitigation measures is included in Chapter 4.0, Environmental Impact Analysis. Table ES.5-1 summarizes the environmental impacts, mitigation measures, and level of significance after mitigation associated with full implementation of SWIRP.

Potentially Significant, Mitigable Impacts

Potentially significant impacts, pursuant to CEQA criteria, have been identified for the environmental issue areas identified below. Implementation of proposed mitigation measures in this PEIR would reduce the potential significant impacts associated with each environmental issue area to a level that is less than significant.

- Aesthetics and Visual Resources
- Agriculture and Forestry Resources
- Biological Resources
- Cultural Resources
- Geology and Soils
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Mineral Resources
- Noise
- Population and Housing
- Public Services, Utilities and Service Systems
- Recreation

Potentially Significant, Unmitigable Impacts

Potentially significant, unmitigable impacts, pursuant to CEQA criteria, have been identified for the environmental issue areas identified below.

- Air Quality and Greenhouse Gas (GHG) Emissions (Cumulative)
- Transportation and Traffic

Implementation of proposed mitigation measures will reduce the potential impact to these resources to the extent feasible; however, the potential impact will remain significant and unmitigated at this program level of environmental review and pending more detailed site-specific analysis at the project level of environmental review. If the City chooses to approve the SWIRP project, it must adopt a "Statement of Overriding Considerations"[13] pursuant to Sections 15093 and 15126(b) of the *CEQA Guidelines*.

[13] When a Lead Agency decides to approve a project that will cause one or more significant environmental effects, the Lead Agency prepares a "Statement of Overriding Considerations" which reflects the ultimate balancing of competing public objectives (including environmental, legal, technical, social, and economic factors). The Lead Agency must state specific reasons supporting agency action based on the final EIR or other substantial evidence in the record. Refer to the California Natural Resources Agency, California Environmental Quality Act, Frequently Asked Questions, http://ceres.ca.gov/ceqa/flowchart/la_soc.html (accessed September 30, 2013).

ES.6 SUMMARY OF ALTERNATIVES

CEQA Guidelines Section 15126.6 requires that the City evaluate alternatives to SWIRP, including the "No Project Alternative." Project alternatives are addressed in Chapter 5/-, Project Alternatives, of the PEIR and summarized below. The following five alternatives are evaluated in the PEIR, including the "No Project Alternative" and four (less aggressive) scenarios for implementing SWIRP (refer to *SWIRP Phase 2 Policy, Program, and Facility Plan*, included in Appendix A).

- Alternative 1 (No Project/Landfill Alternative)
- Alternative 2 (SWIRP Scenario 1/Expansion of Existing Policies and Programs - No New Policies or Programs)
- Alternative 3 (SWIRP Scenario 2/Expansion of Existing Policies and Programs plus New Downstream Policies and Programs)
- Alternative 4 (SWIRP Scenario 3/Components of SWIRP Scenario 2, plus Implementation of Mandatory Participation Policies and Programs)
- Alternative 5 (SWIRP Scenario 4/Components of SWIRP Scenario 2, plus Implementation of Upstream Policies and Programs)

Table ES.6-1 provides a brief comparison of the components of each alternative compared to the proposed project (full implementation of SWIRP). Refer to Chapter 2.0 of this report for a complete description of all the policies, programs and facilities related to the proposed project.

ES.6.1 Alternative1 (No Project/Landfill Alternative)

Under Alternative 1 (No Project/ Landfill), SWIRP would not be implemented, and the City's waste would still be disposed at landfills. The City would continue its existing programs and expand existing programs to accommodate growth, where practicable. Black bin materials would continue to be direct-hauled or transferred and then hauled to the Sunshine Canyon Landfill,[14] or other local or remote landfills that accept residual waste from the City. No black bin processing facilities would be developed for residual waste. This alternative would continue with landfilling, which would result in ongoing landfill-related impacts, including GHG emissions, landfill truck traffic and associated truck noise, and water quality impacts. This alternative would also result in less recycling, which could have impacts on forestry and mineral resources. The potential for creating new green jobs would also be reduced, thereby impacting the population.

While this alternative has fewer environmental impacts than the proposed project, (based on existing landfill infrastructure, and need for new facilities), this alternative fails to achieve any of the primary source reduction, recycling and composting benefits of the project. This alternative will also significantly reduce landfill capacity through 2030. Additionally, this alternative does not meet the project's goals and objectives.

[14] Note that the City's disposal contract with the Sunshine Canyon Landfill will expire in 2021. The landfill closure date is anticipated to be 2037.

Table ES.5-1. Summary of Impacts and Mitigation Measures

Environmental Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
Aesthetics and Visual Resources			
Visual Resources/Specific locations of future facilities have not been identified. The potential for future facilities to result in a substantial adverse effect would be dependent on the ultimate facility design and location.	Potentially Significant	VR-1 Future facilities shall be sited within the zoning districts outlined in Table 4.1-4 of the PEIR and designed in accordance with all applicable land use planning documents. For areas outside of the City, facilities shall be sited in accordance with all applicable zoning and planning restrictions. To the greatest extent possible, future facilities shall be sited in areas not identified as visually significant or historic. VR-3 Existing natural aesthetic features proposed for removal shall be replaced. VR-4 Grading of natural and semi-natural open space shall be minimized to the maximum extent. VR-6 Design features shall be incorporated into the project which effectively integrates natural aesthetics (i.e., cluster development, greenbelts, landscaping, etc.).	Mitigated to below a level of significance
Obstruction of Views/Future SWIRP facility sites would include locations that may be designated as being valued for visual quality.	Potentially Significant	VR-5 New utilities shall be placed underground, where appropriate. VR-7 Rooftop mechanical equipment, garbage dumpsters, and other outdoor equipment shall be screened from public view.	Mitigated to below a level of significance
Lighting, Glare, and Nighttime Illumination/Future SWIRP facilities would require lighting and could be constructed of materials with varying levels of reflectivity.	Potentially Significant	VR-2 Future facilities shall include design features that allow the facility to blend in with nearby buildings. These design features may include but are not limited to: • Landscape screening (i.e., use of tall trees or shrubs around the perimeter) • Neutral wall or fencing that obstructs the view of the facility from the nearby roads • Use of varying facades to break up bulk and scale • Building materials that minimize glare potential • Shielded lighting so as to minimize spillage to adjacent parcels and minimize night sky pollution • Modifying structure design to eliminate or screen contrasting/detracting features • Utilizing architectural styles, materials, scale, massing, setbacks, signage, circulation patterns, pedestrian orientation, streetscape amenities, and landscaping common to and/or consistent with the character of existing surrounding uses	Mitigated to below a level of significance
Agriculture and Forestry Resources			
Conversion of Mapped Farmland/The potential for future SWIRP facilities to convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural use is unknown. If future sites include locations that support Farmland Mapping and Monitoring Program-classified land, then there is potential for a significant impact.	Potentially Significant	AG/FOR-1 Future facilities shall be sited away from Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. If facilities are sited on such farmland, impacts to the farmland shall be mitigated at a 1:1 ratio or through payment of fees into an agricultural conservation trust. Proof of agricultural land acquisition or fee payment shall be provided to the local jurisdiction that is issuing the grading permit. The Planning Director of that local jurisdiction shall confirm that the land has been acquired or fees paid.	Mitigated to below a level of significance
Conflict with Agricultural Zoning or Williamson Act Contracts/The potential for future facilities to conflict with existing zoning for agricultural use or a Williamson Act Contract is unknown. If future sites are proposed on lands that are zoned for agricultural use or contain a Williamson Act Contract, then there is potential for an impact.	Potentially Significant	AG/FOR-2 Future facilities shall be sited away from lands under a Williamson Act Contract or within a Farmland Security Zone to the maximum extent possible. AG/FOR-3 Future facilities (except for composting facilities) shall be sited away from areas that are zoned for agricultural use to the maximum extent possible.	Mitigated to below a level of significance
Conflict with Forest and Timberland Zoning/Conversion/The potential for future facilities to conflict with existing zoning of forest land, timberland, or timberland zoned Timberland Production, or that result in the loss of forest land or convert forest land to non-forest use, is unknown. If future sites are proposed on lands that support these types of uses, then there is potential for an impact.	Potentially Significant	AG/FOR-4 Future facilities shall be sited away from areas zoned for Timberland Production to the maximum extent. If facilities are sited on such farmland, impacts to the farmland shall be mitigated at a 1:1 ratio or through payment of fees into a forest conservation trust.	Mitigated to below a level of significance

Table ES.5-1. Summary of Impacts and Mitigation Measures (Continued)

Environmental Impact	Significance Before Mitigation	Mitigation Measures		Significance After Mitigation
Air Quality and Greenhouse Gases				
Construction-Related Emissions/ Construction activities associated with future SWIRP facilities would have the potential to result in the generation of dust, criteria air pollutants, and reactive organic gas at levels that would exceed South Coast Air Quality Management District (SCAQMD) thresholds.	Potentially Significant	AQ-1	Future facilities within the SCAQMD shall prepare and implement a fugitive dust control program pursuant to the provisions of SCAQMD Rules 402 and 403 prior to any ground disturbance. For future facilities outside of the SCAQMD, adherence to any applicable fugitive dust control programs shall be required.	Potentially unmitigated impact at this PEIR level of evaluation depending on the specific locations and technologies that can or will be implemented at each specific facility When future facilities are proposed, a site-specific environmental review will be conducted
		AQ-2	Minimize combustion emissions during construction activities.	
		AQ-3	Low volatile organic compound (VOC) paints and coatings shall be used on future facilities.	
		AQ-4	Excavation, grading, and other construction activity is limited to one activity or phase at a time.	
		AQ-5	Hours of operation of heavy-duty equipment shall be limited to a maximum of 8 hours per day, 5 days per week.	
		AQ-6	Fossil-fueled equipment shall be replaced with electrically driven equivalents (provided they are not run via a portable generator set), to the maximum extent practicable.	
		AQ-7	All diesel engines shall be shut off when not in use to reduce emissions from idling.	
		AQ-8	Curtail construction during periods of high ambient pollutant concentrations; this may include ceasing construction activity during the peak hour of vehicular traffic on adjacent roadways and “Spare the Air Days” declared by the San Joaquin Valley Air Pollution Control District (SJVAPCD). Note that land within the 100-mile project study area falls within the SJVAPCD.	
		AQ-9	Implement activity management (e.g., rescheduling activities to reduce short-term impacts) to minimize concurrent operation of construction equipment and concurrent construction of project phases.	
		AQ-10	During the smog season (May through October), lengthen the construction period to minimize the vehicles and equipment operating at the same time.	
		AQ-11	Minimize the obstruction of traffic on adjacent roadways.	
		AQ-12	Power construction equipment with diesel engines fueled by alternative diesel fuel blends or ultra-low sulfur diesel. Only fuels that have been certified by the California Air Resources Board (ARB) shall be used. The ARB has verified specific alternative diesel fuel blends for nitrogen oxide (NO_x) and particulate matter (PM) emission reduction. ARB-certified alternative fueled compressed natural gas, liquid propane gas, electric motors, or other ARB-certified off-road technologies in construction equipment shall be used where practicable.	
		AQ-13	Use construction equipment that meets the current off-road engine emission standard (as certified by the ARB) or that is re-powered with an engine that meets this standard. Tier I, Tier II, and Tier III engines have significantly less NO_x and PM emissions compared with uncontrolled engines.	
Facility Operations Emissions/Although there would be a reduction in air emissions associated with reduced reliance on transporting waste to the landfills, the operation of future SWIRP facilities would have the potential to generate air emissions as a result of vehicular traffic, building heating and cooling needs, backup generators, and stack emissions.	Potentially Significant	AQ-14	During the facility design phase, a review of local Air Quality Management District rules shall be conducted to determine site-specific permit requirements for waste processing or handling facilities that may emit or potentially emit VOCs, particulates, carbon monoxide (CO), NO_x, or, sulfur oxide (SO_x). Emissions of non-conventional pollutants[15] and hazardous air pollutants (HAPs) (Title V-Major Sources) shall comply with federal and state permitting rules.	Potentially unmitigated impact at this PEIR level of evaluation depending on the specific locations and technologies that can or will be implemented at each specific facility When future facilities are proposed, a site-specific environmental review will be conducted
		AQ-15	Future facility applicant(s) shall properly maintain reactive organic gas emission control devices within the gasoline dispensing station.	
		AQ-16	Future facility applicant(s) shall ensure combustion operational emissions are minimized.	
		AQ-17	All diesel truck operators shall strictly abide by the applicable state law requirements for idling. Idling of the primary engine shall be limited to five minutes.	
		AQ-18	An odor analysis shall be prepared as part of future project-specific air quality analysis. Should the odor analysis identify the potential for impacts, the facility shall incorporate odor-reducing design features. Such features could include, but are not limited to: • Provision of exhaust fans to provide multiple air exchanges every hour. • Treatment of air leaving the building by an odor neutralizing misting system. • Maintaining negative pressure at the building entrances to minimize the amount of untreated air leaving the building. • Adding an odor neutralizer with dust control water in the ceiling-mounted misting systems for extra odor mitigation.	
		AQ-19	Energy-efficient design will be provided for buildings, including automated control systems for heating and air conditioning and energy efficiency beyond California Code of Regulations Title 24 (California Building Standards Code) requirements, lighting controls and energy-efficient lighting in buildings, increased insulation beyond Title 24 requirements, and light-colored roof materials to reflect heat.	
		AQ-20	Landscaping shall be used to maximize building protection from energy-consuming environmental conditions and to shade paved areas. Such landscaping could include planting of shade trees to shade 50% of paved areas within 15 years and planting deciduous trees on the south- and west-facing sides of buildings.	
		AQ-21	Implement measures to reduce the amount of vehicle traffic to and from future facilities. This could include provisions such as encouraging employees to rideshare or carpool to the project site, or incentives for employees to use alternative transportation.	

[15] Air pollutants other than PM, CO, VOCs, NO_x, and SO_x (conventional pollutants).

Table ES.5-1. Summary of Impacts and Mitigation Measures (Continued)

Environmental Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
Cumulative GHG Emissions/Although there would be a reduction in air emissions associated with reduced reliance on transporting waste to the landfills, the construction and operation activities associated with future SWIRP facilities would have the potential to result in the generation of GHG emissions (e.g., carbon dioxide).	Significant	Refer to AQ-1 through AQ-21 above.	Potentially unmitigated impact at this PEIR level of evaluation depending on the specific locations and technologies that can or will be implemented at each specific facility Note: this does not account for reduced GHG emissions due to decreased landfilling
Biological Resources			
Loss of Habitat, Sensitive Species and Wildlife Corridors/If new SWIRP facilities are located in areas known to contain sensitive habitats or wildlife corridors, there is the potential for a significant impact.	Potentially Significant	BIO-1 Prior to the approval of any new project component or facility that could result in earth-disturbing activities (e.g., grubbing, grading), a qualified Biologist shall conduct a habitat assessment to evaluate the site's potential to support special-status plant and wildlife species and jurisdictional wetlands/waters. To the extent feasible, the location(s) of all new project facilities shall be on previously disturbed or developed sites and shall avoid undisturbed, high-quality, natural habitat that supports special-status biological resources, areas that are used for regional or local wildlife movement, and jurisdictional wetlands and associated waters. If the habitat assessment determines that there is the potential for significant impacts to any biological resources, additional surveys and/or documentation would be required pursuant to CEQA and Mitigation Measure BIO-2. BIO-2 If it has been determined that a proposed project component or facility has the potential for significant impacts to any biological resources, then prior to commencement of any earth-moving activities, the City shall conduct the appropriate focused survey(s) to determine the presence or absence of special-status species (i.e., plant and/or wildlife surveys) that could be significantly impacted by the proposed project. If special-status species are identified on or adjacent to the facility site, then appropriate avoidance and/or mitigation measures shall be implemented, as approved by the resource agencies with jurisdiction over that species and subject to the necessary permits under the Federal Endangered Species Act, the California Endangered Species Act, the California Fish and Game Code, and other applicable regional or local regulations or plans, and ensure that impacts would be less than significant after mitigation. If any jurisdictional wetlands or associated waters are identified, appropriate avoidance and/or mitigation measures shall be implemented as approved by the resource agencies, and subject to the necessary permits under Section 404 of the Clean Water Act issued by the U.S. Army Corps of Engineers, Section 401 of the Clean Water Act (Water Quality Certification) issued by the Regional Water Quality Control Board, and Section 1600 of the California Fish and Game Code, and ensure that impacts would be less than significant after mitigation. BIO-3 All project-related ground-disturbing activities shall comply with all applicable federal, state, regional, and local biological resource protection regulations to avoid and/or minimize potential impacts to biological resources including, but not limited to, use of Best Management Practices (BMPs) during construction and in the design of project facilities; protection of native trees as required by local tree ordinances; and pre-construction nesting bird surveys and nesting raptor surveys (if appropriate based on season and habitat present) in compliance with the Migratory Bird Treaty Act and/or California Department of Fish and Game regulations.	Mitigated to below a level of significance
Cultural Resources			
Disturbance to Archaeological Resources/Any proposed facility that involves earth-disturbing activities, such as grading and excavation, would have the potential to impact significant archaeological resources.	Potentially Significant	CR-1 Future SWIRP projects that would result in earth-disturbing activities within native sediments with the potential for producing archaeological materials, or projects located near known cultural resources, shall implement the following: 1. Prior to commencement of any earth-disturbing activities, a Phase 1 study shall be undertaken to evaluate the current conditions of a project site. The study shall consist of: (1) an initial records search including records, maps, and literature housed at the appropriate Archaeological Information Center depending on the specific county that the project is within; (2) a Sacred Lands check with the Native American Heritage Commission (NAHC) and initial scoping with interested Indian Tribes and individuals identified by the NAHC; (3) a pedestrian field survey by a qualified Archaeologist to determine the presence or absence of surficial artifactual material and/or the potential for buried resources; and (4) a technical report describing the study and offering management recommendations for potential further investigation. 2. If archaeological sites or resources are discovered as a result of the Phase I study, a Phase II study of the significance of any prehistoric material that is present shall be undertaken. The evaluation shall include further archival research, ethnographic research, and subsurface testing/excavation to determine the site's horizontal and vertical extent, the density and diversity of cultural material, and the site's overall integrity. The evaluation shall include a technical report describing the findings and offering management recommendations for sites determined to be significant. Non-significant resources would require no further study.	Mitigated to below a level of significance

Table ES.5-1. Summary of Impacts and Mitigation Measures (Continued)

Environmental Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
Disturbance to Archaeological Resources (continued)	Potentially Significant	3. If the Phase II study indicates that a significant site is present, the qualified Archaeologist shall determine appropriate actions, in cooperation with the City, for preservation and/or data recovery of the resource. Preservation in place is the preferred manner of mitigation, as provided in the California Code of Regulations, *Title* 14 Section 15126.5(b)(3). This could include: (1) avoidance of resources; (2) incorporation of resources into open space; (3) capping the resource with chemically stable sediments; and/or (4) deeding the resource into a permanent conservation easement. To the extent that a resource cannot be preserved in place, a Phase III data recovery excavation shall be completed to recover the resource's scientifically consequential information. A technical report shall be completed that adheres to the Office of Historic Preservation's (OHP) Archaeological Resources Management Report (ARMR) guidelines. 4. Monitoring of ground-disturbing activities shall be undertaken by a qualified Archaeologist as a final mitigation measure in areas that contain or are sensitive for the presence of cultural resources.	Mitigated to below a level of significance
Disturbance of Paleontological Resources/Unique Geologic Features/Specific SWIRP projects may impact significant fossil resources if they are exposed during project- related earth-moving activities.	Potentially Significant	CR-2 Future SWIRP projects that would excavate into alluvial sediments (e.g., Older Quaternary Alluvium deposits) or bedrock formations shall implement the following: 1. Prior to commencement of any earth-disturbing activities, an archival records search shall be undertaken at the Natural History Museum of Los Angeles County, San Bernardino County Museum, or other appropriate institution to determine the depositional environment within the project area and to evaluate the likelihood of fossils being present. 2. A field survey shall be undertaken prior to ground-disturbing activities in areas of potential but unknown sensitivity to evaluate the site for the presence of significant fossil resources and to establish the need for paleontological salvage and/or monitoring. 3. If significant fossils are discovered as a result of a field survey or during monitoring operations, a qualified Paleontologist shall determine appropriate actions, in cooperation with the City, for the preservation and/or salvage of the resource. 4. Any monitoring activities shall be accomplished by a qualified Paleontologist so that fossils discovered during grading can be scientifically and efficiently recovered and preserved. 5. A qualified Paleontologist shall prepare collected specimens to the point of identification and place the prepared fossils in the appropriate institution for permanent curation. 6. Upon completion of recovery and curation, all studies and actions shall be described in a paleontological technical report prepared by a qualified Paleontologist.	Mitigated to below a level of significance
Disturbance to Human Remains/Future SWIRP projects that would result in earth-disturbing activities within native sediments could have the potential to disturb Native American buried human remains that are on or near burial sites, and outside of formal cemeteries.	Potentially Significant	CR-3 If human remains are encountered during SWIRP-related projects, no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains shall occur until the County Coroner has determined the appropriate treatment and disposition of the human remains, in accordance with Section 7050.5 of the California Health and Safety Code. Section 5097.98 of the Public Resources Code states that if remains are determined by the Coroner to be of Native American origin, the Coroner must notify the NAHC within 24 hours, which in turn must identify the person or persons it believes to be the most likely descended from the deceased Native American. The descendants shall complete their inspection within 48 hours of being granted access to the site. The designated Native American representative would then determine, in consultation with the property owner, the disposition of the human remains.	Mitigated to below a level of significance
Disturbance to Historic Resources/Any proposed facility that involves earth-disturbing activities, such as grading and excavation, or alterations to existing infrastructure such as objects, buildings, or structures has the potential to impact significant historic resources and/or to cause an adverse change to historic objects, buildings, or structures.	Potentially Significant	CR-4 Implementation of SWIRP could include development near historical resources or resources considered to be potential historical resources. This development has the potential to result in significant impacts to individual historical resources within the project area, including resources listed in or eligible for listing in the National Register of Historic Places, California Register of Historical Resources, and local registers. This could include the delisting or loss of eligibility of such resources. In addition, there is the potential for significant impacts to buildings or structures of historic age (45 years old or older), or buildings or structures which may eventually be of historic age, and which may qualify as historical resources pursuant to CEQA. Prior to development of future facilities that would demolish or alter buildings or structures 45 years old or older or affect their historic setting, the project applicant shall employ a cultural resource professional who meets the Secretary of the Interior's Professional Qualifications Standards for Architectural History to determine if the project would cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5 of the *CEQA Guidelines*. The cultural resource professional, in conjunction with the City, shall determine an appropriate scope of investigation including archival research, if necessary, an updated records search at any of the appropriate California Historical Resources Information System information centers, and a pedestrian survey of the project area to determine if any significant historical resources would be adversely affected by the proposed development. A technical report shall be completed per the OHP's ARMR guidelines which evaluates any historical resources within the project area and includes recommendations for eliminating or reducing impacts to historical resources. The technical report shall be submitted to the Lead Agency for approval. As determined necessary by the Lead Agency, environmental documentation (e.g., CEQA documentation) prepared for future development within the project site shall utilize the findings and recommendations of the technical report. The project applicant shall be responsible for implementing methods for eliminating or reducing impacts to historical resources. Such methods could include, but not be limited to: (1) preparing a preservation plan or element which provides guidelines to ensure that the project conforms to the standards for rehabilitation established by the Secretary of the Interior and the OHP; (2) requiring new construction to be compatible with historical resources on the site and in the vicinity (e.g., mass, height, materials, setback, retention of mature landscaping); (3) requiring the project sponsor to relocate the historical resource or offer it for relocation by another individual or organization (provided that eligibility will be maintained following the relocation); (4) requiring the project sponsor to adaptively reuse the historical resource or incorporate it into the project; (5) undertaking documentation according to the requirements of the Historic American Building Survey such as large format photography, measured drawings, and written narrative; (6) making copies of this documentation available to the Los Angeles Public Library and local preservation organizations and historical societies; or (7) requiring the project sponsor to allow local preservation organizations and historical societies to document the resource and/or remove significant historic elements for archives.	Mitigated to below a level of significance

Table ES.5-1. Summary of Impacts and Mitigation Measures (Continued)

Environmental Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
Geology and Soils			
Earthquake Faults, Seismic Hazards, and Groundshaking/Portions of the study area contain earthquake faults, and are subject to seismic hazards and groundshaking. Future SWIRP facilities could be exposed to these geotechnical hazards.	Potentially Significant	GS-1 Future facilities shall not be located within a mapped Alquist-Priolo Earthquake Fault Zone. Placement of structures for human occupancy shall be restricted from areas designated as an Alquist-Priolo Earthquake Fault Zone. GS-2 At the time a site is selected for a facility, a site-specific geotechnical report shall be prepared in areas subject to earthquake-induced landslides or liquefaction as mandated by the State Seismic Hazard Mapping Act. Mitigation measures and design recommendations identified in those site-specific reports shall be implemented to minimize the potential for injury and loss related to earthquake-induced landslides, liquefaction, or seismic hazards.	Mitigated to below a level of significance
Ground Failure/Liquefaction/Portions of the study area are subject to ground failure and liquefaction. Future SWIRP facilities could be exposed to these geotechnical hazards.	Potentially Significant	GS-3 Future facilities shall not be located within an area known for or designated with a high liquefaction potential. Placement of structures for human occupancy shall be restricted from areas known for ground failure or liquefaction.	Mitigated to below a level of significance
Landslides/Portions of the study area are subject to landslide potential. Future SWIRP facilities could be exposed to these geotechnical hazards.	Potentially Significant	GS-4 Future facilities shall not be located in areas mapped as a landslide or mudslide hazard area in local planning documents (e.g., General Plans).	Mitigated to below a level of significance
Unstable and Expansive Soils/Portions of the study area are subject to unstable and expansive soils. Future SWIRP facilities could be exposed to these geotechnical hazards.	Potentially Significant	Refer to GS-2 above	Mitigated to below a level of significance
Hazards and Hazardous Materials			
Airports/The potential for future SWIRP facilities to conflict with an airport land use plan, or operations at a public or private airport, would be dependent upon where future facilities are sited. Due to the uncertainty at this time, a potential significant impact to airports is identified.	Potentially Significant	HAZ-1 If future facilities are sited within an area governed by an airport land use plan or within two miles of a public or private airport, analysis shall be undertaken to assess if the proposed facility would result in any impacts to airport operations or if it would subject people to a significant risk due to airport operations. If potential impacts are identified, a different site shall be selected or mitigation measures shall be implemented during the project-level environmental analysis to reduce the potential impact to airport operations to below a level of significance. Such mitigation measures could include maintaining certain percentages of low-occupancy areas (e.g., undeveloped areas, parking areas), building heights, and building lights.	Mitigated to below a level of significance
Listed Sites/Due to the uncertainty of where future facilities would be located, there is a potential that facilities could be located on or adjacent to a site that is listed by the Department of Toxic Substances Control as needing corrective action.	Potentially Significant	HAZ-2 Prior to siting waste facilities, a Phase I Environmental Site Assessment (ESA) shall be conducted in conformance with industry-accepted practices, American Society of Testing Materials Designation E1527-05, and the Environmental Protection Agency All Appropriate Inquiry Rule (40 Code of Federal Regulations §312). Based on the Phase I ESA findings, recommendations for further assessment or mitigation measures shall be recommended, as appropriate, to assess or mitigate potential environmental impacts.	Mitigated to below a level of significance
Human Health Hazards/Future SWIRP facilities would utilize certain hazardous materials that could pose a risk to surrounding land uses.	Potentially Significant	HAZ-3 Barriers shall be provided that contain hazards (e.g., appropriate buffers between land uses or air curtains of sufficient strength to control insect vectors). HAZ-4 Hazardous substances shall be stored away from site boundaries. HAZ-5 Upon approval of future facilities proposed under SWIRP, an applicable community emergency plan shall be developed, reviewed and updated, as needed, to account for new waste facilities and updated routes for the transportation of hazardous wastes. HAZ-6 A Health and Safety Plan shall be developed in accordance with local, state, and federal occupational health regulations. HAZ-7 Spill containment measures shall be developed and implemented on site for any new SWIRP facility.	Mitigated to below a level of significance

Table ES.5-1. Summary of Impacts and Mitigation Measures (Continued)

Environmental Impact	Significance Before Mitigation	Mitigation Measures		Significance After Mitigation
Hydrology and Water Quality				
Hydrologic Resources/Depending on the type of facility, the footprint of development can range from 2 acres to 100 acres, which could impact hydrologic resources.	Potentially Significant	HWQ-1	Prior to entitlement of any future facility and to assist in preparation of final engineering documents, a project-specific drainage study will be required for development of any facility demonstrating the impacts on local and regional hydrology. The drainage study shall include a review of the existing drainage facility capacity and demonstrate that site runoff will not overwhelm existing drainage capacities. Any increase in runoff above the existing drainage facility capacity would require hydraulic analysis to determine alternatives to safely convey the design storm. Future facilities shall implement improvements to the drainage system if the analysis concludes that existing capacity is not adequate.	Mitigated to below a level of significance
		HWQ-2	Future facilities shall include construction of new or improved stormwater management facilities to reduce or retard the amount of peak runoff from the facility sites. Such measures may include the construction of detention basins or other structures that will slow down or delay the peak flow of stormwater runoff from the site.	
		HWQ-3	Ensure facilities shall reduce impervious surfaces and materials and maximize landscaped and natural areas.	
Water Quality/The development of proposed SWIRP facilities would have the potential to impact water quality.	Potentially Significant	HWQ-4	Prior to entitlement of any future facility and to assist in preparation of final engineering documents, a project-specific water quality study would be required to address impacts on water quality and identify potential mitigation measures. The project-specific water quality study shall identify downstream water bodies, their beneficial uses, and any impairment. The water quality report shall identify permanent BMPs to mitigate water quality impacts, including hydromodification.	Mitigated to below a level of significance
		HWQ-5	Specific and detailed BMPs shall be required and included in the Stormwater Management Plan. BMPs will need to address the site design, source control, and treatment. Potential BMP options are identified in Table 4.8-9 of the PEIR. Individual facility development shall review and implement the local jurisdictional BMP standards. Project development will be required to implement all site design, source control, and treatment BMPs to the maximum extent practicable. A number of counties and cities are emphasizing low impact development (LID) design features as a way to address water quality concerns through the use of multiple sustainable BMP alternatives at the local level. To facilitate this sustainable approach, development should aim to maximize the number of LID mitigation alternatives implemented in site design. In addition to the use of BMPs, an acceptable operation and maintenance plan must be established to demonstrate long-term performance of the features. Typically, part of the operation and maintenance discussion for BMPs will include a funding source and identify the entity responsible for implementing the operation and maintenance plan.	
		HWQ-6	Prior to construction of any future facilities, construction stormwater quality will need to be addressed in a Stormwater Pollution Prevention Plan (SWPPP), in accordance with the State General Construction Permit. The SWPPP shall provide a plan for addressing water quality associated with construction activities. SWPPPs are intended to be dynamic and change as a project undergoes various stages of construction. SWPPPs are prepared during final engineering; however, new General Construction Permit post-construction BMP requirements will need to be considered during entitlement and final engineering.	
Floodplains/In the event that one or more of the processing facilities are proposed within a 100-year floodplain, there would be a potential for that facility to add to a flooding hazard which would impede or redirect flows.	Potentially Significant	HWQ-7	If a future facility is proposed within a floodplain, a floodplain study shall be prepared to address Federal Emergency Management Agency (FEMA) or jurisdictional floodplain management requirements. The floodplain study shall be completed during entitlement and final engineering. The floodplain study shall investigate the hydrology of the river system and develop a hydraulic model to quantify existing and proposed water surface elevations and velocities. The study shall identify feasible mitigation measures to meet FEMA water surface elevation requirements.[16] These mitigation measures shall be implemented as part of the project design and/or construction.	Mitigated to below a level of significance
		HWQ-8	Future facilities shall be designed so that structures and other important facilities that would be adversely affected by flooding are no longer located within flood hazard areas or so that the floodway open space is preserved.	
		HWQ-9	Future facilities shall raise the building pad or ground floor of proposed structures to an elevation above flood prone areas.	
Land Use and Planning				
Future SWIRP facilities would have the potential to conflict with any applicable land use plan, policy, or regulation depending on the location of the facility.	Potentially Significant	LU-1	Future facilities shall be sited in locations that support the appropriate General Plan and Zoning designations for the use being proposed. The project's proposed land use shall be modified to be consistent with designated land uses, zoning classification, and/or General Plan element(s).	Mitigated to below a level of significance
Future SWIRP facilities would have the potential to result in a permanent disruption in the physical arrangement of an established community depending on the location of the facility.	Potentially Significant	LU-2	Future facilities shall be fully enclosed to the maximum extent practicable to minimize nuisance issues such as noise, odor, and visual impact and achieve maximum compatibility with surrounding land uses. If a nuisance is found to occur as result of facility operations, certain restrictions on the operational characteristics of the facility shall be implemented to reduce or eliminate impacts, such as limiting hours of operation or placing restrictions on specific types of uses or activities proposed for the facility.	Mitigated to below a level of significance

[16] These requirements are based on Title 44 Code of Federal Regulations: Emergency Management and Assistance, Chapter 1: Federal Emergency Management Agency, Department of Homeland Security.

Table ES.5-1. Summary of Impacts and Mitigation Measures (Continued)

Environmental Impact	Significance Before Mitigation	Mitigation Measures		Significance After Mitigation
Future SWIRP facilities would have the potential to be incompatible with existing or proposed adjacent land uses depending on the location of the facility.	Potentially Significant	LU-3 LU-4	Project design, configuration, visual screening, setbacks, building heights, etc., shall be compatible with surrounding uses. The site shall be designed to provide buffer(s) (such as a decorative wall or landscaping) if residential uses are adjacent to a proposed facility. The buffer(s) shall be included in the site plan for the future facilities, and reviewed and approved by the local jurisdiction that will issue the building and/or occupancy permit for the facility.	Mitigated to below a level of significance
Mineral Resources				
Future SWIRP facilities would have the potential to impact State or Locally Important Mineral Resources depending on the location of the facility.	Potentially Significant	MR-1 MR-2 MR-3 MR-4	Future facilities shall be sited so as to avoid areas mapped as MRZ-2, MRZ-3, and MRZ-3a by the California Mineral Land Classification System. Other known or potential mineral resource areas shall be avoided to the maximum extent. Future facilities shall be sited so as to avoid active oil, gas, or geothermal operations. The project shall be designed so that no, or only nonpermanent, structures are atop or blocking the mineral resource area. Future facilities shall be sited so as to avoid areas mapped as locally important mineral resources on General Plans, specific plans, or other land use plans. Easements shall be established, when necessary, to preserve possible future use of mineral resources.	Mitigated to below a level of significance
Noise				
Future Facilities could result in long-term noise generation associated with various operational activities of the facilities.	Potentially Significant	N-1	A noise study shall be prepared for future facilities. The noise study shall include measurements of the existing noise environment and quantify the facility's noise contribution to the ambient environment for both the construction and operation phase. If impacts are identified, mitigation measures shall be implemented to reduce sound levels to a level that is consistent with the applicable jurisdiction's noise ordinance or noise element. Such mitigation measures could include, but are not limited to fencing, noise walls, or increasing the distance between noise-generating equipment and off-site sensitive receptors. The noise study shall be submitted to, and approved by, the Planning Director, or designee, of the jurisdiction where the facility will be constructed.	Mitigated to below a level of significance
Construction-Related Impacts/Future facilities could have short-term noise generation associated with facility construction.	Potentially Significant	N-2 N-3 N-4 N-5 N-6 N-7 N-8	Prior to construction, the construction contractor shall obtain authorization approval to exceed the ambient base noise level by more than five A-weighted decibels at the property boundary for industrial zoned land use. Construction activities shall be limited to 7:00 AM to 7:00 PM, Monday through Saturday. If the local jurisdiction has more stringent construction timing limits, those limits shall be applied. The construction contractor shall operate and maintain a City-approved haul truck traffic route along major traffic arteries. All construction equipment shall be equipped, operated, and maintained with manufacturer-recommended mufflers or the equivalent. Mobile and stationary construction equipment shall be turned-off when not in operation. All construction equipment powered by gasoline or diesel engines shall be required to have sound-control devices at least as effective as those originally provided by the manufacturer; no equipment will be permitted to have an un-muffled exhaust. All stationary noise-generating construction equipment, such as pumps and generators, shall be located as far as possible from nearby noise-sensitive receptors. Noise-generating equipment shall be shielded from nearby noise sensitive receptors by noise-attenuating buffers, such as structures or haul truck trailers. Water tanks and equipment storage, staging, and warm-up areas will be located as far from noise sensitive receptors as possible.	Mitigated to below a level of significance
Future Facilities could result in long-term noise generation associated with various operational activities of the facilities.	Potentially Significant	N-9	Operational activities at future facilities shall not produce noise levels at the property line that exceed the levels identified in the applicable jurisdiction's noise ordinance. If proposed activities are forecast to exceed property line levels, noise attenuation measures shall be implemented to reduce the property line noise levels to the appropriate level. Such measures could include, but are not limited to, fencing, sound walls, and screening of mechanical equipment.	Mitigated to below a level of significance
Public and Private Airports/If future SWIRP facilities are located within an airport land use plan area or within two miles of a public airport, there would be a potential for noise exposure from airport activities.	Potentially Significant	N-10	If future facilities are proposed within two miles of a public or private airport, the project-specific noise study shall include an analysis of the potential for the facility's adjacency to an airport to result in exposure of employees to excessive noise levels. If excessive noise levels are identified, mitigation measures shall be implemented to reduce the interior noise levels to acceptable levels. Such mitigation could include, but is not limited to, enhanced insulation or dual-paned windows.	Mitigated to below a level of significance

Table ES.5-1. Summary of Impacts and Mitigation Measures (Continued)

Environmental Impact	Significance Before Mitigation	Mitigation Measures		Significance After Mitigation
Population and Housing				
Displacement of People and Housing/If a SWIRP facility were sited where an existing residential use is located, resulting in the displacement of housing or people, a significant impact to population and housing would occur.	Potentially Significant	PH-1	If future facilities result in the displacement of existing residential units or persons, appropriate compensation to property owners or relocation of displaced people shall occur.	Mitigated to below a level of significance
		PH-2	If future facilities result in the demolition of residential units, construction of new residential units, including units deemed "affordable" under state law, would lessen the impact to population and housing to a level below significance. If acquisition of public or private residences will be necessary, all applicable federal, state, and local laws regarding acquisition of property, compensation to displaced property owners or tenants, and relocation assistance and benefits for persons who may be displaced shall be adhered to or exceeded, as appropriate.	
Public Services, Utilities and Service Systems				
Water Supply/Future SWIRP facilities would generate the demand for water use.	Potentially Significant	WS-1	Future processing facilities shall incorporate water conservation design features. These features may include, but are not limited to, the following: • Landscaping plans shall incorporate planting water-efficient, well-adapted, and/or native shrubs, trees, and grasses (i.e., drought and heat tolerant). • Use recycled water as landscaping irrigation to the maximum extent practicable. • Use high-efficiency/low-flow toilets and sink faucets. • If truck washing will occur on-site, a water recycling system shall be implemented to reduce water demand.	Mitigated to below a level of significance
		WS-2	Development applications for future SWIRP facilities greater than 40 acres of land, having more than 650,000 square feet of floor area, or employing more than 1,000 persons shall include a water supply assessment. The water supply assessment shall be prepared by the water agency serving the facility and shall: (1) document wholesale water supplies; and (2) identify and quantify the existing and planned sources of water availability to the water supplier in 5-year increments for the 20-year projection. For each identified supply, the assessment shall: (1) detail the quantity available and whether it is a water supply entitlement, water right, or water service contract; (2) document the project demand; (3) document dry year supplies; (4) document dry year demand; and (5) determine if projected water supply is sufficient or insufficient for the proposed facility.	
Energy/Future SWIRP facilities would result in a demand for energy.	Potentially Significant	ES-1	Future processing facilities shall be required to incorporate energy efficient design features. These features shall include, but are not limited to, the following: • Energy efficient light fixtures • Energy efficient equipment/machinery • Alternative energy source (i.e., solar power, wind power, thermal)	Mitigated to below a level of significance
Recreation				
Existing Recreational Facilities/If future SWIRP facilities were constructed in an area that currently supports recreation there would be a potential for an impact.	Potentially Significant	REC-1	If future facilities are located on a site that results in an impact to existing recreation facilities, replacement recreation facilities shall be acquired or constructed prior to demolition of existing recreational facilities. Replacement recreational facilities shall be located in the general vicinity of the demolished recreational facility.	Mitigated to below a level of significance
Transportation/Traffic				
Traffic Level of Service (LOS)/Depending on the location of the future facilities and that location's relation to impacted roadways, there would be a potential for future facilities to result in an exceedance of LOS standards established by the County Congestion Management Agency.	Potentially Significant	TR-1	Prior to the approval of any future facility, a project-level traffic impact report shall be prepared by a qualified traffic consultant. The report shall be prepared to the standard of the local jurisdiction that would be providing approvals for the project. The report shall include existing traffic information, thresholds of significance, construction and operation-related trip generation, and a project and cumulative-level analysis. The traffic report shall identity mitigation measures to reduce project- and cumulative-level impacts to the maximum extent practicable. Such mitigation measures could include roadway and intersection improvements, payment of traffic impact fees, timing of collection truck schedules to avoid peak hours, encouraging carpool, van pool, or alternative transportation for employees through the use of incentives.	Potentially significant and unmitigated When future facilities are proposed, a site-specific environmental review will be conducted
Parking/Parking requirements would be considered on a project-by-project basis depending on the requirements of the jurisdiction that would approve the future facility.	Potentially Significant	TR-2	Future facilities shall adhere to minimum adopted parking requirements for the type of use proposed, including adequate parking for employees, customers, and any collection vehicles that are stored on-site.	Mitigated to below a level of significance

Table ES.6-1. Comparison of Facility and Policy/Program Components (Proposed Project and Alternatives)

Alternative	Anticipated City-Wide Diversion	Number of Facilities Needed[1]					Population Growth	Policies and Programs			
		RRCs	Blue Bin	Green Bin[2]	Black Bin	Total		Expansion	Downstream	Mandatory Participation	Upstream
Proposed Project (Full Implementation of SWIRP)[3]	94 to 98%[4]	1	3	1 large or 6 small	5	10-15	Assumed	Fully Implemented	Fully Implemented	Fully Implemented	Fully Implemented
Alternative 1 (No Project/ Landfill Alternative)	72%[5]	0	0	0	0	0	Assumed	Implemented Where Practicable	Not Implemented/ Does Not Meet Project Objectives	Not Implemented/ Does Not Meet Project Objectives	Not Implemented/ Does Not Meet Project Objectives
Alternative 2 (SWIRP Scenario 1/ No New Programs)	91 to 98%[4]	0	0	0	12	12	Assumed	Implemented Where Practicable	Not Implemented/ Does Not Meet Project Objectives	Not Implemented/ Does Not Meet Project Objectives	Not Implemented/ Does Not Meet Project Objectives
Alternative 3 (SWIRP Scenario 2/ New Downstream Programs)	93 to 98%[4]	0	2	1 small	8	11	Assumed	Fully Implemented	Fully Implemented	Not Implemented/ Does Not Meet Project Objectives	Not Implemented/ Does Not Meet Project Objectives
Alternative 4 (SWIRP Scenario 3/ Downstream plus Mandatory)	94 to 98%[4]	1	4	1 large or 6 small	5	11-16	Assumed	Fully Implemented	Fully Implemented	Fully Implemented	Not Implemented/ Does Not Meet Project Objectives
Alternative 5 (SWIRP Scenario 4/ Downstream plus Upstream)	93 to 98%[4]	0	2	1 small	8	11	Assumed	Fully Implemented	Fully Implemented	Not Implemented/ Does Not Meet Project Objectives	Fully Implemented

(1) *SWIRP Phase 2 Policy, Program, and Facility Plan* (Table 33), in Appendix A. Throughput capacity for each facility type: Resource Recovery Center (RRCs) 10-200 tons per day (tpd) (PEIR assumes 100 tpd) and Blue Bin/Clean MRF 50 to 600 tpd (PEIR assumes 300 tpd), Green Bin 100 to 1,000 tpd (PEIR assumes 600 tpd), Black Bin 250 to 1,200 tpd (PEIR assumes 500 tpd).
(2) Composting facility footprints range from about 15 acres for a small facility to 60 acres for a large facility.
(3) Full Implementation of SWIRP includes expansion of existing programs, new downstream policies and programs, mandatory policies and programs, and upstream policies and programs.
(4) Anticipated diversion rates would vary based upon the black bin technology selected for this alternative, thus a range is provided (*SWIRP Phase 2 Policy, Program, and Facility Plan* (Table 27), in Appendix A).
(5) The City reached 72% diversion in 2010, the base year for SWIRP.

ES.6.2 Alternative 2 (SWIRP Scenario 1/Expansion of Existing Policies and Programs – No New Policies or Programs)

Under Alternative 2 (SWIRP Scenario 1/Expansion of Existing Policies and Programs − No New Programs), SWIRP would not be implemented. Existing programs and policies aimed at increased landfill diversion would continue to be expanded, where practicable, but new upstream and downstream policies and programs would not be implemented. Under this alternative, residual waste will be processed at 12 black bin facilities that would need to be built in order to reach the high diversion goals set by the City. While this alternative has potentially fewer environmental impacts than the proposed project, based on total number of new facility needs (12 versus 10-15), this alternative does not increase source reduction, recycling, and composting diversion. This alternative does not meet all of the project's goals and objectives.

ES.6.3 Alternative 3 (SWIRP Scenario 2/Expansion of Existing Polices and Programs plus New Downstream Policies and Programs)

Under Alternative 3 (SWIRP Scenario 2/Expansion of Existing Policies and Programs plus New Downstream Programs), only a portion of SWIRP would be implemented, specifically, the new downstream policies and programs. No new mandatory programs or upstream policies would be implemented. This alternative would increase recycling diversion through the construction and operation of two additional blue bin facilities and one small composting facility, and the remaining residual waste will be processed at eight black bin facilities that would need to be built in order to reach the high diversion goals set by the City. This alternative has fewer environmental impacts than the proposed project based on total number of new facility needs (11 versus 10-15 facilities); however, this alternative only partially achieves the project's recycling and composting diversion goals. This alternative does not meet all of the project's goals and objectives.

ES.6.4 Alternative 4 (SWIRP Scenario 3/Components of SWIRP Scenario 2, plus Implementation of Mandatory Participation Policies and Programs)

Under Alternative 4 (SWIRP Scenario 3/Components of SWIRP Scenario 2, plus Implementation of Mandatory Participation Policies and Programs), a portion of SWIRP would be implemented, specifically, the new downstream policies and programs identified under Alternative 3 (SWIRP Scenario 2) plus the addition of mandatory participation programs. No new upstream policies would be implemented.

Under Alternative 4, a majority of the City's materials will be diverted to four additional blue bin facilities, up to six additional green bin facilities, one resource recovery center, and the remaining residual waste will be processed at five black bin facilities. This alternative has one more facility than the proposed project (11-16 versus 10-15), and construction and operational impacts will be similar; however, this alternative does not implement upstream policies, therefore source reduction is not achieved. This alternative comes closest to meeting the project's goals and objectives.

ES.6.5 Alternative 5 (SWIRP Scenario 4/Components of SWIRP Scenario 2, plus Implementation of Upstream Policies and Programs)

Under Alternative 5 (SWIRP Scenario 4/Components of SWIRP Scenario 2, plus Implementation of Upstream Policies and Programs), a portion of SWIRP would be implemented, specifically, the new downstream policies and programs identified under Alternative 3 plus the addition of upstream policies

and programs. No new mandatory polices would be implemented. Under Alternative 5, two blue bin facilities, one small compost facility and eight black bin facilities would need to be built in order to reach the high diversion goals set by the City. This alternative has fewer environmental impacts than the proposed project based on the total number of facilities needed (11 versus 10-15); however, recycling and composting diversion is not fully achieved. This alternative will only partially meet the project's goals and objectives.

ES.7 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

The analysis of the alternatives found that Alternative 4 (New Downstream plus Mandatory Policies and Programs) is able to substantially increase landfill diversion through maximizing reuse, recycling and composting programs in the City by 2025, and meet most of the project goals and objectives.

The other alternatives under SWIRP (Alternatives 2, 3 and 5), do not fully maximize reuse, recycling, and composting programs, and rely more on black bin processing of waste. These alternatives do not meet many of the goals and objectives defined by the project.

The "No Project Alternative" (Landfill Alternative) fails to meet most of the project goals and objectives. Additionally, landfilling has environmental impacts, including greater greenhouse gas emissions and truck emissions compared to the proposed project, particularly affecting the areas surrounding the landfills. Therefore, compared to the alternatives analyzed, Alternative 4 is the environmentally superior alternative because it is most likely to result in substantial reuse, recycling and composting (up to 85%) prior to black bin processing.

It should be noted that the proposed project (SWIRP) substantially achieves all the project objectives, including implementation of upstream policies and programs (up to 86% diversion) prior to black bin processing, and has similar environmental impacts to Alternative 4. None of the alternatives considered are environmentally superior to the proposed project (as identified in Section ES.4) because they do not meet all the project goals and objectives.

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1.0 INTRODUCTION

1.1 PROJECT BACKGROUND/OBJECTIVES

The Solid Waste Integrated Resources Plan (SWIRP) is a long-range master plan for solid waste and solid resources management in the City of Los Angeles (City). The complete SWIRP document is described in Chapter 2.0, Project Description, and included as Appendix A of this Final Program Environmental Impact Report (Final PEIR). Planning efforts for SWIRP began in 2006 to develop an approach for the City to achieve a goal of 70 percent diversion by 2013 and 90 percent diversion by 2025. This has since been accelerated to a 75 percent diversion by 2013. These targeted diversion rates would be implemented through an expansion of existing policies and programs, implementation of new policies and programs, making certain policies and programs are mandatory, and the development of future facilities to meet the City's recycling and solid waste infrastructure needs through 2030. The objectives of SWIRP represent the City's policies and the guiding principles identified during the stakeholder process conducted during the preparation of SWIRP, and are as follows:

- Achieve a 75 percent landfill diversion rate for solid waste by 2013
- Achieve a 90 percent landfill diversion rate for solid waste by 2025
- Protect public health and the environment
- Make the City a leader in implementing Zero Waste practices
- Promote manufacturer and consumer responsibility
- Provide incentives for reducing, reusing and recycling
- Increase recycling by providing convenient opportunities for residents, businesses and institutions to participate
- Find diversion solutions that are both economically efficient and environmentally preferable
- Promote education and conduct outreach to decrease wasteful consumption and to increase recycling
- Invest in new, safe alternative technologies for energy and resource recovery
- Provide solutions that are equitable and do not unfairly reward or penalize one community over another

1.2 PURPOSE OF PROGRAM ENVIRONMENTAL IMPACT REPORT

This Final PEIR has been prepared in accordance with the California Environmental Quality Act (CEQA) Public Resources Code Section 21000 et seq., the *CEQA Guidelines* (Section 15000 et seq.) as promulgated by the California Resources Agency and the Governor's Office of Planning and Research, and the *City of Los Angeles CEQA Thresholds Guide*. The purpose of this environmental document is to assess the potential environmental effects associated with the implementation of SWIRP and to propose mitigation measures, where required, to reduce significant impacts. Per Section 15367 of the *CEQA Guidelines*, a lead agency is defined as "the public agency which has the principal responsibility for carrying out or approving a project." In the case of the proposed project, the City is the lead agency for compliance with CEQA.

CEQA (Section 15002) states that the purpose of an EIR is to: (1) inform the public and decision-makers of the potential environmental impacts of a project; (2) identify methods that could reduce the magnitude of a potentially significant impact of a project; and (3) identify alternatives that could reduce the magnitude of environmental impacts or propose more effective uses of the project site. The principal use of this Final PEIR is to evaluate and disclose potential environmental impacts associated with the implementation of SWIRP. An Environmental Impact Report (EIR) is an informational document and is not intended to determine the merits or recommend approval or disapproval of a project. Ultimately, City decision-makers must weigh the environmental effects of a project among other considerations, including planning, economic, and social concerns.

1.3 PROGRAM ENVIRONMENTAL IMPACT REPORT ADEQUACY

Information presented in the EIR is to be factual, adequate, and complete. The standards of adequacy of an EIR, defined by Section 15151 of the *CEQA Guidelines*, are as follows:

> *"An EIR should be prepared with a sufficient level of analysis to provide decision-makers with information which enables them to make a decision which intelligently takes account of environmental consequences. An evaluation of the environmental effect of a proposed project need not be exhaustive, but sufficiency of an EIR is to be reviewed in the light of what is reasonably feasible. Disagreement among experts does not make an EIR inadequate, but the EIR should summarize the main points of disagreement among the experts. The courts have not looked for perfection but for adequacy, completeness, and good faith effort at full disclosure."*

1.4 DOCUMENT ORGANIZATION

The content and format of this Final PEIR are designed to meet the current requirements of CEQA and the *CEQA Guidelines*. This Final PEIR is organized into the following chapters so the reader can easily obtain information about the proposed project and its specific issues:

Executive Summary: Provides an overview of the proposed project, summary of the potential impacts, mitigation measures and impact conclusions of SWIRP.

Chapter 1.0 – Introduction: Describes the project history, project components, purpose and use of the Final PEIR, organization of the Final PEIR, and a summary of the scoping meeting and Notice of Preparation (NOP) comments.

Chapter 2.0 – Project Description: Describes the project analysis areas, outlines the overall objectives for the project, purpose and need of the project, and summarizes the project components.

Chapter 3.0 – Environmental Setting: Provides an overview of the project location and boundaries as well as a description of the project study area environmental setting.

Chapter 4.0 – Environmental Impact Analysis: Presents, for each environmental issue, the existing environmental setting or conditions before project implementation; the regulatory setting, methods and assumptions used in the impact analysis; thresholds of significance; project-level impact analysis; cumulative-level analysis, and ;mitigation measures that would eliminate or reduce significant impacts.

Chapter 5.0 – Project Alternatives: Evaluates the environmental effects of the project alternatives. This chapter also identifies an environmentally superior alternative.

Chapter 6.0 – Growth Inducing Impacts: In accordance with Section 15126.2(d) of the *CEQA Guidelines*, this chapter presents the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment.

Chapter 7.0 – Cumulative Impact Analysis: Provides a summary, by environmental issue area, of the cumulative impact analyses in Chapter 4.0.

Chapter 8.0 – Unavoidable Adverse Impacts/Significant Environmental Change: Summarizes the significant and unmitigated impacts from the project, if identified. Per Section 15126(c) of the *CEQA Guidelines*, this chapter identifies any significant irreversible environmental changes that would be caused by the proposed project being analyzed.

Chapter 9.0 – References: This chapter identifies all print and electronic references that were used in the preparation of this Final PEIR.

Chapter 10.0 – Preparers: Lists the City staff and consultant team members that contributed to the preparation of the Final PEIR.

Appendices: Presents data supporting the analysis or contents of the Final PEIR including the SWIRP documents, the NOP and NOP comment letter, Final PEIR Scoping Summary Report, Air Quality Modeling Data, Federal and State Listed Species Documented in the Project Area, Cultural Resources Attachments, and Noise Modeling Data. All technical appendices are provided electronically on a CD at the end of this document. In addition, copies of these reports are on file at:

Department of Public Works, Bureau of Sanitation
Public Works Building
1149 South Broadway, 5th Floor
Los Angeles, CA 90015

1.5 PROGRAM ENVIRONMENTAL IMPACT REPORT CONTENT

Approval of SWIRP is subject to the requirements of CEQA because it is an action that has the potential to result in a physical change in the environment subject to discretionary approval by a public agency (in this case, the City of Los Angeles). An Initial Study was not prepared for the project, since the City determined that all environmental topics would be addressed in the Final PEIR. Typically, an Initial Study is prepared if the lead agency wants to rule out specific environmental topics from the Final PEIR. With that in mind, this Final PEIR addresses all of the environmental issue areas, including:

- Aesthetics
- Agricultural and forestry resources
- Air quality/greenhouse gases
- Biological resources
- Cultural resources
- Geology and soils
- Hazards and hazardous materials
- Hydrology and water quality
- Mineral resources
- Noise
- Population and housing
- Public services, utilities, and service systems
- Recreation
- Transportation and traffic

The State Clearinghouse (SCH) number for the Final PEIR is SCH No. 2010081061. In accordance with *CEQA Guidelines*, the City completed an NOP, including a project description (Appendix B.1). The NOP for the Draft PEIR was circulated beginning August 12, 2010 through September 16, 2010. The NOP which described the proposed project and some of its anticipated impacts, served as a chance for interested members of the public, non-governmental agencies, and government agencies to solicit input on the scope, focus, and content of the Draft PEIR. A copy of the NOP and the NOP distribution list are included in Appendix B.1 of this Final PEIR. Appendix B.2 contains the comment letters that were received during the NOP process.

Two scoping meetings were held on August 26, 2010 (one at 1:30 PM and one at 6:30 PM), at the City of Los Angeles, Bureau of Sanitation Public Works Building, Sub-basement Room #6 and Conference Room 150, 1149 South Broadway, Los Angeles, CA 90015. The purpose of the scoping meetings was to provide members of the public and other interested parties with an opportunity to learn about the project and to provide input on the scope, focus, and content of the Draft PEIR. Both of the scoping meetings had a similar format and included a presentation followed by a question and comment period. A total of 14 people signed in for the 1:30 PM meeting (two of which were project team members) and nine people signed in for the 6:30 PM meeting. No written comments were received during the two meetings. However, all oral commenters and meeting attendees were encouraged to submit their comments in writing, either on the comment sheet or via separate letter, by September 16, 2010.

Table 1.5-1 contains a summary of the comments and questions received during the scoping meetings, separated into general categories. Additionally, Appendix B.3 contains a copy of the Scoping Summary Report that was prepared following the scoping meetings.

As identified above, the NOP was circulated for a 30-day period to gather input from interested parties regarding the proposed project. Table 1.5-2 contains a summary of the comments received during this comment period and a brief response to the comment.

1.6 PROGRAM ENVIRONMENTAL IMPACT REPORT PROCESSING

The Draft PEIR for the Solid Waste Integrated Resources Plan was subject to a 45-day public review period. Interested individuals, organizations, and agencies provided written comment letters on the document during the review period. Written comments were received by the City at the following address:

Ms. Reina Pereira, P.E., Senior Environmental Engineer
City of Los Angeles
Department of Public Works, Bureau of Sanitation
Public Works Building (PWB) MS 521
1149 South Broadway, 5th Floor
Los Angeles, CA 90015

1.7 SUMMARY OF IMPACTS AND MITIGATION MEASURES

A detailed discussion of existing environmental conditions, environmental impacts, and recommended mitigation measures is included in Chapter 4.0, Environmental Impact Analysis. Table 1.7-1 summarizes the environmental impacts, mitigation measures, and level of significance after mitigation associated with SWIRP.

Table 1.5-1. Summary of Scoping Meetings Comments/Questions

Issue Raised	Response
Administrative Items Related to EIR Process	
Request that Draft PEIR review period be increased from 45 days to 60 or 90 days.	The City will provide a 45-day public review period for the Draft PEIR, which is consistent with the requirements of Section 15105(a) of the State *CEQA Guidelines*.
Notification process used for NOP and scoping meeting	The NOP was distributed to the SWIRP Stakeholders mailing list, responsible and trustee agencies as well as the Planning Director for every jurisdiction within the 100-mile study area. Additionally, the scoping meeting information and NOP were posted on the City's Zero Waste webpage and published in the *Los Angeles Times*.
Clarification on schedule of Draft PEIR.	The Draft PEIR schedule was discussed at the scoping meetings. The Draft PEIR is anticipated to be available in Fall2013.
Notification process for Draft PEIR.	The Notice of Availability (NOA) for the Draft PEIR will be mailed to members of the SWIRP Stakeholders mailing list, persons or organizations that submitted a letter during the NOP comment period and also anyone who attended the SWIRP scoping meetings on August 26, 2010. The NOA will also be posted to the City's Zero Waste webpage and will be published in the *Los Angeles Times*.
Relationship between Project EIR and Program EIR.	The City is preparing a Program EIR (PEIR) for SWIRP as it represents a series of connected actions. Future project-level EIRs will be prepared once specific facilities are to be sited. Due to the fact that the sites for these facilities have not been identified, a program-level analysis is appropriate at this time.
What is the budget for preparation of the PEIR?	City staff responded at the meeting that the budget was approximately $350,000.
Facility Siting and Planning	
When does the choice of facility sites go into the environmental process?	At this time, specific facility locations have not been identified. This Draft PEIR analyzes potential facility impacts at a programmatic level, since specific locations have not been identified. At the time a facility is located, subsequent site-specific environmental review would be required.
Consider recommending that surfaces at facilities be cement, not asphalt, as to minimize debris collection and potential for nuisance birds.	Concrete/cement entrances and exits have been identified as a mitigation measure in the aesthetics section of the Draft PEIR (Chapter 4.0, Section 4.1).
Consider recommending landscaping at future facilities.	Landscaping requirements and future facilities will vary, depending on what jurisdiction they are located in. However, the Draft PEIR does include a mitigation measure in the aesthetics section noting that appropriate screening, which may include the use of landscaping, should be incorporated into the facilities so as to minimize visual impacts.
Request for additional information regarding the City Council approval of the zoning ordinance for the siting of alternative technology facilities.	Details of the ordinance are provided in Chapter 4.0, Section 4.9, Land Use, of the Draft PEIR.
Where will these alternative technology facilities be located?	At this time, specific facility locations, including any alternative technology facilities, have not been identified. This Draft PEIR analyzes potential facility impacts at a programmatic level, since specific locations have not been identified. At the time a facility is located, subsequent site-specific environmental review would be required.
The Draft PEIR should include siting parameters to minimize environmental impacts and maximize efficiency.	Through mitigation measures in the Draft PEIR, general siting parameters are identified. While the mitigation measures do not identify specific locations for facilities, they encourage sites that would not impact sensitive resources (e.g., sensitive biological resources, cultural resources, floodplains, etc).

Table 1.5-1. Summary of Scoping Meetings Comments/Questions (Continued)

Issue Raised	Response
Facility Siting and Planning (Continued)	
Concern regarding the lack of specificity as to future sites at this time.	SWIRP is a 20-year program-level document and notes that additional facilities will be required in the future. Some of these facilities would be proposed by the private sector, thus it is not known where they may be located. One of SWIRP's goals is to keep the solid waste management as local to the City as possible. At the time a facility site is identified, subsequent environmental review would be required.
Scoping Presentation	
Request that scoping presentation be made available on City's Zero Waste website.	The scoping meeting presentation was made available on the City's Zero Waste website at: http://www.zerowaste.lacity.org/home/index.html.
Mitigation Measures	
Statement regarding the term "mitigation" and that it is not always a cure for the impact.	Mitigation is proposed to lessen an impact. In some instances the mitigation may reduce the impact to below a level of significance. In other instances, the mitigation may reduce the impact, but to such a level that the impact is not reduced to below a level of significance.
Environmental Concerns	
What is the water source for these alternative technology projects?	At this time, site-specific alternative technology projects have not been identified; therefore, water services for these projects have yet to be identified. Project-specific water supply assessments, pursuant to the requirements of State Senate Bill 610, will be required for any industrial or processing facility that occupies more than 40 acres of land or has more than 650,000 square feet of floor space, or if the facility would use an amount of water equivalent or greater to 500 residential units. Additionally, Chapter 4.0, Section 4.13 (Public Services and Utilities) addresses water supply.
Seismic concerns related to any potential alternative technology sites.	Chapter 4.0, Section 4.6 of the Draft PEIR includes a discussion of the seismic nature of Southern California and discloses known faults. Site-specific geotechnical investigations, as well as a project-level CEQA analysis, will be required at the time a specific facility is proposed. Seismic issues would be analyzed as part of that effort.
What thresholds will be used for the PEIR analysis?	Each of the analyses in Chapter 4.0, (Sections 4.1 through 4.15) include thresholds of significance. The City's CEQA *Thresholds Guide Document* was used in the development of these sections. Additional thresholds used in the Draft PEIR include recently modified and/or adopted thresholds in the State *CEQA Guidelines* (Appendix G), particularly those pertaining to greenhouse gas emissions.
Discussion of corridor upgrades due to alternative technologies that produce power.	Alternative technology projects that result in the generation of electricity will need to connect into the existing electricity grid. The requirements for corridor upgrades are not known at this time, as specific locations for these facilities have not been identified. Chapter 4.0, Section 4.13 (Public Services and Utilities), notes the requirement for future analysis of corridor capacity for any such facilities that may produce electrical power.
Concern that 100-mile analysis study area means City will export waste outside the area instead of having solid waste taken care of locally.	One of SWIRP's goals is to keep the solid waste management as local to the City as possible. However, due to the urban nature of the City and/or the sites of privately owned facilities, there are some facilities that may end up being constructed outside the City limits.
More information on greenhouse gas analysis.	A greenhouse gas analysis was prepared as part of the SWIRP Facility Planning document. Additional analysis was conducted as part of this project. Please refer to Chapter 4.0, Section 4.3, (Air Quality/Greenhouse Gas) for more information. Once sites are determined, site-specific analyses will be performed.

Table 1.5-1. Summary of Scoping Meetings Comments/Questions (Continued)

Issue Raised	Response
Environmental Concerns (Continued)	
Economic impacts/benefits (e.g., job creation).	The SWIRP Facility Plan document notes that job creation and economic benefit is a key aspect of the policies, programs and facilities selected. A calculation of the green jobs expected to be generated through implementation of SWIRP is included in the SWIRP Facility Plan document.
Project Approvals/Permits	
Are there any federal approvals required? Will this project be fast-tracked with federal approval in any way?	There are no federal approvals for adoption of SWIRP. If any federal approvals are required for specific facilities (e.g., federal grants), environmental compliance pursuant to the National Environmental Policy Act (NEPA) would be conducted by the federal lead agency.
Relationship to the Western Wasteshed/Watershed Coalition. Will they be informed of the impacts?	It is unclear what organization this commenter is referring to. The City does not participate in either a Western Wasteshed Coalition or a Western Watershed Coalition.
Concerns with future impacts in counties outside the City limits and within the 100-mile study area, like Kern County.	One of SWIRP's goals is to keep the solid waste management as local to the City as possible. However, due to the urban nature of the City and/or the sites of privately owned facilities, there are some facilities that may end up being constructed outside the City limits.
Coordination with the California Transmission Planning Group will be required for any transmission.	At this time, no specific facilities are proposed. If future facilities include a scenario where electricity would be generated and added to the larger grid network, coordination with appropriate state agencies would occur. This has been noted in Chapter 4.0, Section 4.13, Public Services, Utilities and Service System, of the Draft PEIR.
Recycling Facilities	
Comments regarding different levels of recycling throughout the City. Some communities not participating.	SWIRP includes an educational component to change recycling habits in communities that may not be maximizing their recycling opportunities. SWIRP also includes a recycling ambassador program, which will help provide education on recycling practices and social media networking.

Table 1.5-2. Summary of NOP Comment Letters

Issue Raised	Response
State Clearinghouse - August 18, 2010	
This letter provides dates of review for the NOP.	No environmental issues were raised; therefore, no additional response is required.
Native American Heritage Commission (NAHC) – August 24, 2010	
NAHC conducted a sacred lands file search and identified Native American Cultural Resources within the project study area. NAHC provided a list of tribal contacts.	Letters were sent on October 11, 2010 to the tribal contacts identified in the letter from NAHC. To date, no responses have been received. Copies of the letters are included within Appendix E of the Draft PEIR.
Recommend contacting the California Historic Resources Information Center (CHRIS) and the Office of Historic Preservation (OHP).	At the time a specific facility is proposed, a project-level cultural resources report would be prepared. Contacting the CHRIS and OHP would be part of that subsequent analysis, should there be a potential to impact historical resources.
If consultation with tribes is conducted, it should be done in compliance with the requirements of Section 106 and 4(f) of the federal National Historic Preservation Act (NHPA).	Letters were sent to the tribal contacts identified in the letter from NAHC on October 11, 2010. To date, no responses or requests for consultation have been received. Copies of the letters are included within Appendix E of the Draft PEIR.
Lead agencies are recommended to consider avoidance of resources as projects are designed.	Siting parameters have been identified in the Draft PEIR, which direct future facilities away from areas of known cultural or historic resources. Additionally, as future facilities are proposed, subsequent project-specific CEQA review will be initiated, which will include a review of cultural resources.
Caltrans – October 28, 2010	
This comment requests a traffic study be prepared to assess the potential for the project to impact the state highway system.	The Draft PEIR includes a mitigation measure requiring project-specific traffic studies once specific sites are identified for facilities. If such facilities would be located near state highway facilities, analysis of those facilities would also be included. It is not appropriate to conduct a traffic study at this time, since the project is still programmatic in nature.
South Coast Air Quality Management District – August 24, 2010	
This letter addresses the project's potential impact on air quality.	An air quality analysis was prepared for the project and is summarized in Chapter 4.0, Section 4.3 of the Draft PEIR. Additionally, air quality modeling data is included in Appendix C.
CalRecycle – Department of Resources Recycling and Recovery – September 30, 2010	
CalRecycle requests to review the Draft EIR, when available.	The City will include CalRecycle on the Draft PEIR notification list.
Discuss SCAQMD Rule 401, pertinent parts of AB32 and Appendix F of the *CEQA Guidelines.*	Chapter 4.0, Section 4.3, Air Quality, includes discussion of SCAQMD Rule 401 and AB32. Appendix F of the *CEQA Guidelines* addresses energy conservation. The anticipated energy demand for future facilities is discussed in Chapter 4.0, Section 4.13, Public Services, Utilities and Service Systems.
Southern California Association of Governments (SCAG)– September 19, 2010	
PEIR should reflect the most current SCAG forecasts.	The most recent SCAG forecasts, as identified in this letter, are used in Chapter 4.0, Section 4.12, Population and Housing.

Table 1.5-2. Summary of NOP Comment Letters (Continued)

Issue Raised	Response
Southern California Association of Governments (SCAG)– September 19, 2010	
Discuss consistency of project with Regional Transportation Plan (RTP) goals.	The project's consistency with the RTP goals is presented in Chapter 4.0, Section 4.15, Transportation/Traffic.
Discuss consistency of project with Growth Visioning goals.	The project's consistency with the Growth Visioning goals is presented in Chapter 4.0, Section 4.9, Land Use and Planning.
Include mitigation measures for any negative regional impacts.	Regional impacts were not identified for the project, therefore, mitigation measures are not proposed.
Recommends format for policy analysis (matrix style).	The policy analysis in Chapter 4.0, Section 4.9 is conducted in the matrix-style format, as suggested per this comment.
Sun Valley Area Neighborhood Council – September 16, 2010	
Recommends that any facilities built to accommodate the plan be built on property large enough for future expansion.	SWIRP identifies a number of facilities that would be required. If the identified number of facilities were constructed, additional expansions would not be anticipated to meet the objectives of SWIRP. This would be addressed during the siting of future facilities and would be contingent on the land availability.
Recommends requirements for future facilities: • Concrete/cement entrances and exits • Use of Compressed Natural Gas/Liquefied Natural Gas (CNG/LNG) fuel • Odor minimizing strategies • Minimal signage • Setbacks • Incorporation of landscaping • Low profile • Limited hours of operation • Truck washing • Employee facilities • Stormwater management • Parking • Water efficiency for landscaping	The recommended requirements for future facilities cover a broad range of environmental issue areas. • Concrete/cement entrances and exits have been identified as a mitigation measure in the aesthetics section (Chapter 4.0, Section 4.1) of the Draft PEIR. • The use of alternative fuels, including CNG/LNG fuel instead of diesel for trucks could be a condition of approval required by the City for future private sector development of new facilities. • Odor minimizing strategies are included as a mitigation measure in the Air Quality/Greenhouse Gas section (Chapter 4.0, Section 4.3) of the Draft PEIR. • Signage, setbacks, landscaping, and building profile are addressed through mitigation measures identified for aesthetics. • Operational hours of facilities would be a function of the facility location, adjacent land uses, the land use zoning that applies to the future selected site and the requirements of the jurisdiction that would be approving the future facility. • Regular truck washing needs to be balanced with the need for water conservation and is an appropriate mitigation measure to be required for future development. Additionally low-water, dry washing and methods that recycle the water can be employed. • Employee facilities are not a topic addressed in a CEQA document. • Stormwater management would be required to meet local, state and federal requirements. Mitigation measures are identified in Chapter 4.0, Section 4.8 (Hydrology/Water Quality), noting some potential best management practices to be implemented to decrease stormwater-related impact. • Parking requirements will vary depending on the jurisdiction that would be approving the future facility. Chapter 4.0, Section 4.15 (Transportation/Traffic) includes a mitigation measure requiring adequate parking at future facilities for employees, visitors, and collection trucks (if stored onsite). • Water efficient landscaping has been identified in Chapter 4.0, Section 4.13 (Public Service, Utilities and Service Systems), specifically within the water supply section. Additionally, recycled water may be used for landscaping if it is available in the area where future facilities will be proposed.

Table 1.5-2. Summary of NOP Comment Letters (Continued)

Issue Raised	Response
Sun Valley Area Neighborhood Council – September 16, 2010	
Prefer that facilities not be built in the Sun Valley community and surroundings.	At this time, specific facility locations have not been identified. SWIRP makes note of the quantity of each facility type that would be needed to meet future waste processing needs, but does not identify specific locations.
Prefer that any facilities generate electricity, not any kind of bio-fuels.	SWIRP notes that up to five black bin processing facilities would be needed if all the SWIRP programs and policies were implemented. Four potential types of black bin facilities are identified: mixed materials processing facilities, alternative technology (advanced thermal recycling), alternative technology (biological) and alternative technology (thermal). The type(s) of energy recovery from these facilities have not been identified at this time.
Potential Industries – No Date Provided	
Provide incentives to promote businesses within the City.	The SWIRP document identifies significant new policies, programs and facilities that are expected to increase local jobs and promote local businesses. A calculation of the green jobs expected to be generated through implementation of SWIRP is included in the SWIRP Facility Plan document. Additionally, SWIRP seeks to handle the City's solid waste processing locally, to the maximum extent practicable. This could include finding local markets for recycled materials, which would also promote business within the City.
PEIR should distinguish between pre-processors and end users.	The Draft PEIR analyzes the potential impact of implementation of the policies and programs identified in SWIRP and the resulting need for additional facilities to process diverted material from the landfills. The new facilities identified in the SWIRP document are anticipated to be pre-processors (e.g., clean material recovery facilities, compost facilities, alternative technology facilities) that prepare materials for end use markets (e.g., paper manufacturers, farms, energy markets, etc.). A discussion of policies for promoting local market development of end users is included in Appendix D of the SWIRP Facility Plan document.
Facility locations should take into consideration the location of local and regional user-processors.	At this time, specific facility locations have not been identified. SWIRP makes note of the quantity of each facility type that would be needed to meet future waste processing needs, but does not identify specific locations.
Joyce Dillard – September 16, 2010	
Analysis and disclosure of impacts outside the City/within the 100-mile study area.	The policies and programs identified in SWIRP are to achieve a "zero waste" goal for the City. One of SWIRP's goals is to keep the solid waste management as local to the City as possible. However, due to the urban nature of the City, there are some types of facilities that are not likely to be accommodated within the City boundaries, such as large-scale composting sites. The Draft PEIR includes a 100-mile study area for analysis, since there is a potential that some facilities could be located outside the City boundaries. The Draft PEIR includes a programmatic level analysis of potential impacts for facilities, including potential impacts within the 100-mile study area. For the NOP, the City sent a letter to the planning director in each of the nine counties and 190 cities that are fully or partly within the 100-mile study area. The City will notify the same list when the Draft PEIR is released. Additionally, the SWIRP stakeholder working groups include representatives from environmental advocacy groups who have a focus outside of the City.
Appropriate analysis of Joint Powers Authority (JPA), if proposed.	Creation of a new JPA is not contemplated for the project. The City is the lead agency for the Los Angeles Regional Agency (LARA) which is a consortium of 16 member cities in Los Angeles County. The Agency was formed by environmentally conscious recycling advocates from the member cities. In 2004, the California Integrated Waste Management Board (the predecessor agency to CalRecycle) approved the formation of LARA as a regional agency whose mission is to assist members in meeting and exceeding the 50 percent waste diversion mandates of State Assembly Bill 939.
Desert territory/providing opportunity for input from interested parties in those areas.	For the NOP, the City sent a letter to the planning director at each of the nine counties and 190 cities that are fully or partly within the project analysis area, which includes the City and a 100-mile study area around the City. The City will notify the same list when the Draft PEIR is released. Additionally, the SWIRP stakeholder working groups include representatives from environmental groups that have counterparts in the desert areas.

Table 1.5-2. Summary of NOP Comment Letters (Continued)

Issue Raised	Response
Joyce Dillard (Continued)	
Recycling centers should be addressed through the General Plan and Community Plans.	The General Plan and Community Plans provide a framework for overall growth within the City or specific community area. The Los Angeles Bureau of Sanitation (LASAN) and the Planning Department within the City have coordinated efforts to ensure that the SWIRP goals and needs for new infrastructure are taken into consideration in the development of the City's Community Plans. As part of the development of general plans and community plans, appropriate areas to develop facilities such as recycling centers are typically identified throughout the planning process, as well as areas where such facilities should be prohibited. As part of SWIRP, land use mitigation measures are included that will require facilities to be placed appropriately and to be sited in order to comply with all applicable land use plans and regulations.
Common Land Use Findings Ordinance is under review.	The Code Findings Draft Ordinance (CPC-2010-1572-CA) is a proposed ordinance amending various sections of the Los Angeles Municipal Code to create consistent procedures for review of projects requiring multiple approvals, clarify language regarding utilization of approvals, synchronize the expiration periods of multiple approvals granted to a single project, extend the expiration periods of quasi-judicial land use approvals, and establish clear procedures for the review of requests of extensions of time of approvals.
Recommends review of Growth and Infrastructure reports.	Chapter 4.0, Section 4.12 (Population and Housing) considers SCAG's population growth forecasts for the project analysis area.
Update to General Plan and Elements needed.	SWIRP does not propose any General Plan Element updates.
Future environmental review for landfill or carbon sequestration projects.	SWIRP does not include any recommendations for landfills or carbon sequestration projects.
Traffic, congestion and greenhouse gas effects need to be addressed.	Traffic is analyzed in Chapter 4.0, Section 4.15 and greenhouse gases are analyzed in Chapter 4.0, Section 4.3. Analyses are at a programmatic level, based upon general assumption of the number of facilities and their size. Subsequent project-level CEQA review will be conducted, which will provide a more detailed traffic analysis once sites are selected for the facilities. Such project-level analysis would include specific roadway segment and intersection analysis, traffic impacts, and impacts associated with greenhouse gases.
Address long-term operations and maintenance issues.	Chapter 4.0 of the Draft PEIR includes a programmatic analysis of the construction and operational impacts associated with the various facility types (Section 4.3 – Air Quality, Section 4.10 – Noise, and Section 4.15, Transportation/Traffic). Project-level analysis will analyze long-term operations and maintenance issues at a more detailed level once a specific site for a facility is identified.
Zoning approaches are not clear.	SWIRP does not identify any zoning designation changes. Chapter 4.0, Section 4.9, Land Use, notes the types of zones that would allow for the various facility types within the City. Depending on the specific facility, these zones could include commercial, industrial or public facility. As future facilities are sited, an analysis of zoning ordinance consistency would occur.
Public-private partnerships should be addressed.	Public-private partnerships are not a specific topic addressed under CEQA. Appendix C of the SWIRP document includes an extensive description of the private sector infrastructure in the region. The majority of tons diverted and disposed in Los Angeles are handled by private sector operators and service providers. The policies and programs identified in SWIRP (including commercial recycling, mandatory source-separation, construction and demolition debris diversion, etc.) rely on the private sector service providers for infrastructure development, as described in the SWIRP document. The City engages in public-private partnerships through permits, service contracts and development agreements. SWIRP anticipates that the City will continue to actively engage with the private sector to realize the goals of SWIRP.

Table 1.5-2. Summary of NOP Comment Letters (Continued)

Issue Raised	Response
Joyce Dillard (Continued)	
Conversion waste to energy should be addressed (methane) as well as any necessary pipeline and safety issues.	Due to the uncertainty of where future facilities may be located, a detailed analysis on pipeline requirements cannot be provided. It is possible that pipelines could be required to transport methane or biofuels produced in alternative technology projects. It is also possible that the fuels could be used to generate energy onsite or to support an adjacent co-generation facility. All future facilities would be designed to meet all applicable local and state safety requirements related to project construction and operation.
Waste to energy needs to be addressed as a source for Dept. of Water and Power.	The LASANLASAN will coordinate with the Los Angeles Department of Water and Power (LADWP) on any future alternative technology projects. Such projects are discussed in Chapter 4.0, Section 4.13, Public Services, Utilities and Service Systems.
Discuss any project that may fall under California Transmission Group.	The California Transmission Planning Group (CTPG) is a forum for conducting joint transmission planning and coordination in transmission activities to meet the needs of California consistent with Federal Energy Regulatory Commission (FERC) Order 890. The CTPG is not a regulatory agency. LADWP is on the CTPG executive committee and has a representative on the Technical Steering Committee. LASAN will coordinate with LADWP on any future alternative technology projects.
Analyze air quality for any conversion of solid waste to another product.	The PEIR includes an air quality analysis in Chapter 4.0, Section 4.3. The air quality analysis provides generalized emissions for various facility types that may be contemplated under SWIRP. It should be noted that as specific facilities are proposed in the future, project-specific CEQA analysis will be required, including additional site-specific air quality analysis.
Water demand for various facilities.	Water supply is addressed in Chapter 4.0, Section 4.13 (Public Services, Utilities and Service Systems) of the Draft PEIR. The water supply analysis provides generalized water use information for the facility types that may be contemplated under SWIRP. It should be noted that as specific facilities are proposed in the future, project-specific CEQA analysis will be required, including additional water supply analysis.
Jurisdictions need to be defined and the Los Angeles Department of Water and Power may need to address those needs in their planning including the Integrated Resource Plan.	SWIRP is a long-range plan for the City. However, development of new infrastructure within the City or within the 100-mile study area may also benefit other cities and public agencies within the region, as implementation of SWIRP may directly affect solid waste planning in other jurisdictions if a facility is constructed outside of the City limits. The LASAN and LADWP have collaborated closely on projects that impact both agencies, including potential new alternative technology facilities and the need to optimize recycled water use. The LASAN is the lead agency in the development of SWIRP and staff members from LADWP have participated in the development of SWIRP. It should be noted that as selective facilities are proposed in the future, specific collaborative efforts will be made with the appropriate agencies.
JoAnn Wysocki – September 7, 2010	
Ms. Wysocki's letter includes a cover letter from the offices of Councilwoman Hahn (15th District).	The cover letter from Councilwoman Hahn's office requests that a response be provided directly to Ms. Wysocki. The cover letter does not raise any additional environmental issues. Ms. Wysocki also sent this letter directly to LASAN, without the cover letter from the 15th District office.
Inquires about the status of an Initial Study for the project.	Since the City determined that a Draft PEIR was to be prepared for the project, preparation of an Initial Study was not required. The PEIR will cover all environmental issues, no issues were "written off" during an Initial Study process.
Requests that copies of the EIR be circulated to all public libraries.	The City will make the Draft PEIR available on the City's Zero Waste webpage and will also place the Draft PEIR in libraries within each region (wasteshed) of the City.
Requested that more scoping meetings be held.	The City held two scoping meetings in the downtown area. One during the day and one in the evening. This meets the requirements of CEQA. The City is planning on holding seven informational meetings (one in each wasteshed and one downtown) when the Draft PEIR is released for public review, which is anticipated in Fall 2013. This would include a meeting in the Valley, downtown area, East Los Angeles and Harbor area, as requested in this comment.

Table 1.5-2. Summary of NOP Comment Letters (Continued)

Issue Raised	Response
JoAnn Wysocki (Continued)	
This comment states that the notification for the meeting was provided too late for attendance and adequate preparation.	The City opted to have the scoping meetings in the earlier part of the 30-day NOP process so that the public would have adequate time to prepare NOP comments after attending the meeting and learning more about the project.
Comment regarding the maps in the NOP and that they don't identify the location of future facilities.	At this time, specific locations for the facilities have not been identified; rather the number and types of facilities that would be needed to handle the materials are identified. SWIRP, a 20-year master plan, includes as a goal, a shared responsibility for waste handling throughout the City. Additionally, as future facilities are proposed, individual site-specific CEQA review would occur which would address some of the concerns that Ms. Wysocki identified in her letter (e.g., truck storage and waste storage).
Question on the specific type of waste handling facilities, storage and processing facilities that will be discussed in the EIR.	The PEIR considers eight types of facilities, as detailed in Chapter 2.0, Table 2.4.3 of the Draft PEIR. It is important to note that SWIRP and the PEIR do not identify specific locations for future facilities; rather, if the program and policies identified in SWIRP are implemented additional facilities will be required to process the materials.
Question on the 2010 level of diversion and when did it start.	The City reached 72 percent diversion in 2010 (the most recent year that information is available). The Bureau of Sanitation is implementing new programs for increasing diversion to meet the goal of 75 percent diversion including: blue bin recycling available to all multifamily buildings, requirements that all construction and demolition debris loads be processed for recycling, food scrap diversion program available to all restaurants and a food scrap pilot for residents, commercial business technical assistance, and outreach and education. The current programs of the Bureau of Sanitation are described on the City's website at http://www.lacitysan.org/. Additionally, it should be noted that the City started curbside recycling prior to AB 939 in 1998 and met its 50 percent diversion goal prior to 2000.
Question regarding what types and percentage of solid waste is planned for various categories: • Each type of waste • Each Council District • Percentage that is recyclable • Percentage that must be landfilled	The SWIRP Facility Plan document describes the materials that will be diverted and disposed based on the policies, programs and facilities identified by the stakeholders. The information has been prepared by generator (single family, multifamily, commercial and construction and demolition site) and by wasteshed (Harbor, South Los Angeles, North Central, East Valley, West Valley, and West Los Angeles). The information is summarized on the City's website at http://www.zerowaste.lacity.org/home/index.html
What is the cost of the project and how will it be funded.	The SWIRP document provides the planning level cost estimates for the policies, programs and facilities identified by the stakeholders. These costs are raw costs and assume no outside funding sources. This information is summarized on the City's website at http://www.zerowaste.lacity.org/pdf/2010/2009May30SWIRPMayConferencePamphlet.pdf
Is there adequate land within the City for future facilities? Other outlying counties are unlikely to want to take the City's waste.	Depending on the type of facilities, there is available land within the City. However, a facility like a large-scale composting facility is not likely to be located within the City. Therefore, a 100-mile study area is included in the analysis.
EIR should discuss the cost of recycling scavenging.	Scavenging was a major topic discussed by the stakeholders in the SWIRP workshops, including the monetary costs of reduced recyclables revenues and the community costs of a disadvantaged, unemployed workforce. SWIRP addresses this issue by identifying the need for "cultural change" where community members take more responsibility for the management of the materials that they generate and the City forms partnerships with community organizations to increase awareness and create green jobs for disadvantaged workers. A calculation of the green jobs expected to be generated through implementation of SWIRP is included in the SWIRP document. This information is summarized on the City's website at http://www.zerowaste.lacity.org/pdf/2010/2009May30SWIRPMayConferencePamphlet.pdf

Table 1.5-2. Summary of NOP Comment Letters (Continued)

Issue Raised	Response
JoAnn Wysocki (Continued)	
EIR should discuss the efforts of private recycling companies and opportunity for joint effort.	The Draft PEIR focuses on the environmental impacts associated with the policies and programs identified in SWIRP, as well as the potential impact associated with future facilities needed to handle the additional material diverted from the landfill. In the Draft PEIR, the solid waste portion of Chapter 4.0, Section 4.13 (Public Services and Utilities), discusses the role of the City and private recycling companies in the handling of recycled materials within the City. Appendix C of the SWIRP document includes an extensive description of the private sector infrastructure in the region. The majority of tons diverted and disposed in Los Angeles are handled by private sector operators and service providers. The policies and programs identified in SWIRP (including commercial recycling, mandatory source-separation, construction and demolition debris diversion, etc.) rely on the private sector service providers for infrastructure development, as described in the SWIRP Facility Plan document. The City engages in public-private partnerships through permits, service contracts and development agreements. SWIRP anticipates that the City will continue to actively engage with the private sector to realize the goals of SWIRP.
EIR should discuss plastic bag use and disposal.	One of the policies included in SWIRP is an ordinance for a single-use plastic bag ban. This is noted in the project description for the Draft PEIR and each environmental analysis section also has an analysis of this policy. On May 23, 2012 the City Council adopted a policy to ban distribution of single-use plastics bags and impose a 10 cent fee on single-use paper bags at supermarkets and select retail stores within the City. A separate, project-specific CEQA analysis was conducted to address potential environmental impacts related to that policy.
EIR should discuss illegal dumping.	The Draft PEIR addresses the environmental impacts associated with implementation of SWIRP. LASAN addresses illegal dumping through its Illegal Dumping Program. Residents can call 311 to request that illegally dumped items be collected by City crews. The City also offers a reward for witnesses of illegal dumping. SWIRP addresses the City's Bulky Item Collection Program by identifying strategies for diverting bulky items for reuse or recycling. http://www.lacitysan.org/solid_resources/refuse/ SR_IllegalDumping.htm.
EIR should discuss packaging.	SWIRP includes policies related to manufacturer responsibility and trying to decrease waste generation from upstream (pre-consumer) sources. This is noted in the project description for the Draft PEIR and each environmental analysis section also has an analysis of this policy.
Include a timeline for the EIR preparation, printing, distribution, comments, hearing, EIR public meetings, and Council hearings.	Scheduling information is not typically included in the EIR. The Draft PEIR is anticipated to be released in Fall 2013 and will be available for a 45-day review period. When the Draft PEIR is released, the City will hold a series of community meetings (dispersed throughout the City) to discuss the conclusions of the Draft PEIR. Production of the Final PEIR will be dependent on the number of comments received during the 45-day review period. As an NOP commenter, the author of this letter will be notified of all meetings and hearings related to the Draft PEIR.
Qualifications of HDR and Los Angeles City staff preparing the EIR.	The PEIR includes a list of preparers for the Draft PEIR, including both City and consultant staff. In depth discussion of consultant and City staff qualifications is not required to be in the EIR.
Advertising the project.	The City published the NOP in the *Los Angeles Times*.
Includes a phone number for City staff.	A phone number for the City project manager will be included with the Draft PEIR. The NOP was printed on City letterhead, which did include a number for the LASAN.
EIR should discuss population growth in the city.	The Draft PEIR includes a section on population and housing. This includes a discussion of population growth within the City. Additionally, the SWIRP document is a long-range plan which considers the population growth in the City and the future increases in solid waste generation that would occur through 2030.
Bureau of Sanitation should work with the various community councils.	The SWIRP process has been very transparent and included 42 regional workshops and three City-wide conferences during Phase 1. During Phase 2 there were 21 regional workshops and 1 City-wide conference. Additionally, there were 109 constituent interviews, 27 house meetings and 75 business meetings. Upon completion of the Draft PEIR for public review, the City will hold seven information sessions in different parts of the City to discuss the findings of the Draft PEIR.

Table 1.7-1. Summary of Impacts and Mitigation Measures

Environmental Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
Aesthetics and Visual Resources			
Visual Resources/Specific locations of future facilities have not been identified. The potential for future facilities to result in a substantial adverse effect would be dependent on the ultimate facility design and location.	Potentially Significant	VR-1 Future facilities shall be sited within the zoning districts outlined in Table 4.1-4 of the PEIR and designed in accordance with all applicable land use planning documents. For areas outside of the City, facilities shall be sited in accordance with all applicable zoning and planning restrictions. To the greatest extent possible, future facilities shall be sited in areas not identified as visually significant or historic. VR-3 Existing natural aesthetic features proposed for removal shall be replaced. VR-4 Grading of natural and semi-natural open space shall be minimized to the maximum extent. VR-6 Design features shall be incorporated into the project which effectively integrates natural aesthetics (i.e., cluster development, greenbelts, landscaping, etc.).	Mitigated to below a level of significance
Obstruction of Views/Future SWIRP facility sites would include locations that may be designated as being valued for visual quality.	Potentially Significant	VR-5 New utilities shall be placed underground, where appropriate. VR-7 Rooftop mechanical equipment, garbage dumpsters, and other outdoor equipment shall be screened from public view.	Mitigated to below a level of significance
Lighting, Glare, and Nighttime Illumination/Future SWIRP facilities would require lighting and could be constructed of materials with varying levels of reflectivity.	Potentially Significant	VR-2 Future facilities shall include design features that allow the facility to blend in with nearby buildings. These design features may include but are not limited to: • Landscape screening (i.e., use of tall trees or shrubs around the perimeter) • Neutral wall or fencing that obstructs the view of the facility from the nearby roads • Use of varying facades to break up bulk and scale • Building materials that minimize glare potential • Shielded lighting so as to minimize spillage to adjacent parcels and minimize night sky pollution • Modifying structure design to eliminate or screen contrasting/detracting features • Utilizing architectural styles, materials, scale, massing, setbacks, signage, circulation patterns, pedestrian orientation, streetscape amenities, and landscaping common to and/or consistent with the character of existing surrounding uses	Mitigated to below a level of significance
Agriculture and Forestry Resources			
Conversion of Mapped Farmland/The potential for future SWIRP facilities to convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural use is unknown. If future sites include locations that support Farmland Mapping and Monitoring Program-classified land, then there is potential for a significant impact.	Potentially Significant	AG/FOR-1 Future facilities shall be sited away from Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. If facilities are sited on such farmland, impacts to the farmland shall be mitigated at a 1:1 ratio or through payment of fees into an agricultural conservation trust. Proof of agricultural land acquisition or fee payment shall be provided to the local jurisdiction that is issuing the grading permit. The Planning Director of that local jurisdiction shall confirm that the land has been acquired or fees paid.	Mitigated to below a level of significance
Conflict with Agricultural Zoning or Williamson Act Contracts/The potential for future facilities to conflict with existing zoning for agricultural use or a Williamson Act Contract is unknown. If future sites are proposed on lands that are zoned for agricultural use or contain a Williamson Act Contract, then there is potential for an impact.	Potentially Significant	AG/FOR-2 Future facilities shall be sited away from lands under a Williamson Act Contract or within a Farmland Security Zone to the maximum extent possible. AG/FOR-3 Future facilities (except for composting facilities) shall be sited away from areas that are zoned for agricultural use to the maximum extent possible.	Mitigated to below a level of significance
Conflict with Forest and Timberland Zoning/Conversion/The potential for future facilities to conflict with existing zoning of forest land, timberland, or timberland zoned Timberland Production, or that result in the loss of forest land or convert forest land to non-forest use, is unknown. If future sites are proposed on lands that support these types of uses, then there is potential for an impact.	Potentially Significant	AG/FOR-4 Future facilities shall be sited away from areas zoned for Timberland Production to the maximum extent. If facilities are sited on such farmland, impacts to the farmland shall be mitigated at a 1:1 ratio or through payment of fees into a forest conservation trust.	Mitigated to below a level of significance

Table 1.7-1. Summary of Impacts and Mitigation Measures (Continued)

Environmental Impact	Significance Before Mitigation	Mitigation Measures		Significance After Mitigation
Air Quality and Greenhouse Gases				
Construction-Related Emissions/ Construction activities associated with future SWIRP facilities would have the potential to result in the generation of dust, criteria air pollutants, and reactive organic gas at levels that would exceed South Coast Air Quality Management District (SCAQMD) thresholds.	Potentially Significant	AQ-1	Future facilities within the SCAQMD shall prepare and implement a fugitive dust control program pursuant to the provisions of SCAQMD Rules 402 and 403 prior to any ground disturbance. For future facilities outside of the SCAQMD, adherence to any applicable fugitive dust control programs shall be required.	Potentially unmitigated impact at this PEIR level of evaluation depending on the specific locations and technologies that can or will be implemented at each specific facility When future facilities are proposed, a site-specific environmental review will be conducted
		AQ-2	Minimize combustion emissions during construction activities.	
		AQ-3	Low volatile organic compound (VOC) paints and coatings shall be used on future facilities.	
		AQ-4	Excavation, grading, and other construction activity is limited to one activity or phase at a time.	
		AQ-5	Hours of operation of heavy-duty equipment shall be limited to a maximum of 8 hours per day, 5 days per week.	
		AQ-6	Fossil-fueled equipment shall be replaced with electrically driven equivalents (provided they are not run via a portable generator set), to the maximum extent practicable.	
		AQ-7	All diesel engines shall be shut off when not in use to reduce emissions from idling.	
		AQ-8	Curtail construction during periods of high ambient pollutant concentrations; this may include ceasing construction activity during the peak hour of vehicular traffic on adjacent roadways and “Spare the Air Days” declared by the San Joaquin Valley Air Pollution Control District (SJVAPCD). Note that land within the 100-mile project study area falls within the SJVAPCD.	
		AQ-9	Implement activity management (e.g., rescheduling activities to reduce short-term impacts) to minimize concurrent operation of construction equipment and concurrent construction of project phases.	
		AQ-10	During the smog season (May through October), lengthen the construction period to minimize the vehicles and equipment operating at the same time.	
		AQ-11	Minimize the obstruction of traffic on adjacent roadways.	
		AQ-12	Power construction equipment with diesel engines fueled by alternative diesel fuel blends or ultra-low sulfur diesel. Only fuels that have been certified by the California Air Resources Board (ARB) shall be used. The ARB has verified specific alternative diesel fuel blends for nitrogen oxide (NO_x) and particulate matter (PM) emission reduction. ARB-certified alternative fueled compressed natural gas, liquid propane gas, electric motors, or other ARB-certified off-road technologies in construction equipment shall be used where practicable.	
		AQ-13	Use construction equipment that meets the current off-road engine emission standard (as certified by the ARB) or that is re-powered with an engine that meets this standard. Tier I, Tier II, and Tier III engines have significantly less NO_x and PM emissions compared with uncontrolled engines.	
Facility Operations Emissions/Although there would be a reduction in air emissions associated with reduced reliance on transporting waste to the landfills, the operation of future SWIRP facilities would have the potential to generate air emissions as a result of vehicular traffic, building heating and cooling needs, backup generators, and stack emissions.	Potentially Significant	AQ-14	During the facility design phase, a review of local Air Quality Management District rules shall be conducted to determine site-specific permit requirements for waste processing or handling facilities that may emit or potentially emit VOCs, particulates, carbon monoxide (CO), NO_x, or, sulfur oxide (SO_x). Emissions of non-conventional pollutants[1] and hazardous air pollutants (HAPs) (Title V-Major Sources) shall comply with federal and state permitting rules.	Potentially unmitigated impact at this PEIR level of evaluation depending on the specific locations and technologies that can or will be implemented at each specific facility When future facilities are proposed, a site-specific environmental review will be conducted
		AQ-15	Future facility applicant(s) shall properly maintain reactive organic gas emission control devices within the gasoline dispensing station.	
		AQ-16	Future facility applicant(s) shall ensure combustion operational emissions are minimized.	
		AQ-17	All diesel truck operators shall strictly abide by the applicable state law requirements for idling. Idling of the primary engine shall be limited to five minutes.	
		AQ-18	An odor analysis shall be prepared as part of future project-specific air quality analysis. Should the odor analysis identify the potential for impacts, the facility shall incorporate odor-reducing design features. Such features could include, but are not limited to: • Provision of exhaust fans to provide multiple air exchanges every hour. • Treatment of air leaving the building by an odor neutralizing misting system. • Maintaining negative pressure at the building entrances to minimize the amount of untreated air leaving the building. • Adding an odor neutralizer with dust control water in the ceiling-mounted misting systems for extra odor mitigation.	
		AQ-19	Energy-efficient design will be provided for buildings, including automated control systems for heating and air conditioning and energy efficiency beyond California Code of Regulations Title 24 (California Building Standards Code) requirements, lighting controls and energy-efficient lighting in buildings, increased insulation beyond Title 24 requirements, and light-colored roof materials to reflect heat.	
		AQ-20	Landscaping shall be used to maximize building protection from energy-consuming environmental conditions and to shade paved areas. Such landscaping could include planting of shade trees to shade 50% of paved areas within 15 years and planting deciduous trees on the south- and west-facing sides of buildings.	
		AQ-21	Implement measures to reduce the amount of vehicle traffic to and from future facilities. This could include provisions such as encouraging employees to rideshare or carpool to the project site, or incentives for employees to use alternative transportation.	

[1] Air pollutants other than PM, CO, VOCs, NO_x, and SO_x (conventional pollutants).

Table 1.7-1. Summary of Impacts and Mitigation Measures (Continued)

Environmental Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
Cumulative GHG Emissions/Although there would be a reduction in air emissions associated with reduced reliance on transporting waste to the landfills, the construction and operation activities associated with future SWIRP facilities would have the potential to result in the generation of GHG emissions (e.g., carbon dioxide).	Significant	Refer to AQ-1 through AQ-21 above.	Potentially unmitigated impact at this PEIR level of evaluation depending on the specific locations and technologies that can or will be implemented at each specific facility Note: this does not account for reduced GHG emissions due to decreased landfilling
Biological Resources			
Loss of Habitat, Sensitive Species and Wildlife Corridors/If new SWIRP facilities are located in areas known to contain sensitive habitats or wildlife corridors, there is the potential for a significant impact.	Potentially Significant	BIO-1 Prior to the approval of any new project component or facility that could result in earth-disturbing activities (e.g., grubbing, grading), a qualified Biologist shall conduct a habitat assessment to evaluate the site's potential to support special-status plant and wildlife species and jurisdictional wetlands/waters. To the extent feasible, the location(s) of all new project facilities shall be on previously disturbed or developed sites and shall avoid undisturbed, high-quality, natural habitat that supports special-status biological resources, areas that are used for regional or local wildlife movement, and jurisdictional wetlands and associated waters. If the habitat assessment determines that there is the potential for significant impacts to any biological resources, additional surveys and/or documentation would be required pursuant to CEQA and Mitigation Measure BIO-2. BIO-2 If it has been determined that a proposed project component or facility has the potential for significant impacts to any biological resources, then prior to commencement of any earth-moving activities, the City shall conduct the appropriate focused survey(s) to determine the presence or absence of special-status species (i.e., plant and/or wildlife surveys) that could be significantly impacted by the proposed project. If special-status species are identified on or adjacent to the facility site, then appropriate avoidance and/or mitigation measures shall be implemented, as approved by the resource agencies with jurisdiction over that species and subject to the necessary permits under the Federal Endangered Species Act, the California Endangered Species Act, the California Fish and Game Code, and other applicable regional or local regulations or plans, and ensure that impacts would be less than significant after mitigation. If any jurisdictional wetlands or associated waters are identified, appropriate avoidance and/or mitigation measures shall be implemented as approved by the resource agencies, and subject to the necessary permits under Section 404 of the Clean Water Act issued by the U.S. Army Corps of Engineers, Section 401 of the Clean Water Act (Water Quality Certification) issued by the Regional Water Quality Control Board, and Section 1600 of the California Fish and Game Code, and ensure that impacts would be less than significant after mitigation. BIO-3 All project-related ground-disturbing activities shall comply with all applicable federal, state, regional, and local biological resource protection regulations to avoid and/or minimize potential impacts to biological resources including, but not limited to, use of Best Management Practices (BMPs) during construction and in the design of project facilities; protection of native trees as required by local tree ordinances; and pre-construction nesting bird surveys and nesting raptor surveys (if appropriate based on season and habitat present) in compliance with the Migratory Bird Treaty Act and/or California Department of Fish and Game regulations.	Mitigated to below a level of significance
Cultural Resources			
Disturbance to Archaeological Resources/Any proposed facility that involves earth-disturbing activities, such as grading and excavation, would have the potential to impact significant archaeological resources.	Potentially Significant	CR-1 Future SWIRP projects that would result in earth-disturbing activities within native sediments with the potential for producing archaeological materials, or projects located near known cultural resources, shall implement the following: 1. Prior to commencement of any earth-disturbing activities, a Phase 1 study shall be undertaken to evaluate the current conditions of a project site. The study shall consist of: (1) an initial records search including records, maps, and literature housed at the appropriate Archaeological Information Center depending on the specific county that the project is within; (2) a Sacred Lands check with the Native American Heritage Commission (NAHC) and initial scoping with interested Indian Tribes and individuals identified by the NAHC; (3) a pedestrian field survey by a qualified Archaeologist to determine the presence or absence of surficial artifactual material and/or the potential for buried resources; and (4) a technical report describing the study and offering management recommendations for potential further investigation. 2. If archaeological sites or resources are discovered as a result of the Phase I study, a Phase II study of the significance of any prehistoric material that is present shall be undertaken. The evaluation shall include further archival research, ethnographic research, and subsurface testing/excavation to determine the site's horizontal and vertical extent, the density and diversity of cultural material, and the site's overall integrity. The evaluation shall include a technical report describing the findings and offering management recommendations for sites determined to be significant. Non-significant resources would require no further study.	Mitigated to below a level of significance

Table 1.7-1. Summary of Impacts and Mitigation Measures (Continued)

Environmental Impact	Significance Before Mitigation	Mitigation Measures		Significance After Mitigation
Disturbance to Archaeological Resources (continued)	Potentially Significant		3. If the Phase II study indicates that a significant site is present, the qualified Archaeologist shall determine appropriate actions, in cooperation with the City, for preservation and/or data recovery of the resource. Preservation in place is the preferred manner of mitigation, as provided in the California Code of Regulations, *Title* 14 Section 15126.5(b)(3). This could include: (1) avoidance of resources; (2) incorporation of resources into open space; (3) capping the resource with chemically stable sediments; and/or (4) deeding the resource into a permanent conservation easement. To the extent that a resource cannot be preserved in place, a Phase III data recovery excavation shall be completed to recover the resource's scientifically consequential information. A technical report shall be completed that adheres to the Office of Historic Preservation's (OHP) Archaeological Resources Management Report (ARMR) guidelines. 4. Monitoring of ground-disturbing activities shall be undertaken by a qualified Archaeologist as a final mitigation measure in areas that contain or are sensitive for the presence of cultural resources.	Mitigated to below a level of significance
Disturbance of Paleontological Resources/Unique Geologic Features/Specific SWIRP projects may impact significant fossil resources if they are exposed during project- related earth-moving activities.	Potentially Significant	CR-2	Future SWIRP projects that would excavate into alluvial sediments (e.g., Older Quaternary Alluvium deposits) or bedrock formations shall implement the following: 1. Prior to commencement of any earth-disturbing activities, an archival records search shall be undertaken at the Natural History Museum of Los Angeles County, San Bernardino County Museum, or other appropriate institution to determine the depositional environment within the project area and to evaluate the likelihood of fossils being present. 2. A field survey shall be undertaken prior to ground-disturbing activities in areas of potential but unknown sensitivity to evaluate the site for the presence of significant fossil resources and to establish the need for paleontological salvage and/or monitoring. 3. If significant fossils are discovered as a result of a field survey or during monitoring operations, a qualified Paleontologist shall determine appropriate actions, in cooperation with the City, for the preservation and/or salvage of the resource. 4. Any monitoring activities shall be accomplished by a qualified Paleontologist so that fossils discovered during grading can be scientifically and efficiently recovered and preserved. 5. A qualified Paleontologist shall prepare collected specimens to the point of identification and place the prepared fossils in the appropriate institution for permanent curation. 6. Upon completion of recovery and curation, all studies and actions shall be described in a paleontological technical report prepared by a qualified Paleontologist.	Mitigated to below a level of significance
Disturbance to Human Remains/Future SWIRP projects that would result in earth-disturbing activities within native sediments could have the potential to disturb Native American buried human remains that are on or near burial sites, and outside of formal cemeteries.	Potentially Significant	CR-3	If human remains are encountered during SWIRP-related projects, no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains shall occur until the County Coroner has determined the appropriate treatment and disposition of the human remains, in accordance with Section 7050.5 of the California Health and Safety Code. Section 5097.98 of the Public Resources Code states that if remains are determined by the Coroner to be of Native American origin, the Coroner must notify the NAHC within 24 hours, which in turn must identify the person or persons it believes to be the most likely descended from the deceased Native American. The descendants shall complete their inspection within 48 hours of being granted access to the site. The designated Native American representative would then determine, in consultation with the property owner, the disposition of the human remains.	Mitigated to below a level of significance
Disturbance to Historic Resources/Any proposed facility that involves earth-disturbing activities, such as grading and excavation, or alterations to existing infrastructure such as objects, buildings, or structures has the potential to impact significant historic resources and/or to cause an adverse change to historic objects, buildings, or structures.	Potentially Significant	CR-4	Implementation of SWIRP could include development near historical resources or resources considered to be potential historical resources. This development has the potential to result in significant impacts to individual historical resources within the project area, including resources listed in or eligible for listing in the National Register of Historic Places, California Register of Historical Resources, and local registers. This could include the delisting or loss of eligibility of such resources. In addition, there is the potential for significant impacts to buildings or structures of historic age (45 years old or older), or buildings or structures which may eventually be of historic age, and which may qualify as historical resources pursuant to CEQA. Prior to development of future facilities that would demolish or alter buildings or structures 45 years old or older or affect their historic setting, the project applicant shall employ a cultural resource professional who meets the Secretary of the Interior's Professional Qualifications Standards for Architectural History to determine if the project would cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5 of the *CEQA Guidelines*. The cultural resource professional, in conjunction with the City, shall determine an appropriate scope of investigation including archival research, if necessary, an updated records search at any of the appropriate California Historical Resources Information System information centers, and a pedestrian survey of the project area to determine if any significant historical resources would be adversely affected by the proposed development. A technical report shall be completed per the OHP's ARMR guidelines which evaluates any historical resources within the project area and includes recommendations for eliminating or reducing impacts to historical resources. The technical report shall be submitted to the Lead Agency for approval. As determined necessary by the Lead Agency, environmental documentation (e.g., CEQA documentation) prepared for future development within the project site shall utilize the findings and recommendations of the technical report. The project applicant shall be responsible for implementing methods for eliminating or reducing impacts to historical resources. Such methods could include, but not be limited to: (1) preparing a preservation plan or element which provides guidelines to ensure that the project conforms to the standards for rehabilitation established by the Secretary of the Interior and the OHP; (2) requiring new construction to be compatible with historical resources on the site and in the vicinity (e.g., mass, height, materials, setback, retention of mature landscaping); (3) requiring the project sponsor to relocate the historical resource or offer it for relocation by another individual or organization (provided that eligibility will be maintained following the relocation); (4) requiring the project sponsor to adaptively reuse the historical resource or incorporate it into the project; (5) undertaking documentation according to the requirements of the Historic American Building Survey such as large format photography, measured drawings, and written narrative; (6) making copies of this documentation available to the Los Angeles Public Library and local preservation organizations and historical societies; or (7) requiring the project sponsor to allow local preservation organizations and historical societies to document the resource and/or remove significant historic elements for archives.	Mitigated to below a level of significance

Table 1.7-1. Summary of Impacts and Mitigation Measures (Continued)

Environmental Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
Geology and Soils			
Earthquake Faults, Seismic Hazards, and Groundshaking/Portions of the study area contain earthquake faults, and are subject to seismic hazards and groundshaking. Future SWIRP facilities could be exposed to these geotechnical hazards.	Potentially Significant	GS-1 Future facilities shall not be located within a mapped Alquist-Priolo Earthquake Fault Zone. Placement of structures for human occupancy shall be restricted from areas designated as an Alquist-Priolo Earthquake Fault Zone. GS-2 At the time a site is selected for a facility, a site-specific geotechnical report shall be prepared in areas subject to earthquake-induced landslides or liquefaction as mandated by the State Seismic Hazard Mapping Act. Mitigation measures and design recommendations identified in those site-specific reports shall be implemented to minimize the potential for injury and loss related to earthquake-induced landslides, liquefaction, or seismic hazards.	Mitigated to below a level of significance
Ground Failure/Liquefaction/Portions of the study area are subject to ground failure and liquefaction. Future SWIRP facilities could be exposed to these geotechnical hazards.	Potentially Significant	GS-3 Future facilities shall not be located within an area known for or designated with a high liquefaction potential. Placement of structures for human occupancy shall be restricted from areas known for ground failure or liquefaction.	Mitigated to below a level of significance
Landslides/Portions of the study area are subject to landslide potential. Future SWIRP facilities could be exposed to these geotechnical hazards.	Potentially Significant	GS-4 Future facilities shall not be located in areas mapped as a landslide or mudslide hazard area in local planning documents (e.g., General Plans).	Mitigated to below a level of significance
Unstable and Expansive Soils/Portions of the study area are subject to unstable and expansive soils. Future SWIRP facilities could be exposed to these geotechnical hazards.	Potentially Significant	Refer to GS-2 above	Mitigated to below a level of significance
Hazards and Hazardous Materials			
Airports/The potential for future SWIRP facilities to conflict with an airport land use plan, or operations at a public or private airport, would be dependent upon where future facilities are sited. Due to the uncertainty at this time, a potential significant impact to airports is identified.	Potentially Significant	HAZ-1 If future facilities are sited within an area governed by an airport land use plan or within two miles of a public or private airport, analysis shall be undertaken to assess if the proposed facility would result in any impacts to airport operations or if it would subject people to a significant risk due to airport operations. If potential impacts are identified, a different site shall be selected or mitigation measures shall be implemented during the project-level environmental analysis to reduce the potential impact to airport operations to below a level of significance. Such mitigation measures could include maintaining certain percentages of low-occupancy areas (e.g., undeveloped areas, parking areas), building heights, and building lights.	Mitigated to below a level of significance
Listed Sites/Due to the uncertainty of where future facilities would be located, there is a potential that facilities could be located on or adjacent to a site that is listed by the Department of Toxic Substances Control as needing corrective action.	Potentially Significant	HAZ-2 Prior to siting waste facilities, a Phase I Environmental Site Assessment (ESA) shall be conducted in conformance with industry-accepted practices, American Society of Testing Materials Designation E1527-05, and the Environmental Protection Agency All Appropriate Inquiry Rule (40 Code of Federal Regulations §312). Based on the Phase I ESA findings, recommendations for further assessment or mitigation measures shall be recommended, as appropriate, to assess or mitigate potential environmental impacts.	Mitigated to below a level of significance
Human Health Hazards/Future SWIRP facilities would utilize certain hazardous materials that could pose a risk to surrounding land uses.	Potentially Significant	HAZ-3 Barriers shall be provided that contain hazards (e.g., appropriate buffers between land uses or air curtains of sufficient strength to control insect vectors). HAZ-4 Hazardous substances shall be stored away from site boundaries. HAZ-5 Upon approval of future facilities proposed under SWIRP, an applicable community emergency plan shall be developed, reviewed and updated, as needed, to account for new waste facilities and updated routes for the transportation of hazardous wastes. HAZ-6 A Health and Safety Plan shall be developed in accordance with local, state, and federal occupational health regulations. HAZ-7 Spill containment measures shall be developed and implemented on site for any new SWIRP facility.	Mitigated to below a level of significance

Table 1.7-1. Summary of Impacts and Mitigation Measures (Continued)

Environmental Impact	Significance Before Mitigation	Mitigation Measures		Significance After Mitigation
Hydrology and Water Quality				
Hydrologic Resources/Depending on the type of facility, the footprint of development can range from 2 acres to 100 acres, which could impact hydrologic resources.	Potentially Significant	HWQ-1	Prior to entitlement of any future facility and to assist in preparation of final engineering documents, a project-specific drainage study will be required for development of any facility demonstrating the impacts on local and regional hydrology. The drainage study shall include a review of the existing drainage facility capacity and demonstrate that site runoff will not overwhelm existing drainage capacities. Any increase in runoff above the existing drainage facility capacity would require hydraulic analysis to determine alternatives to safely convey the design storm. Future facilities shall implement improvements to the drainage system if the analysis concludes that existing capacity is not adequate.	Mitigated to below a level of significance
		HWQ-2	Future facilities shall include construction of new or improved stormwater management facilities to reduce or retard the amount of peak runoff from the facility sites. Such measures may include the construction of detention basins or other structures that will slow down or delay the peak flow of stormwater runoff from the site.	
		HWQ-3	Ensure facilities shall reduce impervious surfaces and materials and maximize landscaped and natural areas.	
Water Quality/The development of proposed SWIRP facilities would have the potential to impact water quality.	Potentially Significant	HWQ-4	Prior to entitlement of any future facility and to assist in preparation of final engineering documents, a project-specific water quality study would be required to address impacts on water quality and identify potential mitigation measures. The project-specific water quality study shall identify downstream water bodies, their beneficial uses, and any impairment. The water quality report shall identify permanent BMPs to mitigate water quality impacts, including hydromodification.	Mitigated to below a level of significance
		HWQ-5	Specific and detailed BMPs shall be required and included in the Stormwater Management Plan. BMPs will need to address the site design, source control, and treatment. Potential BMP options are identified in Table 4.8-9 of the PEIR. Individual facility development shall review and implement the local jurisdictional BMP standards. Project development will be required to implement all site design, source control, and treatment BMPs to the maximum extent practicable. A number of counties and cities are emphasizing low impact development (LID) design features as a way to address water quality concerns through the use of multiple sustainable BMP alternatives at the local level. To facilitate this sustainable approach, development should aim to maximize the number of LID mitigation alternatives implemented in site design. In addition to the use of BMPs, an acceptable operation and maintenance plan must be established to demonstrate long-term performance of the features. Typically, part of the operation and maintenance discussion for BMPs will include a funding source and identify the entity responsible for implementing the operation and maintenance plan.	
		HWQ-6	Prior to construction of any future facilities, construction stormwater quality will need to be addressed in a Stormwater Pollution Prevention Plan (SWPPP), in accordance with the State General Construction Permit. The SWPPP shall provide a plan for addressing water quality associated with construction activities. SWPPPs are intended to be dynamic and change as a project undergoes various stages of construction. SWPPPs are prepared during final engineering; however, new General Construction Permit post-construction BMP requirements will need to be considered during entitlement and final engineering.	
Floodplains/In the event that one or more of the processing facilities are proposed within a 100-year floodplain, there would be a potential for that facility to add to a flooding hazard which would impede or redirect flows.	Potentially Significant	HWQ-7	If a future facility is proposed within a floodplain, a floodplain study shall be prepared to address Federal Emergency Management Agency (FEMA) or jurisdictional floodplain management requirements. The floodplain study shall be completed during entitlement and final engineering. The floodplain study shall investigate the hydrology of the river system and develop a hydraulic model to quantify existing and proposed water surface elevations and velocities. The study shall identify feasible mitigation measures to meet FEMA water surface elevation requirements.[2] These mitigation measures shall be implemented as part of the project design and/or construction.	Mitigated to below a level of significance
		HWQ-8	Future facilities shall be designed so that structures and other important facilities that would be adversely affected by flooding are no longer located within flood hazard areas or so that the floodway open space is preserved.	
		HWQ-9	Future facilities shall raise the building pad or ground floor of proposed structures to an elevation above flood prone areas.	
Land Use and Planning				
Future SWIRP facilities would have the potential to conflict with any applicable land use plan, policy, or regulation depending on the location of the facility.	Potentially Significant	LU-1	Future facilities shall be sited in locations that support the appropriate General Plan and Zoning designations for the use being proposed. The project's proposed land use shall be modified to be consistent with designated land uses, zoning classification, and/or General Plan element(s).	Mitigated to below a level of significance
Future SWIRP facilities would have the potential to result in a permanent disruption in the physical arrangement of an established community depending on the location of the facility.	Potentially Significant	LU-2	Future facilities shall be fully enclosed to the maximum extent practicable to minimize nuisance issues such as noise, odor, and visual impact and achieve maximum compatibility with surrounding land uses. If a nuisance is found to occur as result of facility operations, certain restrictions on the operational characteristics of the facility shall be implemented to reduce or eliminate impacts, such as limiting hours of operation or placing restrictions on specific types of uses or activities proposed for the facility.	Mitigated to below a level of significance

[2] These requirements are based on Title 44 Code of Federal Regulations: Emergency Management and Assistance, Chapter 1: Federal Emergency Management Agency, Department of Homeland Security.

Table 1.7-1. Summary of Impacts and Mitigation Measures (Continued)

Environmental Impact	Significance Before Mitigation	Mitigation Measures		Significance After Mitigation
Future SWIRP facilities would have the potential to be incompatible with existing or proposed adjacent land uses depending on the location of the facility.	Potentially Significant	LU-3 LU-4	Project design, configuration, visual screening, setbacks, building heights, etc., shall be compatible with surrounding uses. The site shall be designed to provide buffer(s) (such as a decorative wall or landscaping) if residential uses are adjacent to a proposed facility. The buffer(s) shall be included in the site plan for the future facilities, and reviewed and approved by the local jurisdiction that will issue the building and/or occupancy permit for the facility.	Mitigated to below a level of significance
Mineral Resources				
Future SWIRP facilities would have the potential to impact State or Locally Important Mineral Resources depending on the location of the facility.	Potentially Significant	MR-1 MR-2 MR-3 MR-4	Future facilities shall be sited so as to avoid areas mapped as MRZ-2, MRZ-3, and MRZ-3a by the California Mineral Land Classification System. Other known or potential mineral resource areas shall be avoided to the maximum extent. Future facilities shall be sited so as to avoid active oil, gas, or geothermal operations. The project shall be designed so that no, or only nonpermanent, structures are atop or blocking the mineral resource area. Future facilities shall be sited so as to avoid areas mapped as locally important mineral resources on General Plans, specific plans, or other land use plans. Easements shall be established, when necessary, to preserve possible future use of mineral resources.	Mitigated to below a level of significance
Noise				
Future Facilities could result in long-term noise generation associated with various operational activities of the facilities.	Potentially Significant	N-1	A noise study shall be prepared for future facilities. The noise study shall include measurements of the existing noise environment and quantify the facility's noise contribution to the ambient environment for both the construction and operation phase. If impacts are identified, mitigation measures shall be implemented to reduce sound levels to a level that is consistent with the applicable jurisdiction's noise ordinance or noise element. Such mitigation measures could include, but are not limited to fencing, noise walls, or increasing the distance between noise-generating equipment and off-site sensitive receptors. The noise study shall be submitted to, and approved by, the Planning Director, or designee, of the jurisdiction where the facility will be constructed.	Mitigated to below a level of significance
Construction-Related Impacts/Future facilities could have short-term noise generation associated with facility construction.	Potentially Significant	N-2 N-3 N-4 N-5 N-6 N-7 N-8	Prior to construction, the construction contractor shall obtain authorization approval to exceed the ambient base noise level by more than five A-weighted decibels at the property boundary for industrial zoned land use. Construction activities shall be limited to 7:00 AM to 7:00 PM, Monday through Saturday. If the local jurisdiction has more stringent construction timing limits, those limits shall be applied. The construction contractor shall operate and maintain a City-approved haul truck traffic route along major traffic arteries. All construction equipment shall be equipped, operated, and maintained with manufacturer-recommended mufflers or the equivalent. Mobile and stationary construction equipment shall be turned-off when not in operation. All construction equipment powered by gasoline or diesel engines shall be required to have sound-control devices at least as effective as those originally provided by the manufacturer; no equipment will be permitted to have an un-muffled exhaust. All stationary noise-generating construction equipment, such as pumps and generators, shall be located as far as possible from nearby noise-sensitive receptors. Noise-generating equipment shall be shielded from nearby noise sensitive receptors by noise-attenuating buffers, such as structures or haul truck trailers. Water tanks and equipment storage, staging, and warm-up areas will be located as far from noise sensitive receptors as possible.	Mitigated to below a level of significance
Future Facilities could result in long-term noise generation associated with various operational activities of the facilities.	Potentially Significant	N-9	Operational activities at future facilities shall not produce noise levels at the property line that exceed the levels identified in the applicable jurisdiction's noise ordinance. If proposed activities are forecast to exceed property line levels, noise attenuation measures shall be implemented to reduce the property line noise levels to the appropriate level. Such measures could include, but are not limited to, fencing, sound walls, and screening of mechanical equipment.	Mitigated to below a level of significance
Public and Private Airports/If future SWIRP facilities are located within an airport land use plan area or within two miles of a public airport, there would be a potential for noise exposure from airport activities.	Potentially Significant	N-10	If future facilities are proposed within two miles of a public or private airport, the project-specific noise study shall include an analysis of the potential for the facility's adjacency to an airport to result in exposure of employees to excessive noise levels. If excessive noise levels are identified, mitigation measures shall be implemented to reduce the interior noise levels to acceptable levels. Such mitigation could include, but is not limited to, enhanced insulation or dual-paned windows.	Mitigated to below a level of significance

Table 1.7-1. Summary of Impacts and Mitigation Measures (Continued)

Environmental Impact	Significance Before Mitigation	Mitigation Measures		Significance After Mitigation
Population and Housing				
Displacement of People and Housing/If a SWIRP facility were sited where an existing residential use is located, resulting in the displacement of housing or people, a significant impact to population and housing would occur.	Potentially Significant	PH-1	If future facilities result in the displacement of existing residential units or persons, appropriate compensation to property owners or relocation of displaced people shall occur.	Mitigated to below a level of significance
		PH-2	If future facilities result in the demolition of residential units, construction of new residential units, including units deemed "affordable" under state law, would lessen the impact to population and housing to a level below significance. If acquisition of public or private residences will be necessary, all applicable federal, state, and local laws regarding acquisition of property, compensation to displaced property owners or tenants, and relocation assistance and benefits for persons who may be displaced shall be adhered to or exceeded, as appropriate.	
Public Services, Utilities and Service Systems				
Water Supply/Future SWIRP facilities would generate the demand for water use.	Potentially Significant	WS-1	Future processing facilities shall incorporate water conservation design features. These features may include, but are not limited to, the following: • Landscaping plans shall incorporate planting water-efficient, well-adapted, and/or native shrubs, trees, and grasses (i.e., drought and heat tolerant). • Use recycled water as landscaping irrigation to the maximum extent practicable. • Use high-efficiency/low-flow toilets and sink faucets. • If truck washing will occur on-site, a water recycling system shall be implemented to reduce water demand.	Mitigated to below a level of significance
		WS-2	Development applications for future SWIRP facilities greater than 40 acres of land, having more than 650,000 square feet of floor area, or employing more than 1,000 persons shall include a water supply assessment. The water supply assessment shall be prepared by the water agency serving the facility and shall: (1) document wholesale water supplies; and (2) identify and quantify the existing and planned sources of water availability to the water supplier in 5-year increments for the 20-year projection. For each identified supply, the assessment shall: (1) detail the quantity available and whether it is a water supply entitlement, water right, or water service contract; (2) document the project demand; (3) document dry year supplies; (4) document dry year demand; and (5) determine if projected water supply is sufficient or insufficient for the proposed facility.	
Energy/Future SWIRP facilities would result in a demand for energy.	Potentially Significant	ES-1	Future processing facilities shall be required to incorporate energy efficient design features. These features shall include, but are not limited to, the following: • Energy efficient light fixtures • Energy efficient equipment/machinery • Alternative energy source (i.e., solar power, wind power, thermal)	Mitigated to below a level of significance
Recreation				
Existing Recreational Facilities/If future SWIRP facilities were constructed in an area that currently supports recreation there would be a potential for an impact.	Potentially Significant	REC-1	If future facilities are located on a site that results in an impact to existing recreation facilities, replacement recreation facilities shall be acquired or constructed prior to demolition of existing recreational facilities. Replacement recreational facilities shall be located in the general vicinity of the demolished recreational facility.	Mitigated to below a level of significance
Transportation/Traffic				
Traffic Level of Service (LOS)/Depending on the location of the future facilities and that location's relation to impacted roadways, there would be a potential for future facilities to result in an exceedance of LOS standards established by the County Congestion Management Agency.	Potentially Significant	TR-1	Prior to the approval of any future facility, a project-level traffic impact report shall be prepared by a qualified traffic consultant. The report shall be prepared to the standard of the local jurisdiction that would be providing approvals for the project. The report shall include existing traffic information, thresholds of significance, construction and operation-related trip generation, and a project and cumulative-level analysis. The traffic report shall identity mitigation measures to reduce project- and cumulative-level impacts to the maximum extent practicable. Such mitigation measures could include roadway and intersection improvements, payment of traffic impact fees, timing of collection truck schedules to avoid peak hours, encouraging carpool, van pool, or alternative transportation for employees through the use of incentives.	Potentially significant and unmitigated When future facilities are proposed, a site-specific environmental review will be conducted
Parking/Parking requirements would be considered on a project-by-project basis depending on the requirements of the jurisdiction that would approve the future facility.	Potentially Significant	TR-2	Future facilities shall adhere to minimum adopted parking requirements for the type of use proposed, including adequate parking for employees, customers, and any collection vehicles that are stored on-site.	Mitigated to below a level of significance

2.0 PROJECT DESCRIPTION

2.1 OVERVIEW

The City of Los Angeles (City) has developed a long-range Solid Waste Integrated Resources Plan (SWIRP) to manage solid waste generated in the City. The development of SWIRP incorporates a long history of public policy initiatives to maximize waste prevention, recycling, and resource recovery, and to reduce urban landfilling. The planning process undertaken to develop SWIRP included the participation of stakeholders throughout Los Angeles. SWIRP reflects the long-term vision of the Mayor and City Council, and the goals and guiding principles of the City's residents and businesses.

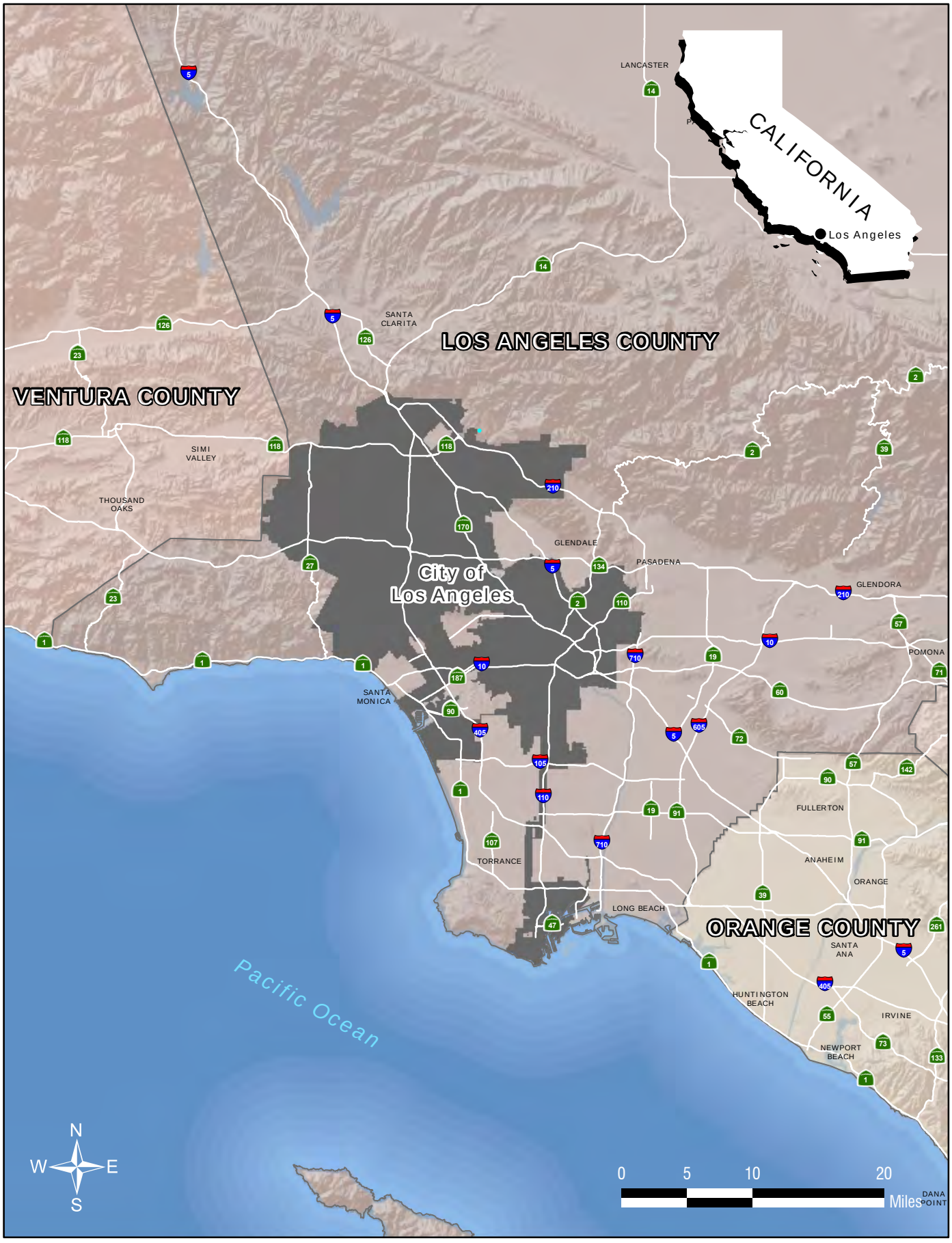
The blueprint for SWIRP is the plan developed by former Councilmember Greig Smith – Recovering Energy, Natural Resources and Economic Benefit from Waste for Los Angeles (RENEW L.A.) Plan. RENEW L.A. was adopted unanimously by the City Council in 2006 and provided the foundation for the SWIRP planning process. RENEW L.A. established the vision for Zero Waste and included the goal of 90 percent diversion by 2025. SWIRP identifies the approach for achieving the City's goal of 75 percent diversion by 2013 and 90 percent diversion by 2025.[1] These targeted diversion rates would be implemented through an expansion of existing policies and programs, implementation of new policies and programs, and the development of future facilities to meet the City's recycling and solid waste infrastructure needs through 2030.

2.2 PROJECT LOCATION

SWIRP addresses the management of solid waste for the City, which covers approximately 470 square miles and is home to approximately 3.8 million residents (Figure 2-1).[2] The programs and policies identified in SWIRP apply to all residential, commercial, industrial, and institutional generators in the City, including City government generators. SWIRP also identifies a variety of facilities that would need to be constructed to meet the City's recycling and solid waste infrastructure needs through 2030. These facilities could be located within the City, but could also be located outside the City. Figure 2-2 shows the City and a 100-mile project study area used in this environmental analysis. Specific locations for the new or expanded facilities have not been identified at this time; rather SWIRP identifies the number and type of facilities that would be required through 2030.

The City organized the SWIRP planning process around the City's six collection districts or "wastesheds." These wastesheds are shown on Figure 2-3 and include East Valley, West Valley, Western, North Central, South Los Angeles, and Harbor.

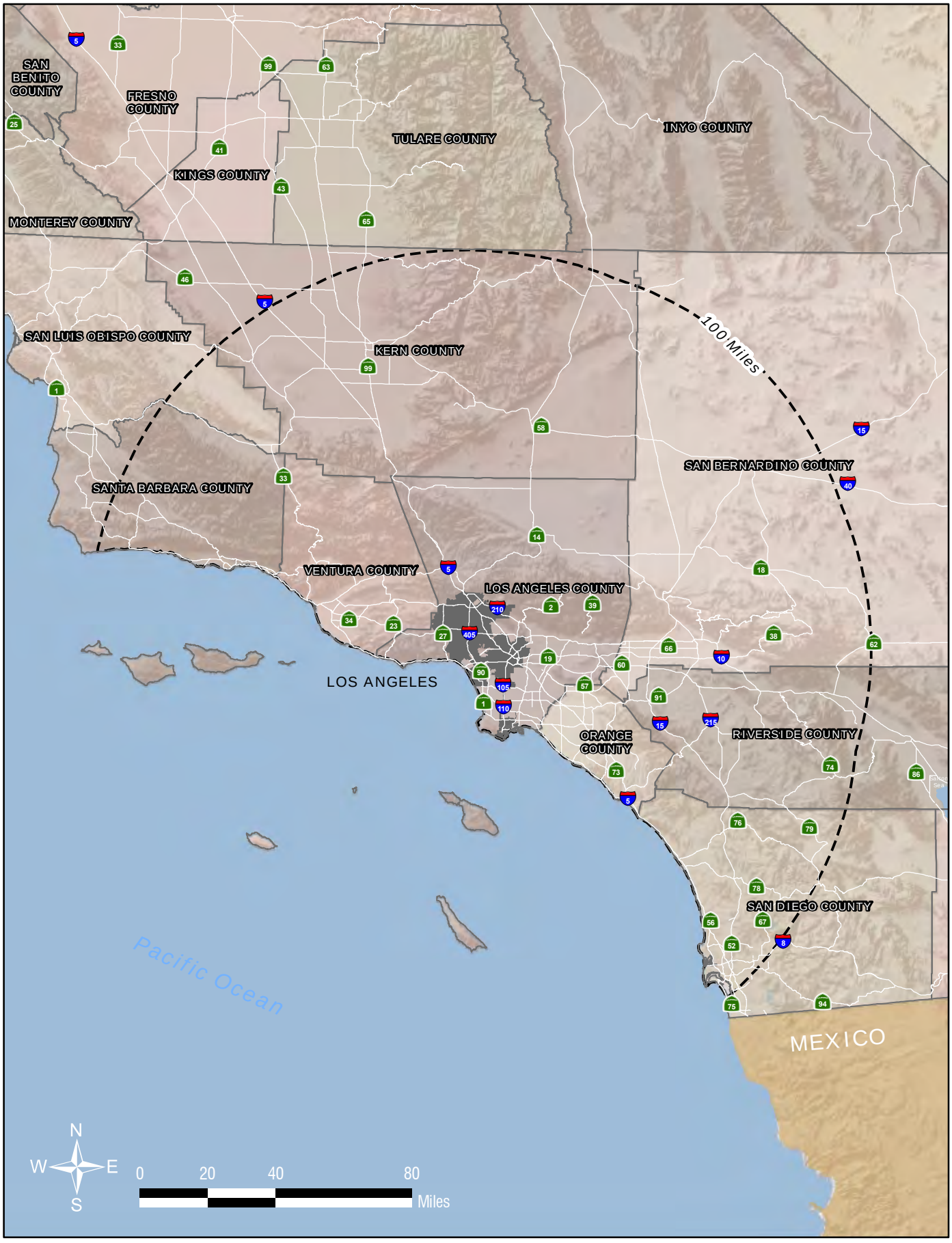
[1] The City reached 76.4 percent diversion in 2011, as documented in the Zero Waste Progress Report, March 2013.
[2] The 3.8 million population number is from the 2010 U.S. Census and was used as part of the baseline calculations to project solid waste demand for SWIRP.



Regional Context

FIGURE 2-1

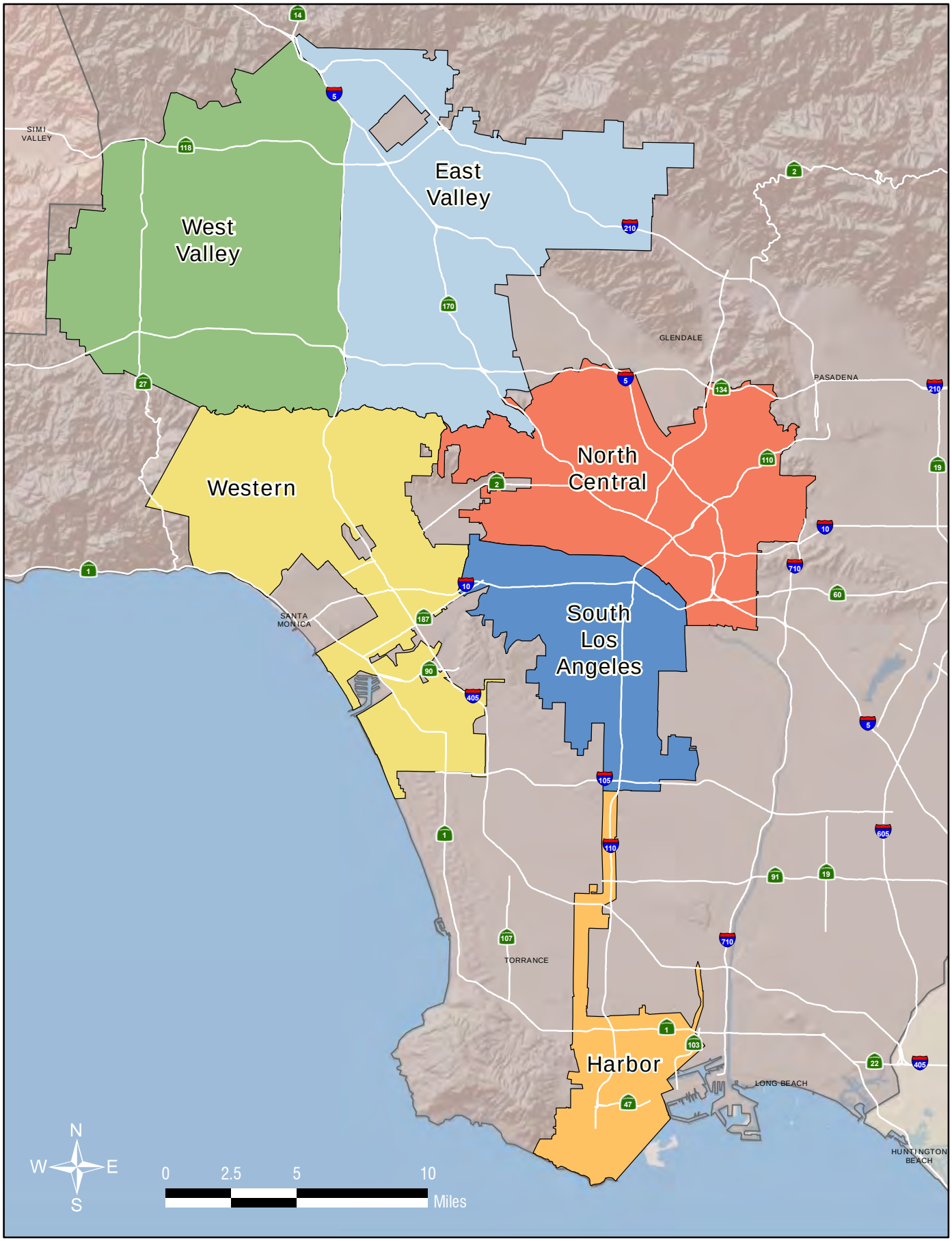
SWIRP | City of Los Angeles | Final Program Environmental Impact Report



Project Study Area

FIGURE 2-2

SWIRP | City of Los Angeles | Final Program Environmental Impact Report



City of Los Angeles Collection Districts

FIGURE 2-3

SWIRP | City of Los Angeles | Final Program Environmental Impact Report

2.3 DESCRIPTION OF PROPOSED PROJECT – FULL IMPLEMENTATION OF SWIRP

To realize the vision articulated in the SWIRP guiding principles and to reach the City's goals of 75 percent diversion by 2013 and 90 percent diversion by 2025, SWIRP identifies a series of policies, programs, and facilities that would be required through 2030. They include the following:

(1) Expansion of Existing Residential and Commercial Programs (Section 2.3.1)
(2) Implementation of New Downstream Policies and Programs (Section 2.3.2)
(3) Implementation of Mandatory Participation Programs (Section 2.3.3)
(4) Adoption of Upstream Policies (Section 2.3.4)
(5) Development of Processing Facilities (Section 2.3.5)
(6) Disposal of Remaining Residual Waste[3] at Local or Remote Landfills (Section 2.3.6)

The following sections provide a more detailed discussion of these six components of the proposed project (full implementation of SWIRP).

2.3.1 Expansion of Existing Residential and Commercial Programs

The City has many successful programs in place for managing residential and commercial solid waste and diverting waste from landfills. Under SWIRP, these programs would be expanded, as appropriate, to further improve solid waste management, increase landfill diversion, and accommodate growth. Some of these programs include:

- Four-bin collection program for residential curbside customers[4] (blue bin for commingled recycling, green bin for yard trimmings, black bin for residual waste, and brown bin for horse manure[5])
- Multi-family blue bin recycling available to all multi-family buildings in the City
- Bulky item collection available to all residential curbside customers and multi-family generators
- Blue bin recycling program and classroom recycling presentations available to all schools in the City within the Los Angeles Unified School District
- Restaurant food scraps collection available to all restaurants in the City
- Mandatory processing of all construction and demolition (C&D) loads at certified C&D facilities
- Environmentally Preferable Purchasing ordinance requiring City procurement of environmentally preferred services and products, as called for in RENEW L.A.
- Commercial recycling technical assistance available to all commercial and institutional generators in the City
- Alternative Clean Fuel Program for powering the City's collection vehicles with clean burning engines
- City Department recycling available to all City offices and facilities

[3] "Residual waste" refers primarily to the discarded materials that remain after reducing, reusing, recycling, and composting; or after processing the materials through a mixed materials processing facility.
[4] Residential curbside customers include generators in single-family residences and some multi-family residences, primarily with four units or less, serviced by the Bureau of Sanitation (LASAN).
[5] Horse manure is considered part of the "green bin material" program, as the materials are composted.

- Seven Solvents /Automotive /Flammables/ Electronics (S.A.F.E.) centers for proper management of household hazardous wastes located throughout the City
- Processing and composting of yard trimmings and making the mulch available free of charge to City residents at City giveaway locations

Since the initiation of the SWIRP planning process in April 2007, most of the above policies and programs have been expanded. Three of the more recent policies and programs include: (1) implementing the food scrap pilot program for 8,700 households; (2) implementing the Environmentally Preferred Purchasing ordinance (approved by the City Council on June 12, 2009);[6] and (3) adopting the C&D ordinance (approved by the City Council on December 17, 2010).[7]

Commercial and Multi-Family Private Hauler Franchise Initiative

The City currently manages a private hauler permit system for the commercial and multi-family sector of the City, which includes industrial and institutional generators. Additionally, the City manages a multi-family recycling program that is available to all multi-family buildings in the City, and managed through three recycling contracts. Effective July 2012, Assembly Bill (AB) 341 requires mandatory recycling for commercial businesses and public entities that generate four cubic yards or more of solid waste per week and multi-family complexes with five units or more.

In 2012, the City Council indicated its intention to move from the current private waste hauler permit system to a franchise system for the collection of waste from both multi-family and commercial properties, not collected by the City of Los Angeles Bureau of Sanitation (LASAN). The franchise system is intended to help the City reach its Zero Waste goals, and may contain elements such as maximum disposal amounts per zone, aggressive diversion programs, including outreach and education, clean fuel requirements, and worker health and safety requirements, to be administered by LASAN.

In November 2012, the City Council directed LASAN to begin the environmental review process pursuant to the California Environmental Quality Act (CEQA) for the commercial and multi-family private hauler franchise initiative adopted by Council, to return with an implementation plan for the franchise system, and requested the City Attorney to draft required ordinances for the project.[8] On April 25, 2013 the City Council approved LASAN's Implementation Plan, adopted the 10 goals of the Franchise program, and directed LASAN to proceed with the development of a Request for Proposals (RFP). The City Council is expected to consider the commercial and multi-family private hauler franchise ordinance and associated CEQA documentation in early 2014.

The SWIRP policies and programs anticipated to fall under the private hauler franchise initiative include, but are not limited to, the following:

- Multi-family recycling
- Multi-family yard trimmings
- Multi-family food scraps
- Modify Multi-family and commercial collection rates

[6] City of Los Angeles Environmentally Preferred Purchasing Ordinance http://www.environmentla.org/pdf/2010/EPP_Ordinance.pdf (accessed September 30, 2013).
[7] The C&D Ordinance is available through the City of Los Angeles Council File 09-3029.
[8] The Private Hauler Franchise Initiative documentation is available through City of Los Angeles Council File 10-1797.

- Provide more public area recycling
- Require all commercial haulers to offer recycling services to their customers
- Request all businesses to have recycling
- Mandatory recycling separation for multi-family and commercial sectors
- Mandatory organics separation for multi-family and commercial sectors
- Multi-family recycling ambassador program
- Expand commercial technical assistance
- Program reinforcement for multi-family and commercial sectors
- Large-scale media campaign for multi-family and commercial sectors

2.3.2 Implementation of New Downstream Policies and Programs

"Downstream" policies and programs address collection, processing, diversion, and disposal of materials after they are generated. The City has identified additional downstream programs that would be needed to achieve Zero Waste, including: adding textiles to the blue bin program or partnering with non-government organizations to divert textiles; adding food scraps to the green bin program; and requiring private solid waste collection service providers to ensure that their multi-family and commercial customers have access to recycling collection services (as anticipated by the private hauler franchise initiative). Table 2.3-1 provides more details for each of these downstream policies and programs.

2.3.3 Implementation of Mandatory Participation Programs

Mandatory participation programs represent a major shift in recycling collection programs, and are intended to motivate all generators within the City (residential, commercial, governmental, institutional, and industrial generators) to separate materials at their homes or businesses, and place them in the appropriate blue bin, green bin, or other appropriate collection bins on a regular basis. Some of the mandatory participation programs include mandatory recycling and organics separation; requiring transfer stations and landfills to provide resource recovery centers; and increased diversion requirements at C&D facilities. To provide more assurances as to the effectiveness of these programs, the City would implement enforcement and education (i.e., through recycling ambassadors) and increased direct technical assistance. Table 2.3-2 provides additional detail on the mandatory participation programs.

2.3.4 Adoption of Upstream Policies

"Upstream" describes policies that would minimize the amount of waste prior to the point of generation. Upstream policies would affect design of the product or package prior to manufacturing. Extended Producer Responsibility (EPR) is a strategy for encouraging manufacturers to take responsibility for the end-of-life of their products. Upstream policies may include material bans, such as the City facilities expanded polystyrene (EPS) foam ban and the reusable bag policy that the City Council adopted in May 2012.[9]

[9] On May 23, 2012, the City Council adopted a policy to ban distribution of single-use plastics bags and impose a 10-cent fee on single-use paper bags at supermarkets and select retail stores within the City.

Table 2.3-1 Proposed Downstream Policies and Programs[10]

Initiative	Description	Generator Type[11]
Expand Recycling Ambassador Program	Currently, the City has eight Recycling Ambassadors. By hiring additional Recycling Ambassadors within LASAN, the City would expand public education and outreach services and encourage residents to participate more consistently in the existing blue bin and green bin recycling program. The program is geared towards increasing public education on the benefits of participating in the curbside recycling program and yard trimmings collection program, and resolving service problems and/or obstacles to participation. This program focuses on improving recycling habits, reducing contamination in the blue and green bin, and decreasing the amount of waste entering landfills. In future years, the Recycling Ambassadors will provide "reinforcement" to ensure participation in the City's programs.	Residential Curbside
Adding Textiles to the Blue Bins or Partnering with Non-Governmental Agencies	Adding textiles to the existing list of materials residents can place in blue bins for curbside collection, or partnering with non-governmental agencies or non-profits to provide convenient access to textile recycling, would require that the City's contracted recycling processors identify viable long-term markets to ensure that textiles are recovered to the maximum extent feasible and have a positive market value. Some textile items are more suited to recovery and processing, while others do not have viable markets or processors to accept them.	Residential Curbside Multi-Family
Bulky Item Reuse and Refurbishment	As part of the Solid Resources Fee, LASAN provides unlimited collection of large or bulky household items, such as large appliances, mattresses, couches, and other furniture from all residents in the City. Residents are required to request this service at least one day in advance, and the City collects the bulky items on the day of regular trash collection. Under this program, the City would provide separate collection of bulky items for repair and reuse and/or partner with a number of reuse entities (thrift stores, repair shops, and non-profits such as L.A. SHARES, Goodwill Industries, and Salvation Army) to repair, reuse, and resell appropriate bulky items that are currently being set out for collection and then landfilled. The City would enter into service contracts with reuse partners to define operating procedures, service requirements, performance standards, and establish program parameters to ensure that the bulky item reuse program would be closely coordinated with the bulky item collection program operated by the City and would not impede City operations.	Residential Curbside Multi-Family
Expand Residential Food Scrap Program	In September 2008, the City launched a voluntary Residential Food Scrap Collection Pilot Program. The pilot program involved 8,700 households in 5 neighborhoods within the South Los Angeles and North Central wastesheds. This program helped reduce the amount of refuse disposed in the landfills by placing food scraps and food-soiled paper products into green bins along with the yard trimmings. All of these materials would be processed into compost, a valuable soil amendment used to grow plants. The City plans to expand this program to all areas of the City, once processing facilities are available.	Residential Curbside Multi-Family

[10] Some of these proposed policies and programs have already begun implementation or expansion from 2007-2013. These include, but are not limited to: multi-family recycling, Los Angeles Unified School District blue bin recycling program, restaurant food scrap program, and C&D ordinance.

[11] Note that the "Commercial" sector includes government, institutional, and industrial generators.

Table 2.3-1. Proposed Downstream Policies and Programs (Continued)

Initiative	Description	Generator Type
Large-Scale Media/Social Marketing	The goal of this program is to create a "culture change" using social marketing and media campaign strategies, which requires efforts beyond a typical large-scale recycling campaign. Behavior change on this magnitude would require significant investment in outreach activities to have a powerful impact at the beginning and then remain consistently effective over each five-year campaign. The first step in this multi-year media and outreach campaign effort would be the development of a Strategic Outreach Plan to determine exactly which segments would be targeted, and identify specific messages and tactics. The proposed strategy is to penetrate all three major aspects of each individual's life (home, work, and play) with a Zero Waste message.	Residential Curbside Multi-Family Commercial
Modify Residential Collection Rates	Modifying collection rates through Pay As You Throw (PAYT) or other mechanisms could increase diversion rates by providing incentives to ratepayers. PAYT is a variable unit pricing system where residents would be charged for solid waste collection services based on the volume or weight of trash they dispose. Under a volume-based program, residents are charged rates based on the number and size of bins the resident subscribes to for refuse collection. Residents who use a smaller size bin are charged less than residents using a larger size bin. Under a weight-based program, residents would be charged based on the weight of trash set out rather than the size bin used for set-outs. The fee structure under either type of a PAYT program requires the higher rates to subsidize the lower rates to maintain revenues adequate to cover costs. The City evaluated weight-based PAYT and concluded that it was not appropriate for implementation in the short-term. The City will monitor new weight-based and volume-based PAYT programs for future implementation.	Residential Curbside
Modify Commercial Collection Rates	This assumes that the City will initiate a program that would require all commercial haulers to provide recycling services to all of their customers, in addition to those covered under the Mandatory Recycling requirement of AB 341. The goal of the program is to establish sufficient customer rate incentives for commercial and multi-family customers to increase recycling and decrease solid waste collection service. The collection rate modifications intended by this program would be established through City adoption of an ordinance and contracts that would describe the parameters of the rate modification haulers would need to implement to operate within the City. This program would be implemented as a component of the City's private hauler franchise initiative.	Multi-Family Commercial
Expand Multi-Family Voluntary Recycling	The City conducted a multi-family recycling pilot program in 2004. Based on the results of the program, the City implemented a citywide multi-family recycling program in 2007 that offers the same blue bin recycling services provided to residential curbside customers. The City contracts with selected haulers to provide weekly recycling services to multi-family complexes. The City is divided into separate zones or service areas for the purpose of awarding the collection contracts. Contracted haulers provide recycling service at all multi-family complexes requesting the service in their specific service area, with the City providing outreach and training, and the contractors providing bins and collection/recycling services. Multi-family residential buildings of five units or more are eligible to receive recycling services through the City's contractors. Multi-family residential buildings can be apartment buildings, condominiums, cooperatives, mobile home parks, and other properties zoned for multiple residential units. Buildings that are formally registered into the program are offered free recycling services once a week, blue bins to store recyclables, and educational information about the types of materials accepted in blue bins. There is no cost to property owners or residents that participate in the program. The program is funded through the Private Solid Waste Hauler AB 939 Compliance Fee Program. With the adoption of AB 341 Multi-family complexes with five units or more are now required to have recycling service. This program would be included as a component of the City's private hauler franchise initiative.	Multi-Family

Table 2.3-1. Proposed Downstream Policies and Programs (Continued)

Initiative	Description	Generator Type
Multi-Family Green Bins	This program expands the multi-family recycling program to include the addition of green bin collection service for yard trimmings. This program would be implemented as a component of the City's private hauler franchise initiative.	Multi-Family
All Businesses to have Recycling Services	This program would be initiated by the City implementing a requirement for all commercial businesses to obtain recycling services at their place of business. The intent of the requirement would be to ensure that each business establishment within the City that subscribes to waste collection service also implements some type of recycling program to help reduce the amount of waste disposed by that business, and provide compliance with AB 341. This program would be implemented as a component of the City's private hauler franchise initiative.	Commercial
Commercial Haulers to Offer Recycling Services to Customers	Under this program, the City would require all haulers in the City to provide recycling services to commercial customers citywide, not just those covered under AB 341. The requirement for recycling service under this program would specify that recycling must be provided to customers. The City may specify which materials must be included in the recycling program to ensure that customers have a reasonable level of service for recycling the types of materials they generate. Reporting requirements would be necessary to enable the City to monitor the program. This program would be implemented as a component of the City's private hauler franchise initiative.	Multi-Family Commercial
Expand Commercial Technical Assistance	This program currently provides enhanced technical assistance to commercial customers to encourage them to initiate or expand recycling and waste reduction practices at their place of business. The City publicizes the technical assistance program and encourages businesses to use this free service to increase recycling wherever feasible, and at the same time, lower their disposal costs. LASAN or the City's private haulers would need to hire additional staff to work directly with commercial generators to assist them in setting up a recycling program tailored to their needs. Technical assistance would include conducting on-site waste assessments to identify target materials for recycling and waste reduction, providing contact information for securing recycling services, and distributing appropriate outreach materials describing best practices for setting up or expanding recycling services for different types of businesses. Technical assistance would help to minimize or overcome various obstacles to recycling faced by commercial customers (space constraints, labor and sorting requirements, lack of information, or training, etc.). Technical assistance provided by the City would encourage more commercial customers to set-up an effective recycling program that is suited to the customer's site, whether it be a large office complex, bar, restaurant, factory, warehouse, shopping center, small retail business, or other type of commercial site.	Commercial

Table 2.3-1. Proposed Downstream Policies and Programs (Continued)

Initiative	Description	Generator Type
Expand C&D Technical Assistance	This program would expand technical assistance currently provided to contractors, waste haulers, C&D processors, building permit applicants, and other entities associated with construction and demolition projects throughout the City. The technical assistance, provided by City staff, gears itself toward explaining the C&D Ordinance requirements and providing contact information for selecting appropriate haulers and certified processing centers for handling C&D site debris. It also encourages project permit applicants and their contractors to initiate effective recycling and waste reduction practices during construction and demolition activities. As with the Commercial Technical Assistance Program, the City publicizes the C&D Technical Assistance Program and encourages building permit applicants to use this free service to increase recycling wherever feasible, and at the same time lower their disposal costs. LASAN would need to hire additional staff to work directly with the haulers, contractors, and processors to assist them in handling C&D-generated materials for maximum waste diversion and to ensure compliance with the City procedures specified by the ordinance. The City can also increase staffing levels at the planning desk at the Los Angeles Department of Building and Safety. Technical assistance includes conducting on-site waste assessments to identify target materials and handling methods for recycling and waste reduction, providing contact information for securing appropriate waste hauling and recycling services, and distributing appropriate outreach materials describing best practices for handling C&D debris for various types of construction and demolition projects.	Construction and Demolition
Provide More Public Area Recycling	This program would require placement and servicing of recycling bins wherever trash cans are located in all public locations. This would provide convenient opportunities for the general public and visitors to the City to recycle a variety of materials, such as beverage containers, newspaper, mixed-paper, and other materials that are included in the residential curbside program, and would increase opportunities for the public to recycle when shopping, visiting parks, public buildings, and other City facilities. Placement of recycling bins in public areas is a popular service advocated by the public. Revenues from the sale of the commingled materials, coupled with potential funding from the State Department of Conservation and other agencies that offer equipment grants for recycling and litter reduction, could help offset program costs. The City could also seek sponsorships for receptacles and automated litter/recycling bins.	Commercial
C&D Ordinance	The C&D ordinance, approved by the City Council on December 17, 2010, requires all mixed C&D debris disposed within the City to be taken to a C&D debris processor certified by the City. Residential self-hauled material and source-separated recycled material are exempted. The ordinance will result in significant increased waste diversion of C&D materials, particularly during times of increased economic activity when more construction and renovation projects are undertaken.	Construction and Demolition

Table 2.3-2. Mandatory Participation Programs

Initiative	Description	Generator Type
Mandatory Recycling Separation	This program represents a major shift from voluntary to mandatory participation in recycling collection programs. It is intended to motivate all generators within the City to separate recyclable materials from the waste they generate at their home or business and place it in the appropriate blue bin or recycling collection bin on a regular basis for collection. AB 341 requires commercial businesses that generate 4 cubic yards or more and multi-family complexes with 5 units or more to maintain a recycling program. To effect this change, the City would require all generators to source-separate recyclables from other waste, and set the recyclables out for collection as appropriate for the programs and services available through their provider (LASAN for residential curbside customers, private waste haulers for commercial establishments and multi-family complexes, etc.).	Residential Curbside Multi-Family Commercial
Mandatory Organics Separation	This program represents a major shift from voluntary to mandatory participation in organics collection programs, and is intended to motivate all generators within the City to separate organic materials from the waste they generate at their home or business, and place it in the appropriate green bin or organics collection bin on a regular basis for collection. To effect this change, the City would require all generators to separate organics from other waste, and set the organics out for collection as appropriate for the organics programs and services available through their service provider (LASAN for residential curbside customers, private waste haulers for commercial establishments and multi-family complexes, etc.).	Residential Curbside Multi-Family Residential Commercial
Resource Recovery Centers (RRC) at Transfer Stations and Landfills	This program calls for establishing RRCs, which would need to be co-located or in proximity to any transfer station or landfill located within the City. An RRC is a facility open to the public that would receive certain recoverable materials that typically are contained in self-hauled loads delivered by residents or businesses to a disposal site. The intent of this ordinance is to ensure that materials that are recyclable or reusable would be diverted from other waste that is self-hauled for disposal. The materials received at the RRC would be processed and marketed as recyclables or made available for reuse/resale (either at the RRC or elsewhere within the City). If the City adopted this ordinance, it would likely result in local disposal sites (local transfer stations and landfills or other designated public works areas) redesigning their sites to provide for a separate drop-off and staging areas where the public would be able to drop off their recoverable materials before proceeding to the designated disposal areas.	Residential Curbside Multi-Family Commercial Construction and Demolition

Table 2.3-2. Mandatory Participation Programs (Continued)

Initiative	Description	Generator Type
Recycling Ambassador Program (Reinforcement)	Reinforcement of the Recycling Ambassador Program would shift the focus from education efforts to education combined with code enforcement. The intent would be to ensure consistent participation by residents in the established recycling and organics collection programs available to waste generators (and mandated by various City requirements designed to increase the City's waste diversion). Code enforcement would rely on coordinated efforts between City staff working in the Recycling Ambassador Program, and other LASAN staff, as appropriate, to ensure violators of the City Code are aware of and take appropriate actions to comply with the recycling and other waste diversion requirements established by relevant City ordinances. Code violations would likely be discovered by Recycling Ambassadors working in neighborhoods while monitoring recycling programs, or through complaints registered by concerned residents or other parties. Information regarding code violations would be followed-up by LASAN code enforcement and/or the City's Code Enforcement Department to ensure the violations are corrected by the appropriate party. In cases where the party refuses to correct the problem or is unwilling to cooperate with the City to find a resolution, City staff would be able to take appropriate actions which could include imposition of fines, penalties, or other sanctions that are consistent with City code enforcement.	Residential Curbside
Direct Technical Assistance (Reinforcement)	Reinforcement of the technical assistance program would shift the focus from technical assistance to technical assistance with reinforcement efforts. The intent of this program would be to include code enforcement to ensure consistent participation by businesses in the established recycling and organics collection programs available to waste generators (and mandated by various City ordinances designed to increase the City's waste diversion).	Multi-Family Commercial Construction and Demolition
Increased Diversion Requirements at C&D Facilities	This program would modify the C&D Ordinance described in the downstream programs by increasing the minimum diversion requirements of the Certified Processor Program. The current C&D Ordinance (approved by the City Council on December 17, 2010) required Certified Processors to meet the minimum diversion rates of 50% by January 2011, 65% by January 2012, and 70% by January 2013. This program anticipates future modifications to the C&D Ordinance and would increase the minimum diversion requirements to 90% for inert debris and 75% of all remaining debris. An amendment to the C&D ordinance would be required to implement the increased diversion requirements.	Construction and Demolition

The following are the City's priority upstream policies:

(1) Advocate for legislation making businesses responsible for their products, which if inappropriately disposed, can release toxics into the environment. Toxics include such items as pharmaceuticals, used needles (sharps), fluorescent lights, household batteries, treated wood, and other materials banned from disposal statewide

(2) Advocate for legislation making businesses responsible for their products that are difficult to recycle such as disposable diapers, composite materials, appliances, durable goods, and food packaging

(3) Advocate for legislation making businesses responsible for their packaging, including alternatives to EPS foam (containers, "peanuts," and "blocks"), single-use bags, and support for reusable shipping containers

(4) Adopt a citywide reusable bag policy at designated supermarkets and retail establishments

(5) Advocate for businesses to develop life-cycle analyses for products and packaging, taking into account all environmental impacts of the product from manufacturing to the end of its useful life

(6) Advocate for legislation to incentivize manufacturers to use local reuse and recycling markets for the products they manufacture

2.3.5 Development of Processing Facilities

An essential component of SWIRP is to identify and develop future facilities to meet the City's waste management needs through 2030. Throughout Phase 1 of the SWIRP planning process, stakeholders discussed facility options and toured local facilities. During Phase 2, stakeholders identified the specific facility needs resulting from implementation of SWIRP, including options for maximizing diversion through residual waste separation and processing. The facilities considered are categorized as follows:

- **Blue Bin Facilities –** Facilities capable of processing source-separated recyclable and reusable materials, including materials recovered from the City's blue bin program and source-separated commercial recycling. Other facilities for source-separated materials were also discussed within this category, including resource recovery centers for self-hauled materials. Examples of blue bin facilities include material recovery facilities (MRFs) for commingled recyclable materials, and resource recovery centers for self-hauled materials.
- **Green Bin Facilities –** Facilities capable of processing yard trimmings, food scraps, and other compostable materials (e.g., food-soiled paper), either source-separated by generators or sorted from residual waste at a processing facility. Examples of green bin facilities include mulching, composting, and anaerobic digestion facilities for source-separated organics.[12]
- **Black Bin Facilities –** Facilities capable of processing residual waste from residential black bins, commercial waste sources, or residual waste from processing facilities. These facilities are also known as alternative technology facilities. Examples of black bin facilities include, but are not limited to, automated mixed material processing facilities, advanced thermal recycling (second generation waste-to-energy), thermal facilities (such as gasification and pyrolysis), and anaerobic digestion facilities for residual waste.

[12] Some green bin facilities can also be used to compost digestate, the material remaining after the anaerobic digestion of a biodegradable feedstock.

Full implementation of SWIRP policies and programs would require the construction and operation of the following additional blue bin, green bin, and black bin facilities:

(1) One large-scale composting facility or six small-scale composting facilities

(2) Three clean material recovery facilities

(3) One resource recovery center

(4) Five alternative technology facilities

No additional C&D facilities would be needed, as there is adequate capacity at existing facilities (*SWIRP Phase 2 Policy, Program and Facility Plan*, Section 4.5, included in Appendix A).

Black bin processing facilities target residential and commercial residual waste, and residual waste that remains after recycling and composting (materials disposed of in blue bins and green bins that are unsuitable for processing). Even with the implementation of all the policies and programs identified in SWIRP, residents and businesses in the City would still produce over 1.5 million tons of residual waste annually that would need to be disposed in landfills or processed for further recycling and energy recovery. If all of the SWIRP policies and programs are implemented, up to five additional black bin processing facilities would be required to maximize diversion from landfills.

Table 2.3-3 summarizes the potential blue bin and green bin facilities that may be needed through 2030 and Table 2.3-4 summarizes the potential black bin facilities that would be needed through 2030.

2.3.6 Disposal of Remaining Residual Waste at Local or Remote Landfills

After implementing various policies, programs, and constructing as needed facilities to achieve the goals of SWIRP, there will be a need to transport and dispose of the remaining residual waste to landfills. Local and remote landfills are categorized as follows:

- **Local Landfill, Truck Haul –** Landfills located within the local region that can accept residual waste transported from the City. This residual waste can either be direct-hauled to the landfill by refuse collection trucks, or trans-loaded to transfer trucks at local transfer stations.
- **Remote Landfills, Truck Haul** – Landfills located outside the local region that can accept residual waste from the City. This residual waste is transported by transfer trucks from local transfer stations to remote landfills.
- **Remote Landfill, Rail Haul –** Landfills located outside the local region that can accept residual waste from the City. This residual waste is transported by rail. Rail haul infrastructure may include, but is not limited to the construction of new and/or expansion of facilities such as rail transfer stations, intermodal facilities, rail yards, rail tracks and spurs, loading docks, rail right of way contracts, and other associated infrastructure.

Table 2.3-3. Potential Blue Bin and Green Bin Processing Facilities

Processing Facility Type	Description	Facility Size Assumption for EIR Analysis
Clean Material Recovery Facilities (MRF)[13]	Clean MRFs receive and process source-separated recyclables from residential blue bin programs and commercial recycling programs. Clean MRFs have been in operation in the U.S. and internationally for over 25 years and are considered to be mature, proven technologies. Clean MRFs use various technologies and methods to sort, bale, and ship material by commodity type to markets. Clean MRFs typically recover traditional recyclable materials, including newspaper, cardboard, mixed paper, aluminum cans, steel cans, plastic bottles, mixed plastics, and glass containers. Typical residual waste includes food scraps, auto parts, yard trimmings, wood, dirt and other inerts, glass shards, and other waste. Residual waste levels for Clean MRFs are strongly tied to the performance of residential curbside recycling programs to eliminate contamination, which depends on education and/or enforcement.	Facility sizes typically range from 5 to 10 acres for siting and can process 50 to 600 tons per day (tpd). *For this EIR analysis, a 7-acre site processing up to 300 tpd is used.* *Three Clean MRFs would be required if all of the SWIRP policies and programs are implemented.*
Aerobic Composting Facilities	Aerobic composting facilities collect, grind, mix, pile, and supply moisture and air to organic materials to speed natural decay. The finished product is compost, a soil amendment suitable for incorporating into topsoil and for growing plants. Compost is different from mulch, which is a shredded or chipped organic material placed on top of soil as a protective layer against water loss and erosion. Compost technologies include windrows, in-vessel, and aerated static piles.	Facility sizes range from 15 (small facility) to 60 acres (large facility) and can process 100 to 1,000 tpd. *For this EIR analysis, a mid-sized composting facility of 30 acres, which processes up to 600 tpd, is used.* *One large-scale or six small-scale composting facilities would be required if all SWIRP policies and programs are implemented.*
Anaerobic Digestion Facilities for Source-Separated Organics[14]	Anaerobic digestion facilities can be used to process organic material. The facilities use a biological process where microorganisms break down biodegradable materials, in this case food scraps, in an oxygen-deficient environment, creating a biogas that can be used to produce electricity or converted into a transportation fuel. This type of biogas consists primarily of methane (CH_4) and carbon dioxide (CO_2). The CH_4-generating and subsequent electrical generation phase of these facilities are designed to operate continuously and provide uninterruptible power. With a proper feedstock, these reactions can reduce the volume of materials by approximately 70%, provide energy, and the digestate can be sent to a compost facility for further processing.	Facility sizes required range from 5 to 10 acres and can process 200 to 500 tpd. *Some anaerobic digestion facilities may be developed in the City in place of aerobic composting facilities for source-separated organics.*
Resource Recovery Centers (RRC)[15]	RRCs provide locations for drop-off of hard-to-recycle items, including mattresses, large blocks of EPS, and furniture. Materials can be dropped off for donation or buyback, and RRCs typically co-locate reuse, recycling and composting, processing, manufacturing, and distribution activities. Materials from self-haul customers (including cardboard, mixed rigid plastics, wood, and metals) can be processed for recycling.	Facilities sizes are typically 2 acres and process 10 to 200 tpd. *For this EIR analysis, a 2-acre site processing 100 tpd of material is used.* *One RRC would be required if all SWIRP policies and programs are implemented.*

[13] SWIRP Appendix D, Facility Analysis, Section 1.4.7.
[14] SWIRP Appendix D, Facility Analysis, Section 1.4.8.
[15] SWIRP Appendix D, Facility Analysis, Section 1.4.12.

Table 2.3-4. Potential Black Bin Processing Facilities[16]

Processing Facility Type	Description	Facility Size Assumption for EIR Analysis
Automated Mixed Material Processing[17] (MMP)	MMP facilities, also referred to as dirty MRFs, sort recyclable material from mixed residential and commercial waste. These facilities can also be adapted to sort or remove different materials to prepare residual waste for composting, advanced thermal recycling, and other alternative technologies. Desired loads include residual waste from residential and commercial generators, and undesirable loads include concentrated amounts of C&D materials or concentrated amounts of wet materials, such as restaurant food. All of the other black bin processing facility types can include a MMP facility to prepare the materials for the technology.	Facility sizes are typically 5 to 7 acres and process 200 to 400 tpd. *For this EIR analysis, a 6-acre facility processing 300 tpd of material is assumed.*
Alternative Technology–Advanced Thermal Recycling[18]	Alternative Technology–Advanced Thermal Recycling (second generation waste-to-energy) facilities are a second generation advancement of technology that utilize complete combustion of organic materials in an oxygen-rich environment, typically at temperatures of 1,300°F to 2,500°F, producing an exhaust gas composed primarily of carbon dioxide (CO_2) and water with inorganic materials converted to bottom ash and fly ash. The hot exhaust gases flow through a boiler, where steam is produced for driving a steam turbine-generator, producing electricity. The cooled waste gases flow through an advanced emission control system designed to capture and recover components in the flue gas, converting them to marketable by-products such as gypsum (e.g., for wallboard manufacture) and hydrochloric acid (used for water treatment). The bottom ash and fly ash are segregated, allowing for recovery/recycling of metals from the bottom ash, and use of the bottom ash as a road base and construction material. The advanced recycling and emission control systems with recovery/recycling go beyond the technology utilized at conventional waste-to-energy plants such as the Commerce Refuse-to-Energy facility and the Southeast Resource Recovery facility.	Facility sizes range from 5 to 15 acres and process 500 to 2,000 tpd. *For this EIR analysis, a 10-acre facility processing 1,200 tpd of material is assumed.*
Alternative Technology–Biological (Anaerobic Digestion)[19]	At an anaerobic digestion facility, biodegradable material is converted by a series of bacteria groups into CH_4 and CO_2. A first group breaks down large organic molecules into small units like sugar. This step is referred to as hydrolysis. Another group of bacteria converts the resulting smaller molecules into volatile fatty acids, mainly acetate, but also hydrogen (H_2) and CO_2. This process is called acidification. The last group of bacteria, the CH_4 producers or methanogens, produce biogas (CH_4 and CO_2) from the acetate and H_2 and CO_2. This biogas is a medium-British thermal units (Btu) gas containing 50% to 70% methane. It can be used to fuel boilers or reciprocating engines with minimal pretreatment. It can also be upgraded to pipeline quality and used as compressed natural gas (CNG), a vehicular fuel. Anaerobic digestion has been used for over a century to process sewage biosolids. If the residual waste feedstock is processed in the solid phase, anaerobic digestion is often referred to as anaerobic composting. To distinguish anaerobic digestion from thermal gasification it is also referred to as biogasification. In addition to biogas, anaerobic bioconversion generates a digestate consisting of inorganics, non-degradable organics, non-degraded biodegradables, and bacterial biomass. If the feedstock entering the process is sufficiently free of objectionable materials such as plastic or glass, this digestate can be sent to a compost facility for further processing.	Facility size requirements range from 5 to 10 acres and process 200 to 500 tpd. *For this EIR analysis, a 7-acre site processing 350 tpd of material is assumed.*

[16] If all SWIRP policies and programs are implemented, five black bin processing facilities would be needed.
[17] SWIRP Appendix D, Facility Analysis, Section 1.4.2.
[18] SWIRP Appendix D, Facility Analysis, Section 1.4.3.
[19] SWIRP Appendix D, Facility Analysis, Section 1.4.5.

Table 2.3-4. Potential Black Bin Processing Facilities (Continued)

Processing Facility Type	Description	Facility Size Assumption for EIR Analysis
Alternative Technology – Thermal (Pyrolysis, Plasma Arc, Gasification, and Others)[20]	Pyrolysis, gasification, and plasma arc gasification, described further below, are all technologies used to treat residual waste, producing a synthetic gas ("syngas") that can be used to produce electricity or can be converted into a transportation fuel.	Facility size requirements range from 2 to 7 acres and process 100 to 500 tpd. *For this EIR analysis, a 5-acre site processing 250 tpd of material is assumed.*
Pyrolysis	Pyrolysis is the thermal degradation of organic carbon-based materials through the use of an indirect, external source of heat, typically at temperatures of 750°F to 1,650°F, in the absence or almost complete absence of free oxygen. This thermally decomposes and drives off the volatile portions of the organic materials, resulting in a syngas composed primarily of H_2, carbon monoxide (CO), CO_2, and CH_4. Some of the volatile components form tar and oil, which can be removed and reused as a fuel. Most pyrolysis systems are closed systems and there are no waste gases or air emission sources (if the syngas is combusted to produce electricity, the power system will have air emissions through a stack and air emission control system). After cooling and cleaning in emission control systems, the syngas can be utilized in boilers, gas turbines, or internal combustion engines to generate electricity or used to make chemicals. The balance of the organic materials that are not volatile or liquid that is left as a char material, can be further processed or used for its adsorption properties (activated carbon). Inorganic materials form a bottom ash that requires disposal, although some pyrolysis ash can be used for manufacturing brick materials.	
Gasification	Gasification is the thermal conversion of organic materials in the presence of internally produced heat, typically at temperatures of 1,400°F to 2,500°F, and in a limited supply of air/oxygen (less than stoichiometric, or less than is needed for complete combustion) to produce a syngas composed primarily of H_2 and CO. Inorganic materials are converted either to bottom ash (low-temperature gasification) or to a solid, vitrified slag (high temperature gasification that operates above the melting temperature of inorganic components). Some of the oxygen injected into the system is used in reactions that produce heat, so that pyrolysis (endothermic) gasification reactions can initiate; after which, the exothermic reactions control and cause the gasification process to be self-sustaining. Most gasification systems, like pyrolysis, are closed systems and do not generate waste gases or air emission sources during the gasification phase. After cooling and cleaning in emission control systems, the syngas can be utilized in boilers, gas turbines, or internal combustion engines to generate electricity, or to make chemicals.	

[20] SWIRP Appendix D, Facility Analysis, Section 1.4.4.

Table 2.3-4. Potential Black Bin Processing Facilities (Continued)

Processing Facility Type	Description	Facility Size Assumption for EIR Analysis
Plasma Arc Gasification	Plasma Arc Gasification is the use of alternating current and/or direct current electricity passed through graphite or carbon electrodes, with steam and/or oxygen/air injection (less than stoichiometric), to produce an electrically conducting gas (a plasma) typically at temperatures greater than 7,000°F. This system converts organic materials, including tar, oil, and char, to a syngas composed primarily of H_2 and CO with inorganic materials converted to a solid, vitrified slag. Like pyrolysis and conventional gasification, plasma arc gasification is a closed system; therefore, there are no waste gases and no emission sources in the plasma gasification conversion process. After cooling and cleaning in emission control systems, the syngas produced by plasma arc gasification can be utilized in boilers, gas turbines, or internal combustion engines to generate electricity or to make chemicals. The quality of the syngas produced from thermal conversion technologies varies based on the pre-treatment technology utilized as well as the characteristics of the conversion process. Natural gas, which is primarily methane, has a heating value of about 1,000 Btu/cubic foot. Syngas from these thermal conversion technologies are composed primarily of CO and H_2, which have a heating value of 100-700 Btu/cubic foot. If used for power generation, the quality of the syngas generally determines what kind of power generation equipment can be utilized. For example, low heating value syngas is easily combusted in a boiler, but may not be usable in a commercially available reciprocating engine due to ignitability issues and flame characteristics. Some manufacturers of reciprocating engines and gas turbines do produce equipment with modified combustion chambers to deal with lower heating value syngas.	

2.4 POLICY, PROGRAM, AND FACILITY PHASING

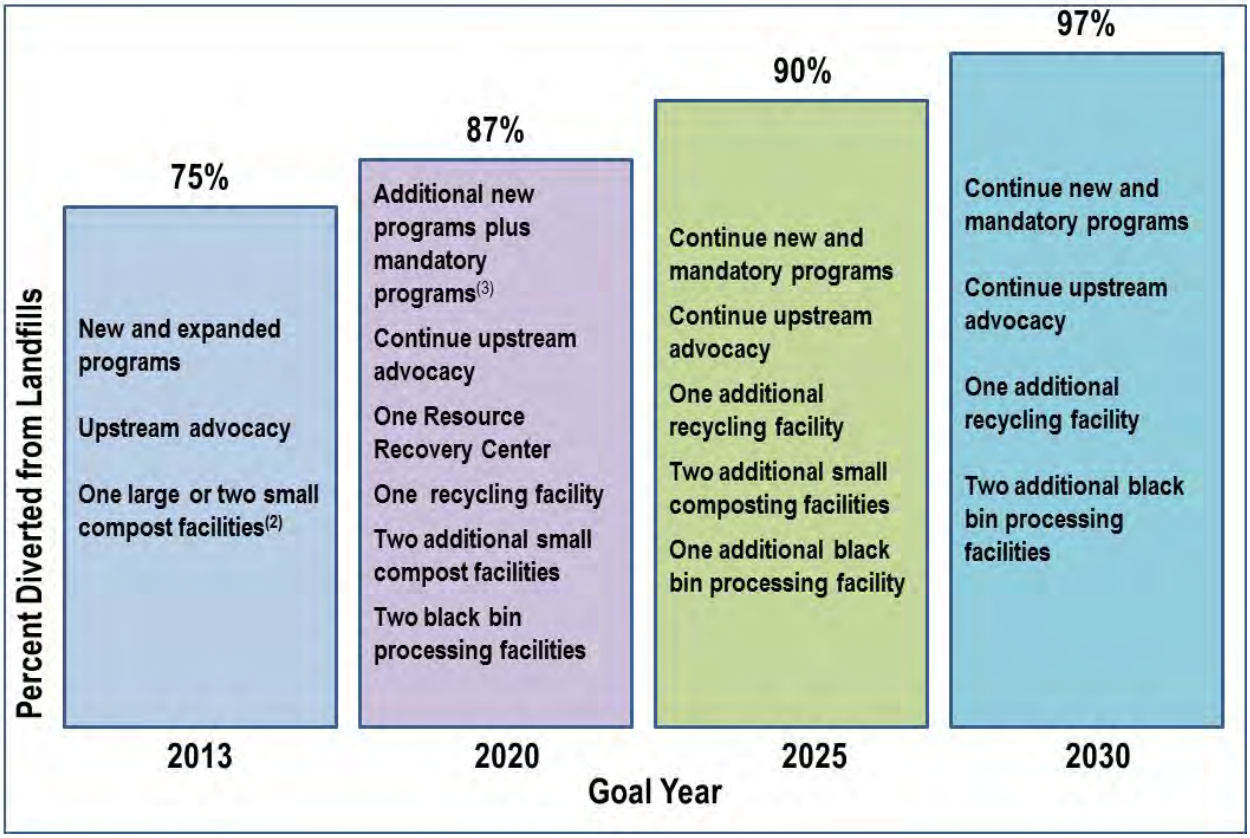
The phasing schedule for SWIRP is shown in Figure 2-4. The phasing schedule takes into account the diversion and disposal tonnage projections that would result from implementation of the policies and programs, and identifies the number and type of facilities that will be needed. The policy, program, and facility phasing approach will achieve the City's goals of 75 percent diversion by 2013 and 90 percent diversion by 2025.

2.5 INTENDED USES OF THE EIR

This EIR will be used for the following approval:

Discretionary Approval	Agency
Adoption of SWIRP	City of Los Angeles

Figure 2-4. Policy, Program, and Facility Phasing [(1)]



(1) Phasing assumed under *SWIRP Phase 2 Policy, Program and Facility Plan*, Sections 3.5 and 4.6 may not reflect actual implementation and/or roll-out of specific policies, programs and/or facilities.

(2) Facilities may be implemented by either the public or private sector, or by joint public-private partnerships, and may also include expansions to existing facilities. Refer to *SWIRP Phase 2 Policy, Program and Facility Plan*, Section 4.6, included in Appendix A, and SWIRP PEIR, Chapter 2.0, Tables 2.3-3 and 2.3-4.

(3) Statewide mandatory commercial recycling for commercial customers generating four cubic yards or more of solid waste per week was implemented in July 2012. Mandatory recycling and composting for all generators will be implemented locally by 2020.

3.0 ENVIRONMENTAL SETTING

The purpose this chapter is to provide a general baseline of the environmental setting, or overview. It is guided by the California Environmental Quality Act (CEQA) Guidelines Section 15125 (Environmental Setting), which states that "an EIR must include a description of the physical environmental conditions in the vicinity of project at the time the project is commenced." This chapter provides an overview of the project location and boundaries as well as a description of the project study area environmental setting. Additionally, please refer to Chapter 4.0, Section 4.1.1 through 4.15.1 for issue-specific environmental setting descriptions.

3.1 LOCATION AND BOUNDARIES

The City of Los Angeles (City) covers approximately 470 square miles and is home to approximately 3.8 million residents. The programs and policies identified in the Solid Waste Integrated Resources Plan (SWIRP) could apply to all residential, commercial, industrial, and institutional solid waste generators in the City. SWIRP also identifies a variety of facilities that will need to be constructed to meet the City's recycling and solid waste infrastructure requirements through 2030. While SWIRP emphasizes local processing and handling of discarded materials generated within the City, it may not be feasible for all facility types to be built within the City, either due to lack of available space or potential land use conflicts. Therefore, a 100-mile study area is included in the analysis to capture any potential impact to areas outside of the City as shown in Chapter 2.0, Figure 2-2. Specific locations for these facilities have not been identified at this time; rather SWIRP notes the number and types of facilities that would be required through 2030.

City Collection Districts/Wastesheds

The City's Bureau of Sanitation (LASAN) is responsible for the collection, disposal, and recycling of over 1.5 million tons per year of materials generated by the residents of the City and separated for collection in the blue, green, brown, and black bins. The City has six solid waste collection districts or "wastesheds." These wastesheds are shown on Chapter 2.0, Figure 2-3 and include East Valley, West Valley, West Los Angeles, North Central, South Los Angeles, and Harbor. Table 3.1-1 summarizes the annual disposed tons, by wasteshed for the residential, commercial, and construction, and demolition (C&D) sectors.

Table 3.1-1. Annual Disposed Tons by Wasteshed and Waste Sector (2010)

	Residential Curbside	Multi Family	Commercial	C&D	Totals
East Valley	178,465	90,254	236,253	14,408	519,379
Harbor	51,318	22,321	63,097	3,470	140,205
North Central	181,512	138,094	447,502	19,634	786,742
South Los Angeles	215,769	93,877	178,294	12,772	500,712
West Valley	149,179	47,422	274,385	12,105	483,090
Western	117,526	49,781	242,261	9,539	419,107
Totals	893,769	441,749	1,441,792	71,928	2,849,237

Source: *SWIRP Phase 2 Policy, Program, and Facility Plan* Appendix B, Table 3.
Totals may not sum due to rounding.

100-Mile Study Area

The project study area includes the City and the area within 100 miles of the City. The100-mile study area encompasses nine counties in Southern California: San Luis Obispo County, Santa Barbara County, Ventura County, Kern County, San Bernardino County, Los Angeles County, Riverside County, Orange County, and San Diego County. The 100-mile study area also includes all or part of 190 cities.

3.2 ENVIRONMENTAL SETTING

This section provides a brief overview of the environmental setting for several of the environmental issue areas. More detailed information is provided in the Existing Conditions of each environmental analysis section (Chapter 4.0, Sections 4.1 through 4.15).

Agriculture and Forestry Resources

Over 400 different commodities are grown within California and nearly half of the U.S.-grown fruits, nuts, and vegetables are grown in California. California is the sole producer (99 percent or more) of a large number of crops, including almonds, dates, grapes, peaches, walnuts, artichokes, figs, pistachios, dried plums, and pomegranates. The top ten commodities of the state, by dollar value, are milk and cream, grapes, almonds, nursery products, cattle, hay and alfalfa, lettuce, berries, and tomatoes (CDFA, 2010a). Of the nine counties in the project study area, crop production in 2008 ranged from 226 million dollars in Orange County to over 4.3 billion dollars in Kern County (CDFA, 2009).

Within the project study area, there are a total of 4,637 acres of land covered by timber harvest plans. The majority of this acreage is north of the City in the Tehachapi Mountains.

Biological Resources

Southern California has a Mediterranean climate characterized by mild, wet winters, and hot, dry summers, and a wide variety of soil conditions and topographic features (Rundel and Gustafson, 2005). These factors and the influence of regional coastlines and mountains contribute to its extremely high level of biological diversity, and multiple habitat types are therefore present throughout the project study area.

The principal vegetation types present in the project study area, beginning at the coast and moving inland, include coastal strand, coastal salt marsh, freshwater marsh, coastal sage scrub, chaparral, valley grassland, southern oak woodland, montane coniferous forest, bristle-cone pine forest, sagebrush scrub, shadscale scrub, pinyon-juniper woodland, Joshua tree woodland, creosote bush scrub, and alkali sink (Munz, 1974). Other notable vegetation types in the region include riparian woodland, mountain meadow, desert sand dunes, and intermittent washes (Jaeger and Smith, 1966).

Given the great biodiversity native to Southern California, many federal and/or state-listed Endangered, Threatened, Rare, and Candidate plant and wildlife species have the potential to occur within the overall project study area. Wetlands and drainages under United States Army Corps of Engineers and/or the California Department of Fish and Game jurisdiction and various special status vegetation types also occur throughout the project study area.

Cultural Resources

Due to the large size of the project study area, there are numerous cultural resources. Prehistoric cultural resources are the recognizable locations of any prehistoric human activities or "sites," as well as locations or natural features recognized by Native Americans as having sensitive historic or ideological importance. Historical resources are typically discussed in one of three general contexts based on phases of European/Western occupation (Spanish, Mexican, and United States). Types of historical resources expected throughout the project study area can relate to European, Mexican, or United States land use including exploration, settlement, or warfare. Types of historic resources include buildings, structures, or objects consisting of habitation sites (homesteads, farmsteads, ranch houses, private residences, hotels), procurement sites (logging, trading posts, kilns, mills, quarries, wells, cisterns, mines), transportation sites (historic roads, trails, bridges, landings, piers, shipyards, railroad tracks/routes), hydrological sites (dams, weirs, canals, locks, drainages, brow ditches, culverts), ceremonial or religious sites (cemeteries, churches), industrial sites (power plants, commercial buildings, factories, canneries), and municipal sites (town halls, civic centers, department stations, or other government buildings).

Geology and Soils

More than 50 percent of Los Angles County is comprised of hilly or mountainous terrain. The Los Angeles Basin occurs at the intersection of the north-northwest trending Peninsular Ranges Geomorphic Province and the east-west trending Transverse Ranges Geomorphic Province. The Peninsular Ranges are characterized by a series of mountain ranges and intervening valleys that extend from Orange County to Baja California. The Transverse Ranges extend eastward where they merge with the Mojave and Colorado Deserts. Chapter 4.0, Section 4.4., Figure 4.4-2 shows the regional topography.

The Verdugo and Santa Susana Mountains bound the city on the north, the Santa Monica Mountains extend across the middle of the city, and the Palos Verdes Hills and Pacific Ocean are on the south and west, respectively. The topography rises from sea level to 5,074 feet (Sister Elsie station in the San Gabriel Mountain foothills in Tujunga). The Santa Monica Mountains are the most visible geologic feature from many areas of the City.

The seismicity of Southern California is dominated by the intersection of the north-northwest trending San Andreas Fault system and the east-west trending Transverse Ranges fault system. The Transverse Ranges include a series of east–west trending mountain ranges that extend from Point Conception at the western tip of Santa Barbara County, eastward (and a bit south) to the east end of the San Jacinto Mountains in western Riverside County. According to data compiled from the United States Geological Survey (USGS), there are 3,706 named faults and fault zones located within the project study area (City and the area within 100 miles of the City) (USGS, 2010). Within the project study area, there are 22 mapped Class A and Class B faults. Class A faults are defined as having geologic evidence that demonstrates the existence of a Quaternary fault of tectonic origin, whether the fault is exposed by mapping or inferred from liquefaction or other deformational features. Class B faults are defined as having geologic evidence that demonstrates the existence of Quaternary deformation, but either: (1) the fault might not extend deeply enough to be a potential source of significant earthquakes; or (2) the currently available geologic evidence is too strong to confidently assign the feature to Class C but not strong enough to assign it to Class A.

Liquefaction is the process by which water-saturated granular soils transform from a solid to a liquid state during strong ground shaking. Liquefaction occurs when there are low-density sandy soils, shallow groundwater, and intense ground motion. According to the Los Angeles Citywide General Plan Framework Environmental Impact Report (EIR) and Los Angeles County Safety Element (1990), relatively shallow groundwater occurrences are found in the valley and basin areas as perched water and in shallow aquifers. The San Fernando Valley has two areas of concentrated shallow groundwater, with the largest extending from the north edge of the Santa Monica Mountains, from one to six miles. The second area is the northeast portion of the Valley along Tujunga Wash and in zones beneath Sylmar and San Fernando. Additionally, the northern Los Angeles Basin has large patches of 0 to 30-foot depths of groundwater along the south edge of the Santa Monica Mountains, narrow strips along the immediate coastline, as well as broad areas east and north of Baldwin-Rosecrans Hills. From the harbor area north into the southern part of the basin, 0 to 30-foot groundwater depths are found bordering the Palos Verdes Hills on the north and east, and in isolated patches along the Harbor Freeway.

Landslides or mudslides are generally the falling, sliding, or flowing masses of soil, rocks, water and debris. The project study area (City and the area within 100 miles of the City) includes areas comprised of hilly or mountainous terrain, and the potential for slides is a problem throughout Los Angeles County. Mud and debris flows, active deep-seated landslides, hillside erosion and man-induced slope instability comprise the vast majority of hillside hazards, in addition to areas that have experienced post-fire conditions which can exacerbate the potential for landslides.

The project study area (City and the area within100miles of the City) has a large variety of soil types, including areas of expansive soils. An example of this would be clay-type soils that expand or swell when wet, and contract or shrink when dry.

Hydrology and Water Quality

The project study area (City and the area within 100 miles of the City) crosses a large number of jurisdictional boundaries from a hydrology and water quality perspective. The project area includes 190 cities, nine counties, seven Regional Water Quality Control Boards (RWQCBs), the State Water Resources Control Board (SWRCB), and Federal Emergency Management Agency. RWQCBs address water quality issues for a given watershed area. Newer requirements from several of the RWQCBs identify hydrology constraints that can be very restrictive.

A general construction National Pollutant Discharge Elimination System (NPDES) permit (General Construction Permit) has been created for the whole state and is implemented through the SWRCB which addresses all water quality concerns associated with construction activities. In addition, the recently adopted General Construction Permit includes post-construction best management practices (BMPs) for projects that are outside of the Phase I and Phase II NPDES permits for the RWQCBs. Phase I and Phase II permits regulate storm water discharges to Municipal Separate Storm Sewer Systems (MS4s) for large cities and counties (over 100,000 population) and for smaller urbanized areas. General Construction Permit SWRCB post-construction BMP requirements went into effect in September 2012, and requires all projects outside of the Phase I and Phase II NPDES permits to consider treatment control for stormwater runoff (SWRCB, 2010).

Major watersheds for the nine counties that make up all or part of the project study area are shown in Chapter 4.8, Hydrology/Water Quality (refer to Figure 4.8-2), and are described as follows:

Table 3.2-1. Major Watersheds in the Project Study Area

County	Major Drainage Features
Kern	Major topographic features of Kern County within the study radius are the Temblor Range and the San Andreas Rift along the western boundary, the Tehachapis along the southern end, which curve northward into the Greenhorn Mountains, the beginnings of the Sierra Nevada Range. The Buena Vista and Kern Lakebeds are sinks at the southern end of the San Joaquin Valley. To the east of the Tehachapis, lies the Mojave Desert and Antelope Valley. Watersheds draining the eastern portions of the Temblor Range drain primarily to the southeast with an ultimate destination of the Buena Vista Lakebed. Drainages of the western slopes of the Greenhorn Mountains drain to the San Joaquin Valley. The Kern River drains the eastern faces of the Greenhorn Mountains, as well as substantial portions of the southern Sierra Nevadas. The Kern's ultimate destination is the Buena Vista and Kern Lakebeds. Eastern portions of the county drain to the Mojave Desert and the sinks of Rosamond Lake and Rogers Lake.
Los Angeles	Los Angeles County is generally divided north to south by the San Gabriel Mountains, with the San Andreas Rift Zone and the Antelope Valley to the north, and the coastal plains of the Los Angeles Basin to the south. The Malibu Mountains are distinctly separate to the west, as well as the adjacent San Fernando Valley and the Palos Verdes Peninsula to the south. The northern portion of the county drains to the Antelope Valley, comprising the western edge of the Mojave Desert and the southern extent of the Great Basin. The northwestern portion of the County drains to the Santa Clara River of Ventura County. The Los Angeles River originates from the Santa Susana Mountains and the Simi Hills on the Ventura County line. The river drains the San Fernando Valley north of the Santa Monica Mountains, turning south to meet downtown Los Angeles. The current course of the river drains south through the Los Angeles Basin to the Long Beach Harbor. Major tributaries include Tujunga Wash, Verdugo Wash, Arroyo Seco, Rio Hondo, and Compton Creek. The San Gabriel River watershed lies to the east of the Los Angeles River watershed and drains the majority of the southern face of the San Gabriel Mountains, including the 10,000-foot peak of Mount San Antonio. Exiting San Gabriel Canyon in the vicinity of Duarte and Azusa, the San Gabriel River flows south to the eastern boundary of the City of Long Beach, along the Orange County line. Major tributaries include Walnut Creek, San Jose Creek, and Coyote Creek. The Santa Monica Bay Watersheds include the North Santa Monica Bay, South Santa Monica Bay, and Marina Del Rey Watersheds. The North Santa Monica Bay includes the Malibu Creek Watershed, Topanga Creek Watershed, and other rural Santa Monica Mountains Watersheds. The South Santa Monica Bay watersheds span from the Castlerock Watershed near Malibu to Palos Verdes Peninsula Watersheds on the south. The Marina Del Rey watershed encompasses all areas that drain to the marina. Portions of these watersheds are very rural and undeveloped, and other portions are very urbanized.
Orange	Major features of Orange County include the Puente Hills to the north, the Santa Ana Mountains to the east, and the San Joaquin Hills along the southern coast. The Santa Ana River divides the county as it flows to the Pacific. The western edge of Orange County follows Coyote Creek as it and its tributaries drain the northern portion of the county, with the boundary continuing along San Gabriel River after the confluence of the two drainages. The lower portion of the Santa Ana River drains the heart of the urban plain of Orange County, as well as the western slopes of the Santa Ana Mountains. Smaller coastal drainages dominate the southern portions of the county, to include San Diego Creek, Aliso Creek, and San Juan Creek.

Table 3.2-1. Major Watersheds in the Project Study Area (Continued)

County	Major Drainage Features
Riverside	The western portion of Riverside County lies within the study radius. Portions of the San Bernardino and Little San Bernardino Mountains provide an east to west topographic divide. The San Jacinto Mountains provide a north to south divide, separating the Coachella Valley from San Jacinto, Perris, and Moreno valleys. Areas to the north of the San Bernardinos and Little San Bernardinos drain to desert sinks of the Mojave Desert. The Whitewater River and its tributaries drain the southern slopes of these mountains through the Coachella Valley, with the Salton Sea as its final destination. The San Jacinto River drains the western slopes of the San Jacinto Mountains and terminates in the vicinity of Lake Elsinore. Small, local drainages contribute to the Santa Ana River.
San Bernardino	The majority of San Bernardino County within the study radius is located within the Mojave Desert. The southwest corner of the county is separated by the San Gabriel and San Bernardino Mountains and extends into the Inland Empire. Inland desert sinks of the Great Basin are the final destination for the majority of San Bernardino drainages. Notably, the Mojave River flows north from the San Bernardinos in the Mojave Desert, following a north and northeast course. Flowing mostly underground, the Mojave River ultimately flows to Soda Lake. The southwestern corner of the county sees local drainages coming off the southern slopes of the San Gabriels, notably Cucamonga Creek, Lytle Creek, and Cajon Wash flowing down the San Andreas Rift. The Santa Ana River drains southern slopes of the San Bernardinos and merges with the San Gabriel Mountain drainages.
San Diego	Most of the northern and western portions of San Diego County lie within the study radius. Major topographic features of these areas are the Santa Margarita Mountains in the northwest corner, Palomar Mountain in the north, the Anza Borrego Desert in the east, and a multitude of coastal drainages and lagoons. The major drainages along the coast are the Santa Margarita River, San Luis Rey River, San Marcos Creek, Escondido Creek, San Dieguito River, Los Peñasquitos Creek, and the San Diego River. These east-to-west drainages characteristically empty to coastal estuaries. Eastern portions of the study area within San Diego County lie east of the Tecate Divide and drain to the Salton Sea, via desert washes of the Anza Borrego Desert.
San Luis Obispo	Southeastern portions of San Luis Obispo County lie within the 100 mile study radius. This portion of the County is dominated by the San Andreas Rift Zone of the Carrizo Plain, as well as the La Planza Rand and Garcia Mountains of the Los Padres National Forest. Drainages surrounding the Carrizo Plain drain to the Soda Lake Basin. The remainder of the study vicinity is ultimately drained by the Cuyama River of Ventura County and the headwaters of the Salinas River.
Santa Barbara	The majority of Santa Barbara County lies within the 100-mile study radius. These portions of the county are defined by the ranges of Los Padres National Forest, specifically the Sierra Madre Mountains, San Rafael Mountains, and the San Ynez Mountains, all a part of the Transverse Ranges. Northern portions of the county drain via the Sisquoc River of the Santa Maria Valley, San Antonio Creek of the Los Alamos Valley, and the Santa Ynez River as the southernmost major watershed above Point Conception. The remaining portions of Santa Barbara County are drained by small, local watersheds coming off the southern facing slopes of the Santa Ynez Mountains, with Arroyo Hondo, Tajiguas Creek, Atascadero Creek, Mission Creek, and Carpinteria Creek, as examples.

Table 3.2-1. Major Watersheds in the Project Study Area (Continued)

County	Major Drainage Features
Ventura	Ventura County sits adjacent to Los Angeles County within the study radius. The upper half of the county is defined by several mountain ranges of the Transverse Ranges within Los Padres National Forest, with the southern portion a mixture of small ranges and east to west drainages. The northwest corner of the county forms the headwaters of the Cuyama River. The western edge of the county is primarily drained by the Ventura River. The majority of the County drains to the Santa Clara River, with major tributaries being Piru Creek, Sespe Creek, and Santa Paula Creek. This watershed drains portions of the Oxnard Plain, prior to reaching the Pacific Ocean, only a few miles south of the Ventura River Mouth.

A seiche is a wave that oscillates in a water body (e.g., lake, bays, or gulf) from a few minutes to a few hours as a result of seismic or atmospheric disturbances. There are several lakes and bays within the project study area that could be subject to a seiche and result in adjacent flooding.

The project study area includes coastal and low-lying areas that could be inundated in the event of a tsunami. A tsunami is a large, destructive ocean wave caused by an underwater earthquake or another movement on the earth's surface. Communities that are located within potential tsunami impact areas typically include tsunami warning plans and evacuation routes as part of their safety elements of the general plans. Tsunami inundation zones within the City include portions of the San Pedro and Harbor area, portions of Venice, Playa del Rey, and Westchester areas, as well as a portion of Pacific Palisades.

A mudflow is a fast-moving downhill flow of mud and soil, loosened by rainfall or melting snow. Areas of potential mudflow within the project study area would be associated with steeper sloped areas, particularly areas that may have been recently subject to wildland fires.

Land Use and Planning

Each of the nine counties and 190 individual local jurisdictions within the 100-mile study area contain an array of various land use patterns and uses. Due to the programmatic nature of the project, the existing underlying general plan land use designations and zoning classifications throughout the nine counties were not identified.

Within the City, alternative technology facilities (similar to those proposed under SWIRP) can be permitted within M2 (light industrial/commercial), M3 (heavy industrial) and PF (Public Facility) zones, subject to the provisions outlined under the Solid Waste Alternative Technology Processing Facility Ordinance, as amended in Sections 12.03 and 12.24 of the Los Angeles Municipal Code (LAMC).

Outside the City, land use provisions and regulations for the siting of new materials processing facilities (including resource recovery centers, material recovery facilities, composting facilities and alternative technology facilities) is typically included within the Municipal Services/Public Facilities Element within the General Plan or any applicable Countywide Siting Elements, Non-Disposal Facility Elements, Solid Waste Management Plans, Recycling/Solid Waste Reduction Plan, etc. Each respective jurisdiction typically utilizes the municipal code to regulate performance objectives, noise levels, land use compatibility, and other land use and community planning matters.

Mineral Resources

The primary mineral resources within the City are rock, gravel, and sand deposits. Sand and gravel deposits follow the Los Angeles River flood plain, coastal plain and water courses. Significant potential deposit sites have been identified by the state geologist. They lie along the flood plain from the San Fernando Valley through the downtown area. Much of the area identified has been developed with structures and is inaccessible for mining extraction. The only currently available deposit site in the City is the Tujunga alluvial fan, which is rich in accumulations of high quality sand and gravel washed from the adjacent mountains (General Plan Conservation Element, Section 18: Resources Management: Mineral Resources – Sand and Gravel).

Current production areas are located within the City and the project 100-mile study area, as shown Chapter 4.10, Mineral Resources (refer to Figure 4.10-2). Local aggregate resources are considered an important local resource due to the correlation between availability and construction costs to haul the aggregate. According to the Department of Conservation (1999), the following production areas are located within the project study area: Moorpark, Simi, Soledad, Little Rock Creek Fan, Sun Valley, Irwindale, San Antonio Fan, Santa Ana Canyon, Irvine Lake, Corona, and Glen Ivy.

In the Los Angeles Basin area, oil field properties offer one of the few open areas still available for development. The conditions of oilfield properties vary, with some in heavily urbanized areas, hillsides, and in coastal zones. There are numerous oil fields located throughout the study area. Oil fields are located parallel to the coastline from Ventura County to the Newport Beach area. Additional pockets of oil fields are located east of the City in the Beverly Hills area, south in the Inglewood and Rosecrans area, and in the area of Montebello extending east to the City of Corona. The Bakersfield area has a vast amount of oil fields located in the San Joaquin Valley, west of the Sierra Mountain Range and Coastal Mountain Range. There is one isolated oil field located east of the San Clemente area.

The project study area includes Geothermal District G2. This area of Desert Hot Springs is identified as the only geothermal activity located within the project study area (City and the area within 100 miles of the City).

Public Services, Utilities, and Service Systems

Fire Protection Services

Fire prevention, fire protection, and emergency medical services for the City are provided by the Los Angeles Fire Department (LAFD). The LAFD operates 106 neighborhood fire stations located throughout the LAFD's approximately 470-square-mile jurisdiction.

Law Enforcement Services

The Los Angeles Police Department (LAPD) is responsible for providing police service to an area encompassing approximately 470 square miles with 18 community areas. The LAPD operates 18 stations within four bureaus (Central, South, Valley, and West) with two new stations proposed. As of December 2008, LAPD was staffed by 9,800 sworn officers (2.6 officers/1,000 people) and 3,030 non-sworn support personnel Citywide (LAPD Statistical Digest, 2009).

Schools

Education within the City is provided by the Los Angeles Unified School District (LAUSD). LAUSD has jurisdiction over 885 school facilities: 520 elementary; 119 middle, 123 senior high (excludes independent charters), 18 Student/Parent Access Network (SPAN) schools, 45 continuation senior high schools, 19 special education schools, 10 community day schools, and 31 opportunity and alternative high schools. Total K-12 enrollment is 670,745 students (CDE, 2009).

Wastewater Service

The City's Department of Public Works (DPW) LASAN provides sewer conveyance infrastructure and wastewater treatment services to the City. The City's system consists of more than 6,500 miles of sewers, 140,000 maintenance holes, and 46 pump stations. In addition, there are about 700,000 privately owned sewer laterals with total length of more than 11,000 miles. The City also provides wastewater conveyance and treatment services to 29 satellite agencies under contractual agreements but is not responsible for satellite agencies' sewer system management. The sewer system consists of three inter-connected sanitary sewer systems: Hyperion Sanitary Sewer System, Terminal Island Water Reclamation Plant Sanitary Sewer System, and the City's Regional Sanitary Sewer System (City of Angeles, 2010)

Stormwater

The Watershed Protection Division of the City's DPW, LASAN, manages the stormwater program for the City. Approximately 100 million gallons of water flow through the storm drain system on an average dry day. When it rains, the amount of water flowing through the channels can increase to 10 billion gallons (DPW, 2010). The City currently diverts approximately 6 million gallons per day (mgd) of dry weather urban runoff into the wastewater collection system for eventual treatment at the Hyperion Treatment Plant. Storm drains within the City are constructed by both the City and the Los Angeles County Flood Control District (LACFCD), and managed by the County DPW.

Water Service/Supply

The Los Angeles Department of Water and Power (LADWP) services over approximately 470 square miles of area in the Los Angeles Basin. The City uses about 215 billion gallons of water annually, with the average City resident using 155 gallons daily (LADWP, 2010). The City's water system has 110 tanks and reservoirs with a total capacity of 109 billion gallons and water is distributed through a network of 7,200 miles of water mains. Because of the size and range in elevation, the system is divided into 102 pressure zones with almost 90 booster pumping stations to provide water service at higher elevations. Regulator stations control the flow that feeds the distribution system (Draft Hollywood Community Plan, 2010).

Solid Waste

The City's DPW LASAN provides solid waste management services to residential curbside customers[1] in the City. Private hauling companies collect other waste, including most multi-family and all commercial, institutional and industrial materials. The SWIRP document (December 2014) is the long-range solid waste management policy plan for the City. The City's Solid Resources program includes the collection,

[1] Residential curbside customers include generators in single-family residences and some multi-family residences, including multi-family residences with four units or less.

recycling, and disposal of solid waste, yard trimmings, recyclables, manure, bulky items, construction and demolition debris, and other special solid resources materials from residences citywide, and oversight of contracted recycling programs for apartments, and other commercial programs. This includes the recycling and disposal of household hazardous waste, the development of long-term alternatives to landfill disposal, and clean fuel infrastructure related to solid waste.

The LASAN collects, disposes, and recycles over 1.5 million tons per year of solid waste, collecting primarily single-family residential refuse, recyclables, yard trimmings, and bulky items (LASAN,2010). Solid waste facilities utilized by the City include: refuse collection yards; mulching/composting facilities; permanent Solvents, Automotives, Flammables, and Electronics (SAFE) centers for household hazardous waste; regional transfer stations and landfills, material recovery facilities (MRFs), and waste-to-energy facilities.

Electricity and Gas

Electricity service in the City is provided by LADWP. To ensure a reliable supply of power, the LADWP maintains a diversified energy generation mix including coal, natural gas, large hydroelectric, nuclear, and renewable power such as wind, biomass, solar and cogeneration. The LADWP draws its energy supply from in-basin power plants and several out-of-state facilities in Nevada, Utah, and the Pacific Northwest. The LADWP supplies more than 22 million MW hours of electricity a year to the City's 1.4 million customers (LADWP, 2010).

Natural gas service within the City is provided by the Southern California Gas Company (SoCalGas). SoCalGas is the nation’s largest natural gas distribution utility, providing energy to 20.5 million consumers through 5.7 million meters in more than 500 communities. The company’s service territory encompasses approximately 20,000 square miles in diverse terrain throughout Central and Southern California, from Visalia to the Mexican border. The California Public Utilities Commission (CPUC) regulates the operations of SoCalGas.

In addition to the City, the 100-mile study area includes all or part of 190 cities and nine counties. Each of these cities and counties has departments and public agencies that supply and regulate public services and utility systems. Depending where future facilities are located, local plans and policies would be applicable to those facilities.

Transportation and Traffic

The Southern California transportation system is a complex network of roads and highways, public transit, bus and rail, freight railroads, airports, seaports, and intermodal terminals. According to the Southern California Association of Governments (SCAG), the regional transportation system is currently at capacity operations during peak periods (SCAG, 2008). The regional freeway and highway system is the primary means of people and freight movement for the region. This system provides for direct auto, bus, and truck access to employment, services, and goods. The network of freeways and state highways serves as the backbone of the system offering very high capacity limited-access travel, and serving as the primary heavy-duty truck route system. Southern California has almost 65,000 lane-miles of roadways, including one of the most extensive High-Occupancy Vehicle (HOV) lane systems (SCAG, 2008).

The Los Angeles County freeway system is operating at approximately its designed capacity. However, at specific locations along the system, freeway segments may range from free flow, such as along State Route (SR) 14 as it approaches the Kern County border, to extremely congested conditions, such as along

SR-10 west of SR-110, where demand approaches 150 percent of capacity during rush hours. In addition to the freeway system, there is a solid network of local streets in the City, as well as the larger project study area.

Southern California public transit service is comprised of local and express buses, rapid buses, and urban rail that is principally centered in the core of Los Angeles County, commuter rail that spans all counties, and shuttles/circulators that feed all transportation modes and activity centers. The Metropolitan Transit Authority (Metro) operates 2,281 peak-hour buses on 183 routes throughout Los Angeles County (County of Los Angeles Metropolitan Transportation Authority, 2011), including the Orange Line and Silver Line, which are part of the Metro Liner system that uses buses within transit ways. The Metro Rail system is made up of the Metro Red and Purple Line subway system, the Metro Blue Line, the Metro Green Line, and the Metro Gold Line. It operates 79.1 miles of rail, and serves 70 rail stations from Long Beach to downtown Los Angeles to Hollywood, Universal City, and North Hollywood in the San Fernando Valley, from downtown Los Angeles to Pasadena, and from Norwalk to El Segundo (Metropolitan Transit Authority, 2011). In addition to the Metro Rail system, Metrolink has a commuter rail service with seven lines, covering 512 route miles and servicing 55 stations. Metrolink provides service from downtown to the Inland Empire, Orange County, San Bernardino, Riverside, Oceanside, Montalvo and Lancaster (Metrolink, 2011). Metrolink also connects with Metro Rail lines at Union Station in downtown Los Angeles, and with the San Diego Coaster and Sprinter lines at Oceanside. It also connects with Amtrak's Pacific Surfliner, Coast Starlight, Southwest Chief, and Sunset Limited trains.

The project study area contains 21 major airports, including international airports and commercial/private airports, as well as several military airports. There are also four ports of entry within the project study area, including the Port of Los Angeles and the Port of Long Beach, the two largest ports in the United States Additionally, the City is a major main line rail hub with Union Pacific operating four terminals, and Burlington Northern Santa Fe operating three terminals. These railroads link Southern California with other U.S. regions, Mexico, and Canada either directly or via their connections with other railroads.

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4.0 ENVIRONMENTAL EFFECTS ANALYSIS

This section provides information on existing conditions, evaluates the potential environmental consequences for the proposed project at a project and cumulative level, and recommends mitigation measures for each environmental subject, as appropriate. This Final Program Environmental Impact Report (Final PEIR) addresses potential impacts under the California Environmental Quality Act (CEQA). The chapters are organized as follows:

- **Environmental Setting** – The environmental setting section provides a summary of the applicable regulatory environment for the specific environmental topic, as well as a description of the existing resource within the project analysis area.
- **Threshold of Significance** – The thresholds of significance guide the analysis of impacts and provide guidance as to whether the level of environmental change due to project implementation would be significant or not. This Final PEIR uses thresholds from the Appendix G of the State *CEQA Guidelines* as well as the *Los Angeles CEQA Thresholds Guide*.
- **Project-Level Analysis** – This section analyzes the impacts of project implementation, per the thresholds identified in the thresholds of significance section.
- **Cumulative-Level Analysis** – This section analyzes the potential for an impact when the project is considered, along with other geographically-related projects.
- **Mitigation Measures** – This section identified measures that will be implemented in order to reduce project- and cumulative-level impacts.
- **Conclusion** – This section briefly summarizes the impact analysis and mitigation measures and makes a final determination as to the level of significance after all the mitigation measures are implemented.

The proposed project is a long-range master plan for solid waste management in the City of Los Angeles (City). Implementation of the policies, plans, and programs identified in the Solid Waste Integrated Resources Plan (SWIRP) would require additional facilities to process materials that are diverted from landfills. For the purposes of this Final PEIR, it is assumed that future facilities would be in the City or in an area within a 100-mile radius of the City, as shown in Chapter 2, Figure 2-2. Specific locations for these facilities have not been identified at this time; rather SWIRP notes the number and type of facilities that would be required through 2030. This Final PEIR will focus on a broad-level program environmental analysis to identify potential impacts that the SWIRP may affect the City and surrounding jurisdictions within the 100-mile study area. Upon determination of future facility locations, further environmental review pursuant to CEQA would be required at the project level.

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4.1 AESTHETICS AND VISUAL RESOURCES

This section analyzes the potential for the proposed project to result in an aesthetic or visual resource impact. It includes a discussion of the applicable regulatory environment, existing conditions, a project- and cumulative-level impact analysis, and any applicable mitigation measures. The project study area for aesthetics includes the City of Los Angeles (City) and the area within 100 miles outside the City. While the Solid Waste Integrated Resources Plan (SWIRP) emphasizes local processing and handling of discarded materials generated within the City, it may not be feasible for all facility types to be built within the City, either due to lack of available space or potential land use conflicts. Therefore, a 100-mile study area is included in the analysis to capture any potential impact to areas outside of the City.

4.1.1 Environmental Setting

The City encompasses 470 square miles of land area[1], including approximately 214 square miles of hills and mountains. The Verdugo and Santa Susana Mountains bound the City on the north, the Santa Monica Mountains extend across the middle of the City, and the Palos Verdes Hills and Pacific Ocean are on the south and west. The topography rises from sea level to 5,074 feet at Sister Elsie station (also known as Mount Lukens) in the San Gabriel Mountain foothills in Tujunga. The Santa Monica Mountains are the most visible feature from many areas of the City. They are 60 miles long and stretch from Elysian and Griffith parks in Los Angeles to Point Mugu State Park in Ventura County. The Los Angeles River and its associated tributaries and flood plains are also prominent topographic features.

The 100-mile study area encompasses all or part of nine counties in Southern California: Kern, Los Angeles, Orange, Riverside, San Bernardino, San Diego, San Luis Obispo, Santa Barbara, and Ventura. The 100-mile study area also includes all or part of 190 cities. Southern California is considered one of the more varied geologic, topographic, and natural ecosystem landscapes in diversity; outnumbering other major regions in the state. The region spans from the Pacific Ocean islands, shorelines, beaches, and coastal plains, through the mountain ranges, into the large and small interior valleys, to the vast deserts of California, including Anza Borrego and Mojave.

4.1.1.1 Regulatory Setting

The following section provides a description of the applicable regulatory environment for the proposed project.

Federal

There are no applicable federal regulations pertaining to aesthetics and visual quality.

State

State Scenic Highway System

The State Scenic Highway System consists of highways that have been designated by the California Department of Transportation (Caltrans) as scenic. The California State Legislature, through Section 263 of the Streets and Highways Code, makes highways eligible for designation as a scenic highway.

[1] City of Los Angeles, Your Government at a Glance, 2006 Edition.

Local

City of Los Angeles

The City's conservation element was adopted by the City Council on September 26, 2001, and includes policies and programs that address conservation, protection, development, utilization, and reclamation of natural resources within the entire City.

The City of Los Angeles Conservation Element

Section 15: Land Form and Scenic Vistas Policy. Continue to encourage and/or require property owners to develop their properties in a manner that will, to the greatest extent practical, retain significant existing land forms (e.g., ridge lines, bluffs, unique geologic features) and unique scenic features (e.g., historic, ocean, mountains, unique natural features) and/or make possible public view or other access to unique features or scenic views.

- *Program 1:* Permit processing, enforcement and periodic revision, especially environmental review, grading, large lot zoning, clustering of structures, building height limits and other project design and construction methods for protecting natural terrain and features and protecting public view access.
- *Program 2:* Planning and construction of roads, utilities, and other public projects, especially projects that are within or impact natural terrain and/or scenic areas.

Los Angeles Municipal Code

The following aesthetics related regulations in the Los Angeles Municipal Code would be applicable to the construction of a new facility:

- Chapter 1, Article 2, Sec. 12.13.5 A 3, and Sec. 12.14 A, and Sec. 12.18 B 5(b) and (d) - All activities, including storage, in the "C1.5" Zone, and certain activities in the "C2" Zone, shall be conducted wholly within an enclosed building. Open storage areas in the "MR2" Zone shall be enclosed on all sides with a solid wall not less than eight feet in height sufficient to screen the use from public view.
- Chapter 1, Article 2, Sec. 12.14 A, and Sec. 12.17 A 3(b), and Sec. 12.17.1 A 2(b)(4) - The display/storage of merchandise within the "C2", "C5" and "CM" Zones shall be confined to the rear of the lot as measured from street frontages.
- Chapter 1, Article 2, Sec. 12.19 A 1(4)(2), and 12.20 A 1(e) - Automobile dismantling yards, junkyards and certain types of storage in the "M2" or "M3" Zones shall be enclosed within a building or an eight-foot solid masonry wall.
- Chapter 1, Article 2, Sec. 12.21 A 6(d) and (e), and (i) - Public and private parking areas shall be enclosed by a wall, except in the "M2" and "M3" Zones, along an alley, public parking area, or a "P," "PB," "C" or "M" Zone. Unimproved or non-parking portions of parking lots shall be landscaped.
- Chapter 1, Article 2, Sec. 12.21.1 - Building heights and setbacks shall not exceed the maximum heights identified per zoning district in this section.
- Chapter 4, Article 6 - Oak trees meeting certain requirements shall be relocated or replaced.

- City of Los Angeles Landscape Ordinance, No. 170,978, as amended, and Guidelines - Updates the City's requirements for landscaping at new buildings, based on a point system.

Several sections of the Los Angeles Municipal Code (LAMC) are specifically intended to encourage retention of existing land forms. These include the residential planned development supplemental district (LAMC Section 13.04), which encourages clustering of development in order to reduce grading and preserve existing natural terrain; the slope-density regulations (LAMC Section 17.50-E), which restrict density on the basis of the calculated average of the ungraded slopes at selected contours within a parcel that is proposed for divisions of land; the hillside overlay zone (LAMC 12.21-A.17) within which restricted densities and other requirements for neighborhood and environmental compatibility apply; and the Specific Plan for the Management of Flood Hazards (Ordinance 172,081), which contains hazard protection requirements. In addition, some community plans contain land form protection provisions. The California Coastal Act requires minimization of natural landform alteration by new development projects within the coastal zone, including minimization of activities that would contribute to erosion and geologic instability.

Other Jurisdictions

In addition to the City, the 100-mile study area includes all or part of 190 cities and nine counties. Each of these cities and counties has adopted General Plans and Municipal Codes which may include specific policies related to aesthetics and visual quality. These may include policies related to view corridors, grading, building design, lighting, landscaping, and more. Depending where future facilities are located, local plans and policies would be applicable to those facilities.

4.1.1.2 Existing Conditions

Scenic views or vistas are the panoramic public view access to natural features, including views of the ocean, striking or unusual natural terrain, or unique urban or historic features. Public access to these views is from park lands, private and publicly owned sites, and public rights-of-way.

State Scenic Highway System

The State Scenic Highway System consists of highways that have been designated by the California Department of Transportation (Caltrans) as scenic. For a highway to be declared scenic, the government with jurisdiction over abutting land must adopt a "scenic corridor protection program" that limits development, outdoor advertising, and earthmoving, and Caltrans must agree that it meets the criteria. Table 4.1-1 lists the designated scenic highways and the highways eligible for state scenic designation within the nine counties of the project analysis area (City and 100-mile study area).

4.1.2 Thresholds of Significance

The thresholds outlined within Section 15126.2 of the California Environmental Quality Act (CEQA) Guidelines (*CEQA Guidelines*) and the *Los Angeles CEQA Thresholds Guide* were used to determine significance of potential impacts relative to aesthetic resources. The analysis is at a programmatic level and the study area for the proposed project is defined as the City and a 100-mile study area.

Table 4.1-1. State Scenic Highways within Project Analysis Area

Highway	Status	Description
Kern County		
SR-14	Eligible State Scenic Highway	Segment between SR-58 and Highway 395
SR-58	Eligible State Scenic Highway	Segment between SR-14 and San Bernardino County line
Los Angeles County		
I-5	Eligible State Scenic Highway	Segment between SR-126 and I-210
I-110	Designated Historic Parkway (Arroyo Seco Historic Parkway)	6 miles between mileposts 25.7 and 31.9 in Los Angeles
I-210	Eligible State Scenic Highway	Segment between I-5 and SR-2
SR-1	Los Angeles County Designated Scenic Highway	Segment along the coast through Santa Monica
	Eligible State Scenic Highway	The majority of the highway segment south from Santa Monica
SR-2	Designated State Scenic Highway	55 mile segment from near La Canada–Flintridge north to the San Bernardino County line
SR-23	Los Angeles County Designated Scenic Highway	Small segment in Santa Monica
SR-27	Eligible State Scenic Highway	Segment between SR-1 and Highway 101
SR-39	Eligible State Scenic Highway	Segment between SR-2 and Highway 101
SR- 57	Eligible State Scenic Highway	Small segment north of the Orange County line
SR-126	Eligible State Scenic Highway	Segment west of I-5
Orange County		
SR-1	Eligible State Scenic Highway	Between Los Angeles County and San Diego County
SR-57	Eligible State Scenic Highway	Segment between Los Angeles County line and SR-55
SR-74	Eligible State Scenic Highway	Segment between Riverside County and SR-1
SR-91	Designated State Scenic Highway	4-mile segment from SR-55 to east of Anaheim city limits
Riverside County		
I-10	Eligible State Scenic Highway	Segment between San Bernardino County line and SR-62
I-15	Eligible State Scenic Highway	Segment between SR-91 and San Diego County line
SR-62	Designated State Scenic Highway	9-mile segment from I-10 north to the San Bernardino County line
	Eligible State Scenic Highway	Segment between San Bernardino County line, northwest of 1-77 and San Bernardino County line northeast of 1-77
SR-71	Eligible State Scenic Highway	Segment between San Bernardino County line to SR-91
SR-74	Designated State Scenic Highway	48-mile segment from west boundary of the San Bernardino National Forest to SR-111 in Palm Desert
	Eligible State Scenic Highway	Segment between Orange County line and western boundary of the San Bernardino National Forest
SR-79	Eligible State Scenic Highway	Segment between SR-371 and San Diego County line
SR-91	Eligible State Scenic Highway	Segment between Orange County line to I-15
SR-111	Eligible State Scenic Highway	Segment between I-10 and SR 74 and segment between SR-195 and Imperial County line
SR-243	Designated State Scenic Highway	28-mile segment from SR-74 to the Banning city limit

Table 4.1-1. State Scenic Highways within Project Analysis Area (Continued)

Highway	Status	Description
San Bernardino County		
I-10	Eligible State Scenic Highway	Segment between Riverside County line and SR-38
I-15	Eligible State Scenic Highway	Segment between SR-58 and SR-127
I-40	Eligible State Scenic Highway	Segment between Needles and SR-247
SR-38	Designated State Scenic Highway	16-mile segment east of South Fork Campground to State line
	Eligible State Scenic Highway	Segment between State Line and I-10
SR-2	Eligible State Scenic Highway	Segment between Los Angeles County line and SR-138
SR-18	Eligible State Scenic Highway	Entire highway segment
SR-58	Eligible State Scenic Highway	Segment between Kern County line and I-15
SR-62	Eligible State Scenic Highway	Segment between Riverside County line and Arizona State line
SR-91	Eligible State Scenic Highway	Segment between Orange County line and SR-71
SR-127	Eligible State Scenic Highway	Segment between I-15 and Inyo County line
SR-247	Eligible State Scenic Highway	Segment between I-40 and SR-62
SR-138	Eligible State Scenic Highway	Segment between SR-2 and SR-18
SR-142	Eligible State Scenic Highway	Segment between Orange County line and SR-71
SR-173	Eligible State Scenic Highway	Entire highway segment
SR-330	Eligible State Scenic Highway	Segment between SR-189 and SR-38
San Diego County		
I-5	Eligible State Scenic Highway	Segment between Orange County line and downtown San Diego and between SR 75 and the Mexico border
I-8	Eligible State Scenic Highway	Segment between I-5 and SR-125 and segment between SR-67 and Imperial County line
SR-52	Eligible State Scenic Highway	Segment between I-5 and SR-67 (includes the unconstructed portion of SR 52)
SR-75	Designated State Scenic Highway	9-mile segment from Imperial Beach City limit to Avenida Del Sol in Coronado and Coronado Bridge
SR-78	Designated State Scenic Highway	18-mile segment from west boundary of the Anza-Borrego Desert State Park to the east boundary
SR-125	Designated State Scenic Highway	2-mile segment from SR-94 to I-8 near La Mesa
SR-163	Designated State Scenic Highway	1-mile segment in San Diego from the south boundary of Balboa Park to the north boundary
SR-76	Eligible State Scenic Highway	Segment between I-5 and SR-79
SR-78	Eligible State Scenic Highway	Segment between SR-79 and west boundary of the Anza-Borrego Desert State Park and segment between east boundary of Anza-Borrego Desert State Park and Imperial County line
SR-79	Eligible State Scenic Highway	Segment between Riverside County line and I-8
SR-94	Eligible State Scenic Highway	Segment between SR-125 and I-8
San Luis Obispo County		
U.S. 101	Eligible State Scenic Highway	Segment between SR-46 and SR-166.
SR-1	Designated State Scenic Highway	Segment between Monterey County line and U.S Highway 101 at City of San Luis Obispo
	Eligible State Scenic Highway	Small segment south of U.S. Highway 101, adjacent to SR-227 and U.S. Highway 101 interchange
SR-33	Eligible State Scenic Highway	Segment between SR-166 and Santa Barbara County line

Table 4.1-1. State Scenic Highways within Project Analysis Area (Continued)

Highway	Status	Description
SR-41	Eligible State Scenic Highway	Segment between Kings County line and SR 46 and Segment between U.S. Highway 101 and SR-1
SR-46	Eligible State Scenic Highway	Segment between SR-41 and SR-1
County Road (CR)	Designated County Scenic Highway	Segment between Monterey County line and U.S. Highway 101
Santa Barbara County		
U.S. 101	Eligible State Scenic Highway	Entire highway segment through Santa Barbara County
SR-1	Designated State Scenic Highway	19-mile segment from U.S. Highway 101 near Las Cruces to the City of Lompoc
SR-33	Eligible State Scenic Highway	Entire highway segment through Santa Barbara County
SR-154	Designated State Scenic Highway	32-mile segment from Highway 101 near Los Olivos to Highway 101 in Santa Barbara
SR-166	Eligible State Scenic Highway	Entire highway segment through Santa Barbara County
Ventura County		
U.S. 101	Eligible State Scenic Highway	Entire highway segment through Ventura County
SR-1	Eligible State Scenic Highway	Entire highway segment through Ventura County
SR-15	Eligible State Scenic Highway	Segment between U.S. Highway 101 and SR-126
SR-33	Designated State Scenic Highway	40-mile segment from 6.4 miles north of SR-150 to the Santa Barbara County line
	Eligible State Scenic Highway	6.4-mile segment north of SR 150 and segment between SR-150 and U. S. Highway 101
SR-118	Eligible State Scenic Highway	Small east/west segment from Los Angeles County line
SR-126	Eligible State Scenic Highway	Segment between SR-150 and Los Angeles County line

Source: California Department of Transportation, 2010. http://www.dot.ca.gov/hq/LandArch/scenic_highways/index.htm

Appendix G of the *CEQA Guidelines* suggests that a project could have a significant impact related to aesthetics and visual resources if the project would:

- *Have a substantial adverse effect on a scenic vista;*
- *Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway;*
- *Substantially degrade the existing visual character or quality of the site and its surroundings; or*
- *Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.*

Additionally, the *Los Angeles CEQA Thresholds Guide* states that a determination of significance shall be made on a case-by case basis, considering the following factors:

- *The amount or relative proportion of existing features or elements that substantially contribute to the valued visual character or image of a neighborhood, community, or localized area, which would be removed, altered, or demolished;*
- *The amount of natural open space to be graded or developed;*

- *The degree to which proposed structures in natural open space areas would be effectively integrated into the aesthetics of the site, through appropriate design, etc.;*
- *The degree of contrast between proposed features and existing features that represent the area's valued aesthetic image;*
- *The degree to which a proposed zone change would result in buildings that would detract from the existing style or image of the area due to density, height, bulk, setbacks, signage, or other physical elements;*
- *The degree to which the project would contribute to the area's aesthetic value;*
- *Applicable guidelines and regulations;*
- *The nature and quality of recognized or valued views (such as natural topography, settings, manmade or natural features of visual interest, and resources such as mountains or the ocean);*
- *Whether the project affects views from a designated scenic highway, corridor, or parkway;*
- *The extent of obstruction (e.g., total blockage, partial interruption, or minor diminishment);*
- *The extent to which the project affects recognized views from a length of a public roadway, bike path, or trail, as opposed to a single, fixed vantage point;*
- *The potential for the project to result in shadow-sensitive uses being shaded by project-related structures for more than three hours between the hours of 9:00 a.m. and 3:00 p.m. Pacific Standard Time (between late October and early April), or for more than four hours between the hours of 9:00 a.m. and 5:00 p.m. Pacific Daylight Time (between early April and late October);*
- *The change in ambient illumination levels as a result of project sources; and*
- *The extent to which project lighting would spill off the project site and effect adjacent light-sensitive areas.*

4.1.3 Project-Level Analysis

SWIRP Policy and Program Analysis

The project-level analysis includes an assessment of the proposed project's impacts on aesthetics. Table 4.1-2 analyzes the potential for the project to have an aesthetics impact as a result of the proposed policies and programs that are identified as part of the proposed project. As shown in Table 4.1-2, the proposed policies and programs are not anticipated to have a significant aesthetic impact. In some instances, proposed policies and programs could actually result in a potential beneficial impact. For example, the "single-use bag ban" could potentially reduce the amount of plastic bag pollution.

SWIRP Facility Analysis

A variety of solid waste processing facilities are needed to manage the City's black bin, blue bin, and green bin and brown bin material streams. These facilities can be somewhat independent, but are likely to be built as part of a holistic system aimed to achieve increased waste diversion. The type of facilities could include residual waste processing and recycling processing plants (e.g., material recovery facilities or resource recovery centers), proven commercial alternative technologies (advanced thermal recycling facilities), and emerging alternative technology facilities (e.g., biological, and thermal technology facilities). Alternative technology facilities are designed to process residual waste directly into energy or fuel and/or recoverable by-products. Table 4.1-3 provides examples of the typical development and visual characteristics of the types of facilities that are recommended under SWIRP.

Table 4.1-2. Analysis of SWIRP Policies and Programs (Aesthetics and Visual Resources)

Initiative	Impact Analysis for Aesthetics and Visual Resources[1]	Significance Conclusion
Downstream Policies and Programs[2]		
Expand Recycling Ambassador Program	This program will not directly impact aesthetics and visual resources.	No Impact
Adding Textiles to the Blue Bins or Partner with Non-Governmental Organizations	This policy/program will not directly impact aesthetics and visual resources.	No Impact
Bulky Item Reuse and Refurbishment	This policy/program will not directly impact aesthetics and visual resources.	No Impact
Expand Residential Food Scrap Program	This program will not directly impact aesthetics and visual resources.	No Impact
Large-Scale Media/Social Marketing	This policy/program will not directly impact aesthetics and visual resources.	No Impact
Modify Residential Collection Rates	This policy/program will not directly impact aesthetics and visual resources.	No Impact
Modify Commercial Collection Rates	This policy/program will not directly impact aesthetics and visual resources.	No Impact
Expand Multi-Family Recycling	This policy/program will not directly impact aesthetics and visual resources.	No Impact
Multi-Family Green Bins	This policy/program will not directly impact aesthetics and visual resources.	No Impact
All Businesses to have Recycling Services	This policy/program will not directly impact aesthetics and visual resources.	No Impact
Commercial Haulers to Offer Recycling Services to Customers	This policy/program will not directly impact aesthetics and visual resources.	No Impact
Expand Commercial Technical Assistance	This policy/program will not directly impact aesthetics and visual resources.	No Impact
Expand Construction and Demolition (C&D) Technical Assistance	This policy/program will not directly impact aesthetics and visual resources.	No Impact
Provide More Public Area Recycling	This policy/program will not directly impact aesthetics and visual resources.	No Impact
C&D Ordinance	This policy/program will not directly impact aesthetics and visual resources.	No Impact
Mandatory Participation Programs[3]		
Mandatory Recycling Separation	This program will not directly impact aesthetics and visual resources.	No Impact
Mandatory Organics Separation	This program will not directly impact aesthetics and visual resources.	No Impact
Resource Recovery Centers (RRC) at Transfer Stations and Landfills	This program will not directly impact aesthetics and visual resources.	No Impact
Recycling Ambassadors (Reinforcement)	This program will not directly impact aesthetics and visual resources.	No Impact

Table 4.1-2. Analysis of SWIRP Policies and Programs (Aesthetics and Visual Resources) (Continued)

Initiative	Impact Analysis for Aesthetics and Visual Resources	Significance Conclusion
Direct Technical Assistance (Reinforcement)	This program will not directly impact aesthetics and visual resources.	No Impact
Increased Diversion Requirements at C&D Facilities	This program will not directly impact aesthetics and visual resources.	No Impact
Upstream Policies[4]		
Extended Producer Responsibility (EPR) for Toxics	This policy would have no direct impact on aesthetics and visual resources.	No Impact
EPR for Difficult to Recycle Materials	This policy would have no direct impact on aesthetics and visual resources.	No Impact
Single-Use Bag Ban	This policy would have a positive impact on scenic resources with the potential reduction in visual blight from plastic bag pollution.	Potential beneficial impact
Disposal of Remaining Residual Waste[5]		
Landfill Disposal – Truck Haul, Rail Haul	This program will not directly impact aesthetics and visual resources.	No Impact

(1) Depending on phasing and implementation of various proposed programs and policies, along with anticipated growth in the City, there will be a need for additional facilities to process the diverted materials. Please refer to Section 4.1.3 for an impact analysis of the future facilities.
(2) Refer to Table Chapter 2.0, Section 2.3.1 for a detailed description of the Downstream Policies and Programs.
(3) Refer to Table Chapter 2.0, Section 2.3.2 for a detailed description of the Mandatory Participation Programs.
(4) Refer to Section Chapter 2.0, Section 2.3.4 for a detailed description of the Upstream Policies.
(5) Refer to Chapter 2.0, Section 2.3.6 for a detailed description of Disposal of Remaining Residual Waste

Table 4.1-3. Visual Characteristics of Future Facilities

Processing Facility Type	Description of Typical Development
Clean Material Recovery Facilities (MRFs)	• Large buildings which may be multi-story in height • Typical height ranges up to 40 feet • Truck ingress/egress that may include traffic signals, when warranted • Paved truck travel areas • May include paved parking areas for collection truck storage during non-use • Paved parking for employees • Onsite exterior storage areas • Exterior fencing • Night lighting for safety and security • May include enhanced facades on sides that face streets • May include enhanced landscaping for screening and visual enhancement • Range in size from 5 to 10 acres, the Final Program Environmental Impact (Final PEIR) assumes a 7-acre site
Composting	• Large, open area with organic materials in windrows. Windrows may or may not be covered • Typical external equipment height ranges up to 40 feet • Exterior fencing • Night lighting for safety and security • Office/employee building (may be permanent or modular); may include enhanced facades on sides that face streets • Employee parking may be paved or unpaved • Ingress/egress typically paved and may include a traffic signal, when warranted • May include enhanced landscaping for screening and visual enhancement • Range in size from 15 to 60 acres, the Final PEIR assumes a 30-acre site
Resource Recovery Centers	• Will be co-located at landfills or waste transfer or recycling stations • Typical height range up to 40 feet • Outdoor storage of materials • Exterior fencing • Truck ingress/egress that may include traffic signals, when warranted • Paved truck travel areas • Paved parking for employees • Onsite exterior storage areas • Exterior fencing • Night lighting for safety and security • May include enhanced facades on sides that face streets • May include enhanced landscaping for screening and visual enhancement
Mixed material processing	• Large buildings which may be multi-story in height • Typical height ranges up to 40 feet • Truck ingress/egress that may include traffic signals, when warranted • Paved truck travel areas • Paved parking areas for collection truck storage during non-use • Paved parking for employees • Exterior fencing • Night lighting for safety and security • May include enhanced facades on sides that face streets • May include enhanced landscaping for screening and visual enhancement • Range in size from 5 to 7 acres, the Final PEIR assumes a 6-acre site

Table 4.1-3. Visual Characteristics of Future Facilities (Continued)

Processing Facility Type	Description of Typical Development
Alternative Technology - Advanced Thermal Recycling	• Large buildings which may be multi-story in height • Typical building or external equipment height ranges from 40 to 100 feet (including boiler buildings); however, stacks could be up to 250 feet • Furnace/boiler • Cleaned flue gas exit stacks • Turbine/generator • Cooling towers • Truck ingress/egress that may include traffic signals, when warranted • Paved truck travel areas • Paved parking areas for collection truck storage during non-use • Paved parking for employees • Exterior fencing • Night lighting for safety and security • May include enhanced facades on sides that face streets • May include enhanced landscaping for screening and visual enhancement • Range in size from 5 to 15 acres, the Final PEIR assumes a 10-acre site
Alternative Technology – Biological (Composting/ Anaerobic Digestion)	• Large buildings which may be multi-story in height • Typical building or external equipment height ranges up to 50 feet • Biogas clean-up compression equipment • Turbine/internal combustion engine/fuel cell generator • Cooling fans • Biogas power plant exhaust stack • Truck ingress/egress that may include traffic signals, when warranted • Paved truck travel areas • Paved parking areas for collection truck storage during non-use • Paved parking for employees • Exterior fencing • Night lighting for safety and security • May include enhanced facades on sides that face streets • May include enhanced landscaping for screening and visual enhancement • Range in size from 5 to 10 acres, the Final PEIR assumes a 7-acre site
Alternative Technology – Thermal (Plasma Arc, Gasification and Pyrolysis)	• Large buildings which may be multi-story in height • Typical building or external equipment height ranges from 40 to 100 feet (including boiler buildings); however, stacks could be up to 250 feet • Turbine/generator • Cooling towers • Cleaned flue gas exit stacks • Truck ingress/egress that may include traffic signals, when warranted • Paved truck travel areas • Paved parking areas for collection truck storage during non-use • Paved parking for employees • Exterior fencing • Night lighting for safety and security • May include enhanced facades on sides that face streets • May include enhanced landscaping for screening and visual enhancement • Range in size from 2 to 7 acres, the Final PEIR assumes a 5-acre site

Within the City, alternative technology facilities (similar to those proposed under SWIRP) are permitted within the following zones: C-1 (limited commercial zone), C-2 (commercial zone), C-4 (commercial zone), CM (commercial manufacturing zone), MR2 (restricted light industrial zone), M2 (light industrial zone), M3 (heavy industrial zone), and PF (public facility zone). The Solid Waste Alternative Technology Processing Facility Ordinance (adopted August 4, 2010)[2] allows alternative technology facilities to be sited in M2, M3, and PF zones provided that the conditional use procedure is followed. Building height and setback requirements within the zoning districts vary depending on the height restrictions that a specific parcel falls within. Table 4.1-3 details the height and setback requirements for the zones mentioned above.

Outside of the City, land use provisions and regulations for the siting of solid waste facilities is typically included within the municipal services/public facilities element within the general plan or any applicable Solid Waste Management Plans or Recycling/Solid Waste Reduction Plan. Each respective jurisdiction typically utilizes the municipal code to regulate performance objectives, noise levels, land use compatibility, and other land use and community planning matters.

Aesthetics and Visual Resources

At this time, the specific locations of future facilities have not been identified; rather SWIRP notes that additional facilities would be required to meet the need for additional materials that would be diverted from landfills. The potential for future facilities to result in a substantial adverse effect on a site-specific scenic vista, a scenic resource, or the surrounding visual character is dependent on the ultimate facility design appearance and if the facility is located where an area's valued aesthetic image may be modified.

In order to avoid potential impacts to aesthetics and visual resources, future facilities should not detract from the existing style or image of the surrounding area or result in a high degree of contrast with surrounding buildings and uses. Natural open space areas should be integrated into the aesthetics of the site to contribute to the area's aesthetic value, and grading should be minimized to the maximum extent to avoid potentially significant impacts to existing features on site. Siting of facilities within or adjacent to a designated scenic vista or scenic resource area may result in a potentially significant impact if the visual character or aesthetic value of the area would be degraded by the proposed facility.

SWIRP facilities are expected to be located in commercial, industrial or public facility zones. In order to minimize potential impacts to scenic vistas, visual resources, or the existing visual character, future facilities would need to be sited within an appropriate zoning district, and comply with the height and setback requirements outlined in Table 4.1-4 to avoid placement of disproportionate features or elements that may degrade the visual character or image of the surrounding neighborhood, community, or localized area. Table 4.1-4 identifies height regulations based on certain height districts used by the City of Los Angeles. The allowable number of stories or height limits specified for the district in which the building or structure is located varies throughout any given area based on a number of factors (e.g., proposed land use, applicable community plan/specific plan/redevelopment plan, adjacency to residential uses, etc.). Height districts for commercial, manufacturing, and public facility zones are identified below to identify potential height limitations that may be placed upon a proposed SWIRP facility. However, the exact height restriction for a SWIRP facility would be dependent upon the location of where the building or structure is located, relative to surrounding uses, or any other applicable regulation as contained within the City's Municipal Code, as mentioned above. All SWIRP facilities should be constructed in

[2] This ordinance amended Sections 12.03 and 12.24 of the Los Angeles Municipal Code to establish regulations for Solid Waste Alternative Technology Processing Facilities throughout the City.

accordance with the height limitations outlined within Section 12.21.1 through 12.21.5 of the City's Municipal Code.

Table 4.1-4. City of Los Angeles Height and Setback Requirements (Commercial/Industrial/Public Facility Zones)

Zone	Height Restrictions per Height District[1]							Yard Setbacks		
	1	1-L	1-VL	1-XL	2	3	4	Front	Side	Rear
C-1	No limit	Not to exceed 6 stories or 75 feet	Not to exceed 3 stories or 45 feet	Not to exceed 2 stories or 30 feet	No limit	No limit	No limit	10 ft. min	15 ft.; 10 ft. for key lots	15 ft. + 1 ft. for each story over three
C-2								None	None	None
C-4										
CM										
MR2								5 ft. for lots <100 ft. deep; 15 ft. for lots >100 ft. deep	None	None
M2								None	None	None
M3										
PF	None							None	None	None

Source: http://cityplanning.lacity.org/zone_code/Appendices/sum_of_zone.pdf

[1] For the purposes of this analysis, portions of Height District No. 1 may be designated as being in an "L" Limited Height District, and no building or structure in Height District No. 1-L shall exceed six stories, nor shall it exceed 75 feet in height. Portions of Height District No. 1 may be designated as being in a "VL" Very Limited Height District, and no building or structure in Height District No. 1-VL shall exceed three stories, nor shall it exceed 45 feet in height. Notwithstanding that limitation, portions of Height District No. 1-VL that are also in the RAS3 or RAS4 Zones shall not exceed 50 feet in height. Portions of Height District No. 1 may also be designated as being in an "XL" Extra Limited Height District, and no building or structure in Height District No. 1-XL shall exceed two stories, nor shall the highest point of the roof of any building or structure located in this District exceed 30 feet in height.

Implementation of the mitigation measures identified in Section 4.1.5 would reduce potential impacts to a less than significant level.

Residual waste would be transported to existing landfill sites, therefore, no impacts to visual resources would result for existing landfill operations.

Obstruction of Views

The project area contains numerous scenic vistas including ocean views, 214 square miles of hills and mountains, and historic districts that contribute to a specific visual character and quality of an area. The principal constraint associated with the nature and quality of recognized or valued views is siting new facilities in areas that are designated as such. The potential for SWIRP facilities to result in the change, removal, or degradation of the nature and quality of scenic highway, corridor, historic parkway, or other recognized or valued view from a length of a public roadway, bike path, or trail is unknown due to the ambiguity of the exact location of a SWIRP facility. However, based on zoning requirements, the probability for degradation of visual resources to occur is unlikely.

If future sites include locations that are designated as being valued for their visual quality, such as a site within the Arroyo Seco Historic Parkway, there is a potential for a significant impact. In order to preserve the visual character and quality of a particular scenic area, future facilities should be sited within

an appropriate zoning district (as outlined above) and located in an area where views of designated scenic highways, corridors, parkways, bike paths and fixed vantage points would not be obstructed. If recognized or valued views are anticipated to be obstructed as a result of facility construction and operation, the extent of obstruction should be minimized to the maximum extent.

Siting of facilities that would obstruct the nature or quality of recognized or valued views, including a designated scenic highway, corridor, or parkway, may result in a potentially significant impact. However, implementation of the mitigation measures identified in Section 4.1.5 would reduce the impact to a less than significant level.

Residual waste would be transported to existing landfill sites, therefore, no impacts to scenic views would result for existing landfill operations.

Shading

It is not anticipated that SWIRP facilities be located near or adjacent to areas with shadow-sensitive uses in the area. Shadow sensitive uses include, but are not limited to, residential, commercial, institutional or other land use types where sunlight is important to function, physical comfort, or commerce. Implementation of the mitigation measures identified in Section 4.1.5 would facilitate appropriate siting of a new facility and avoid any potential impacts relative to shading.

Residual waste would be transported to existing landfill sites, therefore, no impacts with regards to shading would result for existing landfill operations.

Lighting, Glare, and Nighttime Illumination

SWIRP facilities are anticipated to be located in commercial and industrial areas where lighting and glare is more prevalent than residential or open space areas. Building materials for the facilities would most likely not be a reflective substance that would pose a significant problem with glare. Future facilities would include some type of outdoor lighting for security purposes, but on site lighting should be oriented to avoid spill off the project site onto adjacent properties or light sensitive areas. Development plans for future facilities are subject to all applicable general plans, specific plans, zoning ordinances, or other land use plans that govern building design and development standards, including lighting. Implementation of the mitigation measures identified in Section 4.1.5 would reduce potential impacts to a less than significant level. Particularly, mitigation measure VR-2 includes a requirement to shield lighting to minimize night sky pollution.

As future facilities are proposed, each facility would be subject to additional environmental review pursuant to CEQA and the City of *Los Angeles CEQA Thresholds Guide*. At that time, the potential for site-specific impacts to aesthetics and visual resources would be analyzed and identified. As part of the project-level analysis, a review of any applicable guidelines and regulations including any general plans, specific plans, or other land use plans would be conducted to determine if any visual resources would be impacted as a result of a proposed facility. Table 4.1-5 provides a summary of the mitigation measures for proposed SWIRP facilities relative to aesthetics and visual resources.

Residual waste would be transported to existing landfill sites, therefore, no impacts with regards to new sources of lighting, glare, and nighttime illumination would result for existing landfill operations.

Table 4.1-5. Facility Impact Summary Table (Aesthetics)

Facility Type	Impact Conclusion
Clean Material Recovery Facilities	Less than significant with mitigation
Composting (Aerobic)	Less than significant with mitigation
Composting (Anaerobic Digestion)	Less than significant with mitigation
Resource Recovery Centers	Less than significant with mitigation
Mixed Material Processing	Less than significant with mitigation
Alternative Technology – Advanced Thermal Recycling	Less than significant with mitigation
Alternative Technology – Biological (Composting/Anaerobic Digestion)	Less than significant with mitigation
Alternative Technology – Thermal (Plasma Arc, Gasification, Pyrolysis, and Others)	Less than significant with mitigation

4.1.4 Cumulative-Level Analysis

Depending on the location of future facilities as well as other projects that are proposed in the vicinity, and their relationship to the change in visual resources, there could be a cumulative impact on these resources. However, a cumulative level impact would be dependent upon where future facilities are proposed for construction. If mitigation measures presented in Section 4.1.5 are implemented, potential project-level impacts would be minimized and would be less likely to contribute to a cumulative impact. Upon determination of the facility location, a project-level environmental analysis would be conducted to determine if the construction of such facilities would have a cumulative impact.

4.1.5 Mitigation Measures

Visual Resources

VR-1 Future facilities shall be sited within the zoning districts outlined in Table 4.1-4 and designed in accordance with all applicable land use planning documents. For areas outside of the City of Los Angeles, facilities shall be sited in accordance with all applicable zoning and planning restrictions. To the greatest extent possible, future facilities shall be sited in areas not identified as visually significant or historic.

VR-2 Future facilities shall include design features that allow the facility to blend in with nearby buildings. These design features may include but are not limited to:

- Landscape screening (i.e., use of tall trees or shrubs around the perimeter)
- Neutral wall or fencing that obstructs the view of the facility from the nearby roads
- Use of varying facades to break up bulk and scale
- Building materials that minimize glare potential
- Shielded lighting so as to minimize spillage to adjacent parcels and minimize night sky pollution
- Modifying structure design to eliminate or screen contrasting/detracting features
- Utilizing architectural styles, materials, scale, massing, setbacks, signage, circulation patterns, pedestrian orientation, streetscape amenities, and landscaping common to and/or consistent with the character of existing surrounding uses

VR-3 Existing natural aesthetic features proposed for removal shall be replaced

VR-4 Grading of natural and semi-natural open space shall be minimized to the maximum extent.

VR-5 Design features shall be incorporated into the project which effectively integrates natural aesthetics (i.e., cluster development, greenbelts, landscaping, etc.).

Obstruction of Views

VR-6 New utilities shall be placed underground, where appropriate.

VR-7 Rooftop mechanical equipment, garbage dumpsters, and other outdoor equipment shall be screened from public view.

4.1.6 Conclusion

Based upon the analysis presented in Sections 4.1.3 and 4.1.4, there is a potential for future facilities to have an impact on aesthetics and visual resources. It is entirely dependent on where the future facilities are sited. Mitigation measure VR-1 is identified to keep future facilities from being sited on areas mapped as an important scenic resource. Mitigation measures VR-2 through VR-5 are included to reduce the potential impact to the visual character and quality of the area as a result of proposed facilities. Mitigation measures VR-6 and VR-7 are provided to minimize obstruction of views. With implementation of these mitigation measures, project and cumulative level impacts would be reduced to below a level of significance.

4.2 AGRICULTURE AND FORESTRY RESOURCES

This section analyzes the potential for the proposed project to impact agriculture and forestry resources. It includes a discussion of the applicable regulatory environment, existing conditions, a project-level and cumulative-level impact analysis, and any applicable mitigation measures. The study area for agriculture and forestry resources covers the City of Los Angeles (City and the area within 100 miles of the City). While the Solid Waste Integrated Resources Plan (SWIRP) emphasizes local processing and handling of discarded materials generated within the City, it may not be feasible for all facility types to be built within the City, either due to lack of available space or potential land use conflicts. Therefore, a 100-mile study area is included in the analysis to capture any potential impact to areas outside of the City.

4.2.1 Environmental Setting

This section describes the regulatory setting and existing conditions for agriculture and forestry resources.

4.2.1.1 Regulatory Setting

Agriculture and forestry resources in California are protected and regulated by state and local legislation. Local policies and ordinances are in place at the County and City levels to control uses on or adjacent to farmland. National forests and State parks are present within the project analysis area and are protected at the federal and state level; however, national forests are protected for habitat and recreation, not for forestry or timber products such as are described in this section.

Federal

There are no applicable federal regulations pertaining to agriculture that are applicable to the project.

State

Farmland Mapping and Monitoring Program

The Farmland Mapping and Monitoring Program (FMMP) (California Department of Conservation, 2007) was established by the California Department of Conservation to establish categorical definitions of important farmland for land use inventory purposes. These categories of farmland are based on information from the Natural Resources Conservation Service's soil survey maps, land inventory and monitoring criteria developed by the Natural Resource Conservation Service and land use information mapped by the California Department of Water Resources. The definitions recognize the land's suitability for agricultural production, physical and chemical characteristics of the soil, and the actual land use (California Department of Conservation, 2007).

The categorizations for agricultural land are as follows:

FMMP Category	Description
Prime Farmland	Prime Farmland has the best combination of physical and chemical features able to sustain long-term production of agricultural crops. Prime Farmland is able to produce sustained high yields with a high soil quality, stable moisture supply, and an appropriate growing season. The land must be supported by a developed irrigation water supply that is dependable and of adequate quality during the growing season. It must also have been used for production of irrigated crops at some time during the four years before mapping data was collected.
Farmland of Statewide Importance	Farmland of Statewide Importance has similar beneficial characteristics to Prime Farmland and irrigation water supplies but have minor shortcomings, such as a steeper slope or less ability to retain moisture. The land also must have been used for production of irrigated crops at some time during the four years prior to the date in which data was collected.
Unique Farmland	Unique Farmland has lesser-quality soils than Prime Farmland or Farmland of Statewide Importance, and is generally used for the production of California's leading agricultural cash crops. These lands are usually irrigated but may include non-irrigated orchards or vineyards, as found in some of the state's climatic zones. The land also must have been used for production of irrigated crops at some time during the four years prior to the date in which data was collected.
Farmland of Local Importance	Farmland of Local Importance is determined by each County's Board of Supervisors and a local advisory committee to be important to the local agricultural economy.
Grazing Land	Grazing Land are those in which the existing vegetation is suited to the grazing of livestock.

Source: California Department of Conservation, 2007

California Land Conservation Act of 1965

The California Land Conservation Act (Williamson Act) is an agricultural land protection program enacted by the California Legislature in 1965 to maintain the agricultural economy of the state by preserving its agricultural land. The Williamson Act enables local governments to enter into 10-year contracts with private landowners for the purpose of restricting specific parcels of land to agriculture or related open space use. Once entered into a Williamson Act contract, the landowner receives lower property tax assessments based on farming and open space uses as opposed to the full market value. The Williamson Act discourages premature and unnecessary conversion of agricultural land to urban uses. According to the Williamson Act 2008 Status Report, 16.6 million acres are enrolled under the Williamson Act Statewide (DOC, 2007). This represents approximately half of California's 30 million acres of farmland, which accounts for nearly one-third of the State's privately owned land. Within the project analysis area, there are approximately 1.3 million acres of lands enrolled in a Williamson Act contract.

Amendments to the Williamson Act established the opportunity to create Farmland Security Zones (FSZ). Land within an FSZ has extended Williamson Act protection for a 20-year period. FSZs offer greater property tax reductions than 10-year Williamson Act contracts. Within the project analysis area there are approximately 71,000 acres of lands that are identified as Farmland Security Zones.

CAL FIRE

CAL FIRE is under the direction of the California Department of Forestry and Fire Protection (CDF) and the Board of Forestry and Fire Protection to protect and enhance the state's unique forest and wildlife resources. CAL FIRE regulates requests for Timber Conversion Permits and Timber Harvesting Permits in the event that land must be cleared of forest resources.

California Agricultural and Land Evaluation Site Assessment Model (1997)

The Land Evaluation and Site Assessment (LESA) is a point-based approach for rating the relative importance of agricultural land resources based upon specific measurable features. The LESA Model was developed to provide lead agencies with an optional methodology to ensure that potentially significant effects on the environment of agricultural land conversions are quantitatively and consistently considered in the environmental review process.

The California Agricultural LESA Model evaluates measures of soil resource quality, a given project's size, water resource availability, surrounding agricultural lands, and surrounding protected resource lands. For a given project, the factors are rated, weighted, and combined, resulting in a single numeric score. The project score becomes the basis for making a determination of a project's potential significance.

Local

City of Los Angeles and Other Jurisdictions

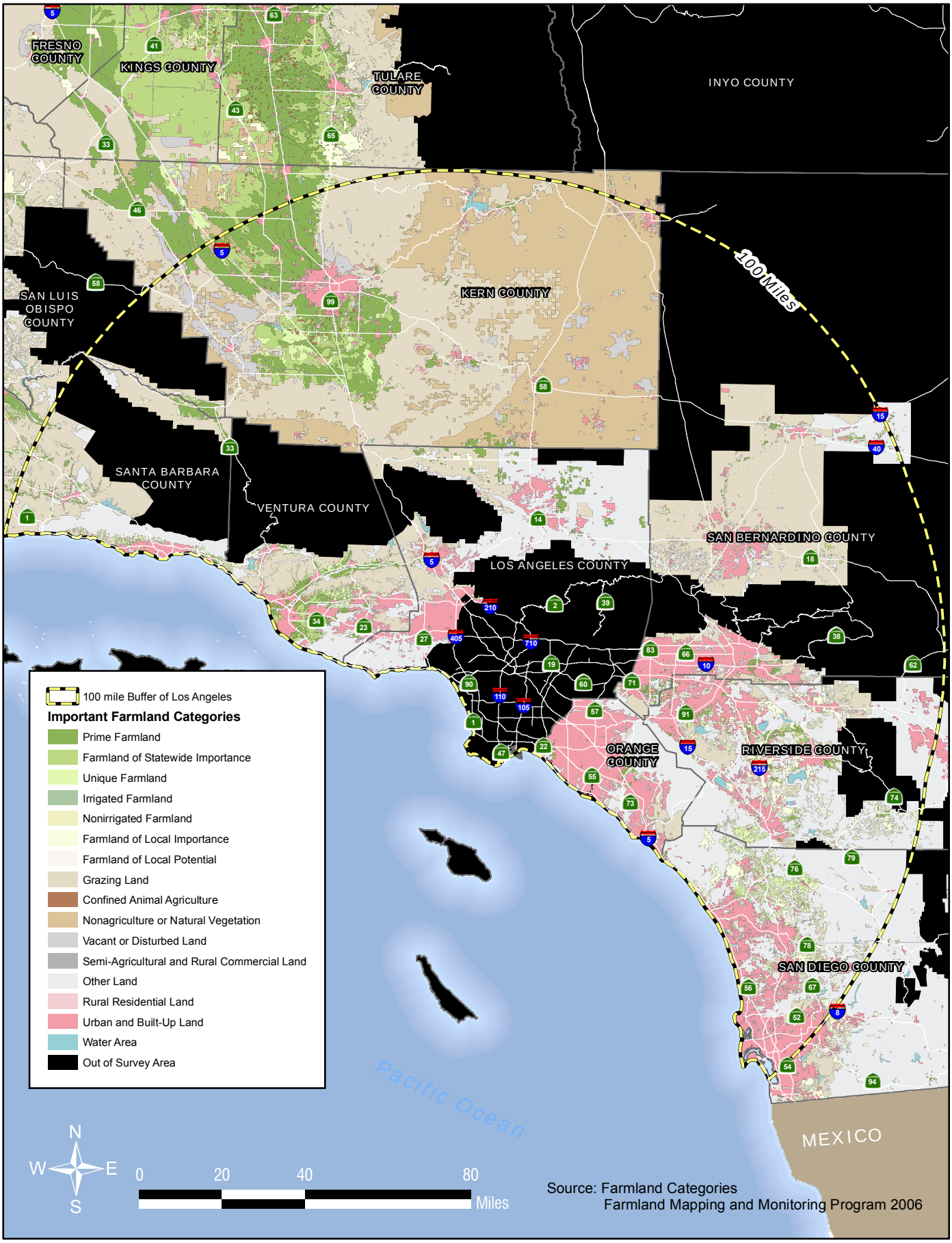
The City and the area within 100 miles of the City includes land within nine counties, as well as 190 local jurisdictions, as shown in Chapter 2.0, Figure 2-2, Project Study Area. Agriculture resources within each jurisdiction are subject to the policies and regulations set by the applicable elements of individual jurisdiction's General Plans, as well as each County's Agricultural Commissioner. The General Plan sets goals and policies for protecting and providing agricultural land. The Agricultural Commissioner of each county regulates pesticide use and provides support services for county agriculture.

4.2.1.2 Existing Conditions

Agriculture Resources

California is one of the most productive agriculture states in the country. Within the state, approximately 25.4 million acres are devoted to farming and ranching. The state's 81,500 farms and ranches received 36.2 billion dollars for their agriculture output in 2008 (California Department of Food and Agriculture, (CDFA, 2010a). Within the United States, nine of the nation's top 10 agriculture producing counties are within California. Kern County, which is partially within the 100-mile buffer of the project analysis area, was the third highest producing county in California by dollars in 2008 (CDFA, 2010a). Important farmlands for the project analysis area are shown in Figure 4.2-1.

Over 400 different commodities are grown within California and nearly half of the U.S.-grown fruits, nuts, and vegetables are grown in California. California is the sole producer (99 percent or more) of a large number of crops, including almonds, dates, grapes, peaches, walnuts, artichokes, figs, pistachios, dried plums, and pomegranates. The top ten commodities of the state, by dollar value, are milk and cream, grapes, almonds, nursery products, cattle, hay and alfalfa, lettuce, berries, and tomatoes. Table 4.2-1 summarizes the agriculture production value, by county, for the past two years that data is available and the key crops of the county's agriculture economy. The nine counties shown in Table 4.2-1 are those that fall fully or partially within the proposed project study area.



Important Farmland

FIGURE 4.2-1

Table 4.2-1. Agriculture Resources Value in Project Area

County	Agriculture Production Value ($1,000)		Key Crops (by dollar value)
	2007	2008	
Kern	4,092,107	4,032,830	Milk, grapes, citrus, almonds and almond byproducts, and carrots.
Los Angeles	253,388	226,190	Trees and shrubs, bedding plants[1], root vegetables, orchard fruit, alfalfa hay, woody ornamentals, nursery plants, and flowers.
Orange	255,216	227,990	Woody ornamentals, strawberries, flower propagative materials, potted plants, fruits, and nuts.
Riverside	1,257,520	1,268,590	Nursery stock, milk, table grapes, eggs, and hay.
San Diego	1,536,260	1,552,102	Foliage plants, trees and shrubs, bedding plants, avocados, tomatoes, flowers, and woody ornamentals.
Santa Barbara	1,103,323	1,137,350	Strawberries, broccoli, wine grapes, lettuce, and cauliflower.
San Bernardino	572,167	547,158	Milk, eggs, cattle and calves, replacement heifers, and trees/shrubs.
San Luis Obispo	653,870	606,746	Wine grapes, broccoli, strawberries, cattle and calves, and vegetable bedding.
Ventura	1,547,263	1,611,091	Strawberries, nursery stock, lemons, celery, tomatoes, and raspberries.

Sources: CDFA, California Agriculture Resource Directory 2008-2009; CDFA, California Agriculture Resource Directory, 2009-2010.
[1]Bedding plants are a heterogeneous group of plants started under controlled conditions particularly herbaceous annuals or perennials, ground cover plants or herbs.

Forestry Resources

Forestry resources within California provide wood and other forestry resources for municipal and industrial needs. Forests cover more than 33 million acres of the state with approximately 19.5 million acres of timberland area[1]. In addition to wood products, forests provide wildlife habitat and recreation opportunities and contribute to maintaining clean watersheds and air. Forestry resources also help to address climate change by sequestering carbon. Forest resources include major commercial and non-commercial strands of timber, woodland, and brush-range watersheds, and all such lands in private and State ownership that contribute to California's forest resource wealth.

Within the project study area, there are a total of 4,637 acres of land covered by timber harvest plans. The majority of this acreage is north of the City in the Tehachapi Mountains.

4.2.2 Thresholds of Significance

The impact analysis for agriculture and forestry resources will use the CEQA thresholds and the *L.A. CEQA Thresholds Guide* to determine significance. For the purpose of this analysis, the project study area is defined as the City and the area 100 miles outside the City. The SWIRP emphasizes local processing and handling of the City's waste, including locating needed facilities within the City limits. However, it may not be feasible for all facility types to be built within the City, either due to lack of available space or potential land use conflicts. Therefore, as stated in Chapter 2.0, Section 2.2 of this EIR, it is assumed that the facilities would be located within a 100-mile radius of the City.

[1] United States Forest Service, 2010.

The following information is provided in accordance with Section 15126.2 of the *CEQA Guidelines*. Appendix G of the *CEQA Guidelines* suggests that a development project could have a significant impact on Agriculture or Forestry Resources if the project would cause any of the following effects:

- *Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use.*
- *Conflict with existing zoning for agricultural use, or a Williamson Act contract.*
- *Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))? Result in the loss of forest land or conversion of forest land to non-forest use.*
- *Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use.*

4.2.3 Project-Level Analysis

The project-level analysis includes an assessment of the proposed project's impacts on agricultural and forestland resources.

SWIRP Policy and Program Analysis

Table 4.2-2 analyzes the potential impacts on these resources in light of the proposed policies and programs that are identified as part of the proposed project.

As shown in Table 4.2-2, the majority of the proposed policies and programs are not anticipated to have a significant impact on agriculture or forestry resources. In some instances, proposed policies and programs could actually result in a decreased demand for forest resources, thereby providing a potential beneficial impact. For example, increasing C&D programs could result in wood materials being recycled or reused, thus decreasing the demand for new lumber resources. Other policies, such as the potential plastic bag ban ordinance, may have varying impacts; the plastic bag ban may increase the use of paper bags as a substitute for plastic bags, or the accompanying paper bag fee may reduce the use of paper bags which would result in less forestry resources to be harvested. Additionally, the result of the plastic bag ban and paper bag fee may change over time as consumers use reusable bags more consistently. On May 23, 2012, the City Council adopted a policy to ban distribution of single-use plastics bags and impose a 10-cent fee on single-use paper bags at supermarkets and select retail stores within the City. The City has prepared a separate CEQA analysis on any such proposed ordinance.

SWIRP Facility Analysis

Implementation of the policies and programs identified in Table 4.2-2 will result in the need for additional processing facilities to handle the additional materials that would be diverted from the landfill. The following analysis describes the potential impact that future facilities could have on agricultural and forestry resources.

Mapped Farmland

At this time, the specific location of future facilities have not been identified; rather SWIRP notes that additional facilities would be required to meet the need for additional waste that would be diverted from the landfill. The potential for these future facilities to convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the FMMP, to non-agricultural use is unknown. If future sites include locations that support FMMP-classified land, then there is a potential for a significant impact.

As future facilities are proposed, they would be subject to additional environmental review pursuant to CEQA. The future review could include an additional analysis which may include use of the Agricultural LESA system to help decision-makers determine the quality of land for agricultural uses and assess sites or land areas for their agricultural economic potential and if any such conversion would result in a significant impact.

Implementation of the mitigation measures identified in Section 4.2.5 would reduce potential impacts to a less than significant level.

Residual waste would be disposed of at existing local or remote landfills. Therefore, the disposal of residual waste would not result in an impact to mapped farmland.

Agricultural Zoning or Williamson Act Conflict

Increasing the collection of food scraps and organics will result in the need for more composting facilities. While SWIRP has a goal of keeping waste facilities within the City as much as possible, large-scale composting facilities are often difficult to develop in urban areas, due to large area of vacant land that is needed, as well as compatibility issues. Therefore, it is likely that such composting facilities would be outside the City, possibly in agricultural areas. Also, placing these facilities closer to agricultural areas provides closer access to end users of the composted material. Ultimately, the potential impact to agriculture resources will depend on where such facilities are placed.

As previously noted, the specific location of future facilities have not been identified; rather SWIRP notes that additional facilities would be required to meet the need for additional waste that would be diverted from the landfill. The potential for these future facilities to conflict with existing zoning for agriculture use or a Williamson Act contract is unknown. If future sites are proposed on lands that are zoned for agricultural use or contain a Williamson Act contract, then there is potential for an impact. As future facilities are proposed, they would be subject to additional review pursuant to CEQA, at which time additional environmental review to identify conflicts with existing zoning or Williamson Act contracts would occur.

Table 4.2-2. Analysis of SWIRP Policies and Programs (Agriculture and Forestry Resources)

Initiative	Impact Analysis for Agriculture and Forestry Resources[1]	Significance Conclusion
Downstream Policies and Programs[2]		
Expand Recycling Ambassador Program	Improvement of recycling habits under this program could potentially increase the amount of paper recycled and thus reduce the amount of forestry resources needed to be harvested. This could be seen as a potential beneficial impact to forestry resources. This program would not result in a direct impact to agriculture resources.	No Impact to Agriculture Resources Potential Beneficial Impact for Forestry Resources
Adding Textiles to the Blue Bins	This policy/program will not directly impact agriculture and forestry resources.	No Impact
Bulky Item Reuse and Refurbishment	Increased reuse under this policy/program could increase the amount of wood products that are recycled and potentially reduce the amount of forestry resources that would need to be harvested, and thus a positive and potential beneficial impact to forestry resources. This policy/program would not result in a direct impact to agriculture.	No Impact to Agriculture Resources Potential Beneficial Impact for Forestry Resources
Expand Residential Food Scrap Program	This program will not directly impact forestry resources. It should be noted that, while SWIRP has a goal of keeping waste facilities within the City as much as possible, large-scale composting facilities may be difficult to develop in urban areas, due to the requirement for a large area of vacant land, as well as compatibility issues. Therefore, it is likely that such composting facilities would be outside the City, possibly in agricultural areas. Placing composting facilities closer to agricultural areas provides closer access to end users of the composted material, which would result in a potential beneficial impact.	Potential Beneficial Impact to Agriculture Resources No Impact to Forestry Resources
Large-Scale Media/Social Marketing	Increased outreach to encourage recycling and reuse could potentially reduce the amount of forestry resources that would need to be harvested, and thus a positive and potential beneficial impact to forestry resources. No anticipated impact on agriculture resources.	No Impact to Agriculture Resources Potential Beneficial Impact for Forestry Resources
Modify Residential Collection Rates	Improvement of recycling habits under this policy/program could potentially increase the amount of paper recycled and thus reduce the amount of forestry resources needed to be harvested. This could be seen as a potential beneficial impact to forestry resources. This policy/program would not result in a direct impact to agriculture resources.	No Impact to Agriculture Resources Potential Beneficial Impact for Forestry Resources
Modify Commercial Collection Rates	Improvement of recycling habits under this policy/program could potentially increase the amount of paper recycled and thus reduce the amount of forestry resources needed to be harvested. This could be seen as a potential beneficial impact to forestry resources. This policy/program would not result in a direct impact to agriculture resources.	No Impact to Agriculture Resources Potential Beneficial Impact for Forestry Resources

Table 4.2-2. Analysis of SWIRP Policies and Programs (Agriculture and Forestry Resources) (Continued)

Initiative	Impact Analysis for Agriculture and Forestry Resources	Significance Conclusion
Expand Multi-Family Recycling	Improvement of recycling habits under this policy/program could potentially increase the amount of paper recycled and thus reduce the amount of forestry resources needed to be harvested. This could be seen as a potential beneficial impact to forestry resources. This policy/program would not result in a direct impact to agriculture resources.	No Impact to Agriculture Resources Potential Beneficial Impact for Forestry Resources
Multi-Family Green Bins	This program will not directly impact agriculture and forestry resources. Placing composting facilities closer to agricultural areas provides closer access to end users of the composted material, which would result in a potential beneficial impact. No impact to forestry resources is anticipated.	No Impact to Agriculture Resources Potential Beneficial Impact for Forestry Resources
All Businesses to Have Recycling Services	Increased recycling could increase the amount of forestry resources that are recycled and potentially reduce the amount of forestry resources that would need to be harvested, and thus a positive and potential beneficial impact to forestry resources. No anticipated impact on agriculture resources.	No Impact to Agriculture Resources Potential Beneficial Impact for Forestry Resources
Commercial Haulers to Offer Recycling Services to Customers	Increased recycling could increase the amount of forestry resources that are recycled and potentially reduce the amount of forestry resources that would need to be harvested, and thus a positive and potential beneficial impact to forestry resources. No anticipated impact on agriculture resources.	No Impact to Agriculture Resources Potential Beneficial Impact for Forestry Resources
Expand Commercial Technical Assistance	Increased recycling could increase the amount of forestry resources that are recycled and potentially reduce the amount of forestry resources that would need to be harvested, and thus a positive and potential beneficial impact to forestry resources. No anticipated impact on agriculture resources.	No Impact to Agriculture Resources Potential Beneficial Impact for Forestry Resources
Expand Construction and Demolition (C&D) Technical Assistance	Increased recycling could increase the amount of forestry resources that are recycled and potentially reduce the amount of forestry resources that would need to be harvested, and thus a positive and potential beneficial impact to forestry resources. No anticipated impact on agriculture resources.	No Impact to Agriculture Resources Potential Beneficial Impact for Forestry Resources
Provide More Public Area Recycling	Increased recycling could increase the amount of forestry resources that are recycled and potentially reduce the amount of forestry resources that would need to be harvested, and thus a positive and potential beneficial impact to forestry resources. No anticipated impact on agriculture resources.	No Impact to Agriculture Resources Potential Beneficial Impact for Forestry Resources
C&D Ordinance	Increased recycling could increase the amount of forestry resources that are recycled and potentially reduce the amount of forestry resources that would need to be harvested, and thus a positive and potential beneficial impact to forestry resources. No anticipated impact on agriculture resources.	No Impact to Agriculture Resources Potential Beneficial Impact for Forestry Resources

Initiative	Impact Analysis for Agriculture and Forestry Resources[1]	Significance Conclusion
Mandatory Participation Programs[3]		
Mandatory Recycling Separation	Increased recycling could increase the amount of forestry resources that are recycled and potentially reduce the amount of forestry resources that would need to be harvested, and thus a positive and potential beneficial impact to forestry resources. .No anticipated impact on agriculture resources.	No Impact to Agriculture Resources Potential Beneficial Impact for Forestry Resources
Mandatory Organics Separation	This program will not directly impact agriculture and forestry resources. Placing composting facilities closer to agricultural areas provides closer access to end users of the composted material, which would result in a potential beneficial impact. No impact to forestry resources is identified.	Potential Beneficial Impact to Agriculture Resources No Impact to Forestry Resources
Resource Recovery Centers (RRC) at Transfer Stations and Landfills	Increased recycling could increase the amount of forestry resources that are recycled and potentially reduce the amount of forestry resources that would need to be harvested, and thus a positive and potential beneficial impact to forestry resources. No anticipated impact on agriculture resources.	No Impact to Agriculture Resources Potential Beneficial Impact for Forestry Resources
Recycling Ambassadors (Reinforcement)	Increased recycling could increase the amount of forestry resources that are recycled and potentially reduce the amount of forestry resources that would need to be harvested, and thus a positive and potential beneficial impact to forestry resources. No anticipated impact on agriculture resources.	No Impact to Agriculture Resources Potential Beneficial Impact for Forestry Resources
Direct Technical Assistance (Reinforcement)	Increased recycling could increase the amount of forestry resources that are recycled and potentially reduce the amount of forestry resources that would need to be harvested, and thus a positive and potential beneficial impact to forestry resources. No anticipated impact on agriculture resources.	No Impact to Agriculture Resources Potential Beneficial Impact for Forestry Resources
Increased Diversion Requirements at C&D Facilities	Increased recycling could increase the amount of forestry resources that are recycled and potentially reduce the amount of forestry resources that would need to be harvested, and thus a positive and potential beneficial impact to forestry resources. No anticipated impact on agriculture resources.	No Impact to Agriculture Resources Potential Beneficial Impact for Forestry Resources
Upstream Policies[4]		
Extended Producer Responsibility (EPR) for Toxics	This policy would have no direct impact to agriculture or forestry resources.	No Impact
EPR for Difficult to Recycle Materials	By decreasing the amount of forest materials that are difficult to recycle, more forestry resources would be able to be recycled and thus less would need to be harvested. No anticipated impact on agriculture resources.	No Impact to Agriculture Resources Potential Beneficial Impact for Forestry Resources

Initiative	Impact Analysis for Agriculture and Forestry Resources[1]	Significance Conclusion
Single-use Bag Ban	The ban would impose a ban of plastic bags and a fee on paper bags. The ban may either reduce the amount of paper bags used due to the fee, or increase the amount of paper bags used (as a replacement for plastic bags). With regard to forestry products, the ban may increase or decrease the need for forestry harvesting. No anticipated impact on agriculture resources.	No Impact to Agriculture Resources Potential Impact for Forestry Resources
Disposal of Remaining Residual Waste		
Landfill Disposal – Truck Haul, Rail Haul [5]	This program would have no direct impact on agriculture or forestry resources.	No Impact

(1) Depending on phasing and implementation of various proposed programs and policies, along with anticipated growth in the City, there will be a need for additional facilities to process the diverted materials. Please refer to Section 4.2.3 for an impact analysis of the future facilities.
(2) Refer to Chapter 2.0, Table 2.3-1 for a detailed description of the Downstream Policies and Programs.
(3) Refer to Chapter 2.0, Table 2.3-2 for a detailed description of the Mandatory Participation Programs.
(4) Refer to Chapter 2.0, Section 2.3.4 for a detailed description of the Upstream Policies
(5) Refer to Chapter 2.0, Section 2.3.6 for a detailed description of Disposal of Residual Waste.

Implementation of the mitigation measures identified in Section 4.2.5 would reduce potential impacts to a less than significant level.

Residual waste would be disposed of at existing local or remote landfills. Therefore, the disposal of residual waste would not result in an impact to lands zoned for farmland or protected under a Williamson Act Contract.

Forest and Timberland Zoning

As previously noted, the specific location of future facilities have not been identified; rather SWIRP notes that additional facilities would be required to meet the need for additional waste that would be diverted from the landfill. The potential for these future facilities to conflict with existing zoning of forest land, timberland, or timberland zoned Timberland Production or to result in the loss of forest land or convert forest land to non-forest use is unknown. If future sites include locations that support these types of land uses, then there is a potential for a significant impact. As future facilities are proposed, they would be subject to additional review pursuant to CEQA, at which time additional environmental review to identify conflicts to existing forest land or timberland, loss of forest land, or conversion of forest land to non-forest use would occur.

Implementation of the mitigation measures identified in Section 4.2.5 would reduce potential impacts to a less than significant level.

Residual waste would be disposed of at existing local or remote landfills. Therefore, the disposal of residual waste would not result in an impact forests or lands zoned for timberland production.

Conversion of Farmland or Forestland

As previously noted, the specific location of future facilities have not been identified; rather SWIRP notes that additional facilities would be required to meet the need for additional waste that would be diverted from the landfill. The potential for these future facilities to result in the conversion of farmland to non-agriculture use or conversion of forest land to non-forest use is unknown. If future sites include locations that are adjacent to existing agricultural or forest lands, then there is potential for a significant impact. As future facilities are proposed, they would be subject to additional environmental review pursuant to CEQA to determine impacts due to conversion of agriculture or farmland.

Implementation of the mitigation measures identified in Section 4.2.5 would reduce potential impacts to a less than significant level.

Table 4.2-3 provides a summary of the impact analysis for proposed SWIRP facilities relative to agriculture and forestry resources.

Table 4.2-3. Facility Impact Summary Table (Agriculture and Forestry Resources)

Facility Type	Impact
Clean Material Recovery Facilities	Less than significant with mitigation
Composting (Aerobic)	Less than significant with mitigation
Composting (Anaerobic Digestion)	Less than significant with mitigation
Resource Recovery Centers	Less than significant with mitigation
Mixed Material Processing	Less than significant with mitigation
Alternative Technology – Advanced Thermal Recycling	Less than significant with mitigation
Alternative Technology – Biological (Anaerobic Digestion)	Less than significant with mitigation
Alternative Technology – Thermal (Plasma Arc, Gasification, Pyrolysis, and Others)	Less than significant with mitigation

4.2.4 Cumulative-Level Analysis

Depending on the location of future facilities, as well as other projects that are proposed in the vicinity, there may be a cumulative impact to agriculture or forestry resources. Upon determination of the facility location, a project-level CEQA analysis can be conducted to determine if the construction of such facilities would have a cumulative impact. The future cumulative analysis will utilize a list of project and/or use projections to determine the project-level impacts to agriculture and forestry within the City and surrounding areas. Further, the actual footprint of disturbance for the future facilities would not be significant, in terms of the overall land area in the project study area (City and the area within 100 miles of the City). If all the policies and programs for SWIRP were implemented, total footprint impacts would range between approximately 133 and 163 acres[2]. Considering the there are over 16.6 million acres in the project study area (City and the area within 100 miles of the City), the actual disturbance that would be realized from the future SWIRP facilities is not significant.

4.2.5 Mitigation Measures

The following mitigation measures were developed to avoid or minimize potential impacts to agriculture or forestry resources as a result of SWIRP implementation.

FMMP Lands/Agricultural Land Conversion

AG/FOR-1 Future facilities shall be sited away from Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. If facilities are sited on such farmland, impacts to the farmland shall be mitigated at a 1:1 ratio or through payment of fees into an agricultural conservation trust. Proof of agricultural land acquisition or fee payment shall be provided to the local jurisdiction that is issuing the grading permit. The Planning Director of that local jurisdiction shall confirm that the land has been acquired or fees paid.

[2] If all policies and programs for SWIRP were implemented, the following facilities would be required: one large-scale composting facility or six small-scale composting facilities, three clean MRFs, one resource recovery center and five black bin processing facilities. This analysis assumes 15 acres of impact for each small-scale composting facility, 60 acres of impact for each large-scale composting facility, 7 acres of impact for each clean MRF, 2 acres for a resource recovery center and up to 10 acres for each black bin facility. Depending on whether nine small-scale compost facilities or two large-scale compost facilities were constructed, total footprint impacts would be 133 to 163 acres.

Williamson Act and Agricultural Land Conflict

AG/FOR-2 Future facilities shall be sited away from lands under a Williamson Act Contract or within a Farmland Security Zone to the maximum extent.

AG/FOR-3 Future facilities (except for composting facilities) shall be sited away from areas that are zoned for agricultural use to the maximum extent possible.

Forest and Timerberland Zoning/Conversion

AG/FOR-4 Future facilities shall be sited away from areas zoned for Timberland Production to the maximum extent. If facilities are sited on such farmland, impacts to the farmland shall be mitigated at a 1:1 ratio or through payment of fees into a forest conservation trust.

4.2.6 Conclusion

As presented in Table 4.2-2, the proposed policies and programs of SWIRP will primarily reduce reliance on forestry resources. However, there is a potential for an impact to agriculture resources depending on the location of future facilities that would be needed due to the implementation of the policies and programs. Implementation of the mitigation measures identified in Section 4.2.5 would reduce any potential impacts to below a level of significance. These mitigation measures direct the future facilities away from lands that are under agricultural or timber production or are zoned for such uses. In the event that facilities need to be sited in such locations, mitigation measures are presented which require mitigation at a 1:1 ratio or payment of fees into an agricultural or forest conservation trust. Implementation of these mitigation measures would reduce the impact to below a level of significance.

4.3 AIR QUALITY

The programs and policies identified in the Solid Waste Integrated Resources Plan (SWIRP) will create the need for new facilities to process the additional materials being diverted from the landfills. SWIRP seeks to site the future facilities within the City of Los Angeles (City); however, some facilities may need to be sited outside the City due to availability of land or potential land use compatibility issues. Therefore, the project study area covers the City and the area within 100 miles of the City. The future facilities will be subject to a variety of regulatory requirements established by the air quality regulatory community to assist in protecting the health and welfare of the existing environment.

This section provides an overview of the existing air quality conditions and current measures that are in place to produce gains in improving air quality in the City and the surrounding region. A comprehensive summary of the regulatory framework is presented including federal, state, and local jurisdictions that govern the region's air quality, current attainment and nonattainment status of criteria pollutants, and recently implemented control measures and policies aimed at improving air quality in the region. The analysis will review the potential air quality impacts that would result from implementation of the SWIRP and an identification of feasible mitigation measures.

The analysis of air quality consists of a summary of the regulatory framework to be considered during the decision-making process, a description of the existing conditions within the project study area, thresholds for determining if the proposed policies, programs and/or facilities would result in significant impacts, anticipated impacts (direct, indirect, and cumulative), mitigation measures, and level of significance after mitigation. The potential for impacts to air quality have been analyzed in accordance with Appendix G of the *California Environmental Quality Act* (*CEQA) Guidelines,* the methodologies and significance thresholds; *City of Los Angeles Threshold Guidelines,* the National Ambient Air Quality Standards (NAAQS); the California Ambient Air Quality Standards (CAAQS); the Clean Air Act (CAA); and guidance provided by the South Coast Air Quality Management District (SCAQMD), Antelope Valley Air Quality Management District (AVAQMD), and California Air Resources Board (CARB).

4.3.1 Environmental Setting

The SWIRP study area includes the City and the area within 100 miles of the City. The area thus encompasses all or part of nine California counties (Kern, Los Angeles, Orange, Riverside, San Bernardino, San Diego, San Luis Obispo, Santa Barbara, and Ventura) and includes a diverse range of environmental regions. The Los Angeles Basin itself is bordered by the Santa Monica Mountains to the northwest, the Verdugo and San Gabriel Mountains to the north/northeast, and the Santa Ana Mountains to the south/southeast.

The following section provides an overview of air pollution constituents, a description of the regulatory setting, and existing conditions for air quality in the project study area.

Air Pollution Constituents

The anticipated facilities required to implement SWIRP program and policies will generate air pollutants during construction and operation. These pollutant types fall under three main categories which are monitored and regulated differently by the federal and California CAAs:

- Criteria air pollutants
- Toxic air contaminants (TAC)
- Global warming and ozone-depleting gases

The manner in which these pollutants are monitored and regulated are described in the discussions below.

Criteria Air Pollutants

The United States Environmental Protection Agency (U.S. EPA) identified six "criteria" pollutants – ozone (O_3), carbon monoxide (CO), nitrogen oxides (NO_x), sulfur dioxide (SO_2), lead (Pb), and particulate matter (PM_{10} and $PM_{2.5}$) – that were found to be the most harmful to human health and welfare. Criteria pollutants are those pollutants that are common and found all over the United States. Federal and state ambient air quality standards have been established for these criteria pollutants, as listed in Table 4.3-1. Following is a description of the six pollutants:

Ozone (O_3). O_3 is a respiratory irritant and an oxidant that increases susceptibility to respiratory infections and that can cause substantial damage to vegetation and other materials. O_3 is not emitted directly into the atmosphere, but is a secondary air pollutant produced in the atmosphere through a complex series of photochemical reactions involving reactive organic gases (ROG) and nitrogen oxides (NO_x). ROG and NO_x are known as precursor compounds for O_3. Substantial ozone production generally requires O_3 precursors to be present in a stable atmosphere with strong sunlight for approximately three hours. O_3 is a regional air pollutant because it is not emitted directly by sources, but is formed downwind of sources of ROG and NO_x under the influence of wind and sunlight. O_3 concentrations tend to be higher in the late spring, summer, and fall, when long sunny days combine with regional air subsidence inversions to create conditions conducive to the formation and accumulation of secondary photochemical compounds.

Carbon Monoxide (CO). CO is a non–reactive pollutant that is a product of incomplete combustion of organic material, and is mostly associated with motor vehicle traffic, and in wintertime, with wood–burning stoves and fireplaces. High CO concentrations develop primarily during winter when periods of light winds combine with the formation of ground–level temperature inversions (typically from the evening through early morning). These conditions result in reduced dispersion of vehicle emissions. Motor vehicles also exhibit increased CO emission rates at low air temperatures. When inhaled at high concentrations, CO combines with hemoglobin in the blood and reduces its oxygen–carrying capacity, resulting in reduced levels of oxygen reaching the brain, heart, and other body tissues. This condition is especially critical for people with cardiovascular diseases, chronic lung disease, or anemia. CO measurements and modeling were important in the early 1980s when CO levels were regularly exceeded throughout California. However, in more recent years, CO measurements and modeling are not a priority in most California air districts due to the retirement of older vehicles, fewer emissions from new vehicles, and improvements to fuels.

Nitrogen Oxides (NO_x). Nitrogen oxides (NOx) in the ambient air consist primarily of nitric oxide (NO) and nitrogen dioxide (NO_2). These two forms of gaseous nitrogen oxides are significant pollutants of the lower atmosphere. Only about 10 percent of all NO_x emissions come from anthropogenic (man-made) sources. The rest is produced naturally by anaerobic biological processes in soil and water, by lightning and volcanic activity, and by photochemical destruction of nitrogen compounds in the upper atmosphere. About 50 percent of emissions from anthropogenic sources come from fossil-fuel-fired heat and electricity generating plants and slightly less from motor vehicles. Other sources include industrial boilers, incinerators, the manufacture of nitric acid and other nitrogenous chemicals, electric arc welding processes, the use of explosives in mining, and farm silos.

NO is a colorless and odorless gas that is relatively harmless to humans, quickly converts to NO_2, and can be measured. NO_2 has been found to be a lung irritant capable of producing pulmonary edema. Inhaling can lead to respiratory illnesses such as bronchitis and pneumonia.

Table 4.3-1. Federal and State Ambient Air Quality Standards

Pollutant	Averaging Time(1)	Concentrations		Pollutant Health and Atmospheric Effects
		State Standards (CAAQS)	Federal Standards (NAAQS)	
Ozone (O_3)	8 hour	0.07 ppm	0.075 ppm	High concentrations can directly affect lungs, causing irritation. Long–term exposure may cause damage to lung tissue.
	1 hour	0.09 ppm	N/A	
Carbon Monoxide (CO)	8 hour	9.0 ppm	9.0 ppm	Classified as a chemical asphyxiant, carbon monoxide interferes with the transfer of fresh oxygen to the blood and deprives sensitive tissues of oxygen.
	1 hour	20 ppm	35 ppm	
Nitrogen Dioxide (NO_2)	Annual arithmetic mean	0.03 ppm	0.053 ppm	Irritating to eyes and respiratory tract. Colors atmosphere reddish–brown.
	1 hour	0.18 ppm	0.10 ppm	
Sulfur Dioxide (SO_2)	Annual arithmetic mean	NA	0.03 ppm	Irritates upper respiratory tract; injurious to lung tissue. Can yellow the leaves of plants, destructive to marble, iron, and steel. Limits visibility and reduces sunlight.
	24 hour	0.04 ppm	0.14 ppm	
	1 hour	0.25 ppm	0.075 ppm	
Particulate Matter (PM_{10})	Annual arithmetic mean	20 µg/m³	N/A	May irritate eyes and respiratory tract, decreases in lung capacity, increases in cancer and increased mortality. Produces haze and limits visibility.
	24 hour	50 µg/m³	150 µg/m³	
Particulate Matter–fine ($PM_{2.5}$)	Annual arithmetic mean	No Separate State Standard	15 µg/m³	Increases respiratory disease, lung damage, cancer, and premature death. Reduces visibility and results in surface soiling.
	24 hour	12 µg/m³	35 µg/m³	
Lead (Pb)	Rolling 3-month Average	N/A	0.15 µg/m³	Disturbs gastrointestinal system, and causes anemia, kidney disease, and neuromuscular and neurological dysfunction.
	Quarterly Average	N/A	1.5 µg/m³	
	30-day average	1.5 µg/m³	N/A	
Hydrogen Sulfide	1 hour	0.03 ppm	N/A	Odor annoyance
Sulfates	24 hour	25 µg/m³	N/A	(a) Decrease in ventilatory function; (b) Aggravation of asthmatic symptoms; (c) Aggravation of cardio-pulmonary disease; (d) Vegetation damage; (e) Degradation of visibility; and (f) Property damage
Vinyl Chloride (chloroethene)	24 hour	0.01 ppm	N/A	Known carcinogen
Visibility-Reducing Particles	8 hour (10:00 a.m. to 6:00 p.m. Pacific Standard Time)	Extinction coefficient of 0.23 kilometer—visibility of 10 miles or more due to particles when relative humidity is less than 70 percent.	N/A	Visibility impairment on days when relative humidity is less than 70 percent

Source: California Air Resources Board, September 18, 2010.
Note: (1) Most of the air quality standards are based on a particular time length for averaging, and the average concentration during that time.
ppm = parts per million
µg/m³= micrograms per cubic meter
N/A = Not Applicable

Particulate Matter (PM_{10} and $PM_{2.5}$). PM_{10} and $PM_{2.5}$ consist of airborne particles that measure 10 microns or less in diameter and 2.5 microns or less in diameter, respectively. PM_{10} and $PM_{2.5}$ represent fractions of particulate matter that can be inhaled into the air passages and the lungs, causing adverse health effects. Particulate matter in the atmosphere results from many kinds of dust-producing and fume-producing industrial and agricultural operations, fuel combustion, wood burning stoves and fireplaces, and atmospheric photochemical reactions. Some sources of particulate matter, such as demolition, construction activities and mining, are more local in nature, while others, such as vehicular traffic and wood burning stoves and fireplaces, have a more regional effect. Very small particles of certain substances (e.g., sulfates and nitrates) can cause lung damage directly, or can contain adsorbed gases (e.g., chlorides or ammonium) that may be injurious to health. Particulates can reduce visibility. Dust comprised of large particles (diameter greater than 10 microns) settles out rapidly and is easily filtered by human breathing passages. This dust is of concern more as a soiling nuisance rather than a health hazard. The remaining fractions, PM_{10} and $PM_{2.5}$, are a health concern particularly at levels above the federal and state ambient air quality standards. $PM_{2.5}$ (including diesel exhaust particles) is thought to have greater effects on health, because these particles are so small and thus are able to penetrate to the deepest parts of the lungs. Acute and chronic health effects associated with high particulate levels include the aggravation of chronic respiratory diseases, heart and lung disease, and coughing, bronchitis, and respiratory illnesses in children. Mortality studies since the 1990s have shown a statistically significant direct association between mortality (premature deaths) and daily concentrations of particulate matter in the air. Despite important gaps in scientific knowledge and continued reasons for some skepticism, a comprehensive evaluation of the research findings provides persuasive evidence that exposure to fine particulate air pollution has adverse effects on cardiopulmonary health. The CARB has estimated that achieving the ambient air quality standards for PM_{10} could reduce premature mortality rates by 6,500 cases per year.

Sulfur Dioxide (SO_2). SO_2 is a combustion product of sulfur or sulfur–containing fuels such as coal and diesel. SO_2 is also a precursor to the formation of atmospheric sulfate and particulate matter, and contributes to potential atmospheric sulfuric acid formation that could precipitate downwind as acid rain.

Lead. Lead is a metal that is a natural constituent of air, water, and the biosphere. Lead is neither created nor destroyed in the environment, so it essentially persists forever. Ambient lead concentrations meet both the federal and state standards in the project area. Lead has a range of adverse neurotoxin health effects, and was released into the atmosphere via leaded gasoline products. The phase-out of leaded gasoline in California has resulted in dramatically decreased levels of atmospheric lead.

Toxic Air Contaminants

In addition to criteria pollutants, there are hundreds of toxic air contaminants (TACs) that do not currently have federal or state ambient air quality standards. Non-criteria air pollutants or TACs are airborne substances that are capable of causing short-term (acute) and/or long-term (chronic or carcinogenic; i.e., cancer causing) adverse human health effects (i.e., injury or illness). TACs include both organic and inorganic chemical substances. They may be emitted from a variety of common sources including gasoline stations, automobiles, dry cleaners, industrial operations, and painting operations. The current California list of TACs includes approximately 200 compounds, including particulate emissions from diesel-fueled engines and asbestos (CARB, 2011).

In August 1998, CARB identified particulate emissions from diesel-fueled engines as TACs. CARB developed the *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles*. The document represents a proposal to reduce diesel particulate emissions, with the goal to reduce emissions and the associated health risk by 75 percent in 2010 and by 85 percent in 2020.

Global Warming and Ozone-Depleting Gases

Greenhouse gases (GHG) include both naturally occurring and anthropogenic gases that trap heat in the earth's atmosphere. GHGs include, but are not limited to, carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydro-chlorofluorocarbons (HCFC), perfluorocarbons (PFC), and sulfur hexafluoride (SF_6).

Methane is an extremely effective absorber of radiation, though its atmospheric concentration is less than CO_2 and its lifetime in the atmosphere is brief (10-12 years), compared to some other greenhouse gases. Methane has both natural and anthropogenic sources. It is released as part of the biological processes in low oxygen environments, such as in swamplands or in rice production (at the roots of the plants). Over the last 50 years, human activities such as growing rice, raising cattle, using natural gas and mining coal have added to the atmospheric concentration of methane (NOAA, 2011).

Nitrous oxide concentrations began to rise at the beginning of the industrial revolution and are understood to be produced by microbial processes in soil and water, including those reactions which occur in fertilizer containing nitrogen. Increasing use of these fertilizers has been made over the last century. In addition to agricultural sources for the gas, some industrial processes (fossil fuel-fired power plants, nylon production, nitric acid production, and vehicle emissions) also contribute to its atmospheric load (NOAA, 2011).

HCFCs are compounds containing hydrogen, fluorine, chlorine, and carbon atoms. Although ozone depleting substances, they are less potent at destroying stratospheric ozone than chlorofluorocarbons (CFCs). They have been introduced as temporary replacements for CFCs and are also greenhouse gases (USEPA, 2011).

PFCs are a group of human-made chemicals composed of carbon and fluorine only. These chemicals were introduced as alternatives, along with hydrofluorocarbons, to the ozone depleting substances. In addition, PFCs are emitted as by-products of industrial processes and are also used in manufacturing. PFCs do not harm the stratospheric ozone layer, but they are powerful greenhouse gases (USEPA, 2011).

Sulfur hexafluoride is a colorless gas soluble in alcohol and ether, slightly soluble in water. It is a very powerful greenhouse gas used primarily in electrical transmission and distribution systems and as a dielectric in electronics.

These gases capture heat radiated from the sun and re-radiated from the earth's surface as it is reflected back into the atmosphere, roughly analogous to the retention of heat energy in a greenhouse. The accumulation of GHGs has been implicated as a driving force for global climate change. Definitions of climate change vary between and across regulatory authorities and the scientific community, but in general can be described as the changing of the earth's climate caused by natural fluctuations and the impact of human activities that alter the composition of the global atmosphere. Volatile Organic Compounds (VOCs) also have a small direct impact as greenhouse gases, as well as being involved in chemical processes which modulate ozone production.

Both natural processes and human activities emit GHGs. Global climate change is a change in the average weather on earth that can be measured by wind patterns, storms, precipitation and temperature. Although there is disagreement as to the speed of global warming and the extent of the impacts attributable to human activities, the majority of the scientific community now agrees that there is a direct link between increased emission of GHGs and long term global temperature. Potential global warming impacts in California may include, but are not limited to, loss in snow pack, sea level rise, more extreme heat days per year, more high ozone days, more large forest fires, and more drought years. Secondary effects are likely to include a global rise in sea level, impacts to agriculture, changes in disease vectors, and changes

in habitat and biodiversity. The accumulation of GHGs in the atmosphere regulates the earth's temperature; however, emissions from human activities such as electricity production and motor vehicles have elevated the concentration of GHGs in the atmosphere.

Ozone-depleting gases contribute to the destruction of the earth's naturally occurring ozone, which protects our planet from the damaging effects of solar ultraviolet radiation. The biggest contributors to ozone depletion are chlorofluorocarbons (CFCs), halons, carbon tetrachloride, methyl chloroform, and other halogenated compounds.

Odorous Emissions

Though offensive odors from stationary sources rarely cause any physical harm, they still remain unpleasant and can lead to public distress, generating citizen complaints to local governments. The occurrence and severity of odor impacts depend on the nature, frequency, and intensity of the source; wind speed and direction; and the sensitivity of receptors.

4.3.1.1 Regulatory Setting

Federal, state, regional, and local requirements influence air quality within the project study area. This section lists and briefly describes the relevant plans, policies, and regulations that pertain to air quality.

Federal

United States Environmental Protection Agency

The Federal CAA of 1970 is the comprehensive law that regulates air emissions from area, stationary, and mobile sources. The law authorized the U.S. EPA to establish the NAAQS to protect public health and the environment. As part of its enforcement responsibilities, the U.S. EPA requires each state with nonattainment areas to prepare and submit a State Implementation Plan (SIP) that demonstrates the means to attain the federal standards. The SIP must integrate federal, state, and local plan components and regulations to identify specific measures to achieve future attainment of the applicable NAAQS, using a combination of performance standards and market-based programs.

State

Responsibility for attaining and maintaining ambient air quality standards in California is divided between CARB and regional air pollution control or air quality management districts. Areas of control for the regional districts are set by CARB, which divides the state into air basins. These air basins are based largely on topography that limits air flow, or by county boundaries.

California Air Resources Board

The CARB, a part of the California Environmental Protection Agency (CalEPA), is responsible for the coordination and administration of both state and federal air pollution control programs within California. In this capacity, the CARB conducts research, sets state ambient air quality standards, compiles emission inventories, develops suggested control measures, and provides oversight of local programs. The CARB establishes emissions standards for motor vehicles sold in California, consumer products (such as hair spray, aerosol paints, and barbecue lighter fluid), and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions. The CARB has divided California into regional air basins according to topographic drainage features. This project study area includes all or part of six air basins. These basins are discussed in Section 4.3.1.2.

California Office of Environmental Health Hazard Assessment

The California Office of Environmental Health Hazard Assessment (OEHHA) is responsible for conducting health risk assessments of chemical contaminants found in air, including those identified as toxic air contaminants or on the list of chemicals under the Air Toxics Hot Spots Act. Assessments include development of Cancer Potency Factors to assess the cancer risk from carcinogens in air, and development of Reference Exposure Levels to assess noncancer health impacts. OEHHA has developed and updates risk assessment guidance for use in site-specific risk assessments under the Air Toxics Hot Spots program. OEHHA also makes health-based recommendations to the CARB for CAAQS. State legislation, the Children's Environmental Health Protection Act (Senate Bill 25, Escutia; chaptered 1999), requires OEHHA to explicitly consider infants and children in evaluating health risks of air pollutants. OEHHA is evaluating current risk assessment methods for their adequacy to protect children and has prepared a draft screening tool. The draft Communities Environmental Health Screening Tool: CalEnviroScreen Version 2.0 (CalEnviroScreen 2.0). CalEnviroScreen (which includes child-specific reference doses) is a screening methodology that can be used to help identify California communities that are disproportionately burdened by multiple sources of pollution.[1]

Assembly Bill 32

In 2006, California passed Assembly Bill 32 (AB 32), the California Global Warming Solutions Act of 2006, which requires the CARB to design and implement emission limits, regulations, and other measures, such that California GHG emissions will be reduced to 1990 levels by 2020. In December 2007, CARB approved the 2020 emission limit of 427 million metric tons of CO_2 equivalents (CO_2e) of GHG. The 2020 target of 427 million metric tons of CO_2e requires the reduction of 169 million metric tons of CO_2e, or approximately 30 percent, from the state's projected 2020 emissions of 596 million metric tons of CO_2e (business-as-usual).

In June, 2008, CARB published its *Climate Change Draft Scoping Plan*. The *Climate Change Draft Scoping Plan* reported that CARB met the first milestones set by AB 32 in 2007: (1) developing a list of early actions to begin sharply reducing GHG emissions; (2) assembling an inventory of historic emissions; and (3) establishing the 2020 emissions limit. After consideration of public comment and further analysis, CARB released the *Climate Change Proposed Scoping Plan* in October 2008. The *Proposed Scoping Plan*, which was approved by CARB in December 2008, proposes a comprehensive set of actions designed to reduce overall carbon emissions in California.

In September 2013, as part of the AB 32 Scoping Plan Update, CARB and CalRecycle, published six technical papers related to the Waste Management Sector Plan.

A central component of AB 32 is the cap-and-trade program which covers major sources of GHG emissions in the State such as refineries, power plants, industrial facilities, and transportation fuels. The regulation includes an enforceable GHG cap that will decline over time. CARB will distribute allowances, which are tradable permits, equal to the emission allowed under the cap. Waste-to-energy facilities and recycling remanufacturers are included as covered entities under the cap-and-trade program.[2] In September 2012, CARB directed staff to develop regulatory amendments to exempt waste-to-energy facilities from the program for the first compliance period (which has since been extended to 2015-16).[3] The eligibility requirements require the facilities to operate under an existing air permit, and

[1] California Office of Environmental Health Hazard Assessment, Communities Environmental Health Screening Tool is available
[2] Description of California Air Resources Board, Cap-and-Trade Program, http://www.arb.ca.gov/cc/capandtrade/capandtrade.htm (accessed June 10, 2014).
[3] CARB Resolution 12-33, http://www.arb.ca.gov/cc/capandtrade/res12-33.pdf (accessed June 10, 2014).

the fuel must be derived from Municipal Solid Waste. This requirement will limit the ability for new facilities to seek an exemption from the Cap-and-Trade program.[4] At this time, CARB is in the process of determining the best regulatory framework for these facilities.[5]

In 2005, in recognition of California's vulnerability to the potential effects of climate change, former Governor Schwarzenegger established Executive Order S-3-05, which sets forth a series of target dates by which California emissions of GHG would be progressively reduced, as follows:

- By 2010, reduce GHG emissions to 2000 levels (which was achieved in 2008)[6]
- By 2020, reduce GHG emissions to 1990 levels
- By 2050, reduce GHG emissions to 80 percent below 1990 levels

Low Carbon Fuel Standard

In January 2007, former Governor Schwarzenegger asserted California's leadership in clean energy and environmental policy by establishing a Low-Carbon Fuel Standard (LCFS) by Executive Order S-1-07. The Executive Order calls for a reduction of at least 10 percent in the carbon intensity of California's transportation fuels by 2020. It instructed the Secretary of the California EPA to coordinate activities between the University of California, the California Energy Commission (CEC) and other state agencies to develop and propose a draft compliance schedule to meet the 2020 Target. Note that the City's Clean Fuel Program for its fleet of solid resources collection vehicles was implemented to help meet the standard.

Landfill Gas Control Measures

CARB approved a new regulation that reduces emissions of methane, a greenhouse gas, from municipal solid waste landfills. The regulation, which became effective June 17, 2010, is a discrete early action greenhouse gas emission reduction measure, as described in AB 32. The regulation primarily requires owners and operators of certain uncontrolled municipal solid waste landfills to install gas collection and control systems, and requires existing and newly installed gas and control systems to operate in an optimal manner.

Senate Bill 97

The provisions of Senate Bill 97 (SB 97), direct the Office of Planning and Research (OPR) to propose *CEQA Guidelines* for the mitigation of GHG emissions or the effects of GHG emissions. SB 97 directs OPR to develop such guidelines by July 2009, and directs the State Resources Agency, the agency charged with adopting the *CEQA Guidelines*, to certify and adopt such guidelines by January 2010.

On April 13, 2009, OPR submitted to the Secretary for Natural Resources its recommended amendments to the State *CEQA Guidelines* for addressing greenhouse gas emissions, as required by Senate Bill 97. Those recommended amendments were developed to provide guidance to public agencies regarding the analysis and mitigation of greenhouse gas emissions and the effects of greenhouse gas emissions in draft CEQA documents.

[4]Proposed Amendments to the California Cap on Greenhouse Gas Emissions and Market-Based Compliance Mechanisms, September 4, 2013 (accessed June 10, 2014).
[5]Municipal Solid Waste Thermal Technologies, September 17, 2013 http://www.arb.ca.gov/cc/waste/mswthermaltech.pdf (accessed December 31, 2014).
[6]California GHG Emission Inventory, 2014 Edition, http://www.arb.ca.gov/cc/inventory/data/misc/ghg_inventory_trends_00-12_2014-05-13.pdf (accessed June 10, 2014).

On July 3, 2009, the Natural Resources Agency commenced the Administrative Procedure Act rulemaking process for certifying and adopting these amendments pursuant to Public Resources Code section 21083.05. Following a 55 day public comment period, and two public hearings, and in response to comments, the Natural Resources Agency proposed revisions to the text of the proposed Guidelines amendments.

The Natural Resources Agency transmitted the adopted amendments and the entire rulemaking file to the Office of Administrative Law (OAL) on December 31, 2009. On February 16, 2010, the Office of Administrative Law approved the Amendments, and filed them with the Secretary of State for inclusion in the California Code of Regulations. The Amendments became effective on March 18, 2010.

OPR Technical Advisory, CEQA and Climate Change

On June 19, 2008, OPR published a technical advisory on CEQA and Climate Change. The advisory provides OPR's perspective on the emerging role of CEQA in addressing climate change and GHG emissions, while recognizing that approaches and methodologies for calculating GHG emissions and addressing environmental impacts through CEQA review are rapidly evolving. The advisory recognizes that OPR will develop, and the Resources Agency will adopt amendments to the *CEQA Guidelines* pursuant to SB 97.

California Air Pollution Control Officers Association (CAPCOA)

In January 2008, the California Air Pollution Control Officers Association (CAPCOA) issued a white paper on evaluating and addressing GHGs under CEQA entitled *CEQA and Climate Change: Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act*. This resource guide was prepared to support local governments as they develop their programs and policies around climate change issues. The paper was intended to provide a common platform of information about key elements of CEQA as they pertain to GHG, including an analysis of different approaches to setting significance thresholds. The paper discussed a range of GHG emission thresholds that could be used.

Regional

The Southern California Association of Governments (SCAG) is the regional planning agency for Los Angeles, Orange, Ventura, Riverside, San Bernardino, and Imperial counties and addresses regional issues relating to transportation, the economy, community development, and the environment. SCAG is the federally designated metropolitan planning organization (MPO) for the majority of the southern California region. As the designated MPO, SCAG is mandated by the federal government to develop and implement regional plans that address transportation, growth management, hazardous waste management, and air quality issues. With respect to air quality planning, SCAG has prepared the Regional Comprehensive Plan and Guide (RCPG) for the Los Angeles County region, which includes Growth Management and Regional Mobility chapters that form the basis for the land use and transportation components of the Air Quality Management Plan (AQMP) and are utilized in the preparation of air quality forecasts and the consistency analysis that is included in the AQMP. The San Diego Association of Governments (SANDAG) serves as the MPO for San Diego County.

Table 4.3-2 summarizes the regional air districts that cover all or part of the project study area.

Table 4.3-2. Air Pollution Control Districts within Project Study Area

Air Pollution Control District	Geographic Area Covered	Air Basin
South Coast Air Quality Management District (SCAQMD)	All of Orange County, Los Angeles County (except for Antelope Valley), western urbanized portions of San Bernardino County, and the western and Coachella Valley portions of Riverside County.	South Coast Air Basin
Antelope Valley Air Quality Management District (AVAQMD)	Northern part of Los Angeles County.	Mojave Desert Air Basin
Eastern Kern County Air Pollution Control District (EKCAPCD)	Eastern portion of Kern County,	Mojave Desert Air Basin
Mojave Desert Air Quality Management District (MDAQMD)	Desert portion of San Bernardino County and the far eastern end of Riverside County.	Mojave Desert Air Basin
Santa Barbara Air Pollution Control District (SBACPD)	Santa Barbara County	South Central Coast Air Basin
San Diego Air Pollution Control District (SDAPCD)	San Diego County	San Diego Air Basin
San Joaquin Valley Air Pollution Control District (SJVAPCD)	All of Tulare, Kings, Fresno, Madera, Stanislaus, Merced, San Joaquin Counties as well as the western portion of Kern County	San Joaquin Valley Air Basin
Ventura County Air Pollution Control District (VCAPCD)	Ventura County	South Central Coast Air Basin

Source: California Air Resources Board, 2011a and 2011b.

Since the City falls within the SCAQMD, a more detailed discussion of that district is provided below.

South Coast Air Quality Management District

The SCAQMD has jurisdiction over an approximately 10,743 square mile area of the South Coast Air Basin. This area includes all of Orange County, Los Angeles County (except for Antelope Valley), western urbanized portions of San Bernardino County, and the western and Coachella Valley portions of Riverside County.

The SCAQMD is the agency principally responsible for comprehensive air pollution control in the South Coast Basin. To that end, the SCAQMD, a regional agency, works directly with SCAG, county transportation commissions, and local governments, and cooperates actively with all state and federal government agencies. The SCAQMD develops rules and regulations, establishes permitting requirements, inspects emissions sources, and enforces such measures through educational programs or fines, when necessary. The SCAQMD is directly responsible for reducing emissions from stationary (area and point), mobile, and indirect sources through the development of AQMPs.

The most recent update to the SCAQMD AQMP was prepared for air quality improvements to meet both state and federal CAA planning requirements for all areas under AQMP jurisdiction. On September 27, 2007, the update was adopted by CARB for inclusion in the SIP. The AQMP sets forth strategies for attaining the federal PM_{10} and $PM_{2.5}$ air quality standards and the federal 8-hour O_3 air quality standard, as well as for meeting state standards at the earliest practicable date. With the incorporation of new scientific data, emission inventories, ambient measurements, control strategies, and air quality modeling, the 2007 AQMP focuses on O_3 and $PM_{2.5}$ attainments.

Although the SCAQMD is responsible for regional air quality planning efforts, it does not have the authority to directly regulate the air quality issues associated with plans and new development projects throughout the South Coast Air Basin (SCAB). Instead, the SCAQMD has prepared the *CEQA Air Quality Handbook* (Handbook) to indirectly address these issues in accordance with the projections and programs of the AQMP. The Handbook explains the procedures that the SCAQMD recommends to be followed during environmental review processes required by CEQA. The Handbook also provides direction on how to evaluate potential air quality impacts, how to determine whether these impacts are significant and how to mitigate these impacts. The SCAQMD intends that by providing this guidance, the air quality impacts of plans and development proposals will be analyzed accurately and consistently throughout the SCAB and adverse impacts will therefore be minimized.

The SCAQMD regulates, permits, and inspects stationary sources of air pollution, while the state is responsible for emission standards and controlling actual tailpipe emissions from motor vehicles. For the SWIRP facilities, the relevant rules and regulations are as follows in Table 4.3-3.

Table 4.3-3. Applicable SCAQMD Rules and Regulations

Rule	Requirement
403 – Fugitive Dust	Implementation of dust suppression techniques to prevent fugitive dust from creating a nuisance off site.
410 - Odors from Transfer Stations and Material Recovery Facilities	Establishes odor management practices and requirements to reduce odors from municipal solid waste transfer stations and material recovery facilities.
461 - Gasoline Transfer and Dispensing	Applies to the transfer of gasoline from any tank truck into any stationary storage tank, and from any stationary storage tank into any motor vehicle fuel tank.
1113 - Architectural Coating	Limits the Reactive Organic Gas/Volatile Organic Compounds (ROG/VOC) content of architectural coatings used in the SCAQMD.
1133 – Composting and Related Operations	Registration requirements for chipping and grinding activities and composting operations.
1193 – Clean On-Road Residential and Commercial Refuse Collection Vehicles	Solid waste collection fleet operators to acquire alternative-fuel refuse collection vehicles when procuring or leasing these vehicles.
1155 – Particulate Matter (PM) Control Devices	Use of best available technologies to reduce the amount of particulate matter (dust) entrained in ambient air as a result of anthropogenic (human-made, for example, construction) activities.

Source: SCAQMD, 2011 (http://www.aqmd.gov/rules/rulesreg.html).

County of Los Angeles

Los Angeles County Congestion Management Program

The Congestion Management Program (CMP) for Los Angeles County was developed to meet the requirements of Section 65089 of the California Government Code and addresses regional congestion by linking transportation, land use, and air quality decisions. The goals of the CMP include the following:

- To link land use, transportation, and air quality decisions
- To develop a partnership among transportation decision-makers on devising appropriate transportation solutions that include all modes of travel
- To propose transportation projects that are eligible for state gas tax funds

Local

City of Los Angeles

The City approved a comprehensive update to the long-term growth strategy in its General Plan. The Framework Element sets policy direction for the City's 35 Community Plan areas, in which detailed land use plans are described, and 12 citywide elements (e.g., transportation and housing). The Framework Element supports land use and transportation policies and patterns that will assist the region in meeting air quality goals, for example, by encouraging the location of residential and commercial uses near transit centers and continuing the City's "centers" development concept.

The Air Quality Element was adopted in November 1992. The objectives are to aid the region in attaining state and federal air quality standards, while continuing to allow economic growth and improvement in the quality of life for City residents. This Element also discusses how the City plans to implement local programs contained in the SCAQMD's AQMP.

GREEN LA Plan

The GREEN LA Plan is a framework for confronting global climate change, engaging residents to create a cleaner, greener, sustainable Los Angeles; and growing the green economy. Los Angeles will meet the goal of reducing CO_2 emissions 35 percent below 1990 levels by increasing the generation of renewable energy, improving energy conservation and efficiency, and changing transportation and land use patterns to reduce dependence on automobiles. Objectives of the plan include: (1) improving public health by enhancing the environment; (2) increasing green space; (3) promoting environmental stewardship for the city and its residents; (4) creating a new urban form; and (5) building a new green economy in the city. Proposed actions cover a variety of areas including energy, water, transportation, waste, port and airport, open space and greening, green economy and adaptation.

Air Quality Management

National and State Ambient Air Quality Standards

As required by the federal CAA, the NAAQS have been established for major air pollutants: O_3, CO, NO_2, SO_2, particulate matter, and lead. Pursuant to California Clean Air Act (CCAA), the State of California has established the CAAQS. The CAAQS are generally more stringent than the corresponding NAAQS and incorporate additional standards for sulfates, hydrogen sulfide, vinyl chloride and visibility-reducing particles. Since the CAAQS are more stringent than the NAAQS, the CAAQS are used as the comparative standard in the air quality analysis contained in this report. The "primary" standards have been established to protect public health. The "secondary" standards are intended to protect the nation's welfare and account for air pollutant effects on soil, water, visibility, materials, vegetation and other aspects of the general welfare.

Some or all of the new SWIRP facilities will be located in the City which is part of the South Coast Air Basin (SCAB) and is under the jurisdiction of the SCAQMD.

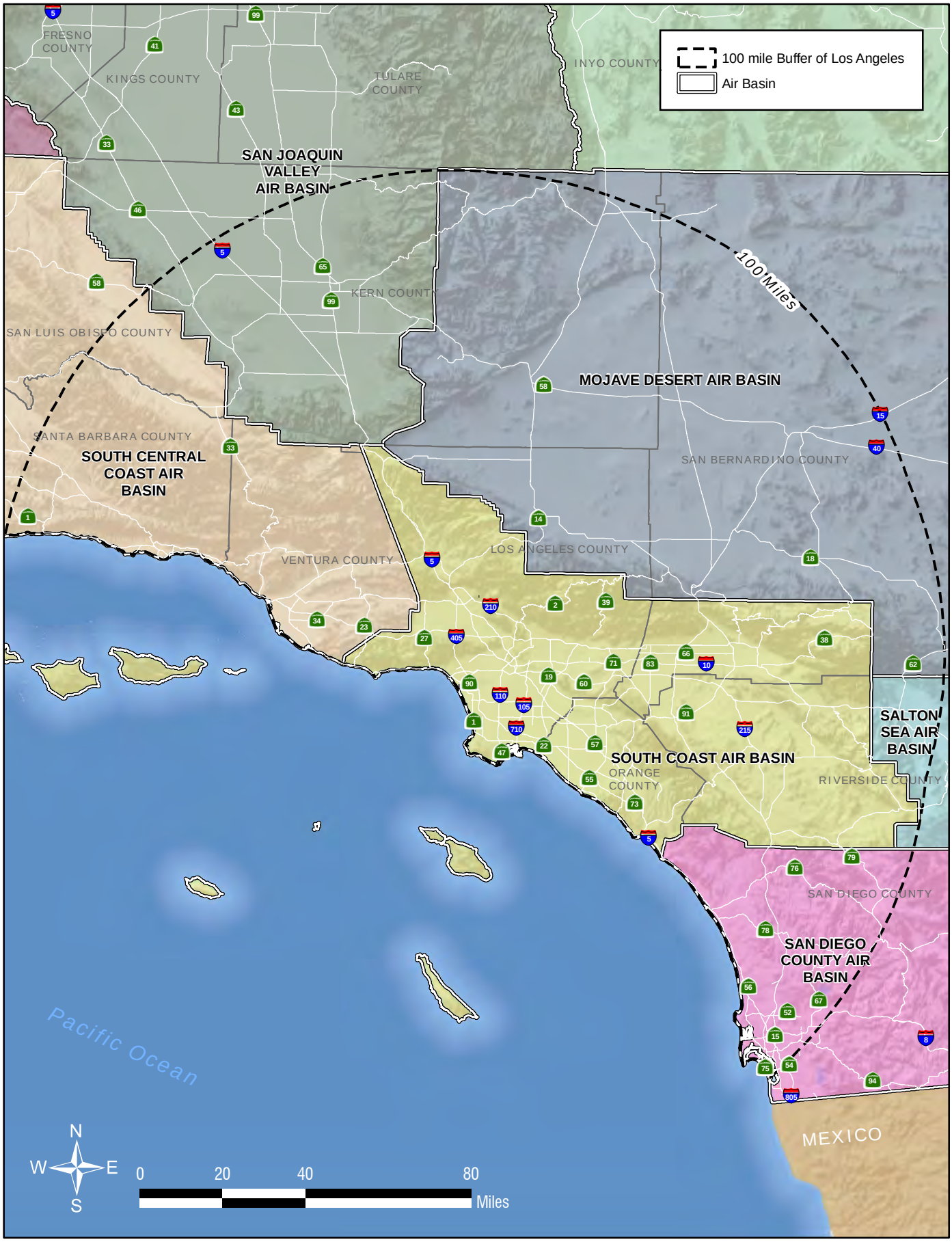
4.3.1.2 Existing Conditions

This project study area includes all or part of six air basins (Figure 4.3-1)[7]. The topography and climate for each air basin is discussed below. This section provides an overview of the meteorology, as well as three-year air monitoring station summaries for each of the air basins that are within the project study area.

South Coast Air Basin

The City is within the South Coast Air Basin (SCAB), which is bounded by the Pacific Ocean to the west, and the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east. The SCAB includes all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino counties. In general, Southern California has a warm, dry Mediterranean climate; hot in the summer and mild in the winter. Temperatures are cooler near the coast and hotter near inland areas. Most of the precipitation occurs as rain during the winter months, although rain showers are common during the summer in higher-elevation desert areas. Average annual precipitation is approximately 19 inches and temperatures reach 90 degrees Fahrenheit (ºF) 100 days of the year on average. Climate in the SCAB increases the potential to create air pollution problems. The SCAB contains a population of over 15 million people.

[7] California Air Basins Map, http://www.arb.ca.gov/ei/maps/statemap/abmap.htm (accessed March 1, 2013)



Air Basins in Project Analysis Area

FIGURE 4.3-1

Air quality within the SCAB generally rates from fair to poor. Sinking, or subsiding, air from the Pacific High Pressure System creates a temperature inversion which acts as a lid to vertical movement of air masses and dispersion of pollutants. Weak summertime pressure gradients suppress winds and further limit horizontal dispersion of pollutants in the mixed layer below the subsidence inversion. Poorly dispersed anthropogenic (man-made) emissions, combined with strong sunshine, lead to photochemical reactions that create O_3 in this surface layer. Daytime onshore air flow (i.e., sea breeze) and nighttime offshore flow (i.e., land breeze) are quite common in Southern California. The sea breeze helps to moderate daytime temperatures and leads to air pollutants being blown out to sea at night and returning to land the following day. Despite implementing many strict controls, the SCAQMD portions of the basin still fail to meet the federal air quality for O_3 and PM_{10}. Because federal pollution standards have not been achieved, the basin is considered a non-attainment area for federal standards for these pollutants. For State standards, the Los Angeles County portion of the basin is designated as non-attainment for O_3 and PM_{10}.

The SCAQMD maintains a network of 41 stations within Los Angeles County that monitor air quality and compliance with applicable ambient standards. Table 4.3-4 summarizes three years of air monitoring data for the basin from 2010 to 2012, as it relates to national air quality standards.

Table 4.3-4. Air Quality Concentration for South Coast Air Basin

Pollutant	Standard	Monitoring Data by Year		
		2010	2011	2012[a]
CO (ppm) [b]				
Highest 1-Hour Average	9	6	NA	NA
Days over National Standard		0	0	0
Highest 8-Hour Average	35	3.6	4.7	4.0
Days over National Standard		0	0	0
Ozone (ppm) [b]				
Highest 1-Hour Average	0.09	0.143	0.160	0.147
Days over State Standard		79	90	98
Highest 8-Hour Average	0.075	0.123	0.136	0.112
Fourth Highest 8-Hour Average		0.109	0.113	0.106
Days over National Standard		102	106	111
PM_{10} (µg/m³) [c,d,e]				
Highest 24-Hour Average	150	89	84	152
Samples Exceeding National Standard		0	0	0
Highest Annual Average [e]	20	42.3	41.3	39.9
$PM_{2.5}$ (µg/m³) [d]				
Highest 24-Hour Average	35	54.2	65	58.7
Samples Exceeding National Standard		13	17	15
Highest Annual Average [e]	15	15.2	15.3	15.06

Source: SCAQMD (http://sfprod.aqmd.gov/home/library/air-quality-data-studies/historical-data-by-year)., 2010-2012.
N/A =Not Available

a) 2013 concentrations are not available on the SCAQMD website.
b) ppm = parts per million.
c) PM_{10} is not measured every day of the year.
d) µg/m3 = micrograms per cubic meter.
e) Highest annual average is highest recorded annual average at any one monitoring site within an air basin.

Mojave Desert Air Basin

The Mojave Desert Air Basin (MDAB) includes the desert portions of San Bernardino County, Palo Verde Valley, and the Antelope Valley, and is characterized by a dry, hot desert climate. In summer, the area is primarily influenced by a Pacific subtropical high-pressure system which sits off the coast blocking cloud formation and encouraging daytime solar heating. Summer high temperatures in Palmdale approach 100ºF, while winter high temperatures range from the high 50s to low 60s. The MDAB experiences high prevailing winds primarily from the southwest and west. As a result, smog is transported from the SCAB through mountain passes to the MDAB. The exchange of lower and upper air tends to accelerate surface winds during the warm part of the day when convection is at a minimum. During the winter, the rapid cooling of the surface layers at night retards this exchange of momentum, which often results in calm conditions. The entire air basin is currently designated as nonattainment for both the state 24-hour and the annual average PM_{10} standards, with only the western portion of the Mojave Desert AQMD designated as nonattainment for the state annual average $PM_{2.5}$ standard. The San Bernardino portion of the Mojave Desert AQMD is currently designated as nonattainment for the national PM_{10} standards. However, although this portion of the air district has not been officially redesignated, it has not exceeded these standards in many years.

The Antelope Valley Air Quality Management District (AVAQMD) maintains a network of six air monitoring stations, including Barstow, Hesperia, Phelan, Trona, Victorville and Twentynine Palms. The portion of Los Angeles County is monitored at the Lancaster–Division Street Monitoring Station. Table 4.3-5 summarizes the air quality data from 2007 to 2009. Table 4.3-5, indicates exceedances for the applicable federal standards for O_3 and PM_{10}. Additionally, the AVAQMD has exceeded state standards for O_3 and PM_{10}.

Table 4.3-5. Air Quality Concentration for Antelope Valley

Pollutant	Standard	Monitoring Data by Year [a]		
		2007	2008	2009
CO (ppm)[b]				
Highest 1-Hour Average	20	2.2	1.8	1.8
Days over State Standard		0	0	0
Highest 8-Hour Average	9.0	1	1.1	1.1
Days over State Standard		0	0	0
Ozone (ppm) [b]				
Highest 1-Hour Average	0.09	0.116	0.122	0.123
Days over State Standard		18	22	30
Highest 8-Hour Average	0.07	0.103	0.102	0.102
Days over State Standard		59	70	78
PM_{10} (µg/m³) [c,d]				
Highest 24-Hour Average	50	153	199	307
Days over State Standard		16	5	28
NO_2 (ppm) [b]				
Maximum 1-hr concentration (ppm)	0.18	0.062	0.065	0.064
Days over State Standard		0	0	0

Source: Antelope Valley Air Quality Management District. Accessed on June 6, 2014 from website "Annual Air Monitoring Reports." Lancaster, CA. Available at: http://www.avaqmd.ca.gov/index.aspx?page=98.

a) 2009 concentrations are the most recent data available on the AVAQMD website.
b) ppm = parts per million.
c) PM_{10} is not measured every day of the year. Number of estimated days over the standard is based on 365 days per year.
d) µg/m3 = micrograms per cubic meter.

San Joaquin Valley Air Basin

The San Joaquin Valley Air Basin (SJVAB) is the second largest air basin in the state. The SJVAB is defined by the Sierra Nevada to the east, the Coast Range to the west, and the Tehachapi Mountains to the south. The valley opens to the sea at the Carquinez Strait where the San Joaquin-Sacramento Delta empties into San Francisco Bay. Average daily temperatures in the basin range from 44.6ºF in January to 76.7ºF in July. Summer highs often exceed 100ºF. Nearly 90 percent of the annual precipitation falls in the six months between November and April. For the majority of the San Joaquin Valley, the air movement through and out of the air basin is restricted by the hills and surrounding mountains. These topographic features result in weak airflow, which becomes blocked vertically by high barometric pressure over the SJVAB. As a result, the majority of the SJVAB is highly susceptible to pollutant accumulation over time. Most of the surrounding mountains are above the normal height of the summer inversion layer. Wind speed and direction play an important role in the dispersion and transport of air pollutants. The entire air basin is designated as nonattainment for the state 24-hour and the State annual PM_{10} standards, as well as the state annual $PM_{2.5}$ standard. The air basin is also designated as nonattainment for the national 24-hour and national annual PM_{10} standards, and the national 24-hour and national annual $PM_{2.5}$ standards.

The SJVAB maintains a network of 33 monitoring stations. These stations are located throughout the SJVAB jurisdiction and include sites in San Joaquin, Stanislaus, Merced, Fresno, Kings, Tulare and Kern Counties. Table 4.3-6 presents the monitoring data for the years 2006 to 2008 for all of Kern County. Over the past three years, CO concentrations have been well below the 1-hour and 8-hour federal and state standards and no exceedances have been recorded for over 10 years. There is no federal O_3 1-hour standard; however, there is a state standard for 1-hour concentrations. Therefore, both 1-hour and 8-hour O_3 concentrations are included in Table 4.3-6.

As demonstrated in Table 4.3-6, the area has exceeded the 8-hour O_3 federal standard. In 2006, O_3 exceeded 1-hour average federal standards; in 2007, there was a decrease in exceedances; and finally in 2008, a slight increase in exceedances. PM_{10} and $PM_{2.5}$ have exceeded federal standards all three years. Additionally, 8-hour O_3 levels exceeded state standards and PM_{10} and $PM_{2.5}$ have exceeded standards for all three years.

South Central Coast Air Basin

The South Central Coast Air Basin (SCCAB) lies next to the Pacific Ocean and is comprised of three air pollution control districts (APCDs): the San Luis Obispo County APCD, the Santa Barbara County APCD, and the Ventura County APCD. The SCCAB has a Mediterranean-type climate, with warm, dry summers and cool, intermittently rainy winters. During the spring and summer months, cool, moist marine air frequently causes fog and low clouds near the coast. The climate and topography of the region contribute to conditions that can lead to persistent air pollution.

Temperature inversions, in which warm air overlies cooler air, can limit the dispersal of air pollutants within the regional airshed or basin. Wind conditions can also inhibit pollution dispersal. The region typically experiences onshore winds from the west or northwest during the day, alternating with mild offshore breezes that flow from warm inland valleys during the night and early morning. This pattern can allow suspended pollutants to be carried offshore at night and then back onshore the next day, especially during periods when wind velocities are low. Pollution sources within the SSCAB include vehicular emissions as well as stationary and area source pollution.

Table 4.3-6. Air Quality Concentrations for Kern County

Pollutant	Standard	Monitoring Data by Year[a]		
		2011	2012	2013
CO (ppm)[b]				
Highest 1-Hour Average	35	1.3	1.3	1.8
Days over National Standard		0	0	0
Highest 8-Hour Average	9	0.9	0.9	1.2
Days over National Standard		0	0	0
Ozone (ppm)				
Highest 1-Hour Average	0.12	0.118	0.122	0.112
Days over National Standard		0	0	0
Highest 8-Hour Average	0.075	0.105	0.107	0.102
Days over National Standard		49	61	34
PM_{10} (µg/m³) [c,d]				
Highest 24-Hour Average	150	143	99	134
Days over National Standard		0	0	0
Highest Annual Average [e, f]	20	NA	NA	NA
$PM_{2.5}$ (µg/m³) [d]				
Highest 24-Hour Average	35	82.8	86.5	74.1
Days over National Standard [f]		NA	NA	NA
Highest Annual Average [e]	15	22.4	13	22.8

Source: EPA (http://www.epa.gov/airdata/ad_rep_mon.html), 2011-2013.

a) 2014 concentrations are not available on the EPA website.
b) ppm = parts per million.
c) PM_{10} is not measured every day of the year. Number of estimated days over the standard is based on 365 days per year.
d) µg/m3 = micrograms per cubic meter.
e) Highest annual average is highest recorded annual average at any one monitoring site within an air basin.
f) Data not available on EPA website.

Table 4.3-7 summarizes the highest monitored concentrations from 2012 to 2014 for CO, O_3, PM_{10}, and $PM_{2.5}$ for Santa Barbara County. Santa Barbara APCD maintains a network of 18 monitoring stations, which monitor air quality throughout the Santa Barbara APCD jurisdiction. The CO concentrations collected from the Santa Barbara monitoring stations shows that CO emissions are far below national standards. On June 15, 2005, the EPA revoked the 1-hour O_3 standard; however, California still enforces an 8-hour average.

The data collected shows that Santa Barbara has not exceeded the 1-hour standard and the majority of the 8-hour standards.

The Ventura County APCD maintains a network of seven air monitoring stations, including locations in Ventura, El Rio, Ojai, Thousand Oaks, Piru, and two in Simi Valley. Table 4.3-8 displays the highest concentrations for O_3, PM_{10}, and $PM_{2.5}$ for the years 2012 to 2014 in Ventura County. CO concentrations were not available; however, the County is in attainment for CO.

Table 4.3-7. Air Quality Concentration for Santa Barbara County

Pollutant	Standard	Monitoring Data by Year[a]		
		2012	2013	2014
CO (ppm)[b]				
Highest 1-Hour Average	35	2.5	2.5	1.1
Days over National Standard		0	0	0
Highest 8-Hour Average	9	1.1	1.1	0.7
Days over National Standard		0	0	0
Ozone (ppm)				
Highest 1-Hour Average	0.12	0.094	0.085	0.081
Days over National Standard		0	0	0
Highest 8-Hour Average	0.075	0.081	0.077	0.07
Days over National Standard		2	1	0
PM_{10} (µg/m³)[c,d]				
Highest 24-Hour Average	150	47	106	68
Days over National Standard		0	0	0
Highest Annual Average [e, f]	20	NA	NA	NA
$PM_{2.5}$ (µg/m³)[d]				
Highest 24-Hour Average	35	32	20.4	22
Days over National Standard [f]		NA	NA	NA
Highest Annual Average [e]	15	7.6	7.6	9.5

Source: EPA (http://www.epa.gov/airdata/ad_rep_mon.html), 2012-2014.

a) Annual statistics for 2014 are not final until May 1, 2015.
b) ppm = parts per million.
c) PM_{10} is not measured every day of the year. Number of estimated days over the standard is based on 365 days per year.
d) µg/m3 = micrograms per cubic meter.
e) Highest annual average is highest recorded annual average at any one monitoring site within an air basin.
f) Data not available on EPA website.

From the concentrations found in Table 4.3-8, Ventura County APCD has not exceeded federal or state standards for the past several years..

San Diego County Air Basin

The San Diego Air Basin (SDAB) has the same boundaries as the County of San Diego. Approximately 3 million people live within San Diego County. The climate within the SDAB is characterized by warm, dry summers and mild, wet winters. In San Diego County, the months of heaviest precipitation are November through April, averaging about 9 to 14 inches annually. The mean temperature is 62.2ºF, and the mean maximum and mean minimum temperatures are 75.7ºF and 48.5ºF, respectively. Subsidence inversions occur during the warmer months (May through October) as descending air associated with the Pacific high-pressure cell comes into contact with cool marine air.

Table 4.3-8. Air Quality Concentrations for Ventura County

Pollutant	Standard	Monitoring Data by Year[a]		
		2012	2013	2014
CO (ppm) [b]				
Highest 1-Hour Average	35	N/A		
Days over National Standard				
Highest 8-Hour Average	9			
Days over National Standard				
Ozone (ppm) [b]				
Highest 1-Hour Average	0.12	0.106	0.104	0.08
Days over National Standard		0	0	0
Highest 8-Hour Average	0.075	0.087	0.089	0.069
Days over National Standard		14	4	0
PM_{10} (µg/m³) [c,d]				
Highest 24-Hour Average	150	56	45	48
Days over National Standard		0	0	0
Highest Annual Average [e, f]	20	NA	NA	NA
$PM_{2.5}$ (µg/m³) [d]				
Highest 24-Hour Average	35	28.1	23.6	30.8
Days over National Standard [f]		NA	NA	NA
Highest Annual Average [e]	15	9.3	9	8.3

Source: EPA (http://www.epa.gov/airdata/ad_rep_mon.html), 2012-2014.

a) Annual statistics for 2014 are not final until May 1, 2015
b) ppm = parts per million.
c) PM_{10} is not measured every day of the year. Number of estimated days over the standard is based on 365 days per year.
d) µg/m3 = micrograms per cubic meter.
e) Highest annual average is highest recorded annual average at any one monitoring site within an air basin.
f) Data not available on EPA website.

The boundary between the layers of air represents a temperature inversion which traps pollutants below it. Inversion layers are important elements of local air quality because they inhibit the dispersion of pollutants, thus resulting in a temporary degradation of air quality. On April 15, 2004 the SDAB was designated a basic non-attainment area for the 8-hour NAAQS for O_3. The San Diego Air Basin is in attainment for the federal NAAQS for all other criteria pollutants. The San Diego Air Basin is currently classified as a non-attainment area under the state CAAQS for O_3, $PM_{2.5}$ and PM_{10}. Pollution sources within the SDAB include vehicular emissions as well as stationary and area source pollution.

The SDAPCD currently maintains ten air quality monitoring stations to monitor air pollutant concentrations found within San Diego County. Table 4.3-9 displays the highest concentrations collected for CO, O_3, $PM_{2.5}$, and PM_{10} for the years 2011 to 2013. The concentrations collected show that CO concentrations have been below the national 1-hour and 8-hour standards. Ozone concentrations have exceeded the 8-hour national standard in each of the last three years. PM_{10} and $PM_{2.5}$ have exceeded the federal 24-hour standard in 2012 and 2013.

Table 4.3-9. Air Quality Concentrations for San Diego County

Pollutant	Standard	Monitoring Data by Year[a]		
		2011	2012	2013
CO (ppm) [b]				
Highest 1-Hour Average	35	3.5	4.4	25.6
Days over National Standard		0	0	0
Highest 8-Hour Average	9	2.4	3.8	7
Days over National Standard		0	0	0
Ozone (ppm) [b]				
Highest 1-Hour Average	0.12	0.114	0.106	0.095
Days over National Standard		0	0	2
Highest 8-Hour Average	0.075	0.093	0.083	0.082
Days over National Standard		10	7	6
PM_{10} (µg/m³) [c, d]				
Highest 24-Hour Average	150	125	210	721
Days over National Standard		0	7	5
Highest Annual Average [e,f]	20	NA	NA	NA
$PM_{2.5}$ (µg/m³) [d]				
Highest 24-Hour Average	35	34.7	70.7	56.3
Days over National Standard[f]		NA	NA	NA
Highest Annual Average [e]	15	10.9	11.1	10.6

Source: EPA (http://www.epa.gov/airdata/ad_rep_mon.html), 2011-2013.

a) Annual statistics for 2014 are not final until May 1, 2015.
b) ppm = parts per million.
c) PM_{10} is not measured every day of the year. Number of estimated days over the standard is based on 365 days per year.
d) µg/m3 = micrograms per cubic meter.
e) Highest annual average is highest recorded annual average at any one monitoring site within an air basin.
f) Data not available on EPA website.

Salton Sea Air Basin

The middle part of Riverside County (between San Gorgonio Pass and Joshua Tree National Monument), belongs in the Salton Sea Air Basin (SSAB), along with Imperial County. Air quality conditions in this portion of the County, although in the SSAB, are also administered by the SCAQMD. The SCAQMD is responsible for the development of the regional Air Quality Management Plan and efforts to regulate pollutant emissions from a variety of sources. The SSAB portion of Riverside County is separated from the SCAB region by the San Jacinto Mountains and from the Mojave Desert Air Basin to the east by the Little San Bernardino Mountains. During the summer, the SSAB is generally influenced by a Pacific Subtropical High Cell that sits off the coast, inhibiting cloud formation and encouraging daytime solar heating. The SSAB averages between three and seven inches of precipitation per year.

The SSAB currently maintains six air quality monitoring stations to monitor air pollutant concentrations found within a portion of the South Coast AQMD, which consists of the central portion of Riverside County (the Coachella Valley) and the Imperial County APCD, which consists of Imperial County. Table 4.3-10 displays the highest concentrations collected for the CO, O_3, $PM_{2.5}$, and PM_{10} for the years 2011 to 2013. The concentrations collected show that CO concentrations have been far below the

national 1-hour standard. Ozone concentrations for the 8-hour standard have exceeded both national and state standards for all three years. PM_{10} and $PM_{2.5}$ exceeded standards for all three years.

Table 4.3-10. Air Quality Concentrations for Salton Sea Air Basin (Imperial County)

Pollutant	Standard	Monitoring Data by Year [a]		
		2011	2012	2013
CO (ppm)[b]				
Highest 1-Hour Average	35	7.7	8.4	6.5
Days over National Standard		0	0	0
Highest 8-Hour Average	9	6.1	4.9	5
Days over National Standard		0	0	0
Ozone (ppm)				
Highest 1-Hour Average	0.12	0.164	0.114	0.11
Days over National Standard		1	0	0
Highest 8-Hour Average	0.075	0.084	0.095	0.098
Days over National Standard		12	14	11
PM_{10} (µg/m³) [c, d]				
Highest 24-Hour Average	150	220	406	196
Days over National Standard		1	2	3
Highest Annual Average [e,f]	50	NA	NA	NA
$PM_{2.5}$ (µg/m³)[d]				
Highest 24-Hour Average [d]	35	80.3	64.7	36.3
Days over National Standard[f]		NA	NA	NA
Highest Annual Average	15	13.7	14.7	13.3

Source: EPA (http://www.epa.gov/airdata/ad_rep_mon.html), 2011-2013.

a) Annual statistics for 2014 are not final until May 1, 2015.
b) ppm = parts per million.
c) PM_{10} is not measured every day of the year. Number of estimated days over the standard is based on 365 days per year.
d) µg/m3 = micrograms per cubic meter.
e) Highest annual average is highest recorded annual average at any one monitoring site within an air basin.
f) Data not available on EPA website.

Sensitive Receptors

Some persons, such as those with respiratory illnesses or impaired lung function due to other illnesses, the elderly over 65 years of age, and children under 14 years of age, can be particularly sensitive to emissions of criteria pollutants. Facilities and structures where these sensitive people live or spend considerable amounts of time are known as sensitive receptors. Land uses identified to be sensitive receptors by SCAQMD in the *CEQA Air Quality Handbook* include residences, schools, playgrounds, child care centers, athletic facilities, long-term health care facilities, rehabilitation centers, convalescent centers, and retirement homes. There are many sensitive receptors located throughout the project study area.

4.3.2 Thresholds of Significance

Analysis is undertaken on a program level. For the purpose of this analysis, the area for the project is defined as the City and the area within 100 miles of the City. SWIRP does emphasize the local

processing and handling of the City's waste, however, it may not be feasible for all facility types to be built within the City, either due to lack of available space or potential land use conflicts. Therefore, a 100-mile study area is included in the analysis to capture any potential impact to areas outside of the City.

Appendix G of the *CEQA Guidelines* and the *L.A CEQA Thresholds Guide* provide thresholds for determining significant environmental impacts. A project may be deemed to have a significant impact related to air quality if the project would:

- *Conflict with or obstruct implementation of the applicable air quality plans;*
- *Violate any air quality standard or contribute substantially to an existing or projected air quality violation;*
- *Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including increased emissions which exceed quantitative thresholds for ozone precursors);*
- *Expose sensitive receptors to substantial pollutant concentrations; and*
- *Create objectionable odors affecting a substantial number of people.*

Each air quality management district has established air quality significance thresholds for evaluation of project impacts under CEQA. A majority of the air quality management district's share similar significance thresholds, however based on the particular air basin, specific criteria is influenced by current air quality management plans and the basins attainment status.

The four main significance criteria common to all of the air quality management or air pollution control districts and relevant to the consideration of the proposed SWIRP facilities are as follows:

- Daily construction and operational emissions thresholds for CO, VOCs, NO_x, SO_x, $PM_{2.5}$, and PM_{10}
- The CAAQS for the 1-hour and 8-hour periods of CO concentrations are 20 ppm and 9.0 ppm, respectively; if CO concentrations currently exceed the CAAQS, then an incremental increase of 1.0 ppm over no-project conditions for the 1-hour period would be considered a significant impact; an incremental increase of 0.45 ppm over the no-project conditions for the 8-hour period would be considered significant
- Emissions of toxic air contaminants and health risk thresholds
- Odor nuisance pursuant to applicable air quality management or air pollution control districts

Detailed thresholds for each AQMD are provided below.

SCAQMD Significance Thresholds

Los Angeles County relies on significance thresholds recommended by the SCAQMD in the *CEQA Air Quality Handbook*, as revised in November 1993 and approved by the SCAQMD Board of Directors, to determine whether projects will have significant impacts to air quality. The SCAQMD's emission thresholds as shown in Table 4.3-11 apply to all federally regulated air pollutants.

Table 4.3-11. SCAQMD Air Quality Significance Thresholds

Pollutant	Construction (lbs/day)	Operation (lbs/day)
CO	550	550
NO_x	100	55
VOC (ROG)	75	55
SO_x	150	150
PM_{10}	150	150
$PM_{2.5}$	55	55
Lead (Pb)	3	3

Source: South Coast Air Quality Management District, SCAQMD Air Quality Significance Thresholds (www.aqmd.gov/ceqa/handbook/signthres.pdf).

SCAQMD Draft GHG Significance Thresholds

On December 5, 2008, the SCAQMD Governing Board adopted the staff proposal for an interim GHG significance threshold for projects where the SCAQMD is lead agency. The interim threshold consists of five tiers of standards that could result in a finding of less than significant impact. The tiers include CEQA exemptions, consistency with regional GHG budgets, less than significant screening levels for industrial projects (10,000 metric tons/year CO_2e) and commercial/residential projects (3,000 metric tons/year CO_2e), performance standards (i.e., 30 percent less than—business as usual), and carbon offsets. This GHG significance threshold does not automatically apply to the proposed project because the SCAQMD is not the lead agency.

SCAQMD Amended Rule 1150.1 – Control of Gaseous Emissions from Municipal Solid Waste Landfills

On April 1, 2011, Rule 1150.1 Control of Gaseous Emissions from Municipal Solid Waste Landfills was amended pursuant to the early action measure under AB 32. The primary purpose of the amendment was to incorporate the state requirements into the rule for controlling methane emissions. The amendment also improved enforceability and streamlined requirements by clarifying operation standards for control devices already installed, and by eliminating duplicate recordkeeping and redundant reporting.

Rule 1150.1 was originally adopted by the SCAQMD Governing Board on April 5, 1985 to regulate emissions from active landfills. Landfills generate gaseous emissions and greenhouse gases in the form of methane and carbon dioxide. The originally adopted Rule 1150.1 was focused on controlling the non-greenhouse gas components of landfill gas because of the contribution to criteria pollutant formation from VOC emissions, potential for public nuisance from odorous compounds, and potential detriment to public health from TAC emissions. Recent legislative activity has focused on controlling greenhouse gases, including the approval of AB 32.

AVAQMD Significance Thresholds

The AVAQMD provides guidelines and significance thresholds for performing air quality analyses in CEQA documents and states that the methodologies as presented in the latest SCAQMD *CEQA Air Quality Handbook* are acceptable for projects under the jurisdiction of the AVAQMD. Any project is significant per AVAQMD if it:

- Generates total emissions (direct and indirect) in excess of the thresholds given in Table 4.3-12; and/or

- Generates a violation of any ambient air quality standard when added to the local background; and/or
- Does not conform with the applicable attainment or maintenance plan(s); and/or
- Exposes sensitive receptors to substantial pollutant concentrations, including those resulting in a cancer risk greater than or equal to 10 in a million and/or a Hazard Index (HI) (non-cancerous) greater than or equal to 1.

Table 4.3-12. AVAQMD Air Quality Significance Thresholds

Pollutant	Annual (tons/yr)	Daily (lbs/day)
CO	100	548
NO_x	25	137
VOC	25	137
SO_x	150	137
PM_{10}	15	82
$PM_{2.5}$	15	82
H_2S	10	54
Pb	0.6	3

Source: Antelope Valley Air Quality Management District (2008).

A significant project must incorporate mitigation sufficient to reduce its impact to a level that is not significant. A project that cannot be mitigated to a level that is not significant must incorporate all feasible mitigation. Note that the emission thresholds are given as a daily value and an annual value, so that a multi-phased project (such as a project with a construction phase and a separate operational phase) with phases shorter than one year can be compared to the daily value.

KCAPCD Significance Thresholds

The KCAPCD has established the following significance thresholds. Air quality impacts resulting from the proposed project would be less than significant if the project were to:

- Emit (from all project sources subject to KCAPCD Rule 201) less than offset trigger levels set forth in Subsection III.B.3. of KCAPCD's Rule 210.1 (New and Modified Source Review Rule)
- Emit less than 137 pounds per day of NO_x or reactive organic compounds (ROCs) from motor vehicle trips (indirect sources only)
- Not cause or contribute to a violation of any CAAQS or NAAQS
- Not exceed the KCAPCD health risk public notification thresholds adopted by the KCAPCD Board
- Be consistent with adopted federal and state air quality attainment plans

SBAPCD Significance Thresholds

The SBAPCD has established the following significance thresholds. A project would have a less than significant air quality impact if it would:

- Emit (from all project sources, both stationary and mobile) less than the daily trigger for offsets or Air Quality Impact Analysis set in the APCD New Source Review Rule as shown in Table 4.3-13. There is no daily operational threshold for CO; it is an attainment pollutant
- Emit less than 25 pounds per day of NOx or ROC from motor vehicle trips only
- Not cause or contribute to a violation of any CAAQS or NAAQS (except ozone)
- Not exceed the SBAPCD health risk public notification thresholds adopted by the SBAPCD Board (10 excess cancer cases in a million for cancer risk and a Hazard Index of more than one, or 1.0, for non-cancer risk)
- Be consistent with the latest adopted federal and state air quality plans for Santa Barbara County

Table 4.3-13. SBCAQMD Air Quality Significance Thresholds

Pollutant	Daily (lbs/day)
NO_x	240
VOC	240
PM_{10}	80

Source: SBCAQMD (2010) (http://www.sbcapcd.org/apcd/landusefaq.htm#thresholds).

Quantitative thresholds of significance are not currently in place for short-term (construction) emissions.

SJVAPCD Significance Thresholds

The SJVAPCD has identified three different thresholds to determine whether a project may have a significant environmental effect on the surrounding area and are related to the short-term and long-term emissions generated from the construction and operation of the projects within the San Joaquin Air Basin.

- Threshold for Construction Emissions. The SJVAPCD has determined that these pollutant emissions may cause an air quality impact only in cases of very large or very intense construction projects. Therefore, these pollutants are only considered on a case-by-case basis. The SJVAPCD recommends a qualitative approach in evaluating the PM_{10} construction impacts. Sufficient mitigation to reduce construction PM_{10} impacts would be achieved by demonstrating compliance with Regulation VIII, *Fugitive PM_{10} Prohibitions*, and implementation of all other control measures. The purpose of Regulation VIII is to limit fugitive dust emissions from construction, demolition, excavation, extraction, and other earthmoving activities
- The following ozone precursor emissions thresholds for the operation of a project have been established by the SJVAPCD. These thresholds are for both direct and indirect emissions. Projects in the San Joaquin Air Basin with operation-related emissions that exceed these thresholds are considered to have significant air quality impacts:
  - 10 tons per year of ROGs
  - 10 tons per year of NO_x

- Any project with the potential to frequently expose the public to objectionable odors would be deemed to have an impact

VCAPCD Significance Thresholds

The VCAPCD has established the following significance thresholds. Air quality impacts resulting from the proposed project would be significant if the project were to:

- Conflict with or obstruct implementation of the Ventura County AQMP
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment (i.e., 1-hour ozone and PM_{10}) under an applicable federal or state ambient air quality standard
- Cause an exceedance of any state or federal ambient air quality standard or may make a substantial contribution to an existing exceedance of an air quality standard. Substantial is defined as making measurably worse an existing exceedance of a state or federal ambient air quality standard
- Show a possible violation of an ambient particulate standard based upon appropriate air dispersion modeling analysis
- Generate fugitive dust emissions in such quantities as to cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which may endanger the comfort, repose, health, or safety of any such person or the public, or which may cause, or have a natural tendency to cause injury or damage to business or property (refer to California Health and Safety Code, Division 26, §41700)
- Generate emissions of two pounds per day or greater of ROCs or two pounds per day or greater of nitrogen oxides (NO_x) that is found to be inconsistent with the Air Quality Management Plan will have a significant cumulative air quality impact. A project with emissions below two pounds per day of ROC and below two pounds per day of NO_x is not required to assess consistency with the Air Quality Management Plan
- Result in a General Plan Amendment or revision that would provide directly or indirectly for increased population growth above that forecasted in the most recently adopted Air Quality Management Plan (1997) will have a significant cumulative air quality impact

Additionally VCAPCD guidelines note that a project may be required to model CO impacts if the project contributes more than 800 peak hour trips to an existing congested intersection at a level of service (LOS) D or below, or will cause an intersection to reach LOS D or below.

The VCAPCD has also established the following significance thresholds relating to greenhouse gas emissions. GHG emissions resulting from the proposed project would be significant if the project were to:

- Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment
- Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases

4.3.3 Project Level-Analysis

The project-level analysis includes an assessment of the proposed SWIRP policies and programs, as well as the analysis of future facilities that could be developed under SWIRP.

SWIRP Policies and Programs

Table 4.3-14 provides an analysis of potential impacts that could result from implementation of the policies and programs associated with SWIRP relative to air quality. The City's existing policies and programs, as well as new policies and programs identified through the stakeholder planning process were analyzed to determine if a potential significant impact would occur as a result of project implementation. As shown in Table 4.3-14, many of the policies and programs associated with SWIRP would not result in any additional truck trips; therefore, additional truck-related emissions would not occur. The implementation of programs that increase blue and green bin materials decreases the amount of materials that are landfilled. This can represent a potential beneficial impact from an air quality perspective, since landfills emit greenhouse gases.

Three of the policies and programs will result in an increase in trucks to pick up blue and green bin materials due to the expansion of recycling programs to multi-family and commercial users. These policies/programs include expanding multi-family recycling, multi-family green bins and commercial haulers to offer recycling services to customers. At this time, the number of truck trips and potential emissions cannot be quantified, as specific routing and end location for blue bin and green bin materials is unknown. Thus a policy-specific air quality analysis cannot be conducted. However, SCAQMD Rule 1193 (Clean On-Road Residential and Commercial Refuse Collection Vehicles) requires solid waste collection fleet operators to acquire alternative-fuel refuse collection vehicles when procuring or leasing these vehicles, which will result in additional reductions of NO_x and PM_{10}. Additionally, increasing the amount of materials diverted from the landfill results in a decrease in landfill-related emissions. Therefore, impacts are determined to be less than significant.

Table 4.3-14. Analysis of SWIRP Policies and Programs (Air Quality/Greenhouse Gases)[1]

Initiative	Impact Analysis for Air Quality and Greenhouse Gases	Significance Conclusion
Downstream Policies and Programs[2]		
Expand Residential Recycling Ambassador Program	Implementation of this program is expected to result in additional materials placed in blue and green bins and less material in black bins. Additional truck trips are not expected, since trucks are already coming to pick up the three bins. The change will be the quantity of material in each bin. Since additional trucks are not anticipated, there would not be any additional operational emissions associated with the truck. Additionally, increasing the amount of materials in the blue and green bins increases diversion from the landfills. Decreasing landfilling results in a decrease of landfill-related emissions. Therefore, no air quality or greenhouse gas impacts are associated with this policy/program and a potential beneficial impact may be realized.	No Impact/Potential Beneficial Impact
Adding Textiles to the Blue Bins or Partner with Non-Governmental Organizations	Implementation of this program is expected to result in additional materials placed in blue bins and less material in black bins. Additional truck trips are not expected, since trucks already pick up the blue bins. The change will be the quantity of material in each bin. Since additional trucks are not anticipated, there would not be any additional operational emissions associated with the truck. Additionally, increasing the amount of materials in the blue and green bins increases diversion from the landfills. Decreasing landfilling results in a decrease of landfill-related emissions. Therefore, no air quality or greenhouse gas impacts are associated with this policy/program and a potential beneficial impact may be realized.	No Impact/Potential Beneficial Impact
Bulky Item Reuse and Refurbishment	Under this policy/program bulky materials may be collected by crews for use by non-profits. Currently, bulky items picked up are taken to the landfill. This program/policy would not necessarily result in an increase in truck trips or truck related emissions; rather the destination of the materials would change. LASAN crews could be dispatched for specific material types (such as carpets and mattresses). Further, the reduction of landfill materials results in a reduction of landfill emissions. Therefore, no air quality or greenhouse gas impacts are associated with this policy/program and a potential beneficial impact may be realized.	No Impact/Potential Beneficial Impact
Expand Residential Food Scrap Program	Implementation of this program is expected to result in additional materials placed in green bins and less material in black bins. Additional truck trips are not expected, since trucks already pick up the green bins. The change will be the quantity of material in each bin. Since additional trucks are not anticipated, there would not be any additional operational emissions associated with the truck. Additionally, increasing the amount of materials in the blue and green bins increases diversion from the landfills. Decreasing landfilling results in a decrease of landfill-related emissions. Therefore, no air quality or greenhouse gas impacts are associated with this policy/program and a potential beneficial impact may be realized.	No Impact/Potential Beneficial Impact
Large-Scale Media/Social Marketing	Implementation of this program is expected to result in additional materials placed in blue and green bins and less material in black bins. Additional truck trips are not expected, since trucks are already coming to pick up the three bins. The change will be the quantity of material in each bin. Since additional trucks are not anticipated, there would not be any additional operational emissions associated with the truck. Additionally, increasing the amount of materials in the blue and green bins increases diversion from the landfills. Decreasing landfilling results in a decrease of landfill-related emissions. Therefore, no air quality or greenhouse gas impacts are associated with this policy/program and a potential beneficial impact may be realized.	No Impact/Potential Beneficial Impact

Table 4.3-14. Analysis of SWIRP Policies and Programs (Air Quality/Greenhouse Gases)[(1)] (Continued)

Initiative	Impact Analysis for Air Quality and Greenhouse Gases	Significance Conclusion
Modify Residential Collection Rates	Implementation of this program is expected to result in additional materials placed in blue and green bins and less material in black bins. Additional truck trips are not expected, since trucks are already coming to pick up the three bins. The change will be the quantity of material in each bin. Since additional trucks are not anticipated, there would not be any additional operational emissions associated with the truck. Additionally, increasing the amount of materials in the blue and green bins increases diversion from the landfills. Decreasing landfilling results in a decrease of landfill-related emissions. Therefore, no air quality or greenhouse gas impacts are associated with this policy/program and a potential beneficial impact may be realized.	No Impact/Potential Beneficial Impact
Modify Commercial Collection Rates	Implementation of this program is expected to result in additional materials placed in blue and green bins and less material in black bins. At this time, the number of trucks and their ultimate destination for the increased blue bin and green bin materials is unknown, thus a policy-specific air quality analysis cannot be conducted. However, SCAQMD Rule 1193 (Clean On-Road Residential and Commercial Refuse Collection Vehicles) requires solid waste collection fleet operators to acquire alternative-fuel refuse collection vehicles when procuring or leasing these vehicles, which will result in additional reductions of NO_x and PM_{10}. Additionally, increasing the amount of materials diverted from the landfill results in a decrease in landfill-related emissions. Therefore, impacts are determined to be less than significant.	Less than Significant Impact
Expand Multi-Family Voluntary Recycling	Implementation of this policy/program will result in additional blue bin pick ups as the program expands to more multi-family residences. Assembly Bill 341 (AB 341) requires all multi-family residences with five units and above to recycle. This program will be rolled out Citywide as the City implements the Franchise Initiative. However, SCAQMD Rule 1193 (Clean On-Road Residential and Commercial Refuse Collection Vehicles) requires solid waste collection fleet operators to acquire alternative-fuel refuse collection vehicles when procuring or leasing these vehicles, which will result in additional reductions of NO_x and PM_{10}. Additionally, increasing the amount of materials diverted from the landfill results in a decrease in landfill-related emissions. Therefore, impacts are determined to be less than significant.	Less than Significant Impact
Multi-Family Green Bins	Implementation of this policy/program will result in additional green bin pick ups as the program expands to multi-family residential areas. Assembly Bill 1826 (AB 1826) requires multi-family residences with five units and above (with more than four cubic yards of solid waste) to divert organics. This program will be rolled out Citywide as the City implements the Franchise Initiative. At this time, the number of trucks and their ultimate destination for the increased green bin materials is unknown, thus a policy-specific air quality analysis cannot be conducted. However, SCAQMD Rule 1193 (Clean On-Road Residential and Commercial Refuse Collection Vehicles) requires solid waste collection fleet operators to acquire alternative-fuel refuse collection vehicles when procuring or leasing these vehicles, which will result in additional reductions of NOx and PM10. Additionally, increasing the amount of materials diverted from the landfill results in a decrease in landfill-related emissions. Therefore, impacts are determined to be less than significant.	Less than Significant Impact

Table 4.3-14. Analysis of SWIRP Policies and Programs (Air Quality/Greenhouse Gases)[(1)] (Continued)

Initiative	Impact Analysis for Air Quality and Greenhouse Gases	Significance Conclusion
All Businesses to have Recycling Services	Implementation of this policy/program will result in additional recycled material pick up as the program requires all businesses to have recycling service. At this time, the number of trucks and their ultimate destination for the increased blue bin materials is unknown, thus a policy-specific air quality analysis cannot be conducted. However, SCAQMD Rule 1193 (Clean On-Road Residential and Commercial Refuse Collection Vehicles) requires solid waste collection fleet operators to acquire alternative-fuel refuse collection vehicles when procuring or leasing these vehicles, which will result in additional reductions of NO_x and PM_{10}. Additionally, increasing the amount of materials diverted from the landfill results in a decrease in landfill-related emissions. Therefore, impacts are determined to be less than significant.	Less than Significant Impact
Commercial Haulers to Offer Recycling Services to Customers	Implementation of this policy/program will result in additional recycled material pick up as the program requires commercial haulers to offer recycling service. At this time, the number of trucks and their ultimate destination for the increased blue bin materials is unknown, thus a policy-specific air quality analysis cannot be conducted. However, SCAQMD Rule 1193 (Clean On-Road Residential and Commercial Refuse Collection Vehicles) requires solid waste collection fleet operators to acquire alternative-fuel refuse collection vehicles when procuring or leasing these vehicles, which will result in additional reductions of NO_x and PM_{10}. Additionally, increasing the amount of materials diverted from the landfill results in a decrease in landfill-related emissions. Therefore, impacts are determined to be less than significant.	Less than Significant Impact
Expand Commercial Technical Assistance	Implementation of this policy/program will result in additional recycled material pick up as the program requires three-bin recycling for commercial. At this time, the number of trucks and their ultimate destination for the increased materials is unknown, thus a policy-specific air quality analysis cannot be conducted. However, SCAQMD Rule 1193 (Clean On-Road Residential and Commercial Refuse Collection Vehicles) requires solid waste collection fleet operators to acquire alternative-fuel refuse collection vehicles when procuring or leasing these vehicles, which will result in additional reductions of NO_x and PM_{10}. Additionally, increasing the amount of materials diverted from the landfill results in a decrease in landfill-related emissions. Therefore, impacts are determined to be less than significant.	Less than Significant Impact
Expand Construction and Demolition (C&D) Technical Assistance	Expanding C&D technical assistance would enhance the processing at C&D processing facilities. It would not result in an increase in truck emissions due to increased truck trips. Therefore, no air quality or greenhouse gas impacts are associated with this policy/program.	No Impact

Table 4.3-14. Analysis of SWIRP Policies and Programs (Air Quality/Greenhouse Gases)[1] (Continued)

Initiative	Impact Analysis for Air Quality and Greenhouse Gases	Significance Conclusion
Provide More Public Recycling Areas	Providing more public recycling areas would result in additional collection of recycling materials and additional blue bins. Depending on where the blue bins are placed, the recyclables may be picked up by maintenance or park crews or by collection trucks along City streets. This has the potential to result in additional truck trips. At this time, the number of trucks and their ultimate destination for the increased blue bin materials is unknown, thus a policy-specific air quality analysis cannot be conducted. However, SCAQMD Rule 1193 (Clean On-Road Residential and Commercial Refuse Collection Vehicles) requires solid waste collection fleet operators to acquire alternative-fuel refuse collection vehicles when procuring or leasing these vehicles, which will result in additional reductions of NO_x and PM_{10}. Additionally, increasing the amount of materials diverted from the landfill results in a decrease in landfill-related emissions. Therefore, impacts are determined to be less than significant.	Less than Significant
C&D Ordinance	Implementing the C&D ordinance would increase the processing at C&D processing facilities. It would not result in an increase in emissions due to increased truck trips. Therefore, no air quality or greenhouse gas impact is identified.	No Impact
Mandatory Participation Programs[3]		
Mandatory Recycling Separation	Implementation of this policy/program will result in additional recycled material pick up as the program requires mandatory recycling separation for all waste generators (residential and commercial businesses). This may result in additional blue bin pick ups. At this time, the number of trucks and their ultimate destination for the increased blue bin materials is unknown, thus a policy-specific air quality analysis cannot be conducted. However, SCAQMD Rule 1193 (Clean On-Road Residential and Commercial Refuse Collection Vehicles) requires solid waste collection fleet operators to acquire alternative-fuel refuse collection vehicles when procuring or leasing these vehicles, which will result in additional reductions of NO_x and PM_{10}. Additionally, increasing the amount of materials diverted from the landfill results in a decrease in landfill-related emissions. Therefore, impacts are determined to be less than significant.	Less than Significant
Mandatory Organics Separation	Implementation of this policy/program will result in additional recycled material pick up as the program requires mandatory organics separation for all residences and commercial businesses. This may result in additional green bin pick ups. At this time, the number of trucks and their ultimate destination for the increased green bin materials is unknown, thus a policy-specific air quality analysis cannot be conducted. However, SCAQMD Rule 1193 (Clean On-Road Residential and Commercial Refuse Collection Vehicles) requires solid waste collection fleet operators to acquire alternative-fuel refuse collection vehicles when procuring or leasing these vehicles, which will result in additional reductions of NO_x and PM_{10}. Additionally, increasing the amount of materials diverted from the landfill results in a decrease in landfill-related emissions. Therefore, impacts are determined to be less than significant.	Less than Significant
Resource Recovery Centers (RRC) at Transfer Stations and Landfills	The addition of resource recovery centers at landfills and transfer stations would divert recycled materials from disposal. Additional truck trips and truck-related emissions are not anticipated. Therefore, no air quality or greenhouse gas impacts are associated with this policy/program and a potential beneficial impact may be realized.	No Impact/Potential Beneficial Impact

Table 4.3-14. Analysis of SWIRP Policies and Programs (Air Quality/Greenhouse Gases)[(1)] (Continued)

Initiative	Impact Analysis for Air Quality and Greenhouse Gases	Significance Conclusion
Residential Recycling Ambassador (Reinforcement)	Implementation of this program is expected to result in additional materials placed in blue and green bins and less material in black bins. Truck-related emissions due to additional truck trips are not expected, since trucks already pick up the three bins. The change will be the quantity of material in each bin. Since additional trucks are not anticipated, there would not be any additional operational emissions associated with the truck. Additionally, increasing the amount of materials in the blue and green bins increases diversion from the landfills. Decreasing landfilling results in a decrease of landfill-related emissions. Therefore, no air quality or greenhouse gas impacts are associated with this policy/program and a potential beneficial impact may be realized.	No Impact/Potential Beneficial Impact
Direct Commercial Technical Assistance (Reinforcement)	Implementation of this program is expected to result in additional materials placed in blue and green bins and less material in black bins. At this time, the number of trucks and their ultimate destination for the increased blue bin and green bin materials is unknown, thus a policy-specific air quality analysis cannot be conducted. However, SCAQMD Rule 1193 (Clean On-Road Residential and Commercial Refuse Collection Vehicles) requires solid waste collection fleet operators to acquire alternative-fuel refuse collection vehicles when procuring or leasing these vehicles, which will result in additional reductions of NO_x and PM_{10}. Additionally, increasing the amount of materials diverted from the landfill results in a decrease in landfill-related emissions. Therefore, impacts are determined to be less than significant.	Less than Significant Impact
Increased Diversion Requirements at C&D Facilities	Increasing diversion requirements at C&D facilities would result in a change of destination for materials. With an increase in diversion requirements, trips to the landfill would be diverted to locations supporting the recycled material market. Therefore, emissions are expected to be similar. Therefore, no air quality or greenhouse gas impacts are associated with this policy/program.	No Impact
Upstream Policies[(4)]		
Extended Producer Responsibility (EPR) for Toxics	This policy is anticipated to reduce waste generation, specifically black bin materials. This could result in a reduction of trips to pick up black bin materials, and thus reduction in truck-related emissions. Therefore, no air quality or greenhouse gas impacts are associated with this policy/program.	No Impact
EPR for Difficult to Recycle Materials	Implementation of this program is expected to result in additional materials placed in blue bins and less material in black bins, since more materials would be recyclable. Additional truck trips are not expected, since trucks already pick up the blue bins. The change will be the quantity of material in each bin. Since additional trucks are not anticipated, there would not be any additional operational emissions associated with the truck. Additionally, increasing the amount of materials in the blue and green bins increases diversion from the landfills. Decreasing landfilling results in a decrease of landfill-related emissions. Therefore, no air quality or greenhouse gas impacts are associated with this policy/program and a potential beneficial impact may be realized.	No Impact/Potential Beneficial Impact

Table 4.3-14. Analysis of SWIRP Policies and Programs (Air Quality/Greenhouse Gases)[1] (Continued)

Initiative	Impact Analysis for Air Quality and Greenhouse Gases	Significance Conclusion
Single-use Plastic Bag Ban	This policy is expected to reduce waste generation. This policy has the potential to result in a reduction of trips to pick up black bin materials and/or blue bin, and thus reduction in truck-related emissions. Therefore, no air quality or greenhouse gas impacts are associated with this policy/program.	No Impact
Disposal of Remaining Residual Waste[5]		
Landfill Disposal – Truck Haul, Rail Haul	Disposal of residual waste from implementation of SWIRP programs and policies above (25% residual waste in 2013 and 10% residual waste in 2025) would not result in air quality impacts since trucks already pick up municipal solid waste and transport it to landfills. Increasing the amount of materials diverted from the landfill results in a decrease in the number of short-haul or long-haul trips to landfill. Therefore, no air quality or greenhouse gas impacts are associated with this program.	No Impact

(1) Depending on phasing and implementation of various proposed programs and policies, along with anticipated growth in the City, there will be a need for additional facilities to process the diverted materials. Please refer to Section 4.3.3 for an impact analysis of the future facilities.
(2) Refer to Chapter 2.0, Table 2.3-1 for a detailed description of the Downstream Policies and Programs.
(3) Refer to Chapter 2.0, Table 2.3-2 for a detailed description of the Mandatory Participation Programs.
(4) Refer to Chapter 2.0, Section 2.3.4 for a detailed description of the Upstream Policies.
(5) Refer to Chapter 2.0, Section 2.3.6 for a detailed description of Disposal of Remaining Residual Waste.

SWIRP Facilities

For the purposes of this PEIR, in order to evaluate applicable significance criteria, information was developed for facility sizes and trip generation for various types of facilities that may be required to implement the SWIRP programs and policies. The potential impacts to air quality cannot be fully analyzed at this time, as the specific location and changes in vehicular patterns have not been defined for each individual proposed SWIRP facility. A separate CEQA analysis will be performed for each facility. However, the following analysis provides general information on the likely impacts and further analysis required to assess impacts on air quality in the region due to implementation of the proposed project.

The SWIRP's programs and policies will result in a variety of facilities aimed at processing and handling the City's waste. The following seven types of facilities are considered under SWIRP.

- Clean Material Recovery Facility
- Composting
- Resource Recovery Center
- Mixed Material Processing
- Alternative Technology – Advanced Thermal Recycling
- Alternative Technology – Biological (Anaerobic Digestion)
- Alternative Technology – Thermal (Plasma Arc, Gasification and Pyrolysis)

At this time it is unknown what combination of SWIRP facilities will be implemented, however, for purposes of this air quality analysis, it is assumed that three clean material recovery facilities, one large-scale or six small-scale composting facilities, one resource recovery center, and up to five black bin facilities will be needed.

The specific technology or type of black bin facilities have not been determined at this time, it is only known that they need to handle a total of approximately 4,000 tons per day of black bin materials. This number represents the black bin processing capacity needed after all blue and green bin diversion is implemented. No additional C&D facilities would be needed, as there is adequate capacity at existing facilities.

These proposed SWIRP facilities have the potential to generate short-term and long-term air quality impacts. The short-term impacts are associated with the construction of the proposed facilities, while the long-term impacts may result from the truck traffic which transports the waste material and emission generating equipment located at each facility. Construction emissions include airborne dust from grading, demolition, dirt hauling, and gaseous emissions from heavy equipment, delivery and dirt hauling trucks, employee vehicles, and paints and coatings associated with facility construction. Operational emissions include all emission associated with the operations of a future facility, including vehicle trips (employee, vendor and trucks), as well as emissions from equipment operations.

Specific assumptions and operating parameters were utilized to develop input parameters for use in air quality modeling tools to assess potential air quality impacts. In addition certain air districts, such as the SCAQMD, have developed guidelines and requirements to conduct air quality analyses. SCAQMD's current guidelines, *CEQA Air Quality Handbook, 1993,* were adhered to in the assessment of air quality impacts for the proposed project.

URBEMIS 2007 Model Inputs and Assumptions[8]

URBan EMISsions (URBEMIS) 2007 model (Version 9.2.4) is a modeling program designed by CARB to calculate emissions from vehicle trips generated by land use development projects and emissions generated from construction equipment. The URBEMIS 2007 model directly calculates VOCs, NO_x, CO, SO_2, PM_{10}, $PM_{2.5}$, and CO_2 emissions. URBEMIS 2007 was used to estimate emissions for this project due to the potential air quality impacts generated by the construction of the SWIRP facilities and trips generated from the operation of each facility. The following inputs and assumptions were used in URBEMIS 2007 to estimate air pollutant emissions generated from the construction and operation of the SWIRP facilities caused by mobile sources.

Construction Inputs and Assumptions

Tables 4.3-15 and 4.3-16 present the construction and facility assumption information that was input into the URBEMIS 2007 model. Since specific construction data for each of the proposed facility types is not available at this time, the SWIRP facilities were compared to similar land development projects to determine appropriate model input factors for estimating emissions. This includes assumptions on typical construction duration and equipment that would be used.

Table 4.3-15. Construction Assumptions Used in URBEMIS 2007 Model

Construction Activity	Estimated Duration	Equipment
Mass Site Grading	17 weeks	1 - Grader 1 - Rubberized Tired Dozers 1 - Tractor/Loader/Backhoe 1 - Water Trucks
Fine Site Grading	1 week	1 - Grader 1 - Rubberized Tired Dozers 1 - Tractors/Loaders/Backhoes 1 - Water Trucks
Trenching	2 weeks	2 - Excavators 1 - Other General Industrial Equipment 1 - Tractor/Loader/Backhoe
Paving	2 weeks	4 - Cement and Mortar Mixes 1 - Pavers 1 - Paving Equipment 1 - Roller 1 - Tractor/Loader/Backhoe
Building Construction	24 weeks	1 - Crane 2 - Forklifts 1 - Generator Set 1 - Tractor/Loader/Backhoe 3 - Welders
Architectural Coating	4 weeks	NA

[8] Note that at the time of the air quality analysis in 2011, URBEMIS2007 was the latest air quality analysis tool available to evaluate vehicular air quality impacts. SCAQMD now recommends using a more comprehensive land use model with updated mobile source emission rates, the California Emissions Estimator model (CalEEMod). The current version of CalEEMod (Version 2013.2.2) uses the new EMFAC2011 and OFFROAD2011 emission factors provides updated methods and emission factors for non-vehicular sources. Future facilities will be required to prepare project-specific air quality analyses, using updated air quality analysis tools, such as CalEEMod.

Table 4.3-16. Facility Assumptions for URBEMIS 2007 Model

Facility Type	Facility Size Assumption for the PEIR(1)	Building Size Assumptions (square feet)
Material Recovery Facility	7 acres	180,000 sf
Composting Facilities	30 acres	Possibly a small office building, but most of this is open area with rows of composting materials
Resource Recovery Centers	2 acres	52,000 sf
Mixed Material Processing	6 acres	155,000 sf
Alternative Technology - Advanced Thermal Recycling	10 acres	260,000 sf
Alternative Technology - Biological (Anaerobic Digestion)	7 acres	180,000 sf
Alternative Technology - Thermal (Plasma Arc, Gasification and Pyrolisis)	5 acres	130,000 sf

(1) Facility size assumption based upon Program EIR Chapter 2.0, Table 2.3-3.

Operational Inputs and Assumptions

Truck trips associated with the transport of blue bin, green bin, and black bin material could contribute to congestion at intersections and along roadway segments in the project vicinity. Trip generation information consisting of total trips from transfer trucks and employee trips for each facility type was utilized as inputs into the URBEMIS 2007 model. The vehicle trip inputs are shown in Table 4.3-17.

Table 4.3-17. Inputs for URBEMIS 2007 Model

Facility Type	Employee Trips Per Day(1)	Truck Trips Per Day(1)	Total Trips Per Day (2)	Auto %(3)	Truck %(4)	Total VMT
Composting Facilities	28	206	234	12.0	88.0	2,510
Material Recovery Facilities	80	124	204	39.2	60.8	2,600
Resource Recovery Center	30	212	242	12.4	87.6	3,091
Mixed Material Processing	100	120	220	45.5	54.5	2,814
Alternative Technology - Advanced Thermal Recycling	44	356	400	11	89	5,119
Alternative Technology – Biological (Anaerobic Digestion)	28	110	138	20.3	79.7	1,772
Alternative Technology – Thermal (Plasma Arc, Gasification and Pyrolisis)	44	78	122	36.1	63.9	1,562

(1) Employee trips per day and truck trips per day are taken from Table 4.15-7 in Section 4.15 of the PEIR.
(2) Total trips equal employee trips per day plus truck trips per day.
(3) Calculated by taking the number of employee trips and dividing it by the number of total trips, per facility type.
(4) Calculated by taking the number of truck trips and dividing it by the number of total trips, per facility type.
VMT = Vehicle Miles Traveled

Short-term Construction Emissions

Construction emissions were estimated for the above SWIRP facilities based on construction activities, acreage and building size and the use of SCAQMD's URBEMIS 2007 model that estimates air pollution emissions from a wide variety of land use projects.

Equipment Exhaust from Construction-Related Activities

Construction activities include site preparation, earthmoving, and general construction. Site preparation includes activities such as general land clearing and grubbing. Earthmoving activities include cut-and-fill operations, soil compaction, and grading. General construction includes adding improvements such as roadway surfaces, structures, and facilities. The emissions generated from these construction activities include:

- Dust (including PM_{10} and $PM_{2.5}$) primarily from fugitive sources (i.e., emissions released through means other than through a stack or tailpipe) such as soil disturbance. PM_{10} refers to particulate matter with an aerodynamic diameter smaller than or equal to 10 microns, it is mainly produced by mechanical processes (tire wear, cutting and grinding, re-suspension of particles from the ground, etc.) and subject to the SCAQMD's Rule 403 (fugitive dust). $PM_{2.5}$, on the other hand, refers to fine particles which are less than or equal to 2.5 microns and is mostly derived from combustion sources
- Combustion emissions of criteria air pollutants (ROG, NO_x, CO, PM_{10}, and $PM_{2.5}$) primarily from operation of heavy off-road construction equipment (primarily diesel-operated), portable auxiliary equipment, and construction worker automobile trips (primarily gasoline-operated)
- Evaporative emissions (ROG) from asphalt paving and architectural coatings

Construction estimates were determined for each of the SWIRP proposed solid waste facilities by applying the mobile-source and fugitive dust emissions factors derived from air quality emissions model URBEMIS 2007. The URBEMIS 2007 output sheets, which detail construction equipment assumptions by phase and construction phase durations, are provided in Appendix C of this EIR.

General default parameters were used for construction equipment based on building square footage requirements. Peak daily emissions associated with construction equipment exhaust during grading periods are summarized in Table 4.3-18. This table identifies those unmitigated construction equipment/vehicle emissions that would exceed the established daily emissions thresholds and cause a temporary increase of pollutant concentrations. For comparison purposes, the SCAQMD thresholds were utilized to represent a general overview of the likely impacts to the significance thresholds for the region prior to implementing mitigation measures during construction.

As shown in Table 4.3-18, there is a slight exceedance of the PM_{10} significance threshold for the construction of composting facilities. The SCAQMD threshold is 150 lbs/day and construction emissions for the composting facility are expected to be 151.6 lbs/day. Additionally, ROG emissions during construction activities will exceed SCAQMD thresholds for all of the facility types with the exception of composting facilities and resources recovery centers. In some instances, the anticipated construction-related ROG emissions exceed the SCAQMD thresholds by nearly 400 percent. This also represents a significant impact.

Table 4.3-18 provides estimated construction emissions on a facility-by-facility basis. Multiple facilities will be needed to handle the increased materials due to landfill diversion which is expected under SWIRP.

Table 4.3-18. Construction Emissions by Facility Type (lbs/day) – Unmitigated

Facility Type	ROG	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Clean Material Recovery Facility	203	30.2	35.9	0.05	36.1	8.3
Anticipated Exceedance?	***Yes***	*No*	*No*	*No*	*No*	*No*
Composting Facility	5.1	29.7	17.4	0.01	**151.6**	32.8
Anticipated Exceedance?	*No*	*No*	*No*	*No*	***Yes***	*No*
Resource Recovery Center	58.65	22	12.5	0.01	11.08	3.08
Anticipated Exceedance?	***No***	*No*	*No*	*No*	*No*	*No*
Mixed Material Processing	174.81	28.09	32.38	0.04	31.08	7.26
Anticipated Exceedance?	***Yes***	*No*	*No*	*No*	*No*	*No*
Alternative Technology - Advanced Thermal Recycling	293.33	37.08	47.19	0.07	51.08	11.43
Anticipated Exceedance?	***Yes***	*No*	*No*	*No*	*No*	*No*
Alternative Technology - Biological (Anaerobic Digestion)	203.0	31.22	35.91	0.05	36.08	8.3
Anticipated Exceedance?	***Yes***	*No*	*No*	*No*	*No*	*No*
Alternative Technology - Thermal (Plasma Arc, Gasification and Pyrolisis)	146.61	25.95	28.85	0.04	26.08	6.21
Anticipated Exceedance?	***Yes***	*No*	*No*	*No*	*No*	*No*
SCAQMD Threshold	75	100	550	150	150	55

Source: URBEMIS Model Output, refer to PEIR Appendix C
Note: Values in **bold** are in excess of the applicable SCAQMD significance threshold.

Anticipated facilities include three clean material recovery facilities; one large scale or six small scale composting facilities, one resources recovery center, and up to five black bin facilities. SWIRP is a long-term plan that will be implemented in phases. It is possible that some facilities could be constructed simultaneously, depending on facility demand. Under that scenario, it is possible for additional construction-related impacts to be realized, since emissions would be additive if facilities are located in the same air basin and under construction at the same time. Implementation of mitigation measures AQ-1 through AQ-13, on a facility by facility basis would minimize each facility's contribution to an additive construction-related impact.

Fugitive Dust

Fugitive dust emissions are generally associated with demolition, land clearing, exposure, and cut and fill operations. Dust generated daily during construction would vary substantially, depending on the level of activity, the specific operations, and weather conditions. If existing facilities are refitted, less fugitive dust emissions are expected. However, if new facilities are constructed on undeveloped land that requires significant grading, higher fugitive dust emissions may occur. Under such conditions, nearby sensitive receptors and on-site workers may be exposed to blowing dust, depending upon prevailing wind conditions. Fugitive dust would also be generated as construction equipment or trucks travel on unpaved roads on the construction site.

Construction-related activities at future facilities are required to comply with regional rules that assist in reducing short-term air pollutant emissions. Several air quality management districts require fugitive dust controls so that the presence of such dust does not remain visible in the atmosphere beyond the property line of the emission source. For example, SCAQMD's Best Available Control Measures (BACMs) for Rule 403 Fugitive Dust are shown in Table 4.3-19. These BACMs would be applicable to any construction activities proposed within the SCAQMD jurisdiction.

4.3.3.1 Long-Term Operational Emissions

Full implementation of SWIRP is expected to divert approximately 1.5 million tons of materials from landfills throughout the City, which will redirect and or generate additional transfer truck trips. The amount of air emissions generated from transfer trucks transporting materials to the various SWIRP facilities is dependent upon the number of trips generated to handle the volume of waste being diverted. For purposes of this air quality analysis, trip generating projections were made for the SWIRP facilities to predict air emissions.

Stationary Source Emissions

Sources identified on an individual facility basis or as a single source are called point sources. At this time, stationary source equipment used in the SWIRP facilities is unknown. However, the proposed SWIRP black bin facilities included for consideration are assumed to have advanced emissions control systems based on best available control technology (BACT) and generate nominal air emissions from on-site operating equipment, as is the case in existing material recovery facilities, resource recovery centers and composting facilities.

Table 4.3-20 provides a list of potential stationary source equipment for each facility type. It should be noted that stationary source equipment at future facilities may differ from the list provided in Table 4.3-20, depending on the type of technology employed at a given facility. The purpose of Table 4.3-20 is to provide the reader with a general understanding of the types of stationary source equipment that may be used. Specific project-level air quality analysis, including an analysis of all stationary source equipment at each facility will be conducted as the individual facilities are proposed.

Stationary source emissions are governed by the rules and regulations of the local air quality management district. The general type of emissions sources and expected contaminants of concern for each source are described as follows. This information was derived from the Durham/York Residual Waste Study (Stantec, 2009). Emergency diesel-fired equipment, such as emergency generators and fire pumps, produces products of diesel consumption. Diesel tanks for this equipment can release diesel fumes.

Comfort heating of the administrative and support buildings produces products of natural gas consumptions. Welding stations produce particulates and metals. Onsite traffic would be expected to produce PM, CO, SO_2 and NO_x. Refuse handling and storage emissions relate to PM_{10} and odor. Finally, stack emissions typically contain production of combustion; including criteria air contaminants (SO_2, NO_2, CO, PM_{10}, $PM_{2.5}$), polycyclic aromatic hydrocarbons, polycyclic organic matter, VOCs, polycyclic organic hydrocarbons, and metals. These emissions have the potential to result in significant air quality impacts. Since specific facility-level analysis cannot be conducted at this time, due to the uncertainty of technologies to be implemented, it cannot clearly be stated if facility emission impacts will be reduced to below a level of significance through the implementation of mitigation. Therefore, significant and unmitigated facility impacts are identified.

Table 4.3-19. Best Available Control Measures (Applicable to All Construction Activity Sources)

Source Category	Control Measure	Guidance
Backfilling	• Stabilize backfill material when not actively handling • Stabilize backfill material during handling • Stabilize soil at completion of activity.	• Mix backfill soil with water prior to moving • Dedicate water truck or high capacity hose to backfilling equipment • Empty loader bucket slowly so that no dust plumes are generated • Minimize drop height from loader bucket
Clearing and Grubbing	• Maintain stability of soil through pre-watering of site prior to clearing and grubbing; and • Stabilize soil during clearing and grubbing activities; and • Stabilize soil immediately after clearing and grubbing activities.	• Maintain live perennial vegetation where possible • Apply water in sufficient quantity to prevent generation of dust plumes
Clearing Forms	• Use water spray to clear forms; or • Use sweeping and water spray to clear forms; or • Use vacuum system to clear forms.	• Use of high pressure air to clear forms may cause exceedance of Rule requirements
Crushing	• Stabilize surface soils prior to operation of support equipment; and • Stabilize material after crushing.	• Follow permit conditions for crushing equipment • Pre-water material prior to loading into crusher • Monitor crusher emissions opacity • Apply water to crushed material to prevent dust plumes
Cut and Fill	• Pre-water soils prior to cut and fill activities; and • Stabilize soil during and after cut and fill activities.	• For large sites, pre-water with sprinklers or water trucks and allow time for penetration • Use water trucks/pulls to water soils to depth of cut prior to subsequent cuts
Demolition - Mechanical/Manual	• Stabilize wind erodible surfaces to reduce dust; and • Stabilize surface soil where support equipment and vehicles will operate; and • Stabilize loose soil and demolition debris; and • Comply with AQMD Rule 1403.	• Apply water in sufficient quantities to prevent the generation of visible dust plumes
Disturbed Soil	• Stabilize disturbed soil throughout the construction site; and • Stabilize disturbed soil between structures	• Limit vehicular traffic and disturbances on soils where possible • If interior block walls are planned, install as early as possible • Apply water or a stabilizing agent in sufficient quantities to prevent the generation of visible dust plumes
Earth-Moving Activities	• Pre-apply water to depth of proposed cuts; and • Re-apply water as necessary to maintain soils in a damp condition and to ensure that visible emissions do not exceed 100 feet in any direction; and • Stabilize soils once earth-moving activities are complete.	• Grade each project phase separately, timed to coincide with construction phase • Upwind fencing can prevent material movement on site • Apply water or a stabilizing agent in sufficient quantities to prevent the generation of visible dust plumes

Table 4.3-19. Best Available Control Measures (Applicable to All Construction Activity Sources) (Continued)

Source Category	Control Measure	Guidance
Importing/Exporting of Bulk Materials	• Stabilize material while loading to reduce fugitive dust emissions; and • Maintain at least six inches of freeboard on haul vehicles; and • Stabilize material while transporting to reduce fugitive dust emissions; and • Stabilize material while unloading to reduce fugitive dust emissions; and • Comply with Vehicle Code Section 23114.	• Use tarps or other suitable enclosures on haul trucks • Check belly-dump truck seals regularly and remove any trapped rocks to prevent spillage • Comply with track-out prevention/mitigation requirements • Provide water while loading and unloading to reduce visible dust plumes
Landscaping	• Stabilize soils, materials, slopes	• Apply water to materials to stabilize • Maintain materials in a crusted condition • Maintain effective cover over materials • Stabilize sloping surfaces using soil binders until vegetation or ground cover can effectively stabilize the slopes • Hydroseed prior to rain season
Road Shoulder Maintenance	• Apply water to unpaved shoulders prior to clearing; and • Apply chemical dust suppressants and/or washed gravel to maintain a stabilized surface after completing road shoulder maintenance.	• Installation of curbing and/or paving of road shoulders can reduce recurring maintenance costs • Use of chemical dust suppressants can inhibit vegetation growth and reduce future road shoulder maintenance costs
Screening	• Pre-water material prior to screening; and Limit fugitive dust emissions to opacity and plume length standards; and • Stabilize material immediately after screening.	• Dedicate water truck or high capacity hose to screening operation • Drop material through the screen slowly and minimize drop height • Install wind barrier with a porosity of no more than 50% upwind of screen to the height of the drop point
Staging Areas	• Stabilize staging areas during use; and • Stabilize staging area soils at project completion.	• Limit size of staging area • Limit vehicle speeds to 15 miles per hour • Limit number and size of staging area entrances/exists
Stockpiles/Bulk Material Handling	• Stabilize stockpiled materials. • Stockpiles within 100 yards of off-site occupied buildings must not be greater than eight feet in height; or must have a road bladed to the top to allow water truck access or must have an operational water irrigation system that is capable of complete stockpile coverage.	• Add or remove material from the downwind portion of the storage pile • Maintain storage piles to avoid steep sides or faces

Table 4.3-19. Best Available Control Measures (Applicable to All Construction Activity Sources) (Continued)

Source Category	Control Measure	Guidance
Traffic Areas for Construction Acitivities	• Stabilize all off-road traffic and parking areas; and • Stabilize all haul routes; and • Direct construction traffic over established haul routes.	• Apply gravel/paving to all haul routes as soon as possible to all future roadway areas • Barriers can be used to ensure vehicles are only used on established parking areas/haul routes
Trenching	• Stabilize surface soils where trencher or excavator and support equipment will operate; and • Stabilize soils at the completion of trenching activities.	• Pre-watering of soils prior to trenching is an effective preventive measure. For deep trenching activities, pre-trench to 18 inches soak soils via the pre-trench and resuming trenching • Washing mud and soils from equipment at the conclusion of trenching activities can prevent crusting and drying of soil on equipment
Truck Loading	• Pre-water material prior to loading; and • Ensure that freeboard exceeds six inches (CVC 23114)	• Empty loader bucket such that no visible dust plumes are created • Ensure that the loader bucket is close to the truck to minimize drop height while loading
Turf Overseeding	• Apply sufficient water immediately prior to conducting turf vacuuming activities to meet opacity and plume length standards; and • Haul vehicles to be covered prior to exiting the site.	• Haul waste material immediately off-site
Unpaved Road/Parking Lots	• Stabilize soils to meet the applicable performance standards; and • Limit vehicular travel to established unpaved roads (haul routes) and unpaved parking lots.	• Restricting vehicular access to established unpaved travel paths and parking lots can reduce stabilization requirements
Vacant Land	• In instances where vacant lots are 0.10 acre or larger and have a cumulative area of 500 square feet or more that are driven over and/or used by motor vehicles and/or off-road vehicles, prevent motor vehicle and/or off-road vehicle trespassing, parking and/or access by installing barriers, curbs, fences, gates, posts, signs, shrubs, trees or other effective control measures.	

Source: SCAQMD (2010) (http://aqmd.gov/rules/download.html)

Table 4.3-20. Potential Stationary Source Equipment by Facility Type

Facility Type	Potential Stationary Source Equipment
Material Recovery Facility	• On-site vehicle traffic (including internal site equipment such as loaders, forklifts roll-off vehicles) • Comfort heating of administration/support buildings • Fugitive emission (particulate and odor) from materials handling • Potential on-site stationary equipment such as grinders, shedders, etc. • Emergency diesel generator • Diesel tank for the generator
Composting	• On-site vehicle traffic (including internal site equipment such as loaders, forklifts roll-off vehicles, etc.) • On-site grinders or screens that use a fuel source such as diesel • Comfort heating of administration/support buildings • Fugitive emission (particulate and odor) from materials handling
Resource Recovery Centers	• On-site vehicle traffic (including internal site equipment such as loaders, forklifts roll-off vehicles) • Comfort heating of administration/support buildings
Mixed Material Processing	• On-site vehicle traffic (including internal site equipment such as loaders, forklifts roll-off vehicles) • Comfort heating of administration/support buildings • Fugitive emission (particulate and odor) from materials handling • Emergency diesel generator • Diesel tank for the generator
Alternative Technology - Advanced Thermal Recycling(1)	• Conventional stack associated with air pollution control equipment on the waste processing trains which is defined by location, base elevation, stack height diameter, gas exit velocity and temperature and containment emissions rates. • On-site grinders or screens that use a fuel source such as diesel • Emergency diesel generator • Emergency diesel fire pumps • Turbine/generator • Diesel tanks for the generator and fire pumps • On-site vehicle traffic (including internal site equipment such as loaders, forklifts roll-off vehicles) • Comfort heating of administration/support buildings • A welding station in the storage/maintenance shop • Fugitive emission (particulate and odor) from materials handling
Alternative Technology-Biological (Anaerobic Digestion)	• Emergency diesel generator • Emergency diesel fire pumps • Diesel tanks for the generator and fire pumps • On-site vehicle traffic (including internal site equipment such as loaders, forklifts roll-off vehicles) • On-site grinders or screens that use a fuel source such as diesel • Comfort heating of administration/support buildings • A welding station in the storage/maintenance shop • Fugitive emission (particulate and odor) from materials handling
Alternative Technology-Thermal (Plasma Arc, Gasification and Pyrolysis)	• Conventional stack associated with air pollution control equipment on the waste processing trains which is defined by location, base elevation, stack height diameter, gas exit velocity and temperature and containment emissions rates. • Emergency diesel generator • Emergency diesel fire pumps • Turbine/generator • Diesel tanks for the generator and fire pumps • On-site grinders or screens that use a fuel source such as diesel • On-site vehicle traffic (including internal site equipment such as loaders, forklifts roll-off vehicles) • Comfort heating of administration/support buildings • A welding station in the storage/maintenance shop • Fugitive emission (particulate and odor) from materials handling

Source: Equipment for the advanced thermal recycling facility was taken from the equipment list used in the air quality analysis for the Durham/York Residual Waste Study Appendix B, Emissions Inventory (Stantec, 2009).

Reduction in Landfill Emissions

Diverting waste from landfills would decrease stationary source air emissions generated at existing landfills. A comparison was made with a landfill receiving waste to the amount of waste diverted by the implementation of the SWIRP project to quantify this reduction. The Regional Olinda Alpha Landfill in Orange County was identified as a comparable landfill which expects to receive 1.7 million tons of waste each year of operation. The Olinda Environmental Impact Report (EIR) projected air quality emissions are shown in Table 4.3-21. Emissions for this landfill were used to estimate the anticipated reduction in stationary air emissions that may be achieved by implementing the proposed SWIRP facilities.

Table 4.3-21. Olinda Alpha Landfill Operation Emissions (lbs/day)

Source[1]	NO_x	ROC	PM_{10}	SO_x	CO
Landfill Gas Facility[2]	--	533	--	--	--
Gas-to-energy Facility[2]	216	65	3	22	438
Flare System[3]	196.1	9.4	77.5	48.2	48.6
Subtotal Stationary Source Emissions	***412.1***	***607.4***	***80.5***	***70.2***	***486.6***
Exceed Threshold?	*Yes*	*Yes*	*No*	*No*	*No*
SCAQMD Threshold	***55***	***55***	***150***	***150***	***550***

Source: P & D Environmental, DEIR for RELOOC – Olinda Alpha Landfill Implementation, June 2004.

1) Emission factors based on SCAQMD, *1993 CEQA Air Quality Handbook,* Tables A9-8-A and A9-9. Based upon USEPA's AP-42 emission factors.
2) Assumes that 70 percent of the landfill gas will be captured by the landfill gas collection system. This is based on generally accepted methods of estimating landfill gas generation rules.
3) Emissions from (2003) flare source test. Emissions vary year to year. Maximum permitted emissions are: 93.6 lb/day ROC, 339.4 lb/day NO_x, 106.1 lb/day SO_x, 407.4 lb/day CO, and 136.6 lb/day PM_{10}.

As shown in Table 4.3-21, the Olinda Alpha landfill stationary source emissions are expected to significantly exceed the SCAQMD significance thresholds for NO_x and ROC. The implementation of the SWIRP project would potentially decrease air pollutant emissions within the project study area equivalent to the amount of emissions generated from stationary sources by the Olinda Alpha landfill.

Operational Vehicular Emissions

The City is located in the SCAB and within the jurisdiction of the SCAQMD. The SCAQMD is characterized as nonattainment for PM_{10}, $PM_{2.5}$, and O_3 and classified as a maintenance area for CO. To satisfy CEQA requirements the project must determine whether or not the project will exceed established thresholds of significance; cause a hot-spot; violate or contribute to an existing violation; expose sensitive receptors to substantial pollutant concentrations; or have a significant effect on the environment from a cumulative standpoint.

Transfer truck trips associated with the transport of organic matter, recyclables, and residual waste could contribute to congestion at intersections and along roadway segments in the project vicinity. Localized air quality effects would occur when emissions from vehicular traffic increase in local areas as a result of the proposed project. Trip generation information was developed for each SWIRP facility consisting of total trips from transfer trucks and employee trips for each facility type to estimate air emissions resulting from transportation related activities. Assumptions on vehicle and truck quantities are presented in

Table 4.3-22. Estimated vehicle emissions for each recommended SWIRP facility, as determined by URBEMIS, are shown in Table 4.3-22.

Table 4.3-22. Anticipated Vehicular Emissions for Each Facility Type (lbs/day)

Facility Type	ROG	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Material Recovery Facility	4.3	41.0	23.2	0.07	6.2	2.4
Anticipated Exceedance?	*No*	*No*	*No*	*No*	*No*	*No*
Composting Facility	4.9	56.74	24.9	0.09	6.74	2.93
Anticipated Exceedance?	*No*	***Yes***	*No*	*No*	*No*	*No*
Resource Recovery Center	6.05	69.57	30.62	0.11	8.29	3.60
Anticipated Exceedance?	*No*	***Yes***	*No*	*No*	*No*	*No*
Mixed Material Processing	4.3	39.9	24.4	0.07	6.5	2.4
Anticipated Exceedance?	*No*	*No*	*No*	*No*	*No*	*No*
Alternative Technology - Advanced Thermal Recycling	10.3	117	51	0.19	13.8	6.03
Anticipated Exceedance?	*No*	***Yes***	*No*	*No*	*No*	*No*
Alternative Technology - Biological (Anaerobic Digestion)	3.4	36.4	17.03	0.06	4.6	1.9
Anticipated Exceedance?	*No*	*No*	*No*	*No*	*No*	*No*
Alternative Technology - Thermal (Plasma Arc, Gasification and Pyrolisis)	2.7	25.8	14.1	0.04	3.8	1.5
Anticipated Exceedance?	*No*	*No*	*No*	*No*	*No*	*No*
Cumulative Impacts[1], [2]	52.85	561.55	273.58	0.92	73.67	30.39
Anticipated Exceedance?	*No*	***Yes***	*No*	*No*	*No*	*No*
SCAQMD Threshold	55	55	550	150	150	55

Source: URBEMIS Model Output, refer to PEIR Appendix C

Note: Values in **bold** are in excess of the applicable SCAQMD significance threshold.

[1] At this time it is unknown what combination of SWIRP facilities will be implemented, however, for purposes of this air quality analysis, it is assumed that three clean material recovery facilities, one large-scale or six small-scale composting facilities (this analysis assumed two medium-sized facilities), one resource recovery center, and up to five black bin facilities will be needed.

[2] A mix of the following black bin facilities was assumed for this analysis: one mixed materials processing facility, one alternative technology (advanced thermal recycling facilities), two alternative technology (biological) facility and one alternative technology (thermal) facility.

As shown in Table 4.3-22, estimated NO_x related vehicular emissions for the Composting Facility, Resource Recovery Center, and Advanced Thermal Recycling facility are anticipated to exceed the SCAQMD significance threshold. However, operational vehicle emissions for all the other SWIRP facilities are below the SCAQMD thresholds and will not cause a significant impact. The cumulative impact of NO_x related vehicular emissions is expected to exceed the SCAQMD significance threshold.

It should be noted that, as a result of technological improvements, air pollutant emissions in the future would be lower than the existing condition. In addition, future ambient air pollutant levels would be lower than current air pollutant levels.

Existing clean fuel programs will also reduce the amount of vehicular and truck emissions. SCAQMD Rule 1193 (Clean On-Road Residential and Commercial Refuse Collection Vehicles) requires solid waste collection fleet operators to acquire alternative-fuel refuse collection vehicles when procuring or leasing

these vehicles, which will result in additional reductions of NO_x and PM_{10}. The Bureau of Sanitation also has a Clean Fuel Program. Therefore, it is anticipated that the SWIRP project would not cause an exceedance of federal or state standards and no hot-spots are anticipated to occur.

Long-Term Exposure at Sensitive Receptors from Project-Related Diesel Exhaust

Long-term diesel exhaust health risk assessment impacts are those associated with project-related truck trips resulting from the transport of solid waste. As previously noted, the specific locations of future facilities have not been identified so a quantitative assessment of health risk at a sensitive receptor is unknown.

As future facilities are proposed, they would be subject to additional environmental review pursuant to CEQA. The further review would be required to perform a health risk assessment (HRA) in accordance with technical guidelines developed by the federal and California agencies (i.e., EPA, CalEPA-OEHHA) and the SCAQMD. Toxic Air Contaminant emissions will need to be evaluated. The following methodology will be utilized once definitive details are provided. The greatest potential for TAC emissions would be related to diesel particulate emissions associated with facility trucks during operational activities. Specific information would be required on the number of truck trips, the type and number of 2-axle delivery trucks (light and medium sized trucks) or semi-trailer and fuel tanker trucks (heavy-duty trucks), determining the truck transport schedule and idling times of the trucks to perform the HRA. According to SCAQMD methodology, health effects from carcinogenic air toxics are usually described in terms of individual cancer risk. Individual cancer risk is the likelihood that a person exposed to concentrations of TACs over a 70-year lifetime will contract cancer, based on the use of standard risk-assessment methodology. The SCAQMD has established the CEQA significance threshold for individuals exposed to TAC sources as the increased incremental cancer risk of 10 in one million or greater. Health risk would be assessed by calculating the cancer risk at a variety of distances from the proposed facility location. The carcinogenic and chronic inhalation health risks would be determined from these concentrations and compared to the chronic inhalation health index.

The HRA would assess the potential incremental cancer risks to residents in the project vicinity of the proposed project, using emission rates from CARB's EMission FACtors (EMFAC) model. EMFAC2007 is the latest version of the model and it is used to calculate emission rates from all motor vehicles, such as heavy-duty trucks, operating on highways, freeways and local roads in California. Emissions rates from EMFAC2007 would be entered into the EPA-approved dispersion model AERMOD to calculate ambient air concentrations at receptors in the project vicinity. AERMOD is an atmospheric dispersion modeling system. The standards are typically applied to the results of a HRA through a detailed air dispersion modeling effort using the EPA's AERMOD dispersion model. This approach is a conservative assessment intended to provide a worst–case estimate of the increased exposure by employing a standard emission estimation program and an accepted pollutant dispersion model. This methodology is anticipated to overestimate both non carcinogenic and carcinogenic health risk, possibly by an order of magnitude or more. For carcinogenic risks, the actual probabilities of cancer formation in the populations of concern due to exposure to carcinogenic pollutants are likely to be lower than the risks derived using the risk assessment methodology.

In addition to future environmental reviews including health risk effects, SCAQMD also recommends that localized air quality impacts be estimated when future facilities are proposed to ensure that any nearby sensitive receptors are not adversely affected by the proposed construction or operational activities occurring in close proximity, within one-quarter mile of sensitive receptors.

4.3.3.2 Obstruct Implementation of Air Quality Plans

While SWIRP has a goal of locating facilities within the City, some facilities may be sited within the 100-mile project study area of the City. The 100-mile study area falls within all or part of five air basins. These basins are regulated by their respective AQMD. Each AQMD regulates ambient air quality through its AQMP. The AQMP incorporates local General Plan land use assumptions and regional growth projections developed by SCAG to estimate stationary and mobile source emissions associated with projected population and planned land uses.

If future facilities are proposed on sites that have the appropriate General Plan designation for the use, then the added emissions generated by the new facility would have already been evaluated in the AQMP in formulating the emissions reduction strategies and the facility would not obstruct implementation of the AQMP that governs the basin in which it is located.

If future facilities are proposed in locations in which the General Plan designation does not support the use, then a General Plan Amendment would be required. If such a scenario should occur, early consultation would need to occur between the local jurisdiction processing the facility's application (e.g., city or county) and the project proponent, to evaluate whether the proposed facility has the potential to result in localized impacts. When evaluating whether a facility has the potential to result in localized impacts, the local jurisdiction will consider the nature of the air pollutant emissions, the proximity between the emitting facility and sensitive receptors, the direction of prevailing winds, and local topography. Providing an adequate distance, or buffer zone, between the source of emissions and the receptor(s) will typically mitigate the problem. This emphasizes the importance of addressing these potential land use conflicts as early as possible in the development review process. As the proposed project reaches the application stage for the General Plan Amendment or rezoning, an environmental review will be performed, as required by CEQA, to determine if significant environmental impacts could result from the proposed change. If a significant impact is determined, mitigation measures will be included in the analysis to minimize localized impacts to sensitive receptors. This analysis will demonstrate conformity with local AQMPs.

4.3.3.3 Odors

Land uses associated with odor complaints typically include agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding. SCAQMD Rule 410 prohibits such emissions. The SCAQMD resolves complaints through investigation and issuance of a notice to comply when necessary. Continued application of these existing regulations would avoid any impacts associated with objectionable odors and assure that any objectionable odors would not affect a significant amount of people.

The proposed SWIRP facilities will handle green bin, blue bin and black bin materials and have the potential for generating odors. Since specific facility locations have not been identified, and their distance from sensitive receptors is not known, there is a potential for impact. Future project-specific air quality studies shall be prepared and such studies would identify potential odor-control strategies. Typical strategies could include: provision of exhaust fans to provide multiple air exchanges every hour; treatment of air leaving the building by an odor neutralizing misting system; maintaining negative pressure at the building entrances to minimize the amount of untreated air leaving the building; and adding an odor neutralizer in the ceiling mounted misting systems for extra odor mitigation. The requirement for odor analysis and incorporation of odor-controlling features is included as mitigation measure AQ-18.

Additionally, each facility would be required to minimize odors by properly maintaining design features and equipment designed to reduce and eliminate odors and pursuant to provisions of SCAQMD Rule 410.

4.3.3.4 Global Climate Change/Greenhouse Gases

Landfills are one of the largest sources of methane, a powerful greenhouse gas which is 21 times more potent than carbon dioxide.[9] As described in the GREEN LA plan, the City can significantly reduce its greenhouse gas emissions levels through waste reduction and recycling. Recycling can reduce greenhouse gases both by reducing methane generation at landfills and by saving energy through recycling. Estimates were prepared of the greenhouse gas emissions reductions that will be achieved by implementing the policies and programs identified by the stakeholders.

The greenhouse gas reduction potential of the proposed project was estimated using the U.S. EPA WAste Reduction Model (WARM) based on material types and amounts diverted. By implementing all of the programs and policies identified in SWIRP, it is estimated the City would have a reduction of 2.6 million metric tons in greenhouse gases (*SWIRP Phase 2 Policy, Program, and Facility Plan*, Table 10). This would help the City achieve 14 percent of its goal to reduce carbon dioxide emissions by 18.9 million metric tons by 2030. This is the equivalent of removing over 25 percent of the 2 million passenger vehicles registered in the City (as calculated by WARM).

As with other relatively small projects (i.e., projects that are not cement plants, oil refineries, electric generating facilities/providers, co-generation facilities, hydrogen plants, or other stationary combustion sources that emit less than 25,000 metric tons CO_2e/yr), the emissions associated with future facilities are not expected to, individually, have an impact on global climate change, and the primary concern would be whether the project would be in conflict with the state goals for reducing GHG emissions.

Two types of analyses are used to determine whether the project could be in conflict with the state goals for reducing GHG emissions. The analyses are reviews of:

- The relative size of the project emissions in comparison to the estimated GHG reduction goal of 174 million metric tons CO_2e by 2020 and in comparison to the size of major facilities that are required to report greenhouse gas emissions (25,000 metric tons of CO_2e/yr or greater)
- The basic parameters of a project to determine whether its design is inherently energy efficient, will lead to wasteful energy use, or is neutral with regard to future energy use

Construction-Related GHG Emissions

Construction emissions range from 433 to 1,615 metric tons CO_2e per year, depending on the facility type. The maximum construction emissions would be approximately 1,615 metric tons CO_2e per year from proposed Advance Thermal Recycling facilities, as shown in Table 4.3-23.

[9]Source: U.S. EPA Overview of Greenhouse Gases, http://epa.gov/climatechange/ghgemissions/gases/ch4.html (accessed June 10, 2014).

Table 4.3-23. Worst Case Construction CO_2 Emissions

Project Facility	CO_2 (lbs/day)	CO_2 (tons/yr)(1)
Material Recovery Facility	6,627	1,209
Composting Facility	3,163	577
Resource Recovery Center	2,371	433
Mixed Material Processing	5,932	1,083
Alternative Technology - Advanced Thermal Recycling	8,852	1,615
Alternative Technology - Biological (Anaerobic Digestion)	6,627	1,209
Alternative Technology - Thermal (Plasma Arc, Gasification and Pyrolisis)	5,236	956

Source: URBEMIS 2007, PEIR Appendix C
(1) Tons/year is derived by multiplying the lbs/day by 365 and dividing by 2,000.

Operational-Related GHG Emissions

Operational GHG emissions were also estimated utilizing URBEMIS 2007, using the same inputs and assumptions used to calculate operational emissions. Table 4.3-24 presents the operational GHG emissions for each of the proposed SWIRP facility types.

Table 4.3-24. Operational CO_2 Emissions

Facility Type	CO_2 (lbs/day)	CO_2 (tons/yr)(1)
Material Recovery Facility	7,582	1,378
Composting Facility – Aerobic	9,620	1,754
Composting Facility – Anaerobic Digestion	11,174	2,039
Resource Recovery Center	11,797	2,153
Mixed Material Processing	7,606	1,381
Alternative Technology - Advanced Thermal Recycling	19,796	3,609
Alternative Technology - Biological (Anaerobic Digestion)	6,296	1,147
Alternative Technology - Thermal (Plasma Arc, Gasification and Pyrolysis)	4,718	858
Total Emissions	78,589	14,319

Source: URBEMIS 2007, PEIR Appendix C
(1) Tons/year is derived by multiplying the lbs/day by 365 and dividing by 2,000.

As shown in Table 4.3-24, none of the SWIRP facility types would be classified as a major source of GHG emissions, as all facilities will be below the lower reporting limit for major sources, which is expected to be 25,000 metric tons of CO_2e/yr. Total CO_2 emissions for the operation of the SWIRP facility types are expected to be 14,319 metric tons of CO_2e/yr. When compared to the overall state reduction goal of approximately 174 million metric tons CO_2e/yr, by the year 2020, the maximum GHG emissions for the project are small and would not conflict with the state's ability to meet the AB 32 goals. The incremental GHG emissions from the future facilities would add a cumulative contribution to global climate change. However, it is expected that there would also be a corresponding reduction in GHG emissions through reduced landfilling.

CARB is currently developing strategies to reduce statewide GHG emissions, including heavy-duty vehicle emission reductions, as directed by AB 32. As a condition of approval, local jurisdictions shall require future facilities to comply with any applicable strategies adopted by CARB through promulgated regulations. The proposed project would be required to comply with all AB 32 regulations.

Table 4.3-25 provides a summary of the project-level air quality impacts, by facility type.

Table 4.3-25. Summary of Project-Level Air Quality Impacts by Facility Type

Facility Type	Construction	Operation
Clean Material Recovery Facilities	Less than significant.	Potentially significant and unmitigated. Future facility-specific air quality analysis will be required.
Composting (Aerobic)	Less than significant with implementation of mitigation.	Potentially significant and unmitigated. Future facility-specific air quality analysis will be required.
Composting (Anaerobic Digestion)	Less than significant with implementation of mitigation.	Potentially significant and unmitigated. Future facility-specific air quality analysis will be required.
Resource Recovery Centers	Less than significant.	Potentially significant and unmitigated. Future facility-specific air quality analysis will be required.
Mixed Material Processing	Less than significant.	Potentially significant and unmitigated. Future facility-specific air quality analysis will be required.
Alternative Technology – Advanced Thermal Recycling	Less than significant.	Potentially significant and unmitigated. Future facility-specific air quality analysis will be required.
Alternative Technology – Biological (Anaerobic Digestion)	Less than significant.	Potentially significant and unmitigated. Future facility-specific air quality analysis will be required.
Alternative Technology – Thermal (Plasma Arc, Gasification, Pyrolisis, and Others)	Less than significant.	Potentially significant and unmitigated. Future facility-specific air quality analysis will be required.

4.3.4 Cumulative-Level Analysis

On a project-level basis, the project has the potential to result in significant and unmitigated air quality impacts related to operational emissions, including the release of criteria pollutants including ozone precursors of NO_x and ROG, as well as GHG emissions.

The SCAQMD's approach for assessing cumulative operational impacts is based on the SCAQMD's AQMP forecasts of attainment of AAQS in accordance with the requirements of the federal and state CAA. This forecast also takes into account SCAG's forecasted future regional growth. As such, the analysis of cumulative impacts focuses on determining whether the SWIRP programs and policies are consistent with forecasted future regional growth. If a project is consistent with the regional population, housing and employment growth assumptions upon which the SCAQMD's AQMP is based, then future development would not impede the attainment of AAQS and a significant cumulative air quality impact would not occur.

NO_x emissions associated with vehicular trips would cause exceedances over the SCAQMD threshold. ROG impacts associated with project construction would also exceed SCAQMD thresholds. Additionally, future stationary source emissions from the facilities would further contribute to exceedences to the

SCAQMD thresholds. The incremental GHG emissions from the future facilities would have a cumulative contribution to global climate change; however, GHG emissions associated with ongoing landfilling would be recognized. Implementation of mitigation measures AQ-1 through AQ-21 would reduce the construction and operational emissions associated with future facilities, however, residual operational-related impacts that contribute to a cumulative impact could remain. Therefore, a potentially significant and unmitigated cumulative impact is identified.

4.3.5 Mitigation Measures

Construction-Related Emissions

AQ-1 Future facilities within the SCAQMD shall prepare and implement a fugitive dust control program pursuant to the provisions of SCAQMD Rules 402 and 403 prior to any ground disturbance. For future facilities outside of the SCAQMD, adherence to any applicable fugitive dust control programs shall be required.

AQ-2 Minimize combustion emissions during construction activities.

AQ-3 Low VOC paintings and coatings shall be used on future facilities.

AQ-4 Excavation, grading, and other construction activity shall be limited to one activity or phase at a time.

AQ-5 Hours of operation of heavy-duty equipment shall be limited to a maximum of 8 hours per day, 5 days per week.

AQ-6 Fossil-fueled equipment shall be replaced with electrically-driven equivalents (provided they are not run via a portable generator set) or clean fuel options, to the maximum extent practicable.

AQ-7 All diesel engines shall be shut off when not in use to reduce emissions from idling.

AQ-8 Curtail construction during periods of high ambient pollutant concentrations; this may include ceasing construction activity during the peak hour of vehicular traffic on adjacent roadways and "Spare the Air Days" declared by the SJVAPCD. Note that land within the 100-mile project study area falls within the SJVAPCD.

AQ-9 Implement activity management (e.g., rescheduling activities to reduce short-term impacts) to minimize concurrent operation of construction equipment and concurrent construction of project phases.

AQ-10 During the smog season (May through October), lengthen the construction period to minimize the vehicles and equipment operating at the same time.

AQ-11 Minimize the obstruction of traffic on adjacent roadways.

AQ-12 Power construction equipment with diesel engines fueled by alternative diesel fuel blends or ultra-low sulfur diesel (ULSD). Only fuels that have been certified by the ARB should be

used. The ARB has verified specific alternative diesel fuel blends for NO_x and PM emissions reduction. The applicant also should use ARB-certified alternative fueled (e.g., compressed natural gas, liquid natural gas (LNG), liquid propane gas, electric motors, or other ARB-certified off-road technologies) engines in construction equipment where practicable.

AQ-13 Use construction equipment that meets the current off-road engine emission standard (as certified by the ARB) or that is re-powered with an engine that meets this standard. Tier I, Tier II, and Tier III engines have significantly less NO_x and PM emissions compared with uncontrolled engines.

Facility-Related Emissions

AQ-14 During the facility design phase, a review of local AQMD rules shall be conducted to determine site-specific permit requirements for waste processing or handling facilities that may emit or potentially emit VOCs, particulates, CO, NO_x or , SO_x. Emissions of non-conventional pollutants[10] and HAPs (Title V-Major Sources) shall comply with federal and state permitting rules.

AQ-15 Future facility applicant(s) shall properly maintain ROG emission control devices within the gasoline/fueling dispensing station.

AQ-16 Future facility applicant(s) shall ensure combustion operational emissions are minimized.

AQ-17 All diesel truck operators shall strictly abide by the applicable state law requirements for idling. Idling of the primary engine shall be limited to five minutes.

AQ-18 An odor analysis shall be prepared as part of future project-specific air quality analysis. Should the odor analysis identify the potential for impacts, the facility shall incorporate odor-reducing design features. Such features could include, but are not limited to:

- Provision of exhaust fans to provide multiple air exchanges every hour
- Treatment of air leaving the building by an odor neutralizing misting system
- Maintaining negative pressure at the building entrances to minimize the amount of untreated air leaving the building

AQ-19 Energy-efficient design will be provided for buildings, including automated control systems for heating, air conditioning, and energy efficiency beyond California Code of Regulations (CCR) Title 24 (California Building Standards Code) requirements, lighting controls and energy-efficient lighting in buildings, increased insulation beyond Title 24 requirements, and light-colored roof materials to reflect heat.

AQ-20 Landscaping shall be used to maximize building protection from energy-consuming environmental conditions and to shade paved areas. Such landscaping could include planting of shade trees to shade 50 percent of paved areas within 15 years and planting deciduous trees on the south- and west-facing sides of buildings.

[10] Air pollutants other than particulate matter, CO, VOCs, NO_x, and SO_x.

AQ-21 Implement measures to reduce the amount of vehicle traffic to and from future facilities. This could include provisions such as encouraging employees to rideshare or carpool to the project site, or incentives for employees to use alternative transportation.

4.3.6 Conclusion

Based upon the analysis presented in Section 4.3.3, including the results of the URBEMIS 2007 model run, the project will have significant construction related emissions. Implementation of BACMs, as identified in Table 4.3-19 as well as implementation of mitigation measures AQ-1 through AQ-13 will reduce some of the construction related impacts to below a level of significance. Mitigation measures AQ-1 through AQ-13 identified parameters by which construction can be undertaken, including requirements for the construction equipment. Table 4.3-26 presents the anticipated emissions after construction mitigation is applied. The significant PM_{10} emissions identified for construction of the composting facility will be reduced to below a level of significance. Implementation of ROG mitigation measures will reduce some of the emissions; however, the emissions will not be reduced to below a level of significance. Residual significant ROG impacts will remain. It should be noted that construction-related emissions are considered short term, and once the construction is complete the ROG exceedence would be eliminated.

Table 4.3-26. Construction Emissions by Facility Type (lbs/day) – Mitigated

Facility Type	ROG	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Material Recovery Facility	182.71	26.1	35.9	0.05	9.0	2.7
Residual Impact?	***Yes***	*No*	*No*	*No*	*No*	*No*
Composting Facility	5.1	29.7	17.4	0.01	35.6	8.5
Residual Impact?	*No*	*No*	*No*	*No*	*No*	*No*
Resource Recovery Center	58.65	22	12.5	0.01	3.4	1.5
Residual Impact?	***Yes***	*No*	*No*	*No*	*No*	*No*
Mixed Material Processing	157.33	24.0	32.4	0.04	7.9	2.4
Residual Impact?	***Yes***	*No*	*No*	*No*	*No*	*No*
Alternative Technology - Advanced Thermal Recycling	263.91	33.0	47.2	0.07	12.4	3.4
Residual Impact?	***Yes***	*No*	*No*	*No*	*No*	*No*
Alternative Technology - Biological (Anaerobic Digestion)	182.71	26.1	35.9	0.05	9.1	2.7
Residual Impact?	***Yes***	*No*	*No*	*No*	*No*	*No*
Alternative Technology - Thermal (Plasma Arc, Gasification and Pyrolysis)	131.96	22.0	28.9	0.04	6.8	2.2
Residual Impact?	***Yes***	*No*	*No*	*No*	*No*	*No*
SCAQMD Threshold	55	55	550	150	150	55

Source: URBEMIS 2007 (PEIR Appendix C)
Note: Values in bold represent a significant and unmitigated impact.

Further, as based upon the analysis presented in Section 4.3.3, a significant impact related to vehicular emissions was identified. Stationary source emissions could not be quantified at this time, due to the uncertainty of the specific type of equipment that may be used in the future facilities. Mitigation measures AQ-14 through AQ-21 have been identified to reduce the operational emissions, however, it cannot be stated that these measures would reduce the impact to below a level of significance. Future facilities will

be required to prepare project-specific air quality analyses, and also adhere to all applicable stationary source rules for the applicable air quality management district.

Based upon the analysis presented in Section 4.3.4, NO_x emissions associated with vehicular trips would cause exceedances over the SCAQMD threshold. Adherence to clean fuels programs will reduce some of the NO_x emissions associated with trucks. Additionally, future stationary source emissions from the facilities could further contribute to exceedences to the SCAQMD threshold. Implementation of BACT could help reduce level of emissions below a level of significance. The incremental GHG emissions from the future facilities would have a cumulative contribution to global climate change. Implementation of mitigation measures AQ-1 through AQ-21 would reduce the construction and operational emissions associated with future facilities, however, residual operational-related impacts that contribute to a cumulative impact could remain. Decreased landfilling would result in a reduction of landfill-related GHG emissions. Therefore, a potentially significant and unmitigated cumulative impact is identified pending a project-specific air quality analysis.

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4.4 BIOLOGICAL RESOURCES

This section analyzes the potential for the proposed project to impact biological resources. It includes a discussion of the applicable regulatory environment, existing conditions, a project-level and cumulative-level impact analysis, and applicable mitigation measures. The project study area for biological resources covers the City of Los Angeles (City) and the area within 100 miles of the City. The Solid Waste Integrated Resources Plan (SWIRP) emphasizes local processing and handling of discarded materials generated within the City, including locating needed facilities within the City limits. However, it may not be feasible for all facility types to be built within the City, either due to lack of available space or potential land use conflicts. Therefore, as stated in Chapter 2, Section 2.2 of this Final Program Environmental Impact Report (Final PEIR), it is assumed that the facilities would be located within a 100-mile study area of the City. There are approximately 16.6 million acres in the overall project study area.

Although the general impact footprint size for potential new facilities has been estimated, no specific site locations have been proposed for such future development; therefore, biological resources that could be impacted as a result of project implementation cannot be evaluated in advance. Each new facility would be required to undergo a separate project-level analysis of impacts to biological resources when sites are identified.

4.4.1 Environmental Setting

The SWIRP study area includes the City and the area within 100 miles of the City. The area thus encompasses all or part of nine California counties (Kern, Los Angeles, Orange, Riverside, San Bernardino, San Diego, San Luis Obispo, Santa Barbara, and Ventura) and includes a diverse range of environmental regions. The Los Angeles Basin itself is bordered by the Santa Monica Mountains to the northwest, the San Gabriel Mountains to the north/northeast, and the Santa Anna Mountains to the south/southeast.

This section describes the regulatory setting and existing conditions for biological resources.

4.4.1.1 Regulatory Setting

Biological resources within the project study area are protected by federal, state, regional, and local requirements. This section lists and briefly describes the relevant plans, policies, and regulations that govern biological resources within the overall project study area.

Federal

Endangered Species Act (16 United States Code §§1531 et seq.)

The Federal Endangered Species Act of 1973 (FESA) protects plants and animals that the government has listed as "Endangered" or "Threatened." A federally listed species is protected from unauthorized "take" pursuant to Section 9 of the FESA. "Take," as defined by the FESA, means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or to attempt to engage in any such conduct. All persons are presently prohibited from taking a federally listed species unless and until: (1) the appropriate Section 10(a) Permit has been issued by the U.S. Fish and Wildlife Service (USFWS); or (2) an Incidental Take Statement is obtained as a result of formal consultation between a federal agency and the USFWS pursuant to Section 7 of the FESA and the implementing regulations that pertain to it (50 *Code of Federal*

Regulations [CFR] §402). "Person" is defined in the FESA as an individual, corporation, partnership, trust, association, or any private entity; any officer, employee, agent, department, or instrument of the federal government; any State, municipality, or political subdivision of the State; or any other entity subject to the jurisdiction of the United States. The City is a "person" for the purposes of the FESA.

Section 401 and 404 of the Clean Water Act of 1972 (33 United States Code §§1251 et seq.)

Section 404 of the Clean Water Act (CWA) regulates the discharge of dredge and fill material into "Waters of the U.S.," including wetlands. Dredge and fill activities are typically associated with development projects, water-resource-related projects, infrastructure development and wetland conversion to farming, forestry, and urban development. The U.S. Army Corps of Engineers (USACE) is the designated regulatory agency responsible for administering the Section 404 Permit program and for making jurisdictional determinations.

Under Section 401 of the CWA, an activity requiring a USACE Section 404 Permit must obtain a State Water Quality Certification (or waiver thereof) to ensure that the activity will not violate established State water quality standards. The State Water Resources Control Board (SWRCB), in conjunction with the nine California Regional Water Quality Control Boards (RWQCBs), is responsible for administering the Section 401 water quality certification program.

Under Section 401 of the CWA, an activity involving discharge into a water body must obtain a federal permit and a State Water Quality Certification to ensure that the activity will not violate established water quality standards. The U.S. Environmental Protection Agency (USEPA) is the federal regulatory agency responsible for implementing the CWA. However, it is the SWRCB in conjunction with the nine RWQCBs who essentially have been delegated the responsibility for administering the Section 401 water quality certification program.

Migratory Bird Treaty Act (16 United States Code §§703-712)

Migratory bird species are protected by an international treaty under the Migratory Bird Treaty Act (MBTA) of 1918 (as amended 1936, 1960, 1968, 1969, 1974, 1978, 1986, and 1989). The MBTA makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed in 50 CFR Part 10, including feathers or other parts, nests, eggs, or products, except as allowed by implementing regulations (50 CFR Part 21).

State

California Endangered Species Act (14 CCR 1783, et seq.)

Pursuant to the California Endangered Species Act (CESA) and Section 2081 of the *California* Fish and Game Code, an Incidental Take Permit from the California Department of Fish and Game (CDFG) is required for projects that could result in the take of a State-listed Threatened or Endangered species. Under the CESA, "take" is defined as an activity that would directly or indirectly kill an individual of a species, but the definition does not include "harm" or "harass," as the federal act does. As a result, the threshold for a take under the CESA is higher than that under the FESA. A CDFG-authorized Incidental Take Permit under Section 2081(b) is required when a project could result in the take of a State-listed Threatened or Endangered Species. The application for an Incidental Take Permit under Section 2081(b) has a number of requirements, including the preparation of a conservation plan, generally referred to as a Habitat Conservation Plan.

California Fish and Game Code - Section 1802

State law confers upon the CDFG the trustee responsibility and authority for the public trust resource of wildlife in California. The CDFG may play various roles under the California Environmental Quality Act (CEQA) process. By State law, the CDFG has jurisdiction over the conservation, protection, and management of the wildlife, native plants, and habitat necessary to maintain biologically sustainable populations. The CDFG shall consult with lead and responsible agencies and shall provide the requisite biological expertise to review and comment upon environmental documents and impacts arising from project activities.

As a trustee agency, the CDFG has jurisdiction over certain resources held in trust for the people of California. Trustee agencies are generally required to be notified of CEQA documents relevant to their jurisdiction, whether or not these agencies have actual permitting authority or approval power over aspects of the underlying project (14 California Code of Regulations [CCR] §15386). The CDFG, as a trustee agency, must be notified of CEQA documents regarding projects involving fish and wildlife of the State, as well as Rare and Endangered native plants, wildlife areas, and ecological reserves. Although as a trustee agency, the CDFG cannot approve or disapprove a project, lead and responsible agencies are required to consult with them. The CDFG, as the trustee agency for fish and wildlife resources, shall provide the requisite biological expertise to review and comment upon environmental documents and impacts arising from project activities and shall make recommendations regarding those resources held in trust for the people of California (California Fish and Game Code §1802).

California Fish and Game Code – Sections 1600-1616

All diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake in California that supports wildlife resources and/or riparian vegetation are subject to CDFG regulations, pursuant to Section 1600 through Section 1603 of the California Fish and Game Code. Under Section 1602, it is unlawful for any person to substantially divert or obstruct the natural flow or substantially change the bed, channel or bank of any river, stream, or lake designated by the CDFG as waters within their jurisdiction, nor can a person use any material from streambeds without first notifying the CDFG of such activity. For a project that may affect stream channels and/or riparian vegetation regulated under Sections 1600 through 1603, CDFG authorization is required in the form of a Streambed Alteration Agreement.

California Fish and Game Code – Sections 3503 and 3513

These sections state that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto. Section 3503.5 explicitly provides protection for all birds-of-prey, including their eggs and nests. Section 3513 makes it unlawful to take or possess any migratory non-game bird as designated in the MBTA.

California Porter-Cologne Water Quality Control Act

Pursuant to the California Porter-Cologne Water Quality Control Act, the SWRCB and the nine RWQCBs may require permits (known as "waste discharge requirements" or WDRs) for the fill or alteration of "Waters of the State." The term "Waters of the State" is defined as "any surface water or groundwater, including saline waters, within the boundaries of the state" (*California Water Code* §13050[e]). The State and Regional Boards have interpreted their authority to require WDRs to extend to any proposal to fill or alter "Waters of the State", even if those same waters are not under

USACE jurisdiction. Pursuant to this authority, the SWRCB and RWQCBs may require the submission of a report of waste discharge under Section 13260 of the California Water Code, which is treated as an application for WDRs.

Oak Woodland Conservation Act (2001) and California Public Resources Code Section 21083.4

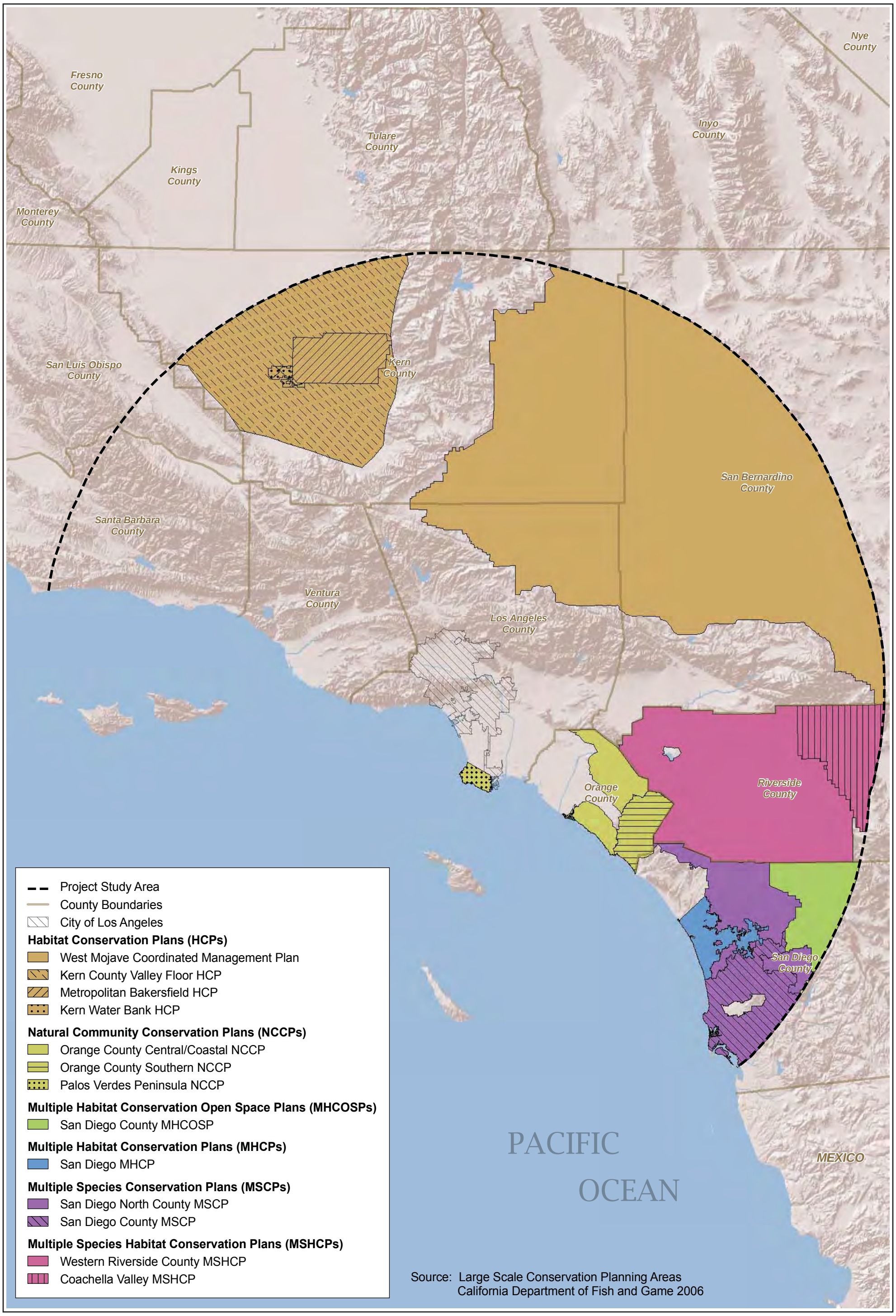
The Oak Woodland Conservation Act (California Fish and Game Code §§1360 et seq.), passed by the California Legislature in 2001, established an Oak Woodland Conservation Fund administered by the Wildlife Conservation Board (WCB) to help and encourage local governments, park and open space districts, resource conservation districts, nonprofit organizations, and private property owners to protect and enhance oak woodlands. "It offers landowners, conservation organizations, and cities and counties an opportunity to obtain funding for projects designed to conserve and restore California's oak woodlands. It authorizes the WCB to purchase oak woodland conservation easements and provide grants for land improvements and oak restoration efforts" (McCreary 2004). The Act defines oak woodlands as "an oak stand with a greater than 10 percent canopy cover or that may have historically supported greater than 10 percent canopy cover" (California Fish and Game Code §1361[h]).

Section 21083.4 of the California Public Resources Code (PRC) (Senate Bill [SB] 1334), which references the Oak Woodland Conservation Act, provides an additional layer of protection for oak woodlands. Section 21083.4 requires that Counties determine if a project may result in a conversion of oak woodlands that will have a significant impact on the environment. If it is determined that it would, the County must require one or more of the following to mitigate the significant effect of the conversion of oak woodlands:

1. *Conserve oak woodlands, through the use of conservation easements;*
    a. *Plant an appropriate number of trees, including maintaining plantings and replacing dead or diseased trees,*
    b. *The requirement to maintain trees pursuant to this paragraph terminates seven years after trees are planted,*
    c. *Mitigation pursuant to this paragraph shall not fulfill more than one-half of the mitigation requirements for the project,*
    d. *The requirements imposed pursuant to this paragraph also may be used to restore former oak woodlands;*
2. *Contribute funds to the Oak Woodlands Conservation Fund … A project applicant that contributes funds under this paragraph shall not receive a grant from the Oak Woodlands Conservation Fund as part of the mitigation for the project; and*
3. *Other mitigation measures developed by the county.*

Regional

The CDFG's Natural Community Conservation Planning (NCCP) program is a cooperative effort to protect habitats and species. The program began in 1991 with the objective to conserve natural communities at the ecosystem level while accommodating compatible land uses. There are multiple plans that have been implemented or are still in the planning stages within the project study area (CDFG, 2011). Each of these plans is discussed below and presented in Figure 4.4-1.



Source: Large Scale Conservation Planning Areas
California Department of Fish and Game 2006

Regional Conservation

FIGURE 4.4-1

The **West Mojave Plan** is in the planning stage. The plan area covers 9,357,929 acres in Inyo, Kern, Los Angeles, and San Bernardino Counties. It includes 28 participating agencies and jurisdictions including the USFWS, the Bureau of Land Management (BLM), the CDFG, the California Department of Transportation (Caltrans), four counties, 11 cities, the Indian Wells Valley Water District, and five military installations. This plan would cover over 100 species.

The **Kern County Valley Floor Habitat Conservation Plan** (VFHCP) is in the planning stage. It has a planning area of 1,990,400 acres in the San Joaquin Valley, with 520,167 acres proposed for a reserve system. There are 25 species proposed to be covered by the VFHCP. The draft plan was prepared in 2006 and would include the USFWS; the CDFG; the California Energy Commission; the BLM; the California Division of Oil, Gas, and Geothermal Resources; and the County of Kern.

The **Kern Water Bank Authority Habitat Conservation Plan/Natural Community Conservation Plan (**HCP/NCCP) has been implemented. It has a plan area of 19,900 acres. Of this, 960 acres are preserved and 9,389 acres are managed. There are 161 Covered Species in this HCP/NCCP. The Implementing Agreement (IA) was signed in 1997 by the USFWS, the CDFG, and the Kern Water Bank Authority, with a term of 75 years.

The **Metropolitan Bakersfield Habitat Conservation Plan** (MBHCP) has been implemented. It has a plan area of 261,120 acres, with 52,480 acres in a reserve system. There are 13 Covered Species in the MBHCP. The MBHCP Permit was issued in August 1994, with a term of 20 years. As such, it will expire in 2014.

The **Tehachapi Upland Multiple Species Habitat Conservation Plan** (MSHCP) is in the planning stages. The plan area covers 141,886 acres, with 93,522 acres proposed for a reserve system. The plan would cover 27 species. A Draft Implementing Agreement (IA) was prepared in 2008 between the USFWS and the Tejon Ranch Corporation.

The **Rancho Palos Verdes NCCP** is in the planning stages. It has a plan area of 8,661 acres in Los Angeles County, with 1,428 acres proposed for a reserve system. The plan would cover 13 species. Plan documents and a draft IA were completed in 2004 and include the USFWS, the CDFG, the City of Rancho Palos Verdes, and the Palos Verdes Peninsula Land Conservancy.

The **Orange County Central/Coastal NCCP/HCP** has been implemented. It has multiple participating agencies and jurisdictions including, but not limited to, the USFWS, CDFG, County of Orange, 16 cities within the County, Transportation Corridor Agencies, and water districts. The 208,000-acre plan area includes a 37,378-acre reserve system. There are 44 species covered by this NCCP/HCP. The IA was signed in 1996 and the NCCP Permit was issued in July 1996, with a term of 75 years.

The **Western Riverside County MSHCP** has been implemented. It has multiple participating agencies and jurisdictions including, but not limited to, the USFWS, the CDFG, Caltrans, the County of Riverside, and 14 cities within the County. The 1.2- million-acre plan area includes a 500,000-acre reserve system. There are 146 covered species. The IA was signed in 2003/2004 and the NCCP Permit was issued in September 2004, with a term of 75 years.

The **Coachella Valley MSHCP** has been implemented. It has multiple participating agencies and jurisdictions including, but not limited to, the USFWS, the CDFG, the Coachella Valley Association of Governments, the County of Riverside, and 8 cities within the County. The 1,100,000-acre plan area

includes a 745,900-acre reserve system. There are 27 species covered by the MSHCP. The IA was signed in 2007 and the NCCP Permit was issued in September 2008, with a term of 75 years.

The **San Diego Multiple Habitat Conservation Program** is an implemented subregional plan for the northwestern portion of San Diego County. It has multiple participating agencies and jurisdictions including the USFWS, the CDFG, the San Diego Association of Governments, and seven cities within the County. It encompasses 111,908 acres with 19,000 acres proposed for a reserve system. There are 61 species covered by this plan. The IA was signed in 2003. NCCP permits will be issued to participating cities upon completion and CDFG approval of their individual subarea plans. The NCCP Permits would have a term of 50 years.

The **San Diego Multiple Species Conservation Program** (MSCP) is divided into three areas: (1) the San Diego MSCP (Incorporated Subarea Plans) and San Diego MSCP South County Subarea; (2) the San Diego East County MSCP; and (3) the San Diego North County MSCP. The first has a planning area of 582,000 acres and includes a 172,000-acre reserve system. There are 81 species covered by this plan. The IA with the City of San Diego was signed in 1997 and the IA with the County of San Diego was signed in 1998. The East County MSCP is in the planning stages and has a planning area of 1.6 million acres. A total of 151 species are proposed to be covered by this plan. The preliminary draft plan documents were prepared in 2009. The North County MSCP is in the planning stages and has a planning area of 311,800 acres. Overall, 63 species are proposed to be covered by this plan. The plan documents and environmental review documents have not yet been prepared for this MSCP.

Local

City of Los Angeles

The Conservation Element of the City's General Plan (City of Los Angeles, 2001) includes policies related to biological resources, which are summarized as follows:

- *Endangered Species Policy 1:* Continue to require evaluation, avoidance and minimization of potential significant impacts, as well as mitigation of unavoidable significant impact to sensitive animal and plant species and their habitats and habitat corridors relative to land development activities.
- *Endangered Species Policy 2:* Continue to administer city-owned and managed properties so as to protect and/or enhance the survival of sensitive plant and animal species to the greatest practical extent
- *Endangered Species Policy 3:* Continue to support legislation that encourages and facilitates protection of endangered, threatened, sensitive and rare species and their habitats and habitat corridors.
- *Habitat Policy 1:* Development permits environmental review and other applicable processes that identify and/or require evaluation, avoidance, minimization and mitigation of potential significant impacts on natural habitat, corridors and linkages.
- *Habitat Policy 2:* Continue to protect, restore and/or enhance habitat areas, linkages and corridor segments, to the greatest extent practical, within City owned or managed sites.
- *Habitat Policy 3:* Continue to work cooperatively with other agencies and entities in protecting local habitats and endangered, threatened, sensitive and rare species.

- *Habitat Policy 4:* Continue to support legislation that encourages and facilitates protection of local native plan and animal habitats.

Other Jurisdictions

The project study area extends 100 miles from the City boundary, including land in nine counties (Kern, Los Angeles, Orange, Riverside, San Bernardino, San Diego, San Luis Obispo, Santa Barbara, and Ventura) and 190 local jurisdictions. Biological resources within each jurisdiction are subject to the policies and regulations set by the applicable land use, conservation, and open space elements of each jurisdiction's General Plan. Such plans commonly include tree protection ordinances and other specific policies pertaining to specific biological resources.

4.4.1.2 Existing Conditions

Many areas in Southern California have been converted to agricultural and urban land uses; overall, approximately 9 percent of the project study area is agricultural and about 15 percent is urban according to land cover data provided by the California Department of Forestry and Fire Protection (CAL FIRE, 2002). Additionally, over 22 million people currently inhabit the nine counties that are fully or partially contained within the project study area (U.S. Census Bureau, 2009).

Southern California has a Mediterranean climate characterized by mild, wet winters and hot, dry summers, and a wide variety of soil conditions and topographic features (Rundel and Gustafson, 2005). Figure 4.4-2 illustrates regional topography in and near the project study area. These factors and the influence of regional coastlines and mountains contribute to its extremely high level of biological diversity, and multiple habitat types are therefore present throughout the project study area. Temperature variations generally follow topographic contours, and average annual precipitation tends to increase with altitude, varying from only a few inches in the desert to perhaps 50 inches in the wettest parts of the mountains (Munz, 1974). Within Southern California, the cismontane subregion is considered the area between the sea and the mountains; the montane subregion is at higher elevations in the Transverse and Peninsular Ranges; and the transmontane/desert subregion includes the Mojave and Colorado deserts (Munz, 1974). Elevations in the project study area range from sea level up to approximately 11,502 feet above mean sea level at Mount San Gorgonio in the San Bernardino Mountains (Munz, 1974).

The principal vegetation types present in the project study area, beginning at the coast and moving inland, include coastal strand, coastal salt marsh, freshwater marsh, coastal sage scrub, chaparral, valley grassland, southern oak woodland, montane coniferous forest, bristle-cone pine forest, sagebrush scrub, shadscale scrub, pinyon-juniper woodland, Joshua tree woodland, creosote bush scrub, and alkali sink (Munz, 1974). Other notable vegetation types in the region include riparian woodland, mountain meadow, desert sand dunes, and intermittent washes (Jaeger and Smith, 1966). Figure 4.4-3 shows large-scale land cover data for the project study area provided by CAL FIRE, which includes the following land cover subclasses: agriculture, barren/other, conifer forest, conifer woodland, desert shrub, desert woodland, hardwood forest, hardwood woodland, herbaceous, shrub, urban, water, and wetland.

The project study area covers a variety of habitat types, as described above. Some wildlife species are expected to occur in certain habitat types while others are adapted to a variety of habitats and can be found in most areas.

Coastal salt marsh occurs in estuaries, bodies of water that form at the mouths of rivers where tidal water and fresh water meet and mix. The saline, nutrient-rich ocean waters carried inland by the tides meet the

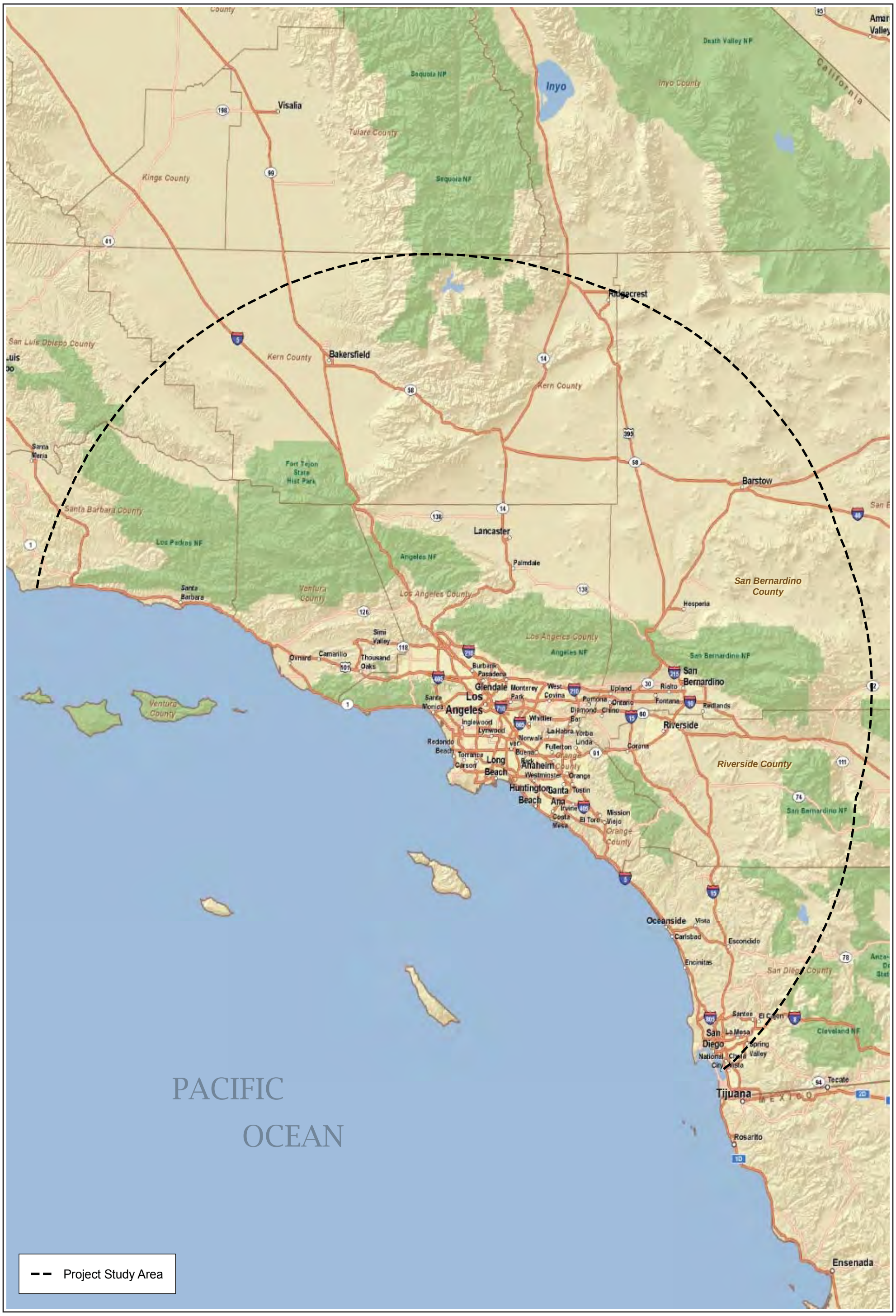
sediment-laden fresh water flowing from upland areas and nutrients settle in the estuary, creating a very productive habitat. Most of the organisms living in estuaries are infauna. Infauna are aquatic animals that live in the substrate of a body of water, especially in a soft/muddy bottom, such asburrowing worms, clams, and crustaceans. These animals are primarily filter feeders that depend on the tidal influx of plankton or nutrients in the mud. Many fish and larger invertebrates that live offshore as adults spend much of their larval or juvenile life in the food-rich estuarine environment, where they are protected from predators that live in the more open coastal water. Given the rich diversity of invertebrates and fish, many aquatic birds such as loons, grebes, egrets, herons, geese, ducks, rails, plovers, sandpipers, and gulls seek refuge in coastal salt marsh habitat and forage year-round or seasonally in the mud flats and tidal waters.

Freshwater marsh occurs in the larger watersheds within the study area. This habitat type is also nutrient-rich and teeming with life but to a lesser extent than estuaries given the lack of tidal marine influence. Amphibians and reptiles that cannot withstand the high salinities of estuarine environments, including salamanders, toads, chorus frogs, true frogs, pond turtles, and garter snakes are commonly found in freshwater marshes and riparian habitats. Many of the same aquatic bird species found in estuaries will occur in freshwater marsh in lower numbers; however, a greater diversity of passerine bird species can be encountered in the riparian woodlands surrounding freshwater marshes and on the banks of streams and rivers. Common mammal species in riparian areas include bats, raccoons, mice, and woodrats.

Montane meadows occur in openings of montane coniferous forest at higher elevations (above 3,200 feet). Meadows are characterized by fine, richly organic topsoil, and a shallow water table which encourages the growth of low, herbaceous plants. Montane habitats support a high diversity of raptors, owls, and passerine bird species such as woodpecker, wood-warbler, and sparrow. Mammal diversity is also high in montane habitats which, within the study area, are mostly within the boundaries of national forests, thereby preserving extensive contiguous areas required by larger mammals such as deer, mountain lions, and bears.

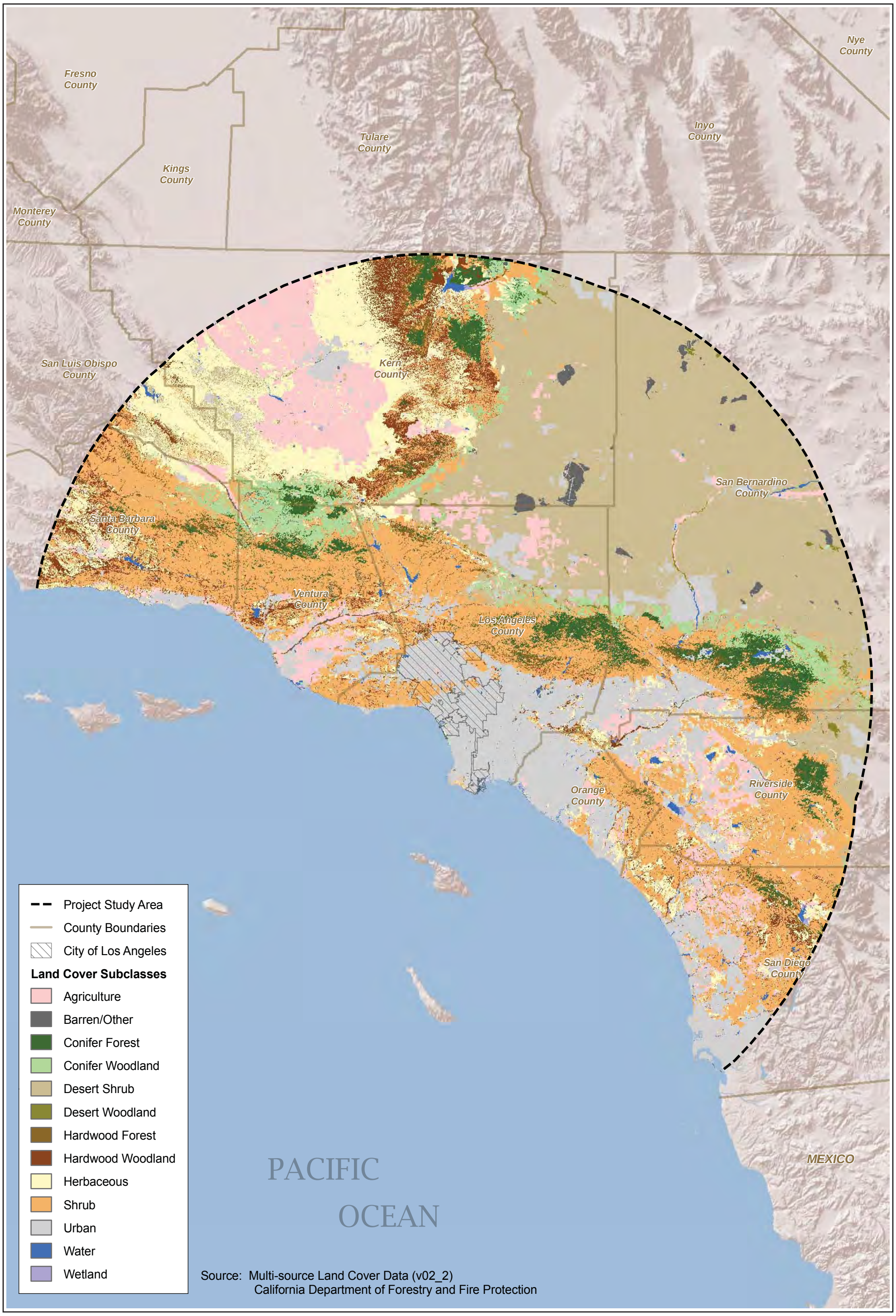
Scrub communities including coastal sage scrub, sagebrush scrub, and shadscale scrub are characterized by low-growing shrubs. Coastal sage scrub occurs in the coastal foothills below 3,000 feet above mean sea level (msl), whereas sagebrush scrub and shadscale scrub occur in higher-elevation areas, most commonly in the high desert foothills of the Mojave. Pinyon juniper woodland and chaparral are higher growing vegetation types than scrub communities and are also typically found at elevations above 3,000 feet above msl. Wildlife that occur in these habitat types have adapted to the arid climate in which these vegetation types occur. Many reptiles are present in scrub, pinyon juniper woodland, and chaparral habitats, including species of spiny lizards, skinks, horned lizards, alligator lizards, whiptails, kingsnakes, whipsnakes, and rattlesnakes. Birds typically occurring include passerine species such as shrikes, jays, bushtits, verdins, wrens, gnatcatchers, thrashers, sparrows, and finches. Many mammal species also occur, including gophers, shrews, ground squirrels, woodrats, harvest mice, pocket mice, rabbits, coyotes, foxes, and badgers.

Joshua tree woodland, creosote bush scrub, and alkali sink are desert vegetation types characterized by widely spaced Joshua trees, creosote bush, or saltbush, respectively. Joshua tree woodland occurs at higher elevations from 2,500 to 6,000 feet above msl, while creosote bush scrub and alkali sink generally do not occur above 3,500 feet above msl. Wildlife that occur in these habitat types have adapted to the xeric climate in which these vegetation types occur. Reptiles present in Joshua tree woodland, creosote bush scrub, and alkali sink include species of tortoise, spiny lizard, horned lizard, whiptail, and rattlesnake. Birds typically occurring include passerine species such as shrikes, jays, verdins, wrens, thrashers, sparrows, and finches. Mammal species also occurring include gophers, ground squirrels, harvest mice, pocket mice, rabbits, coyotes, and foxes.



Regional Topography

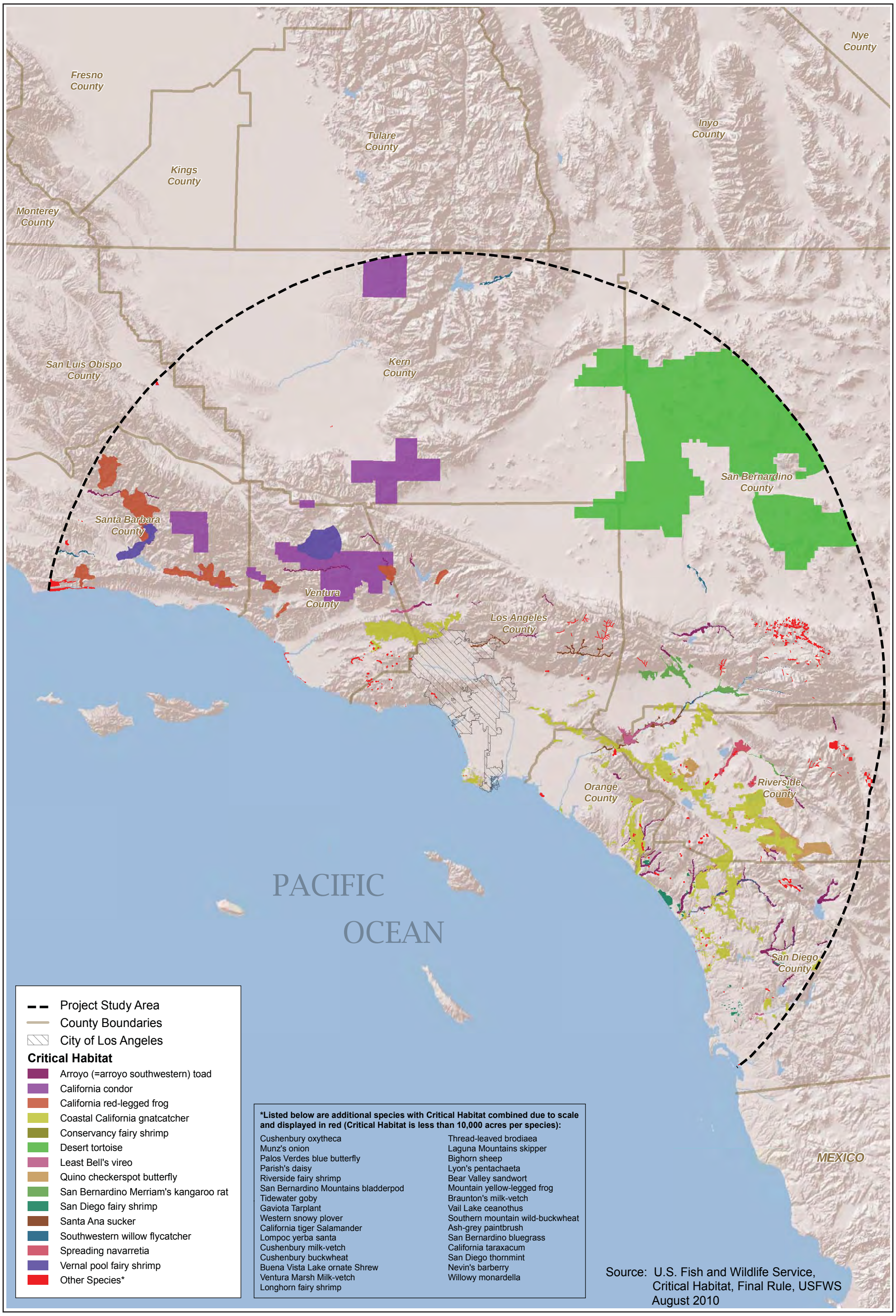
FIGURE 4.4-2



Source: Multi-source Land Cover Data (v02_2)
California Department of Forestry and Fire Protection

Regional Vegetation

FIGURE 4.4-3



Critical Habitat Areas FIGURE 4.4-4

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According to the Conservation Element of the City's General Plan, "within the City more than 180 plant and animal species are listed by the Environmental Affairs Department[1] for the City as a whole… the City has a primary role in protecting endangered and other at risk plant and animal species" (City of Los Angeles, 2001).

The City is contained within 20 U.S. Geological Survey (USGS) 7.5-minute quadrangle maps: Condor Peak, Sunland, San Fernando, Oat Mountain, Simi Valley East (Santa Susana), Pasadena, Burbank, Van Nuys, Canoga Park, Calabasas, Los Angeles, Hollywood, Beverly Hills, Topanga, South Gate, Inglewood, Venice, Long Beach, Torrance, and San Pedro. The CDFG's *California Natural Diversity Database* (CDFG, 2010) lists the occurrences of 33 federal and/or state-listed plant and wildlife species for these quadrangles, shown in Table 4.4-1.

Given the great biodiversity native to Southern California, many federal and/or state-listed Endangered, Threatened, Rare, and Candidate plant and wildlife species have the potential to occur within the overall project study area; these species are listed in Appendix C, organized by County (CDFG, 2010). Figure 4.4-4 identifies Critical Habitat Areas for certain species designated by the USFWS in and near the project study area. Wetlands and drainages under USACE and/or CDFG jurisdiction and various special status vegetation types also occur throughout the project study area.

Wildlife corridors link together areas of suitable wildlife habitat that are otherwise separated by rugged terrain, changes in vegetation, or human disturbance. The fragmentation of open space areas by urbanization creates isolated islands of wildlife habitat. In the absence of habitat linkages that allow movement to adjoining open space areas, various studies have concluded that some wildlife species, especially the larger and more mobile mammals, will not likely persist over time in fragmented or isolated habitat areas because they prohibit the infusion of new individuals and genetic information (MacArthur, and Wilson, 1967; Soule, 1987; Harris and Gallagher, 1989; Bennett, 1990). Corridors mitigate the effects of this fragmentation by: (1) allowing animals to move between remaining habitats, thereby permitting depleted populations to be replenished and promoting genetic exchange; (2) providing escape routes from fire, predators, and human disturbances, thus reducing the risk that catastrophic events, such as fire or disease, that will result in population or local species extinction; and (3) serving as travel routes for individual animals as they move in their home ranges in search of food, water, mates, and other necessary resources (Noss, 1983; Farhig and Merriam, 1985; Simberloff and Cox, 1987; Harris and Gallagher, 1989).

In a large open space area where there are few or no man-made or naturally occurring physical constraints to wildlife movement, wildlife corridors (as defined above) may not yet exist. Given an open space area that is both large enough to maintain viable populations of species and to provide a variety of travel routes (e.g., canyons, ridgelines, trails, riverbeds, and others), wildlife will use these "local" routes while searching for food, water, shelter, and mates and will not need to cross into other large open space areas.

[1] The Environmental Affairs Department (EAD) no longer exists within the City. Activities under the purview of EAD are now administered by the Department of City Planning.

Table 4.4-1. Listed Species with Documented Occurrences in or Adjacent to the City of Los Angeles

Species	Status		General Habitat
	USFWS	CDFG	
Plants			
Arenaria paludicola marsh sandwort	FE	SE	Occurs in marshes and swamps.
Astragalus brauntonii Braunton's milk-vetch	FE	—	Occurs in closed-cone coniferous forest, chaparral, coastal scrub, and valley and foothill grassland.
Astragalus pycnostachyus var. *lanosissimus* Ventura Marsh milk-vetch	FE	SE	Occurs in coastal salt marsh.
Astragalus tener var. *titi* coastal dunes milk-vetch	FE	SE	Occurs in coastal bluff scrub and coastal dunes.
Berberis nevinii Nevin's barberry	FE	SE	Occurs in chaparral, cismontane woodland, coastal scrub, and riparian scrub.
Castilleja gleasonii Mt. Gleason paintbrush	—	SR	Occurs in lower montane coniferous forest.
Chorizanthe parryi var. *fernandina* San Fernando Valley spineflower	FC	SE	Occurs in coastal scrub.
Cordylanthus maritimus ssp. *maritimus* salt marsh bird's-beak	FE	SE	Occurs in coastal salt marsh and coastal dunes.
Deinandra minthornii Santa Susana tarplant	—	SR	Occurs in chaparral and coastal scrub.
Dithyrea maritima beach spectaclepod	—	ST	Occurs in coastal dunes and coastal scrub. Formerly more widespread in coastal habitats in Southern California.
Dodecahema leptoceras slender-horned spineflower	FE	SE	Occurs in chaparral and coastal scrub (alluvial fan sage scrub).
Dudleya cymosa ssp. *ovatifolia* Santa Monica dudleya	FT	—	Occurs in chaparral and coastal scrub.
Nasturtium gambelii Gambel's water cress	FE	ST	Occurs in marshes and swamps.
Navarretia fossalis Moran's nosegay	FT	—	Occurs in vernal pools, chenopod scrub, marshes and swamps, and playas.
Orcuttia californica California Orcutt grass	FE	SE	Occurs in vernal pools.
Pentachaeta lyonii Lyon's pentachaeta	FE	SE	Occurs in chaparral and valley and foothill grassland.
Invertebrates			
Euphilotes battoides allyni El Segundo blue butterfly	FE	—	Restricted to remnant coastal dune habitat in Southern California.
Glaucopsyche lygdamus palosverdesensis Palos Verdes blue butterfly	FE	—	Restricted to the cool, fog-shrouded, seaward side of the Palos Verdes Hills in Los Angeles County.

Legend:

Federal (USFWS)		State (CDFG)	
FE	Endangered	SE	Endangered
FT	Threatened	ST	Threatened
FC	Candidate	SR	Rare

Table 4.4-1. Listed Species with Documented Occurrences in or Adjacent to the City of Los Angeles (Continued)

Species	Status		General Habitat
	USFWS	CDFG	
Fish			
Catostomus santaanae Santa Ana sucker	FT	—	Endemic to Los Angeles Basin southern coastal streams.
Gila bicolor mohavensis Mohave tui chub	FE	SE	Endemic to the Mojave River Basin, adapted to alkaline, mineralized waters.
Oncorhynchus mykiss irideus southern steelhead	FE	—	Federal listing refers to populations from Santa Maria River south to southern extent of range (San Mateo Creek in San Diego County).
Amphibians			
Anaxyrus californicus arroyo toad	FE	—	Occurs in semi-arid regions near washes or intermittent streams, such as valley and foothill grasslands, desert riparian, and desert wash.
Rana draytonii California red-legged frog	FT	—	Occurs in lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation.
Rana muscosa Sierra Madre yellow-legged frog	FE	—	Federal listing refers to populations in the San Gabriel, San Jacinto, and San Bernardino Mountains only.
Birds			
Charadrius alexandrinus nivosus western snowy plover	FT	—	Occurs in sandy beaches, salt pond levees, and shores of large alkali lakes.
Coccyzus americanus occidentalis western yellow-billed cuckoo	FC	SE	Nests in riparian forests, along the broad, lower flood-bottoms of larger river systems.
Empidonax traillii extimus southwestern willow flycatcher	FE	SE	Occurs in riparian woodlands in Southern California.
Laterallus jamaicensis coturniculus California black rail	—	ST	Occurs in freshwater marshes, wet meadows and shallow margins of saltwater marshes bordering larger bays.
Passerculus sandwichensis beldingi Belding's savannah sparrow	—	SE	Occurs in coastal salt marshes, from Santa Barbara south through San Diego County.
Polioptila californica californica coastal California gnatcatcher	FT	—	Obligate, permanent resident of coastal sage scrub below 2,500 ft above msl in Southern California.
Sternula antillarum browni California least tern	FE	SE	Nests along the coast from San Francisco Bay south to northern Baja California.
Vireo bellii pusillus least Bell's vireo	FE	SE	Occurs in low riparian habitat in vicinity of water or in dry river bottoms below 2,000 ft above msl as a summer resident of Southern California.
Mammals			
Perognathus longimembris pacificus Pacific pocket mouse	FE	—	Inhabits the narrow coastal plains from the Mexican border north to El Segundo, Los Angeles County.

Source: CDFG, 2010.
Note: ft: feet; msl: mean sea level
Legend:

Federal (USFWS)		State (CDFG)	
FE	Endangered	SE	Endangered
FT	Threatened	ST	Threatened
FC	Candidate	SR	Rare

Based on their size, location, vegetative composition and availability of food, some of these movement areas (e.g., large drainages and canyons) are used for longer lengths of time and serve as source areas for food, water, and cover, particularly for small- and medium-sized animals. This is especially true if the travel route is within a larger open space area. However, once open space areas become constrained and/or fragmented as a result of urban development or construction of physical obstacles (e.g., roads and highways), the remaining landscape features or travel routes that connect the larger open space areas become corridors as long as they provide adequate space, cover, food, and water and do not contain obstacles or distractions (e.g., man-made noise, lighting) that would generally hinder wildlife movement.

Local

City of Los Angeles

The following information comes from the *L.A. CEQA Thresholds Guide*, Section C, Biological Resources (City of Los Angeles, 2006).

There are a wide variety of sensitive biological resources including both plant and animal species that reside in or use resources within the City. The City encompasses a variety of open space and natural areas that serve as habitat for sensitive species. Much of this natural open space is found in or is adjacent to the foothill regions of the San Gabriel, Santa Susana, Santa Monica and Verdugo Mountains, the Simi Hills, and along the coastline between Malibu and the Palos Verdes Peninsula. Many of the outlying areas are contiguous with larger natural areas, and may be part of significant wildlife habitats or movement corridors. In contrast, the central and valley portions of the City contain fewer natural areas.

Various-sized remnants of native habitats, such as hillside and canyon areas, wetland habitats, dunes, beaches and marine habitats exist in many areas of the City. Although these areas may have been modified from their natural conditions, they are still important habitats for wildlife. Habitat values are generally highest in areas of relatively large acreage adjacent to other similar habitat systems. Some sensitive biotic resources may persist even in urbanized settings, such as oak trees, rare plants, peregrine falcons, Monarch butterflies, and bats.

Significant Ecological Areas (SEAs) were established by the County of Los Angeles through its General Plan. The following discusses the open space resources and SEAs in each of the eleven Planning Subregions of the City, starting in the north and proceeding generally south.

Northwest Valley Planning Subregion

Chatsworth Reservoir SEA**.** The Chatsworth Reservoir is owned by the Los Angeles Department of Water and Power (DWP), and abuts the foot of the Simi Hills in the Western San Fernando Valley. A variety of habitats are present here, including grassland, oak woodland and savannah, freshwater marsh and open water, which offer important wintering and breeding grounds for songbirds and waterfowl. The Chatsworth Reservoir is one of five areas in the San Fernando Valley that is used regularly by wintering Canada geese. Many-stemmed dudleya is reported in rocky areas on the south side of the reservoir (City of Los Angeles, 2006).

Simi Hills and Simi Hills SEA, and Santa Susana Pass SEA. The Simi Hills are generally located north of the Ventura Freeway (US-101), south of the Simi Valley Freeway (SR-118), and west of the San Fernando Valley. As such, they lie largely outside of the City boundary, and are mostly within Ventura County. However, portions of its eastern flank bordering the western San Fernando Valley from the

vicinity of Castle Peak to Santa Susana Pass lie within the City. Wieslander (1934) mapped the vegetation of this region between 1927 and 1933. Wiekel (1983) has prepared a biological inventory and mapping for this area, although additional specific biological resource inventories of the Simi Hills within the City and County of Los Angeles are generally lacking. A survey over the areas of Dayton and Woolsey Canyons in the Simi Hills just east of the Chatsworth Reservoir is the best representative inventory available for the eastern Simi Hills. Habitats present include grassland, coastal scrub, chaparral, riparian and oak woodland, and limited areas of walnut woodland. The state-listed Rare Santa Susana tarplant is prevalent in the sandstone outcrops, and Humboldt lily occurs in the under story of riparian woodland in upper Dayton Canyon. The Simi Hills SEA is almost entirely within the unincorporated area of Los Angeles County, with only a small fraction extending into the City. The remaining portions of this SEA are located west of Chatsworth Reservoir and Valley Circle Boulevard, and north and south of Lakeside Park (a residential community). Santa Susana tarplant occurs adjacent to Valley Circle Boulevard in the northern area. The Simi Hills SEA contains representative examples of chaparral, coastal scrub, southern oak woodland and riparian woodland, and the area also serves as a wildlife corridor for movement between the Chatsworth Reservoir SEA and the large, undeveloped portions of the Simi Hills in Ventura County to the west) (City of Los Angeles, 2006).

The southern portion of the Santa Susana Pass SEA that is located south of the Simi Valley Freeway (SR-118) is actually located in the Simi Hills, within the City of Los Angeles (the remainder of the SEA north of the freeway is in the Santa Susana Mountains and outside the City boundary). The Santa Susana Pass SEA is an important wildlife movement zone between the Santa Susana Mountains and the Simi Hills, which is referred to as the "primary Simi Valley Freeway habitat linkage" by Edelman. Intact crossings for large mammals include the Rocky Peak Road freeway overpass (just outside City/County line). Habitats encompassed by the Santa Susana Pass SEA (within the City) include chaparral, coastal scrub, grassland, oak woodland, and riparian woodland. The SEA also contains concentrations of Santa Susana tarplant, which is associated with sandstone outcrops in chaparral and coastal scrub habitats (City of Los Angeles, 2006).

Discrepancies between the original boundaries recommended (England and Nelson, 1976) and adopted by the County of Los Angeles and the extent of open space habitat for plants and animals shown on Exhibits C-2 through C-5, are the result of "deletions" of areas from the SEA as they have become developed (City of Los Angeles, 2006).

Santa Susana Mountains and Santa Susana Mountains SEA. The Santa Susana Mountains form an open-space link between the San Gabriel Mountains (northeast) and the Simi Hills and Santa Monica Mountains (southwest). The range supports grassland, chaparral, oak woodland and savanna, riparian woodland, and big-cone spruce woodland (latter on the north slope only) (City of Los Angeles, 2006).

A small, eastern extension of the Santa Susana Mountains SEA is located within the City boundary, although much of the former SEA here is occupied by the Sunshine Canyon Sanitary Landfill. Habitats of the Santa Susana Mountains SEA include grassland, coastal sage scrub, chaparral, oak woodland and savannah, and riparian woodlands (England and Nelson, 1976). Porter Ranch is also included in this geographic region (City of Los Angeles, 2006).

Van Norman Reservoir and Vicinity. This large open space area in the northern San Fernando Valley receives water via aqueduct over the San Fernando Pass–the divide between the Santa Susana and San Gabriel Mountains. The size of the reservoir containing open water was substantially reduced following the Sylmar earthquake in 1971, when the lower dam was drained. As a result, portions of that area have recovered to form willow forest habitat. Upland portions of the reservoir area support grassland and

coastal scrub vegetation. The area is one of five, which are regularly used by wintering Canada geese. To the south and adjacent to the reservoir are agricultural lands, a cemetery, a parcel containing remnant grassland, coastal scrub and oak woodland, and several vacant lots. These form a cohesive unit, which offers resources for plants and animals as an adjunct to the reservoir site. Across the Golden State Freeway (I-5) from the Van Norman Reservoir (in the Northeast Valley Subregion) is a substantial area of grassland, coastal scrub, and small open water habitat, which adds to the effective size and resource value of the reservoir site(City of Los Angeles, 2006).

Pacoima Spreading Grounds. This area of storm water runoff collection located southwest of the junction of the Golden State Freeway (I-5) and the Simi Valley Freeway (SR 118) is divided approximately in half between the Northwest and Northeast Valley Planning Subregions. It supports marsh-like habitat when ponding occurs, and offers opportunities for migrating waterfowl and shorebirds (City of Los Angeles, 2006).

Northeast Valley Planning Subregion

San Gabriel Mountains. This subregion contains portions of the foothills of the San Gabriel Mountains bordering the San Fernando Valley and extending from the western end of the range eastward to Pacoima Canyon, Lopez Canyon, Little Tujunga Canyon and Big Tujunga Canyon. From there, the City includes the foothills of the range bordering on the San Gabriel Valley eastward to approximately Hines Canyon, and extending upward into the mountains to the vicinity of Mount Lukens. Biological resources of the San Gabriel Mountains are discussed generally, but specific biological accounts of areas within the City, with the exception of detailed vegetation maps prepared by Wieslander, are limited to project-related environmental impact reports and sensitive species records in the Natural Diversity Data Base. Habitats evident in the City boundary on aerial photographs include primarily coastal scrub and chaparral, and limited areas of oak and riparian woodlands, and grasslands (City of Los Angeles, 2006).

Verdugo Mountains and Verdugo Mountains SEA. The City includes the entire northwestern end of this mountain range bordering the San Fernando Valley and the San Gabriel Valley. This geographic location makes the Verdugo Mountains an important habitat linkage between the San Gabriel Mountains to the north, and the Santa Monica Mountains to the south (England and Nelson, 1976). Both general and specific accounts of biological resources therein are lacking or limited to project-related environmental impact reports or accounts of sensitive species, and the detailed vegetation maps of the area prepared by Wieslander in 1934. As shown on aerial photographs, habitats present in these mountains include grassland, coastal scrub, chaparral, riparian and oak woodlands. A substantial portion of the Verdugo Mountains SEA lies within the City, while the remainder is within the corporate boundaries of Burbank and Glendale (City of Los Angeles, 2006).

Tujunga Valley/Hansen Dam Park SEA. The Tujunga Valley occupies the floodplain of Big Tujunga Canyon. Hansen Dam is a flood control basin receiving stream discharge from Lopez, Kagel, Little Tujunga, and Big Tujunga Canyons. The floodplain behind Hansen Dam (Hansen Dam Park) supports one of the last examples of alluvial scrub vegetation in the freshwater marsh, willow forest and scrub. Alluvial scrub is habitat for the state-listed Endangered Nevin's barberry and the state- and federally-listed Endangered slender-horned spineflower, which has been found here (City of Los Angeles, 2006).

The park reportedly supports a south coast minnow/sucker stream which sustains native populations of arroyo chub and Santa Ana sucker. Swift et al. (1993) report that arroyo chub remains common in Big Tujunga, whereas Pacific speckled dace and Santa Ana sucker have become scarce and perhaps extirpated. Areas to the southwest (below the dam) are used as a spreading ground for groundwater

recharge, which has created several freshwater marsh areas used by marsh birds, migratory waterfowl, and shorebirds (City of Los Angeles, 2006).

Jessup Park. A small area of chaparral, coastal scrub and grassland habitats (as evident on aerial photographs) occurs just west of Hansen Dam Park (City of Los Angeles, 2006).

Tujunga Spreading Grounds SEA. This SEA is located in the Tujunga Wash downstream from Hansen Dam, at the juncture of the Golden State Freeway (I-5) and the Hollywood Freeway (SR-170). Although it contains little natural vegetation, it is an area of ponded water serving as an important nesting, feeding and resting ground for many migrating, resident and wintering bird species (City of Los Angeles, 2006).

Pacoima Spreading Grounds. This area of storm water runoff collection located southwest of the junction of the Golden State Freeway (I-5) and the Simi Valley Freeway (SR 118) is divided approximately in half between the Northwest and Northeast Valley Planning Subregions. It supports "marsh-like habitat" when ponding occurs, and offers opportunities for migrating waterfowl and shorebirds in the Van Norman Reservoir vicinity. Across the Golden State Freeway (I-5) from the Van Norman Reservoir (in the adjacent Northeast Valley subregion) is a substantial area of grassland, coastal scrub, and small open water habitat, which adds to the effective size and resource value of the reservoir site (City of Los Angeles, 2006).

Southwest Valley Planning Subregion

Santa Monica Mountains and Encino Reservoir SEA. The biological resources of the Santa Monica Mountains are considered in general. Wielander (1934) mapped the vegetation in detail between 1927 and 1933. Aside from project-related environmental impact reports and accounts of sensitive species, specific details are generally lacking. The subregion includes portions of the north slope of the range from the vicinity of Topanga Canyon Boulevard (south of US 101) eastward to the Sepulveda Pass (San Diego Freeway; I-405). As evidenced on aerial photographs, habitats in the area include mostly chaparral, but also oak and riparian woodland, and small amounts of grassland, coastal scrub and walnut woodland. A small portion of Topanga State Park is included in upper Caballero (Reseda) Canyon, with the bulk occurring in the West Los Angeles subregion (City of Los Angeles, 2006).

The Encino Reservoir SEA contains some of the best stand of inland chaparral, coastal scrub and streamside vegetation remaining on the inland slope of the Santa Monica Mountains. In addition, the reservoir itself is an open, fresh water habitat. Along with Chatsworth Reservoir, the Sepulveda Basin, Van Norman Reservoir, and Los Angeles Pierce College, the Encino Reservoir is an important wintering ground for Canada geese (City of Los Angeles, 2006).

Simi Hills and Simi Hills SEA. The Simi Hills are represented in this subregion by small areas at the western end of the San Fernando Valley, with the majority occurring in the Northwest Valley subregion. As discussed for that subregion, with the exception of an inventory and mapping by Weikel general and specific accounts of biological resources of the range are lacking. As evidenced by aerial photographs, the area within the City and subregion support grassland, chaparral, coastal scrub, oak and riparian woodland, and walnut woodland. Castle Peak5 is a prominent rocky peak that is a major roosting site for great horned and barn owls and probably a hibernaculum for one or more species of bats. None of the Simi Hills SEA occurs in the Southwest Valley subregion (City of Los Angeles, 2006).

Los Angeles Pierce College. The campus of the former Clarence W. Pierce School of Agriculture retains a substantial amount of agricultural open space that is attractive to wintering Canada geese. As such, it is

one of only five areas in the San Fernando Valley where Canada geese can forage. The recently-graded (fall 1993) Warner Ridge property adjacent to the west side of the Campus was also used by geese in the winter of 1994, since the area supported a dense growth of young grasses following the grading. In addition to the agricultural lands at Pierce College, the campus also contains an outdoor Nature Center with a pond and surrounding hillsides supporting grassland, and an arboretum. A number of sensitive or unusual bird species occur on the campus, especially in winter, and it is a popular location during the annual Christmas Bird Count conducted by the Audubon Society. The hilly portions of the campus represent an extension of the Chalk Hills discussed below (City of Los Angeles, 2006).

Chalk Hills and Related Areas. The Chalk Hills in Woodland Hills are a privately-owned, small island of grassland vegetation south of the Ventura Freeway (US 101) in the foothills of the Santa Monica Mountains. Close proximity to these mountains enables this area to support wildlife species including coyote, bobcat, western harvest mouse, and California quail. Barn owls, great horned owls, red-tailed hawks and American kestrel are resident in the trees of the surrounding neighborhood and forage in the grassland. The site is the only location of square stemmed buckwheat in the Santa Monica Mountains zone. Similar, geologically-related areas occur between the Chalk Hills and Pierce College, and to the west of Topanga Canyon Boulevard both to the north and south of the Ventura Freeway (US 101), and again on the western edge of the subregion at Boething's Treeland Nursery.

Sepulveda Flood Control Basin. The Los Angeles River and tributaries draining the western San Fernando Valley discharge into the Sepulveda Basin. A variety of open space land uses occur here including agriculture, wastewater treatment, outdoor recreation, and an outdoor nature center. The area is one of only five areas of the San Fernando Valley that is regularly used by wintering Canada geese. The area also includes grassland and open water habitats, as well as two lakes (one is concrete lined), and a segment of riparian woodland on the river. The basin is a popular location for the annual Christmas Bird Count conducted by the Audubon Society. A portion of the Sepulveda Basin has been restored to attract migratory waterfowl and other wildlife.

Southeast Valley Planning Subregion

No substantial areas of natural habitat for plants and animals are evident on aerial photographs covering this subregion. Although the Los Angeles River passes through this area, it is a vertical walled, concrete-lined segment of the stream.

Metro Center Planning Subregion

Santa Monica Mountains and Griffith Park SEA. Griffith Park, located at the east end of the Santa Monica Mountains, supports coastal scrub, chaparral, riparian and oak woodland habitats. The area also includes the Hollywood Reservoir. Griffith Park an important "island" rest stop for migrating birds, as well as a "reservoir for native species" and "corridor" for wildlife movement between the Santa Monica Mountains and San Gabriel Mountains, via the Verdugo Mountains. The Department of Recreation and Parks manages a portion of the Park as a bird sanctuary (City of Los Angeles, 2006).

Central Los Angeles Planning Subregion

No substantial areas of natural habitat for plants and animals are evident on aerial photographs covering this subregion. Although the Los Angeles River passes through this area, it is a vertical walled, concrete-lined segment of the stream.

Northeast Los Angeles Planning Subregion

Los Angeles River. The river in this subregion is a concrete-lined conveyance channel, although a five-mile stretch of the river from Griffith Park to the Golden State (I-5) and Pasadena (SR-11) Freeway interchange contains a natural bottom. The river is perennial below the Sepulveda Basin since 1985 as a result of the discharge of tertiary-treated wastewater from the Tillman Reclamation Plant. A limited amount of riparian scrub vegetation is present in the bed of the river, subject to scouring and reappearance elsewhere in the shifting bottom sediments (City of Los Angeles, 2006).

Elysian Park/Dodger Stadium. Undeveloped portions of this area support chaparral and oak woodland vegetation, as evident on aerial photography.

Mount Washington and Vicinity. In the area east of the Golden State Freeway (I-5) and between the Glendale (SR-2) and Pasadena (SR-11) Freeways, there occurs a number of small pockets of grassland and coastal scrub habitat in the mountainous area in the vicinity of Mount Washington. No specific details of biological resources present there could be found in the literature.

Areas east of Occidental College. Small pockets of grassland and coastal scrub habitats remain in the mountainous area just to the east of Occidental College.

Rose Hill/Arroyo Seco Parks and Vicinity. Areas of remnant grassland habitat occur at Rose Hill Park and Arroyo Seco Park and in the mountainous terrain to the south and east. Included here is also the open water habitat of Ascot Reservoir.

Silverlake and Ivanhoe Reservoirs. These reservoirs located west of the Golden State (I-5) and Glendale (SR 2) freeway interchanges are concrete-lined open water habitats with some waterfowl use.

San Rafael Hills. The San Rafael Hills represent a southeastward extension of the Verdugo Mountains. A small portion of the foothills on the southern flank of these mountains and on both sides of the Foothill Freeway (I-210) occurs within this subregion. As evident on aerial photographs, the primary habitat type present is chaparral.

South Los Angeles Planning Subregion

No substantial areas of natural habitat for plants and animals are evident on aerial photographs covering this subregion.

Southwest Los Angeles Planning Subregion

El Segundo Dunes SEA. Located west of the runways of the Los Angeles International Airport, the El Segundo Dunes SEA is the last remnant of a coastal dune system that once stretched several miles in each direction from here. A substantial portion of the original SEA has been deleted due to airport expansion. The present SEA borders a portion of Dockweiler Beach State Park. The vegetation found here, referred to as coastal dune scrub, occurs nowhere else in the County. The dunes support the entire world population of the El Segundo Blue butterfly, a federally listed endangered species. Much of the area has been disturbed by a former residential development, but the area is currently undergoing restoration (City of Los Angeles, 2006).

Ballona Wetlands and Ballona Creek SEA. The Ballona Wetlands, located just north of the El Segundo Dunes, are privately owned and subject to a future restoration (ca. 280 acres) of the area to tidally-influenced coastal saltmarsh under the Playa Vista Plan. Habitats present include coastal saltmarsh willow woodlands, freshwater marsh, coastal dunes, and coastal scrub. The Ballona Creek SEA, generally encompassing the Ballona Wetlands, is one of two remaining remnants of coastal saltmarsh habitat in Los Angeles County, and is used as a breeding ground for several state-listed endangered species including Belding's savanna sparrow, California least tern, saltmarsh skipper, and saltmarsh harvest mouse (City of Los Angeles, 2006).

Baldwin Hills. The Baldwin Hills support coastal scrub and grassland communities, reportedly containing plant species now found only at the edge of the Los Angeles Metropolitan area and on the desert side of the San Gabriel Mountains.

West Los Angeles Planning Subregion

Santa Monica Mountains including Topanga State Park. The largest portions of the Santa Monica Mountains that are contained within the City occur in this subregion. The biological resources of the Santa Monica Mountains are considered in Wieslander mapped the vegetation in detail between 1927 and 1933. Muns has compiled a flora for Topanga State Park. Aside from project-related environmental impact reports and accounts of sensitive species, specific details are generally lacking. The subregion includes the south slopes of the range from Topanga State Park eastward to Laurel Canyon. As evidenced on aerial photographs, habitats in the area include mostly chaparral, but also coastal scrub, oak and riparian woodland, and small amounts of grassland.

Will Rogers State Park Beach Coastline. In the Pacific Palisades, sandy beach as well as rocky and sandy intertidal zones offer habitat for shorebirds.

Stone Canyon Reservoir. There are actually two reservoirs here. The upper reservoir is concrete-lined, and the lower one is larger, with natural banks. The area provides habitat for waterfowl, and also support a small area of walnut woodland.

Harbor Planning Subregion

Palos Verdes Peninsula Coastline SEA. The City includes the eastern portion of this SEA from near Cabrillo Beach Park/Point Fermin westward to the City boundary. The Fort MacArthur Military Reservation is included as a buffer for the SEA. The shoreline encompasses headlands, rocky shoreline, sandy beaches, intertidal areas, kelp beds, coastal strand, and coastal scrub vegetation (England and Nelson, 1976). The coastal cliffs and offshore rocks offer roosting and feeding sites for shorebirds, gulls and other seabirds including the state- and federally endangered brown pelican. The state- and federally-listed endangered peregrine falcon and Species of Special Concern prairie falcon are reported to winter along bluff tops in this area.

Harbor Lake Regional Park SEA. Harbor Lake Regional Park, located northwest of the junction of the Harbor Freeway (SR-110) and Anaheim Boulevard, supports one of two remaining wetland areas that once covered the South Bay area (the other area is Madrona Marsh, outside the City) (England and Nelson, 1976). Habitats present include willow forest, freshwater marsh and open water habitats, which support frogs, toads, water-dependent birds, and migratory birds. The Harbor Lake area is noted for the

number of songbirds found there during migration, including many which are outside their normal ranges (so-called "vagrants").

San Pedro Harbor. This area is heavily used for shipping traffic and recreational activities (i.e., jet skis and boating). Some biological value does remain in the harbor, particularly along the northern part of the jetty separating the harbor from the open ocean. Of special interest is the sandy beach on the ocean-side of the jetty adjacent to Cabrillo Park, where grunions spawn in spring on nights of high tides following a full moon. The harbor also provides habitat for fish and water birds. The heavy human activity in the area has reduced the value of the harbor to wildlife.

Other Jurisdictions

In addition to the City, the 100-mile study area includes all or part of 190 cities and nine counties. Each of these cities and counties has adopted General Plans and Municipal Codes which may include specific policies related to the protection of biological resources. These may include policies related to habitat preservation, tree preservation and protection of riparian areas. Depending where future facilities are located, local plans and policies would be applicable to those facilities.

4.4.2 Thresholds of Significance

The impact analysis for biological resources will use the CEQA thresholds and the *L.A. CEQA Thresholds Guide* to determine significance. For the purpose of this analysis, the project study area is defined as the City and the area within 100 miles of the City. SWIRP emphasizes local processing and handling of the City's waste, including locating needed facilities within the City limits. However, it may not be feasible for all facility types to be built within the City, either due to lack of available space or potential land use conflicts. Therefore, as stated in Chapter 2, Section 2.2 of this EIR, it is assumed that the facilities would be located within the 100-mile study area of the City.

The following information is provided in accordance with the Environmental Checklist Form included as Appendix G of the *CEQA Guidelines*, which suggests that a development project could have a significant impact on Biological Resources if it would meet certain thresholds:

- *Would the project result in the loss of individuals, or the reduction of existing habitat, of a state or federal listed endangered, threatened, rare, protected, or candidate species, or a Species of Special Concern or federally listed critical habitat;*
- *Would the project result in the loss of individuals or the reduction of existing habitat of a locally designated species or a reduction in a locally designated natural habitat or plant community;*
- *Would the project result in interference with wildlife movement/migration corridors that may diminish the chances for long-term survival of a sensitive species;*
- *Would the project result in the alteration of an existing wetland habitat; and*
- *Would the project result in interference with habitat such that normal species behaviors are disturbed (e.g., from the introduction of noise, light) to a degree that may diminish the chances for long-term survival of a sensitive species.*

4.4.3 Project-Level Analysis

SWIRP Policy and Program Analysis

This PEIR evaluates the policies, programs, and facilities of SWIRP. As shown in Table 4.2-2, the SWIRP policies and programs will not directly impact biological resources; however, once implemented, may result in project-level impacts through facility expansion or construction of new facilities.

SWIRP Facility Analysis

If all policies and programs for SWIRP are implemented, the following facilities would be required: one large-scale composting facilities or six small-scale composting facilities, three clean Material Recycling Facilities (MRFs), one resource recovery center, and five black bin processing facilities (*SWIRP Phase 2 Policy, Program, and Facility Plan*, Table 34). This PEIR assumes 30 acres of impacts for a mid-sized composting facility (15 acres for a small-scale and 60 acres for a large-scale facility), 7 acres of impacts for each clean MRF, 2 acres of impacts for the resource recovery center, 6 acres of impacts for a mixed material processing facility, and up to 10 acres of impacts for each black bin facility. Depending on whether six small-scale compost facilities or one large-scale compost facilities are constructed, total footprint impacts for all the facilities would be 133 to 163 acres.

This section analyzes the potential impacts to biological resources based on whether implementation of all the programs and policies could impact natural areas due to the expansion or construction of various facilities. Any proposed project component or facility that would result in temporary or permanent ground disturbance activities (such as construction of a composting facility) would need to be independently evaluated to determine project-related impacts to biological resources in compliance with CEQA, and site-specific mitigation measures may be required in addition to the general mitigation measures included in this document.

Mitigation measures BIO-1, BIO-2 and BIO-3 would be applicable and would reduce potential impacts to the loss of protected individual species or habitats to a less than significant level.

Mitigation measure BIO-1 would require that prior to the approval of any new project component or facility that could result in earth-disturbing activities (e.g., grubbing, grading), a qualified Biologist shall conduct a habitat assessment to evaluate the site's potential to support special status plant and wildlife species and jurisdictional wetlands/waters. To the extent feasible, the location(s) of all new project facilities shall be on previously disturbed or developed sites and shall avoid undisturbed, high-quality, natural habitat that supports special status biological resources, areas that are used for regional or local wildlife movement, and jurisdictional wetlands and associated waters. If the habitat assessment determines that there is the potential for significant impacts to any biological resources, additional surveys and/or documentation would be required pursuant to CEQA and mitigation measure BIO-2.

Mitigation measure BIO-2 requires that if it has been determined that a proposed project component or facility has the potential for significant impacts to any biological resources, then prior to commencement of any earth-moving activities, the City shall conduct the appropriate focused survey(s) to determine the presence or absence of special status species (i.e., plant and/or wildlife surveys) that could be significantly impacted by the proposed project. If special status species are identified on or adjacent to the facility site, then appropriate avoidance and/or mitigation measures shall be implemented, as approved by the resource agencies with jurisdiction over that species and subject to the necessary permits under the FESA, the CESA, the California Fish and Game Code, and other applicable regional or local regulations or plans,

and ensure that impacts would be less than significant after mitigation. If any jurisdictional wetlands or associated waters are identified, appropriate avoidance and/or mitigation measures shall be implemented as approved by the resource agencies, and subject to the necessary permits under the Section 404 of the Clean Water Act issued by USACE, Section 401 of the Clean Water Act (Water Quality Certification) issued by the RWQCB, and Section 1600 of the California Fish and Game Code, and ensure that impacts would be less than significant after mitigation.

Additionally, as set forth in mitigation measure BIO-3, all project-related ground-disturbing activities shall comply with all applicable federal, state, regional, and local biological resource protection regulations in order to avoid and/or minimize potential impacts to biological resources including, but not limited to: use of Best Management Practices (BMPs) during construction and in the design of project facilities; protection of native trees as required by local tree ordinances; and pre-construction nesting bird surveys and nesting raptor surveys (if appropriate based on season and habitat present) in compliance with the MTBA and/or CDFG regulations.

Implementation of mitigation measures BIO-1, BIO-2, and BIO-3 would reduce potential impacts to the loss of protected individual species or habitats to a less than significant level.

Wildlife Corridors

If new SWIRP facility sites have the potential to interfere with existing wildlife movement, migration corridors, or habitat connectivity, thereby affecting sensitive species, then there is a potential for a significant impact to biological resources. As required by mitigation measure BIO-1, a habitat assessment would be required for any new project component or facility that would require earth-disturbing activities. An evaluation of potential project impacts to wildlife movement and migration corridors is included in the habitat assessment. If it is determined that potential impacts would result from project implementation, then BIO-2 requires additional applicable assessments pursuant to CEQA to determine the presence or absence of special status species (i.e., plant and/or wildlife surveys) that could be significantly impacted by the proposed project. If special status species are identified on or adjacent to the facility site, then appropriate avoidance and/or mitigation measures shall be implemented. Additionally, BIO-3 requires compliance with all appropriate laws and regulations including the MBTA and/or CDFG regulations that are intended to protect migratory birds. Implementation of mitigation measures BIO-1, BIO-2, and BIO-3 would reduce potential impacts to wildlife movement/migration corridors to a less than significant level.

As shown in Table 4.4-2, none of the individual programs and policies would result in a significant impact to biological resources, including habitat. However, depending on phasing and implementation of various proposed programs and policies, along with anticipated growth in the City, there will be a need for additional facilities to process the diverted materials. Construction of new facilities discussed in Tables 2.3-3 and 2.3-4 of Section 2.3.5, Development of Processing Facilities, would include ground-disturbing activities that could impact approximately 133 to 163 acres. New facility construction and existing facility expansion would have potentially significant impacts on biological resources, depending on where the individual facilities are located with respect to surrounding habitat quality, biological resources present, and species distribution. However, overall the Upstream Policies would result in a reduction of waste generation and have no impact on biological resources.

Ultimately, the potential impacts to biological resources will depend on where the proposed facilities are placed. Therefore, the following analysis describes the potential impacts that future facilities could have on biological resources within the project study area for each CEQA significance threshold previously identified.

Table 4.4-2. Analysis of SWIRP Policies and Programs (Biological Resources)

Initiative	Impact Analysis for Biological Resources[1]	Significance Conclusion
Downstream Policies and Programs[2]		
Expand Recycling Ambassador Program	This policy/program will not directly impact biological resources.	No Impact
Adding Textiles to the Blue Bins or Partner with Non-Governmental Organizations	This policy/program will not directly impact biological resources.	No Impact
Bulky Item Reuse and Refurbishment	This policy/program will not directly impact biological resources.	No Impact
Expand Residential Food Scrap Program	This program will not directly impact biological resources.	No Impact
Large-Scale Media/Social Marketing	This policy/program will not directly impact biological resources.	No Impact
Modify Residential Collection Rates	This policy/program will not directly impact biological resources.	No Impact
Modify Commercial Collection Rates	This policy/program will not directly impact biological resources.	No Impact
Expand Multi-Family Recycling	This policy/program will not directly impact biological resources.	No Impact
Multi-Family Green Bins	This policy/program will not directly impact biological resources	No Impact
All Businesses to Have Recycling Services	This policy/program will not directly impact biological resources.	No Impact
Commercial Haulers to Offer Recycling Services to Customers	This policy/program will not directly impact biological resources.	No Impact
Expand Commercial Technical Assistance	This policy/program will not directly impact biological resources.	No Impact
Expand Construction and Demolition (C&D) Technical Assistance	This policy/program will not directly impact biological resources.	No Impact.
Provide More Public Area Recycling	This policy/program will not directly impact biological resources.	No Impact
C&D Ordinance	This policy/program will not directly impact biological resources.	No Impact
Mandatory Participation Programs[3]		
Mandatory Recycling Separation	This program will not directly impact biological resources.	No Impact
Mandatory Organics Separation	This program will not directly impact biological resources.	No Impact
Resource Recovery Centers (RRC) at Transfer Stations and Landfills	This program will not directly impact biological resources.	No Impact
Recycling Ambassadors (Reinforcement)	This program will not directly impact biological resources.	No Impact
Direct Technical Assistance (Reinforcement)	This program will not directly impact biological resources.	No Impact
Increased Diversion Requirements at C&D Facilities	This program will not directly impact biological resources.	No Impact

Table 4.4-2. Analysis of SWIRP Policies and Programs (Biological Resources) (Continued)

Initiative	Impact Analysis for Biological Resources	Significance Conclusion
Upstream Policies[4]		
Extended Producer Responsibility (EPR) for Toxics	Results in a reduction of waste generation. No impact to biological resources.	No Impact
EPR for Difficult to Recycle Materials	Results in a reduction of waste generation. No impact to biological resources	No Impact
Single-use Bag Ban	Results in a reduction of waste generation. No impact to biological resources	No Impact
Disposal of Remaining Residual Waste[5]~~[5]~~		
Landfill Disposal – Truck Haul, Rail Haul	This program will not directly impact biological resources	No Impact

(1) Depending on phasing and implementation of various proposed programs and policies, along with anticipated growth in the City, there will be a need for additional facilities to process the diverted materials. Please refer to Section 4.1.3 for an impact analysis of the future facilities.
(2) Refer to Chapter 2, Table 2.3-1 for a detailed description of the Downstream Policies and Programs.
(3) Refer to Chapter 2, Table 2.3-2 for a detailed description of the Mandatory Participation Programs.
(4) Refer to Chapter 2, Section 2.3.4 for a detailed description of the Upstream Policies.
(5) Refer to Chapter 2, Section 2.3.6 for a detailed description of the Disposal of Remaining Residual Waste.

Habitat and Sensitive Species

As mentioned above, Appendix C contains lists of federal and state-listed species organized by County, and Figure 4.4-4 identifies USFWS Critical Habitat Areas for the project study area. The locations, numbers, and sizes of new facilities that would be created by SWIRP to handle waste that would be diverted from the landfill have not yet been determined. However, any proposed facility location that involves earth-disturbing activities, including grubbing and grading, has the potential to impact special status plants and/or animals. If new SWIRP facility sites are located in areas that could potentially support federal and/or state-listed species or include federally designated Critical Habitat Areas, then there is a potential for a significant impact to biological resources.

As set forth in mitigation measure BIO-1, prior to the approval of any new project component or facilities that could result in earth-disturbing activities (e.g., grubbing, grading), a qualified biologist shall conduct a habitat assessment to evaluate the site's potential to support special status plant species, wildlife species, and jurisdictional wetlands/waters. To the extent feasible, the location(s) of all new project facilities shall be on previously disturbed or developed sites and shall avoid undisturbed, high-quality, natural habitat that supports special status biological resources, areas that are used for regional or local wildlife movement, and jurisdictional wetlands and associated waters. If the habitat assessment determines that there is the potential for significant impacts to any biological resources, additional surveys and/or documentation would be required pursuant to CEQA.

As set forth in mitigation measure BIO-2, if it has been determined that a proposed project component or facility has the potential for significant impacts to any biological resources, then prior to commencement of any earth-moving activities, the City shall conduct the appropriate focused survey(s) to determine the presence or absence of special status species (i.e., plant and/or wildlife surveys) that could be significantly impacted by the proposed project. If special status species are identified on or adjacent to the facility site, then appropriate avoidance and/or mitigation measures shall be implemented, as approved by the resource agencies with jurisdiction over that species and subject to the necessary permits under FESA, CESA, the California Fish and Game Code, and other applicable regional or local regulations or plans, and ensure that impacts would be less than significant after mitigation. If any jurisdictional wetlands or associated waters are identified, appropriate avoidance and/or mitigation measures shall be implemented as approved by the resource agencies, and subject to the necessary permits under Section 404 of the Clean Water Act issued by USACE, Section 401 of the Clean Water Act (Water Quality Certification) issued by the RWQCB, and Section 1600 of the California Fish and Game Code, and ensure that impacts would be less than significant after mitigation.

Disposal of residual waste not diverted from the landfill would not result in impacts to sensitive habitat or sensitive species.

Alteration of Existing Wetland Habitat

The locations, numbers, and sizes of new facilities that would be created by SWIRP have not yet been determined. However, any proposed facility location that involves earth-disturbing activities, including grubbing and grading, has the potential to impact jurisdictional waters of the U.S. and/or the State, including wetland habitats. As set forth in mitigation measure BIO-1, prior to the approval of any new project component or facilities that could result in earth-disturbing activities (e.g., grubbing, grading), a qualified biologist shall conduct a habitat assessment to evaluate the site's potential to support jurisdictional wetlands/waters. If potential impacts could occur due to project implementation, mitigation measure BIO-2 requires that appropriate avoidance and/or mitigation measures shall be implemented as approved by the resource agencies, and subject to the necessary permits under the Section 404 of the

Clean Water Act issued by USACE, Section 401 of the Clean Water Act (Water Quality Certification) issued by the RWQCB, and Section 1600 of the California Fish and Game Code, and ensure that impacts would be less than significant after mitigation.

Implementation of mitigation measures BIO-1 and BIO-2 would reduce potential impacts to jurisdictional resources, including wetland habitat, to a less than significant level.

Table 4.4-3 presents a summary of the biological resource impacts, by facility type. As shown in Table 4.4-3, mitigation measures have been provided that will reduce potential biological resource impacts related to facility siting to below a level of significance.

Table 4.4-3. Summary of Biological Resources Impact by Facility Type

Facility Type	Impact
Clean Material Recovery Facilities	Mitigated to below a level of significance.
Composting (Aerobic)	Mitigated to below a level of significance.
Composting (Anaerobic Digestion)	Mitigated to below a level of significance.
Resource Recovery Centers	Mitigated to below a level of significance.
Mixed Material Processing	Mitigated to below a level of significance.
Alternative Technology – Advanced Thermal Recycling	Mitigated to below a level of significance.
Alternative Technology – Biological (Anaerobic Digestion)	Mitigated to below a level of significance.
Alternative Technology – Thermal (Plasma Arc, Gasification, Pyrolysis, and Others)	Mitigated to below a level of significance.

Disposal of residual waste not diverted from the landfill would not result in impacts to wetland habitat.

4.4.4 Cumulative-Level Analysis

Depending on the location(s) of proposed new facilities necessary to support the project, as well as other projects that are proposed in the overall project study area, there may be a cumulative impact to biological resources. Assuming the implementation of mitigation measure BIO-1, the required habitat assessment would determine if potential impacts to biological resources could occur due to project implementation. If potential impacts could occur, then mitigation measure BIO-2 requires that the impacts are evaluated and mitigation measures are set forth pursuant to CEQA, to ensure that impacts would be less than significant. Lastly, mitigation measure BIO-3 requires compliance with all applicable federal, state, regional, and local laws and regulations. Therefore, project implementation conducted in compliance with mitigation measures BIO-1, BIO-2, and BIO-3 would ensure that implementation of the facilities set forth in SWIRP would result in less than significant direct impacts.

Full buildout of all SWIRP facilities would require a relatively minimal extent of acres of impact anticipated (i.e., between 133 and 163 acres), which would likely be developed within the largely urbanized City, and/or dispersed throughout the 100-mile radius study area. Given that all SWIRP projects would be required to avoid and/or mitigate for all direct impacts, and it can be presumed that other future development projects within the 100-mile study area would also be subject to the same regulatory requirements that mandate avoidance and/or minimization of impacts, potential impacts from project implementation would not be considered cumulatively considerable and no additional mitigation is required.

4.4.5 Mitigation Measures

Habitat, Sensitive Species and Wildlife Corridors

BIO-1 Prior to the approval of any new project component or facility that could result in earth-disturbing activities (e.g., grubbing, grading), a qualified Biologist shall conduct a habitat assessment to evaluate the site's potential to support special status plant and wildlife species and jurisdictional wetlands/waters. To the extent feasible, the location(s) of all new project facilities shall be on previously disturbed or developed sites and shall avoid undisturbed, high-quality, natural habitat that supports special status biological resources, areas that are used for regional or local wildlife movement, and jurisdictional wetlands and associated waters. If the habitat assessment determines that there is the potential for significant impacts to any biological resources, additional surveys and/or documentation would be required pursuant to CEQA and mitigation measure BIO-2.

BIO-2 If it has been determined that a proposed project component or facility has the potential for significant impacts to any biological resources, then prior to commencement of any earth-moving activities, the City shall conduct the appropriate focused survey(s) to determine the presence or absence of special status species (i.e., plant and/or wildlife surveys) that could be significantly impacted by the proposed project. If special status species are identified on or adjacent to the facility site, then appropriate avoidance and/or mitigation measures shall be implemented, as approved by the resource agencies with jurisdiction over that species and subject to the necessary permits under FESA, CESA, the California Fish and Game Code, and other applicable regional or local regulations or plans, and ensure that impacts would be less than significant after mitigation. If any jurisdictional wetlands or associated waters are identified, appropriate avoidance and/or mitigation measures shall be implemented as approved by the resource agencies, and subject to the necessary permits under the Section 404 of the Clean Water Act issued by U.S. Army Corps of Engineers, Section 401 of the Clean Water Act (Water Quality Certification) issued by the Regional Water Quality Control Board, and Section 1600 of the California Fish and Game Code, and ensure that impacts would be less than significant after mitigation.

BIO-3 All project-related ground-disturbing activities shall comply with all applicable federal, state, regional, and local biological resource protection regulations in order to avoid and/or minimize potential impacts to biological resources including, but not limited to, use of BMPs during construction and in the design of project facilities; protection of native trees as required by local tree ordinances; and pre-construction nesting bird surveys and nesting raptor surveys (if appropriate based on season and habitat present) in compliance with the Migratory Bird Treaty Act and/or California Department of Fish and Game regulations.

4.4.6 Conclusion

As described above, the intent of SWIRP is to minimize waste flow and impacts on the environment by siting new facilities in locations that would minimize impacts on biological resources. Assuming a project would result in earth-disturbing activities, mitigation measure BIO-1 requires a habitat assessment to determine if potential impacts to biological resources could occur due to project implementation. If potential impacts could occur, then mitigation measure BIO-2 requires that the impacts are evaluated and mitigation measures are set forth pursuant to CEQA to ensure that impacts would be less than significant. Lastly, mitigation measure BIO-3 requires compliance with all applicable federal, state, regional, and

local laws and regulations. Therefore, project implementation conducted in compliance with mitigation measures BIO-1, BIO-2, and BIO-3 would ensure that potential impacts associated with the implementation of the facilities set forth in SWIRP would be reduced to below a level of significance.

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4.5 CULTURAL RESOURCES

This section analyzes the potential for the proposed project to impact cultural resources. Cultural resources include archaeological resources, historical resources and paleontological resources. This section includes a discussion of the applicable regulatory environment, existing conditions, a project-level and cumulative-level impact analysis, and any applicable mitigation measures. The analysis area (project study area) for cultural resources covers the City of Los Angeles (City) and the area within 100 miles of the City. The Solid Waste Integrated Resources Plan (SWIRP) emphasizes local processing and handling of discarded materials generated within the City, including locating needed facilities within the City limits. However, it may not be feasible for all facility types to be built within the City, either due to lack of available space or potential land use conflicts. As stated in Chapter 2.0, Section 2.2 of this Final Program Environmental Impact Report (Final PEIR), it is assumed that the facilities would be located within the 100-mile study area of the City. There are approximately 16.6 million acres in the overall project study area.

SWIRP addresses the handling of solid waste for the City, which covers approximately 470 square miles and is home to approximately 3.8 million residents. The programs and policies identified in SWIRP would apply to residential, commercial, industrial, and institutional generators in the City. SWIRP also identifies a variety of facilities that would need to be constructed to meet the City's recycling and solid waste infrastructure needs through 2030. Specific locations for these facilities have not been identified at this time; rather, SWIRP notes the number and type of facilities that would be required through 2030.

4.5.1 Environmental Setting

The SWIRP study area includes the City and the area within 100 miles of the City. The area thus encompasses all or part of nine California counties (Kern, Los Angeles, Orange, Riverside, San Bernardino, San Diego, San Luis Obispo, Santa Barbara, and Ventura) and 190 cities. The Los Angeles Basin itself is bordered by the Santa Monica Mountains to the northwest, the San Gabriel Mountains to the north/northeast, and the Santa Anna Mountains to the south/southeast.

The outlying environmental settings include the Southern Coast Region (including the Santa Barbara subregion and the San Diego subregion), the Central Valley Region (including the San Joaquin Valley subregion), the Sierra Nevada Region (including the Southern Sierra subregion), and the Desert Region (including the Southwestern Great Basin subregion and the Colorado River subregion).

The Santa Barbara subregion of the Southern Coast Region environment is defined by varied coastal and mountain zones between Morro Bay and Santa Monica. The upland areas are often separated from the shore by piedmont and terrace lands. The San Diego subregion extends from Santa Monica to upper Baja California. Low hills and terraces separate the mountains from the shore. The coastal landscape features bays, lagoons, and long sandy beaches. Due to the vast area and central location of the Central Valley, it shares common borders with numerous environmental regions. Topographically, the Valley is a low-elevation flatland composed of alluvial plains, river channels, oak lakebeds, sloughs, marshes, and uplands of low relief. The Sierra Nevada Region includes foothills, the Sierran midslope, and higher Alpine elevations. The deserts of southeastern California lie to the south and east of the Sierra Nevada, Transverse, and Peninsular Ranges which block the eastward movement of the moist air masses, creating the characteristic arid conditions of the deserts. The desert area is characterized by north-south trending mountain ranges and wide arid expanses of low enclosed valleys, interrupted by an occasional spring, intermittent stream, or dry lakebed.

4.5.1.1 Regulatory Setting

Cultural resources within the project study area are protected by federal, state, regional, and local requirements. This section lists and briefly describes the relevant plans, policies, and regulations that govern cultural resources within the overall project study area.

Federal

National Historic Preservation Act

Cultural resources are considered during federal undertakings chiefly under Section 106 of the National Historic Preservation Act (NHPA) of 1966 (as amended) through one of its implementing regulations (36 Code of Federal Regulations [CFR] 800, Protection of Historic Properties) and under the National Environmental Policy Act (NEPA). Properties of traditional religious and cultural importance to Native Americans are considered under Section 101(d)(6)(A) of the NHPA. Other federal laws include the Archaeological Data Preservation Act of 1974, the American Indian Religious Freedom Act (AIRFA) of 1978, the Archaeological Resources Protection Act of 1979, and the Native American Graves Protection and Repatriation Act of 1989, among others.

Section 106 of the NHPA (16 United States Code [USC] 470f) requires federal agencies to: (1) take into account the effects of their undertakings on any district, site, building, structure, or object that is included in or eligible for inclusion in the National Register of Historic Places (NRHP); and (2) afford the Advisory Council on Historic Preservation (ACHP) a reasonable opportunity to comment on such undertakings (36 CFR 800.1). Under Section 106 of the NHPA, the significance of any adverse effect on cultural resource is assessed, and mitigation measures are proposed to reduce the impacts to an acceptable level. Significant cultural resources are those resources that are listed in or are eligible for listing in the NRHP per the criteria listed at 36 CFR 60.4 below.

The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association and that:

(a) Are associated with events that have made a significant contribution to the broad patterns of our history; or

(b) Are associated with the lives of persons significant in our past; or

(c) Embody the distinctive characteristics of a type, period, or method of installation, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

(d) Have yielded, or may be likely to yield, information important in prehistory or history.

State

California Environmental Quality Act

The California Environmental Quality Act (CEQA) requires a lead agency to determine whether a project may have a significant effect on one or more historical resources. A "historical resource" is defined as: a resource listed in, or determined to be eligible for listing in, the California Register of Historical

Resources (CRHR) (*California Public Resources Code* [PRC] §21084.1); a resource included in a local register of historical resources (14 *California Code of Regulations* [CCR] §15064.5[a][2]); or any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant (14 CCR §15064.5[a][3]).

Section 5024.1 of the PRC, Section 15064.5 of the *CEQA Guidelines* (14 CCR), and Sections 21083.2 and 21084.1 of the CEQA Statutes (PRC) were used as the basic guidelines for the cultural resources study. PRC 5024.1 requires evaluation of historical resources to determine their eligibility for listing on the CRHR. The purposes of the CRHR are to maintain listings of the state's historical resources and to indicate which properties are to be protected from substantial adverse change. The criteria for listing resources on the CRHR were expressly developed to be in accordance with previously established criteria developed for listing on the NRHP.

Section 15064.5(a)(3) of the *CEQA Guidelines* states that "generally, a resource shall be considered by the Lead Agency to be 'historically significant' if the resource meets the criteria for listing on the California Register of Historical Resources" (PRC §5024.1; 14 CCR §4852), including if the resource:

A. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;

B. Is associated with lives of persons important in our past;

C. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or

D. Has yielded, or may be likely to yield, information important in prehistory or history.

The lead agency shall concurrently determine whether a project will cause damage to a unique archaeological resource (as defined in PRC §21083.2[b]) and, if so, must make reasonable efforts to permit the resources to be preserved in place or left undisturbed. Section 21083.2(g) of the California PRC defines a unique archaeological resource as an archaeological artifact, object, or site about which it can be demonstrated that, without merely adding to the existing body of archaeological knowledge, there is a high probability that it meets any of the following criteria:

1. Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.

2. Has a special and particular quality such as being the oldest of its type or the best available example of its type.

3. Is directly associated with a scientifically recognized important prehistoric or historic event or person.

Using the information outlined above, the first level of evaluation is to determine whether a resource on a site is a historical resource and/or a unique archaeological resource that would be considered eligible for the CRHR and, therefore, significant. Impacts to significant cultural resources that affect those characteristics of the resource that qualify it for the CRHR or adversely alter the significance of a resource listed on or eligible for listing on the CRHR are considered to have a significant effect on the environment. Impacts to cultural resources are considered significant if a project: (1) physically destroys or damages all or part of a resource; (2) changes the character of the use of the resource or physical feature within the setting of the resource that contributes to its significance; and/or (3) introduces visual, atmospheric, or audible elements that diminish the integrity of significant features of the resource.

To the extent that unique archaeological resources are not preserved in place, mitigation measures that are consistent with Section 15126.4(b) of the *CEQA Guidelines* (14 CCR) shall be required (PRC §21083.2[c]).

California Register of Historical Resources

The California Office of Historic Preservation (OHP) administers the CRHR, established in 1992 through PRC Sections 5020 et seq. to be "an authoritative guide in California to be used by state and local agencies, private groups, and citizens to identify the State's historical resources and to indicate what properties are to be protected, to the extent prudent and feasible, from substantial adverse change".

The CRHR listing criteria focus on resources of the state, rather than national, significance. The CRHR includes the following types of resources, either as an individual property or a contributor to a historic district: (1) properties listed in or determined eligible for listing in the NRHP (automatically included); (2) California Historical Landmarks numbered 770 and higher (automatically included); (3) California Points of Historical Interest recommended for listing by the OHP; and (4) resources nominated for listing and determined eligible by meeting one or more of the CRHR criteria.

The minimum age criterion for the CRHR is 50 years. Properties less than 50 years old may be eligible for listing if "it can be demonstrated that sufficient time has passed to understand its historical importance." Once listed, the historical resource is protected from any detrimental changes, and any alterations, repairs and additions must be reviewed and approved by the State Historical Resources Commission (SHRC) under the State Historical Building Code to ensure that the quality of the resource remains intact.

California Coastal Act

The California Coastal Act of 1976 (PRC §§30000 et seq.) establishes policies guiding development and conservation along the California coast. Consistent with Section 30001 and the basic goals of Section 30001.5, and except as may be otherwise specifically noted in the Coastal Act, the policies of Section 30200 of the Coastal Act constitute the standards by which the adequacy of local coastal programs and, the permissibility of proposed developments subject to these provisions are determined.

Senate Bill 18

Senate Bill (SB) 18 (*California Government Code* §65352.3) incorporates the protection of California's traditional tribal cultural places into land use planning for Cities, Counties, and agencies by establishing responsibilities for local governments to contact, refer plans to, and consult with California Native American tribes as part of the adoption or amendment of any general plan or specific plan proposed on or after March 1, 2005. SB 18 requires public notice to be sent to tribes listed on the NAHC's SB 18 Tribal Consultation list within the geographical areas affected by the proposed changes. Tribes must respond to a local government notice within 90 days (unless a shorter time frame has been agreed upon by the tribe), indicating whether or not they want to consult with the local government. Consultations are for the purpose of preserving or mitigating impacts to places, features, and objects described in Sections 5097.9 and 5097.993 of the PRC that may be affected by the proposed adoption or amendment to a general plan or specific plan.

California Health and Safety Code

Section 7050.5 of the *California Health and Safety Code* provides for the disposition of accidentally discovered human remains. Section 7050.5 states that if human remains are found, no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains shall occur until the County Coroner has determined the appropriate treatment and disposition of the human remains.

Section 5097.98 of the PRC states that if remains are determined by the Coroner to be of Native American origin, the Coroner must notify the NAHC within 24 hours, which in turn must identify the person or persons it believes to be the most likely descended from the deceased Native American. The descendents shall complete their inspection within 48 hours of being granted access to the site. The designated Native American representative would then determine, in consultation with the property owner, the disposition of the human remains.

Local

City of Los Angeles

City of Los Angeles CEQA Thresholds Guide

The *L.A. CEQA Thresholds Guide: Your Resource for Preparing CEQA Analyses in Los Angeles* (City of Los Angeles, 2006) is a guidance document that draws together practical information useful to City staff, project proponents, and the public involved in the environmental review of projects subject to CEQA. The thresholds guide provides assistance in evaluating the significance of project impacts on 46 of the most common environmental issues in the City, including impacts to cultural resources. This guidance is supplemented by an introduction to each issue area, a recommended analysis method for project impacts, guidance for environmental setting and cumulative impact sections, sample mitigation measures, and references. Additional information on the terminology and requirements of CEQA can be found in the *Los Angeles City CEQA Guidelines,* the State *CEQA Guidelines,* and/or the City's *Guide to Understanding CEQA*.

Within the City, the Cultural Heritage Commission (CHC) is responsible for identifying resources for the City Council to consider for Historic-Cultural Monument status. The City may recognize structures or sites as City Historic-Cultural Monuments and may also designate an area as a Historic Preservation Overlay Zone (HPOZ) if it meets certain criteria that preserve existing historical resources to ensure that new development is compatible with the larger historic area. The CHC also reviews applications for building permits for Historic-Cultural Monuments to consider whether proposed alterations are consistent with the Secretary's Standards pursuant to the Los Angeles Charter and Administrative Code (Chapter 7, Sections 22.132 and 22.133; refer also to Los Angeles Municipal Code, Chapter IX, Section 91.106.4.5). The CHC may delay the issuance of building permits for up to six months to investigate preservation options in the event that proposed alterations are not consistent with the Secretary of Interior's Standards.

Los Angeles Citywide General Plan Framework EIR (1995) and Conservation Element (2001)

The City has developed a General Plan and General Plan Framework EIR for future development in the City (City of Los Angeles, 1995a, 1995b). The EIR evaluates the proposed plan's impact on existing and future environmental conditions including cultural resources. A Conservation Element was completed for the General Plan in 2001 (City of Los Angeles, 2001) and includes the following pieces: Section 3, Archaeological and Paleontological; Section 4, Conservation; and Section 5: Cultural and Historical.

The SWIRP project area encompasses a 100-mile study area around the City which includes all or portions of nine different counties and therefore much more than just within the City boundaries. Consideration of the entire 100-mile study area and its resources would be impractical for the purposes of this project. SWIRP maintains a goal of handling as much of the material within the City, as possible, so it is probable that the majority of the facilities will be sited within the City. Therefore, analysis focuses on the goals and objectives found in the cultural resources element of the General Plan/EIR and the City Conservation Element.

General Plan EIR. The General Plan EIR describes the thresholds of significance for cultural resources and acknowledges that there are a multitude of landmarks or points of interest with unique archaeological or paleontological resources, and many significant built environment historical resources.

The City Planning Department maintains a list of archaeological and paleontological resources. Three figures were created for the plan that depicts the general area of archaeological sites and the locations of vertebrate and invertebrate fossil resources, respectively. The General Plan EIR was adopted in 1995, and the Conservation Element was last updated in 2001. Therefore, additional resources are likely to have been identified and recorded within the City since production of those maps.

The City's CHC is responsible for the preservation of Historical-Cultural Monuments within the City, which in October 1994 numbered 603, and in 2001 numbered 700. The Municipal Code provided for the creation and maintenance of HPOZs. There are seven such zones within the City. Within these zones, or historic districts, no demolition is permitted and alteration to buildings and structures may not occur without permission of the City Historic Preservation Association. Any building designated as a Historical-Cultural Monument, a State Landmark, or on the NRHP requires permission from the City's Building and Safety Department prior to demolition, alteration, or removal of that building.

Mitigation measures and policies provide means to avoid potential impacts to known or potential archaeological resources. Policies 3.1.1, 3.17.1, 5.4.2, and 5.7.2 will help ensure that significant resources are protected through:

- Continuing to update the comprehensive archaeological and cultural resources survey in the City
- Enforcement of the ordinance that authorizes the City to designate appropriate archaeological sites and historic points, sites, or districts
- Continuing to explore methods for future preservation of cultural resources
- Encouraging appropriate adaptive reuse of historic resources
- Promoting the formation of neighborhood conservation organizations
- Encouraging the creation/preservation of significant historic and cultural districts through development credits and housing

Conservation Element

In 2001, a conservation element was developed that considers the identification, evaluation, and mitigation of impacts to cultural resources throughout the City. It identifies objectives and policies with regard to cultural resources in Sections 3, 4, and 5.

Section 3: Archaeological and Paleontological

Archaeological. This subsection briefly describes the early cultures of the area and La Brea Woman-found in the La Brea Tar Pits in 1914 and briefly discusses several of the many federal and state laws promulgated to protect archaeological sites and resources.

Paleontological. This subsection acknowledges the sensitivity of the sedimentary rocks that exist in the Los Angeles area, and focuses on the Pleistocene age La Brea deposits at Hancock Park. CEQA requires the retention of a qualified paleontologist to evaluate and recover any significant fossils discovered during ground disturbing activities. The section concludes with an acknowledgement that the City has primary responsibility for protection of resources and there are continuing losses or damage to archaeological and paleontological resources due to development, vandalism, and theft.

- *Objective:* Protect the City's archaeological and paleontological resources for historical, cultural, research and/or educational purposes.
- *Policy:* Continue to identify and protect significant archaeological and paleontological sites and resources known to exist or that are identified during land development, demolition or property modification activities.
- *Program:* Permit processing, monitoring, enforcement and periodic revision of regulations and procedures.

Section 4: Conservation

Conservation is defined as the managed or controlled use of natural, cultural and historical resources. This includes: (1) preserving open space for the conservation and protection of open space, wildlife and watersheds; (2) identifying, evaluating, and protecting/preserving cultural and historical resources; (3) reducing demand for non-renewable resources as well as natural resources; and (4) recycling.

Section 5: Cultural and Historical

The thrust of this section is to apply city, state, and federal regulations to identify, protect, and preserve historic sites and structures for the enrichment of future generations. The most significant for the City are described below.

Conservation and Protection: Five types of historic protection designations apply in the City:

1. Historic-Cultural Monument designation by the Cultural Heritage Commission and approved by the City Council;
2. California Register of Historical Resources eligibility/nomination;
3. National Register of Historic Places eligibility/nomination;
4. Community Redevelopment Agency (CRA) designation as of cultural or historical significance within a designated redevelopment area; and
5. City Council classification as an HPOZ.

CEQA defines a "historic resource" to include resources that are presumed to be significant unless the preponderance of evidence shows otherwise. A property does not need to be officially designated as a

landmark or of historic importance to be considered in CEQA review. A lead agency may list properties as historically significant if they meet the criteria for listing on the CRHR.

City *CEQA Guidelines* require an environmental assessment for any proposed adverse impacts to:

- A Historic–Cultural Monument
- A resource listed in the NRHP or CRHR
- A resource in the CRA list
- A resource cited as a proposed historical resource by a community plan or HPOZ survey
- A resource which is over 50 years of age and is a substantially intact example of architectural style important in Los Angeles history

Historic–Cultural Monuments: The 1962 ordinance was designed to protect and/or identify architectural, historical, and cultural buildings, structures and sites of importance in the City's history and/or cultural heritage. As of 2001, there were 700 such monuments listed and maintained by the CHC. Plaques have been erected at some sites, and sites are mapped on the City's zoning maps to guide permit processing. The CHC must approve permits for modification of a designated monument and may impose conditions of permit approval.

CRHR and NRHP listed or eligible sites are afforded additional protections. Criteria applied to determine eligibility for listing includes context, integrity, and if a recent resource, exceptional importance. The Community Redevelopment Agency (CRA) maintains a list of properties of historical significance for the purposes of project planning and evaluating neighborhood improvement proposals.

Historic Preservation Overlay Zones (HPOZ): An HPOZ contains significant examples of architectural styles characteristic of different periods of the City's history. Section 12.20.3 of the Los Angeles Municipal Code (LAMC) contains procedures for designation and protection of areas that have structures, natural features, or sites of historic, architectural, cultural, or aesthetic significance. As of 2001, there were 14 HPOZ areas and 12 more were under study. Property owners are encouraged to make improvements that will enhance the historic character of the HPOZ area. A general survey of all pre-1950 structures within five community plan areas was completed in 1997. It provides a data source for designating future HPOZ areas. The data is used to assist City personnel and citizen design review boards in evaluating proposed projects and building modifications and to assess trends and devise preservation strategies.

- *Objective:* To protect important cultural and historical sites and resources for historical, cultural, research, and community educational purposes.
- *Policy:* To continue to protect historical and cultural sites and/or resources potentially affected by proposed land development, demolition, or property modification activities.
- *Program 1:* Development permit processing, monitoring, enforcement, and periodic revisions of regulations and procedures.
- *Program 2:* Prepare the Historical Preservation and Cultural Resources Element of the General Plan.

- *Program 3:* Continue to survey buildings and structures of any age in neighborhoods throughout the City in order to develop a record that can be used in the present and future for evaluating their historic and cultural value as individual structures and within the context of surrounding structures.
- *Program 4:* Continue to establish HPOZs throughout the City.

Other Jurisdictions

Other jurisdictions within the project study area (100-mile study area outside the City) have their own measures in place to protect cultural resources through their General Plan or other specific ordinances. If future facilities are proposed outside of the City, those projects will have to comply with all applicable regulations in place by that local jurisdiction.

4.5.1.2 Existing Conditions

Cultural Setting

Within this nine-county project area, two major cultural subregions—the Southern Coastal Region and the Central Valley Region—have been recognized as distinguishable prehistoric regions (Moratto, 1984). Due to population expansion, the Southern Coastal Region has received the most archaeological attention. The two most currently accepted approaches for analyzing the Southern Coastal Region are those proposed by Wallace (1955) who interpreted the prehistory of coastal Southern California through temporal horizons, and Warren (1968) who looked at the cultural differences not as temporal distinctions, but as local traditions. Wallace saw four temporal horizons along the Southern California coast: Early Man; Milling Stone; Intermediate; and Late Prehistoric, as presented in Table 4.5-1.

These horizons are based on cultural changes, often reflected in subsistence changes and, in turn, the material culture such as projectile points. By contrast, the cultural traditions proposed by Warren were more restricted spatially. Warren's scheme (which includes the San Dieguito, Encinitas, Campbell, Chumash, Shoshonean, and Yuman traditions) accounted for the cultural variability that is particularly evident within Wallace's Late Prehistoric Horizon. In comparison, Central California (including Kern County) has three rather than four major periods of development: Early Horizon, Middle Horizon, and Late Horizon.

In Southern Coastal California, Koerper (1981) and Koerper and Drover (1983) have taken the horizon system proposed by Wallace and geared it more specifically to the prehistory of Orange County. Despite its focus on Orange County, current archaeological data have indicated that the coastal chronological data derived by Wallace (1955), Warren (1968), and later by Koerper and Drover (1983), can be applied to the greater Los Angeles basin including Ventura, western Riverside, and northern San Diego counties (Mason, 1984; McKenna, 1986). A general description of the cultural chronologies accepted for Southern California is discussed below.

Table 4.5-1. Los Angeles Cultural Chronology

Time BP	Los Angeles
	Historic
1,000	Horizon IV-Late Prehistoric
	Horizon III - Intermediate
2,000	
3,000	
	Horizon II - Millingstone
4,000	
5,000	
6,000	Horizon I – Early Man
7,000	
8,000	
9,000	
10,000	

The Paleo-Coastal

The Paleo-Coastal period (prior to 8,000 Years Before Present [YBP]) of human occupation in California is comprised of several early components that are most likely associated with the "Western Pluvial Lakes Tradition"[1] (Moratto, 1984:104). The Paleo-Coastal Period of occupation has been defined as a tradition[2] by a number of investigators (including Davis et al. 1969 [c.f. Moratto, 1984]), spanning the range extending from 8,000 14C (Carbon-14) years plus through the earliest known ages for the region at the end of the Pleistocene Epoch to approximately 8,000 YBP. Archaeological assemblages attributed to this period are characterized by large projectile points and scrapers. The limited data available suggest that prehistoric populations focused on hunting and gathering, moving about the region in small nomadic groups.

In the Central Valley, known initially from archaeological investigations in the Sacramento Delta area, the occurrence of burial sites with frequent grave goods (often with quartz crystals and red ochre) and rare incidences of cremation characterize the burial practices. Ornamentation included specific Olivella bead types and rectangular Haliotis beads; large, geometric, edge-incised Haliotis ornaments with asphaltum and bead appliqué; perforated canid teeth; turtle carapace and slate pendants; stone pipes; and charmstones of multiple materials (Moratto, 1984:182). Large, stemmed, and foliate (leaf-shaped) projectile points suggest the use of the atlatl (spear thrower) (Moratto, 1984:182). Bone implements included "daggers" and smaller needles and pins. Baked clay, hand-molded net weights and infrequent mortars, pestles, manos, and millingstones suggest hunting and fishing but limited utilization of acorns or hard seeds (Moratto, 1984:183).

[1] The Great Basin tradition in which native peoples practiced big-game hunting around the remnants of Ice Age lakes.
[2] A group of populations sharing a similar culture that exists in a large area and is stable for a relatively long time-period.

The Milling Stone Period

Characterized by the appearance of hand stones and milling stones, this period tentatively dates to between 8,000 YBP and 3,000 YBP. Assemblages in the early Milling Stone period reflect an emphasis on plant foods and foraging subsistence systems. For inland locales, it has been assumed that exploitation of grass seeds formed a primary subsistence activity. Artifact assemblages include choppers and scraper planes but generally lack projectile points. The appearance of large projectile points in the latter portion of the Milling Stone Horizon suggests a more diverse economy. Crude choppers, scrapers, cutting tools, and hammerstones are salient features of Milling Stone assemblages. Bone and antler tools (such as awls and flakers) are infrequent finds in Milling Stone sites. A wide variety of presumed magico-religious objects helps characterize the Milling Stone Period. Cogged stones[3] were manufactured as long ago as 7,000+ YBP. Charmstones were similarly fashioned, at least by the Middle Holocene. Spheres of granite, large ceremonial blades, discoidals, and quartz crystals were also made and used.

The distribution and size of Milling Stone sites reflects the theory that aboriginal groups may have followed a modified central-based wandering settlement pattern. In this semi-sedentary pattern, a base camp would have been occupied for a portion of the year, but a small population group seasonally occupied subsidiary camps in order to exploit resources not generally available near the base camp. Sedentism apparently increased in areas possessing an abundance of resources that were available for longer periods of time. More arid inland regions would have provided a seasonally and spatially dispersed resource base, restricting sedentary occupation (Drover et.al., 1983). Long distance trade, connecting coastal populations with the Great Basin as far away as northeastern Oregon, was established at least by the middle of the Milling Stone Period (Macko et al., 1991). The onset of the warmer and drier Holocene climatic conditions may have brought about the cultural changes associated with this period.

The Intermediate Period

Dated to between 3,000 YBP and 1,350 YBP, the Intermediate Period or "Campbell Tradition" by Wallace (1955) and Warren (1968), respectively, represents a transitional period. Little is known about the people of this period, especially those of inland Southern California. Site assemblages retain many attributes of the Milling Stone Period. Additionally, Intermediate Period sites contain large stemmed or notched projectile points and portable mortars and pestles; they reflect possible intensification toward the Late Intermediate. The mortars and pestles suggest that the aboriginal populations may have harvested, processed, and consumed acorns. Neither the patterns of settlement and subsistence nor the cultural evolution of this period have been well understood due to a general lack of data. While abandonment of the area has been suggested for the early Intermediate Period, it has been proposed that sedentism increased with the exploitation of storable food resources (hard seeds and acorns), with the duration and intensity of occupation of residential base camps increasing, especially toward the latter part of this period. The Intermediate Period is represented north of the Los Angeles area and is only suggested in the San Diego area. Numerous, smaller projectile points, suggesting increased hunting and the introduction of the use of the bow and arrow, characterize this period. It is during this time that true maritime exploitation and occupation of the Channel Islands flourishes (Meighan, 1959).

A general picture emerges through time of growing population pressure resulting in intensified land-use patterns (Drover et al., 2001). Throughout much of California, a growing population resulted in the intensification of subsistence practices among local populations resulting in new environmental adaptations such as acorn processing.

[3] Enigmatic circular stone disks with grooves or indentations around the edges resembling cogs.

The Late Prehistoric and Protohistoric Time Periods

Extending from the year 750 to Spanish contact in 1769, the Late Prehistoric Horizon reflects an increased sophistication and diversity in technology. This is characterized by the presence of small "Cottonwood" projectile points that imply the use of the bow and arrow. With the introduction of the bow and arrow, which occurs between A.D. 400 and A.D. 600, small arrow points largely replace atlatl dart points in the archaeological record. It has been suggested that the replacement of atlatl and dart by bow and arrow marks the end of the Intermediate Period on the Orange County coast (and probably other regions of Southern California), and the beginning of the Late Prehistoric Period (Koerper et al., 1994:277-288). In addition, assemblages include steatite (soap stone) bowls, asphaltum (natural tar deposits used by local populations), grave goods, and elaborate shell ornaments. Use of bedrock milling stations was widespread during this horizon. Pottery may or may not appear at the end of the Late Prehistoric Period or the Historic Period (Koerper and Drover, 1983).

Late Period Central Valley sites often show indications of exchange or interaction with areas adjacent to them. Both flexed burial[4] and cremations occur during this horizon including the burning of burial goods prior to interment. Ornaments include an abundance of baked-clay artifacts, Olivella beads of types specific to this period, numerous types of Haliotis ornaments including effigies, trapezoidal and triangular shapes, magnetite drilled cylinder beads, clamshell disk beads, bird bone tubes with incised geometric designs, and flanged tubular smoking pipes made of both schist (a metamorphic rock) and steatite (Moratto, 1984:183). The existence of small, side-notched, obsidian projectiles including shaft straighteners suggests the use of the bow and arrow and contact with southern and eastern California as suggested by Wedel (1941). Shaped mortars and cylindrical pestles, also similar to southern coastal California, may be indicative of acorn use especially in the Sierran foothills. Archaeological sites of this horizon are likely the most common cultural resources in the subject project area.

Ethnographic Background

By the time of European contact, the greater SWIRP study area consisted of three major language stocks: Penutian, Hokan, and Uto-Aztecan. The Penutian stock of languages characterizes the Southern Valley Yokut of Kern County while the Hokan stock includes the Chumash peoples of Santa Barbara and Ventura Counties and the Ipai peoples of central San Diego County (some researchers [Mithun, 1999] theorize that the Chumash are an isolated language, representing an origin quite different from that of the local languages). The later arrival of the Uto-Aztecan (Takic family) stock, including the Gabrielino, Luiseño, Tativiam, and Kitanemuk peoples split the Hokan coastal speakers.

Uto-Aztecan Stock – Gabrielino/Luiseño

Anthropological data acquired after European contact with Native American tribes are somewhat useful as an analogy to the Late Prehistoric Period. At the time of contact in 1769, the Gabrielino and Juaneño Native Americans occupied the Los Angeles and Santa Ana Plains. The Spanish named the Gabrielino after the Franciscan mission San Gabriel Archangel and the Juaneño from San Juan Capistrano. Both the Gabrielino and Juaneño spoke Takic (Shoshonean) languages.

According to Bean and Smith (1978:538), the Gabrielino is one of the least known groups of California's native inhabitants. In addition to much of the Los Angeles Basin, they occupied the offshore islands of Santa Catalina, San Nicolas, and San Clemente. Like the prehistoric culture before them, the Gabrielino were a hunter/gatherer group who lived in small sedentary or semi-sedentary groups of 50 to 100 persons,

[4] Refers to the placement of the deceased individuals with arms and legs bent up against the body.

termed rancherias. At any one time, as many as 50 to 100 villages were simultaneously occupied. Figure 4.5-1 depicts major villages in Gabrielino territory. These rancherias were occupied by at least some of the people all of the time.

Their subsistence relied heavily on plant foods, but was supplemented with a variety of meat, especially from marine resources. Food procurement consisted of hunting and fishing by men and gathering of plant foods and shellfish by women. Hunting technology included the use of bow and arrow for deer and smaller game, throwing sticks, snares, traps, and slings. Fishing was conducted with the use of shell fishhooks, bone harpoons, and nets. Seeds were gathered with beaters and baskets, stored in baskets, and prepared with manos and mutates, or mortars and pestles. Food was cooked in baskets coated with asphaltum, in stone pots, on steatite frying pans, and by roasting in earthen ovens (Bean and Smith, 1978).

Most trade between settlements was balanced or negative reciprocity indicated by strings of Olivella shell beads used as a medium of exchange throughout Southern California (Ruby, 1970). Gabrielino and Juaneño from the mainland probably exchanged trade beads, game, and plant foods in exchange for shell beads and steatite, and plant foods from the islanders. Steatite artifacts along with fish, shell money, and animal pelts were traded by the mainlander Gabrielino into the interior for seeds and deer skin.

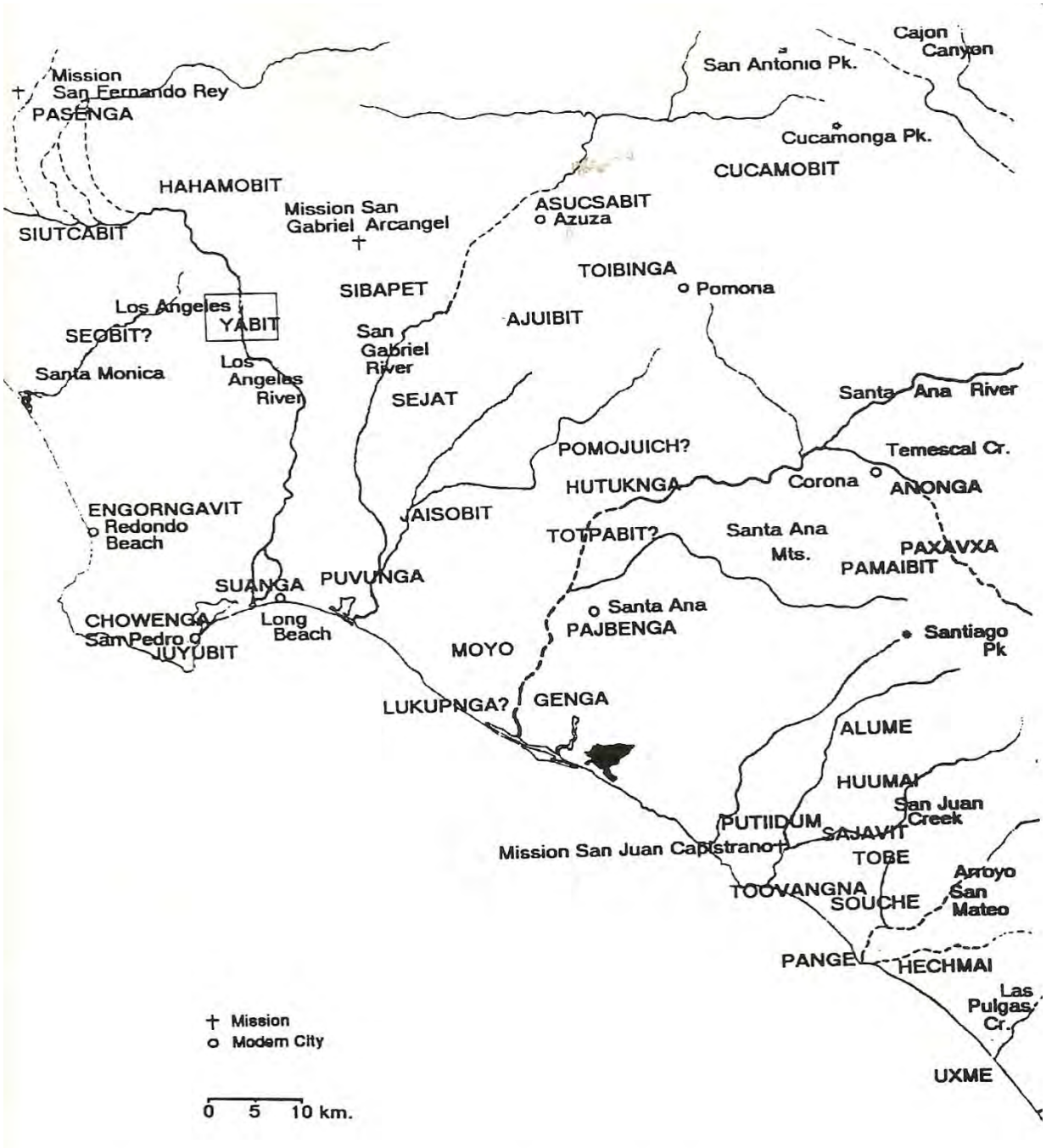
Hokan Stock–Chumash

The majority if not all of Santa Barbara County was occupied or influenced by the Chumash culture. These groups occupied the territory between Estero Beach in the north, Topanga Canyon in the south, and inland to the edge of the San Joaquin Valley. They also occupied the islands of San Miguel, Santa Rosa, Santa Cruz, and Anacapa. Trade networks served to distribute the rich terrestrial and marine resources from the ecologically varied environments among the various groups. The population of all the Chumash just prior to contact with Europeans was probably about 15,000 (Blackburn, 1975:8) with a large proportion of them clustered along the shores and mesas of Santa Barbara Channel. Villages of large hemispherical dwellings that were constructed of bent poles covered with thatching ordinarily contained from 50 to 100 people; larger villages may have housed up to 1,000.

The Chumash, who lived along the south-facing shores of the Pacific, developed a unique ocean-going vessel of sewn wooden planks, called a tomol (Kroeber, 1925:558; Grant, 1978:515; Hudson, 1978). The tomol was used for fishing, for hunting sea mammals, and for conducting trade between the mainland and the islands. Due to their intensive exploitation of the maritime environment, the Chumash acquired comparatively complex social and political organization, trade networks, and religious systems. These characteristics were also accompanied by large, almost sedentary populations; characteristics usually attributed to larger agricultural societies elsewhere.

Penutian Stock–Yokut

Two separate patterns of culture are apparent during the early contact period on either side of the Tehachapi Mountains. The southern San Joaquin Valley was occupied by southern Miwok and Yokut groups of the California Penutian language stock. Both groups made regular use of both plains and foothill subsistence resources. Ceramics are prevalent, especially among the Miwok, and may have trans-Sierran affiliations with Owens Valley Brown Ware pottery. Flexed burials and cremations, small projectile points, stone pipes, stone and bone beads and subsistence that were seasonally dependent on acorn gathering in the Sierra foothills, characterize these groups.



Contact Period Los Angeles Basin Village Locations

FIGURE 4.5-1

Eastward into the Tehachapi Mountains, the eastern Kern River watershed, and the southern Owens Valley, human subsistence adaptation and ethnicity shifted to the Shoshonean-speaking Tubatulabal and Kawaiisu. The Tubatulabal might be considered culturally similar to or part of the nomadic Southern Paiute who characterized southern Owens Valley eastward to the Death Valley Sink. The general ethnohistory[5] of these groups is similar to the late period material culture finds in Death Valley (Hunt, 1960). The contact zone between the two cultural areas no doubt served as a corridor of exchange.

Historic Period

Although European explorers made brief visits to the California coast in the sixteenth and seventeenth centuries, the historic period really begins in 1769 with the Portola expedition and the founding of permanent Spanish settlements along the coast from the Mexican border to the San Francisco Bay region.

The historical period began in the Los Angeles area with the voyage of Juan Rodriguez Cabrillo, who landed near Point Loma, San Diego on September 28, 1542. Although several expeditions were later sent to explore the Alta California coast, for nearly two centuries following Cabrillo's voyage the Spanish government showed little interest in the region, focusing instead on the Mexican mainland and on Baja California. In the 1760s, however, spurred on by the threat to Spanish holdings in Alta California by southward expansion of the Russian sphere of influence, the Spanish government began planning for the colonization of Alta California (Rolle, 1978). California was a colonial province of the Spanish empire during the years 1769 to 1821.

The central institutions of Spanish California were the Franciscan missions founded along the coast from San Diego to San Francisco. Presidios provided military protection while pueblos emerged as civilian centers. Junípero Serra, a Spanish Franciscan, arrived in California in 1769. He founded California's first nine missions and served as father-president of the mission system. For the next 50 years, mission influence grew in southern California (James, 1912). Mission San Gabriel Arcángel was established in modern day Montebello in 1771, but was moved to its present location in San Gabriel four years later due to flooding. Mission San Fernando Rey de España was founded in 1797. The mission economy was based on farming and open-range ranching over vast expanses of territory (Robinson, 1979).

As part of their colonization goals, the church hierarchy felt an obligation to convert the native people to Christianity, and the church worked diligently at converting the local populations. The mission priests gathered as many indigenous groups into the mission as possible. Once there, the neophytes essentially were held captive while they received religious instructions and provided free labor for the mission, often forcibly. The effects of mission influence upon the local native population were devastating. The reorganization of their traditional lifestyle alienated them from their previous subsistence patterns and social customs. European diseases for which the indigenous groups had no immunities reached epidemic proportions and many died (James, 1912; Rolle, 1978).

Government officials founded civilian towns, or pueblos, and attracted settlers by providing free land, livestock, farming equipment, and an annual allowance for the purchase of clothing and other supplies. In return, the settlers were required to sell their surplus agricultural products to the presidios. The first city to be established was San José, founded in 1777. It was followed in 1781 by El Pueblo de Nuestra Señora la Reina de Los Angeles del Río de Porciúncula, also known as Los Angeles. African-American founding families made up more than half of the original settlers of Los Angeles (Rawls, 2006; Rolle, 1978).

[5] Refers to the study of ethnographic cultures and indigenous customs by examining historical records.

Mexican independence from Spain in 1821 was followed by secularization of the California missions in 1832. Between 1833 and 1845, the newly formed Mexican government began to divide up the immense church holdings into land grants. Huge cattle ranches, or ranchos, emerged as the dominant institutions of Mexican California. Los Angeles was given the status of "City" in 1835 and was officially made capital of California. By the 1840s, ranches, farms, and dairies were being established throughout the Los Angeles Basin and in nearby areas. Traders and settlers begin arriving from the United States. Official United States interest in acquiring California grew in the 1840s. The Rancho era in California was short-lived due to the declaration of war. War was declared in 1846 and lasted until 1848 during which California was seized by the United States. In 1848, Mexico ceded California to the United States under the Treaty of Guadalupe Hidalgo. Growth of the region was comparatively rapid after succession. Subsequent gold rushes, land booms, and transportation development all played a part in attracting settlers to the area (Rawls, 2006; Rolle, 1978).

Gold was discovered in California in 1848. From then into the early 1850s, gold fever spread with populations in northern California skyrocketing. California was admitted to the Union in 1850. This was also an important year for Los Angeles with it being incorporated as an American City, getting its first post office, its first hotel, and being named the nation's number one wine-producing county. The trans-continental railroad was completed in 1869, solving the problem of California's isolation. The Atchison, Topeka, and Santa Fe Railroad reached Los Angeles in the 1880s leading to a large population and economic boom. In 1887, more than 200,000 people funneled into Southern California, real estate sales soared, and dozens of new towns sprang up (Rawls, 2006; Rolle, 1978).

The economic growth of the late 19th-and early 20th-centuries came as a result of a boom in the wheat industry in the Central Valley, the citrus fruit industry in Southern California, newly discovered petroleum resources, and the motion-picture industry. With the advent of refrigerated railroad cars and both winter-ripening and summer-ripening oranges, California soon produced two-thirds of the nation's oranges and 90 percent of its lemons. Huge oil deposits were found in the San Joaquin Valley, Santa Barbara County, and the Los Angeles basin. One of the richest oil fields was discovered in Long Beach, which led California to become first among the states for crude oil production. The harbor at Los Angeles became the largest oil-exporting port in the world. The film industry originally came to Niles, California in 1908, producing over 375 films in the following six years. Soon after, the industry moved south to the Los Angeles suburb of Hollywood (Rawls, 2006; Rolle, 1978).

The 1920s saw another boom for California with old industries expanding and new industries founded. But after the stock market crash in 1929, California farm income sank, property owners lost their farms and homes, and unemployment in the state reached 28 percent. However, progress slowly continued with the Olympics being held in Los Angeles in 1932, and the building of the Oakland-Bay Bridge and the Golden Gate Bridge in 1936 and 1937, respectively (Rawls, 2006; Rolle, 1978).

Like most of Southern California, this region changed rapidly following World War II when the pace of migration and growth quickened.

Cultural Resource Manifestations

Past historic cultural resources can manifest themselves as documents, photographs, ditches, roads, buildings, and/or locations of previous events. Prehistoric cultural resources are the recognizable locations of any prehistoric human activities or "sites," as well as locations or natural features recognized by Native Americans as having sensitive historic or ideological importance. These are typically called Traditional Cultural Places (TCPs), and tribes are mostly opposed to formally identifying and documenting their

locations. Some TCPs are, however, registered by tribes with the Native American Heritage Commission (NAHC). While both types of prehistoric resources can be pursued by conducting California Historic Resources Information System (CHRIS) records searches of Archaeological Information Centers, as well as consultation with the NAHC, archaeological survey is usually required for the recognition of yet unrecorded resources, and consultation with the NAHC and tribes is critical to understanding the nature and relative locations of TCPs. While it is problematic to predict areas of cultural resource sensitivity, effort has been made to understand the distribution of prehistoric activity by studying prehistoric settlement patterns in a regional context, and identifying similarities and differences among prehistoric populations.

A large-scale study (4.5 square miles) undertaken in 1994, called The Newport Coast Archaeological Project (NCAP) and funded by Coastal Community Builders, a division of The Irvine Company, required the mitigation of impacts to 37 prehistoric archaeological sites located along the coast and adjacent to the San Joaquin Hills in Newport Beach, California. This study allowed for an empirical opportunity to the study of archaeological site types and locations. Utilizing functional artifact types, much of the analysis was directed at defining functional site types based on the distribution and proportions of artifact types (Mason, et al., 1994: ii-iii). The range of site types was eventually defined as the following: major residential bases, minor residential bases, Specialized Activity Loci Groundstone Activity Area, and Chipped Stone Activity Area.

This attempt to empirically reconstruct settlement and subsistence systems would allow for a better understanding of the variability of cultural resource locations over much of the SWIRP study area. Within the diversity of site types there are differences in time periods as well as physical locations. Older period sites tend to be both less dense as well as less visible due to smaller population densities and post depositional geological processes. Archaeological sites apparent to archaeologists are but a sample of past use areas greatly altered or obscured due to geological uplifting, erosion, and sedimentation. Paleo Coastal, Milling Stone Horizon, and Intermediate Period site locations often remain buried compared to the Late Prehistoric Period sites. Depending on their topographic setting, recorded Intermediate Period sites are known to occur at a depth of 15 to 20 feet in sedimentation which has occurred in the last 2,000 years (Mason et. al. n.d.).

Projecting locations for possible expansion of solid waste facilities is confronted with the difficulty to predict an area's cultural resource potential. While historical resources may be apparent for a proposed project area, the potential for prehistoric resources is dependent on many variables. While not all archaeological sites are habitation sites, the general topography and proximity of natural resources can be indicative of potential long-term occupation. The proximity of water, ecotones comprised of mixed resource bases (such as riparian, chaparral and grassland) combined with locations lacking severe erosion or sedimentation may present likely locations for encountering cultural resources.

Coastal areas within the SWIRP project study area can certainly be predicted to have a greater potential for prehistoric cultural resources because of larger populations and a more varied resource base. In comparison, populations in inland Kern or Riverside counties were smaller.

The standard approach to a proposed building or expansion project is referred to as a Phase I Cultural Resource Inventory and is designed to efficiently recognize the potential of a specific location for cultural resources. Such an effort includes the investigation of preexisting records for historic, prehistoric, and paleontological resources, as well as a pedestrian survey on the proposed project location. Resources, if any, located on the proposed project area can then be evaluated for the mitigation of any project specific impacts.

Cultural resources can include archaeological sites, structures, districts, or any other physical evidence of human activity considered important to a culture, a subculture, or a community for scientific, traditional, religious, or any other reason. Depending on their condition and historic use, such resources can provide insight into living conditions of previous existing cultures, or might retain cultural and religious significance to modern groups. Typically, cultural resources are subdivided into archaeological resources (prehistoric or historic sites where human activity has left physical evidence of that activity, but normally no aboveground structures remain standing); architectural resources (buildings or other structures or groups of structures that are of historic or aesthetic significance); or resources of traditional, cultural, or religious significance to a Native American tribe. Finally, TCPs can include archaeological resources, structures, neighborhoods, prominent topographic features, habitats, or areas where particular plants, animals, or minerals exist that any cultural group considers being essential for the preservation of traditional cultural practices.

The following discussion focuses on resources associated with historic (post-Colombian or post-contact) resources which are typically discussed in one of three general contexts based on phases of European/Western occupation (Spanish, Mexican, and United States). In Southern California, this began with Spanish intrusion in the mid-16th century. The distinction between prehistoric and historic resources is easer to identify in urban environments where historic infrastructure is ever present. However, the distinction between the two contexts outside of urban environments is typically made based on the lack of material culture from one of the two periods. For the purpose of this discussion, historic resources include historic sites, architectural resources, and TCPs important to historic or contemporary subcultures.

Types of historical resources expected throughout the project area and buffer zone can relate to European, Mexican, or United States land use including exploration, settlement, or warfare. Types of historic resources include buildings, structures, or objects consisting of habitation sites (homesteads, farmsteads, ranch houses, private residences, hotels), procurement sites (logging, trading posts, kilns, mills, quarries, wells, cisterns, mines, adits), transportation sites (historic roads, trails, bridges, landings, piers, shipyards, railroad tracks/routes), hydrological sites (dams, weirs, canals, locks, drainages, brow ditches, culverts), ceremonial or religious sites (cemeteries, churches), industrial sites (power plants, commercial buildings, factories, canneries), and municipal sites (town halls, civic centers, department stations, or other government buildings).

South Central Coastal Information Center

In order to identify cultural resource concerns within the project study area, a records search was conducted at the South Central Coastal Information Center (SCCIC) at California State University, Fullerton. Due to the large project study area, it was determined that reviewing the over 100 USGS 7.5-minute Quadrangles that make up the SCCIC's three counties (Los Angeles, Orange, and Ventura) would be unproductive. After discussions with Stacy St. James, Coordinator of the SCCIC, it was decided to use search words such as pipeline, fiber optic, and inventory to build a bibliography for the project because these would be more likely to consist of larger, regional reports and possibly include studies that could be used for the purposes of this project. More than 200 studies were identified in Los Angeles, Orange and Ventura.

Native American Heritage Commission

Native American consultation was initiated with a letter from Ms. Reina Pereira of LADPW to the NAHC with information on the project. The NAHC responded via letter on August 24, 2010. Native American cultural resources were identified within one-half mile of the project area. The letter also provides a list of

culturally affiliated tribes and interested Native American individuals that the NAHC recommends as "consulting parties" that should be contacted for their potential knowledge of the religious and cultural significance of resources in the area. On October 11, 2010, letters were sent to each individual on the list (Appendix E). To date, no responses have been received.

Natural History Museum of Los Angeles County

As part of the Citywide General Plan Framework EIR, a paleontological literature review was undertaken by Diveley (1993) of the Natural History Museum of Los Angeles County in September 1993. The Citywide review encompassed 20 USGS 7.5-minute quadrangle maps and revealed that 11 major sedimentary rock units (formations) have been identified in the City that have yielded or have the potential to yield significant vertebrate fossils. They include the following formations:

- Cretaceous Chico Formation
- Middle Miocene Topanga Formation
- Middle Miocene Altamira Shale Member of the Monterey Formation
- Late Miocene Modelo Formation
- Middle Miocene Monterey Formation
- Latest Miocene–Pliocene Pico Formation
- Pliocene Fernando Formation
- Pleistocene Timms Point Silt
- Pleistocene Lomita Marl
- Quaternary San Pedro Sands
- Quaternary Palos Verde Sands or unnamed Quaternary Sediment

The review recommended that the City develop and implement paleontological resources treatment plans for specific future projects that may impact paleontological resources. The plans should include an updated literature review and a field survey, and will be used as a guide for the consideration of paleontological resources for such projects.

4.5.2 Thresholds of Significance

The impact analysis for cultural resources will use the CEQA thresholds and the *L.A. CEQA Thresholds Guide* to determine significance. For the purpose of this analysis, the project study area is defined as the City and the area within 100 miles of the City. SWIRP emphasizes local processing and handling of the City's waste, including locating needed facilities within the City limits. However, it may not be feasible for all facility types to be built within the City, either due to lack of available space or potential land use conflicts. Therefore, as stated in Section 2.2 of this Final Program EIR (Final PEIR), it is assumed that the facilities would be located within a 100-mile study area of the City.

The following information is provided in accordance with the Environmental Checklist Form included as Appendix G of the *CEQA Guidelines*, which suggests that a development project could have a significant impact on Cultural Resources if it would meet certain thresholds:

- *Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5 of the CEQA Guidelines?*
- *Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?*

- *Would the project disturb any human remains, including those interred outside of formal cemeteries?*
- *Would the project cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5 of the CEQA Guidelines?*

4.5.3 Project-Level Analysis

SWIRP Policy and Program Analysis

SWIRP proposes a variety or policies and programs to increase recycling and to increase diversion from landfills. Table 4.5-2 analyzes the potential for the policies and programs to result in an impact to cultural resources. As shown in Table 4.5-2, none of the policies would result in direct impacts on cultural resources; however, depending on phasing and implementation, certain policies may result in project-level impacts through facility expansion or construction of new facilities.

Disposal of residual waste in existing local or remote landfills would not result in impacts to cultural, paleontological, or historical resources.

SWIRP Facility Analysis

Depending on the combination of facilities that would be constructed, ground-disturbing activities could impact approximately 133 to 163 acres. Ultimately, the potential impacts to cultural resources will depend on where the proposed facilities are placed. Any proposed project component or facility that would result in temporary or permanent ground disturbance activities (such as construction of a composting facility) would need to be independently evaluated to determine project-related impacts to cultural resources in compliance with CEQA, and site-specific mitigation measures may be required in addition to the general mitigation measures included in this document. Because this analysis is at the program level, there is no specific evaluation of impacts to archaeological and historical resources. Consideration of impacts to cultural resources will be undertaken during specific projects under the SWIRP program. Therefore, the following analysis describes the potential impacts that future facilities could have on cultural resources within the project study area for each CEQA significance threshold previously identified.

Archaeological Resources

There are thousands of archaeological sites within the project study area. As described in Section 4.5.1.2, they include Chipped and Ground Stone Activity Areas, Specialized Activity Loci, and minor and major residential bases. Any proposed facility that involves earth-disturbing activities, such as grading and excavation, has the potential to impact significant archaeological resources and/or has the potential to cause adverse change to archaeological sites, if such resources are present in the location where the facilities are proposed.

The City's conservation element's objectives, policies, and programs are the baseline through which to consider mitigation measures for significant archaeological resources, impacted by the proposed project pursuant to CEQA. The City's objective of protecting archaeological resources includes the policy to identify and protect significant archaeological sites and resources known to exist, or that are identified during land development, demolition or property modification activities.

Table 4.5-2. Analysis of SWIRP Policies and Programs (Cultural Resources)

Initiative	Impact Analysis for Cultural Resources[1]	Significance Conclusion
Downstream Policies and Programs[2]		
Expand Recycling Ambassador Program	This program will not directly impact cultural resources.	No Impact
Adding Textiles to the Blue Bins or Partner with Non-Governmental Organizations	This program/policy will not directly impact cultural resources.	No Impact
Bulky Item Reuse and Refurbishment	This program/policy will not directly impact cultural resources.	No Impact
Expand Residential Food Scrap Program	This program will not directly impact cultural resources.	No Impact
Large-Scale Media/Social Marketing	This program/policy will not directly impact cultural resources.	No Impact
Modify Residential Collection Rates	This program/policy will not directly impact cultural resources.	No Impact
Modify Commercial Collection Rates	This program/policy will not directly impact cultural resources.	No Impact
Expand Multi-Family Recycling	This program/policy will not directly impact cultural resources.	No Impact
Multi-Family Green Bins	This program/policy will not directly impact cultural resources.	No Impact
All Businesses to Have Recycling Services	This program/policy will not directly impact cultural resources.	No Impact
Commercial Haulers to Offer Recycling Services to Customers	This program/policy will not directly impact cultural resources.	No Impact
Expand Commercial Technical Assistance	This program/policy will not directly impact cultural resources.	No Impact
Expand Construction and Demolition (C&D) Technical Assistance	This program/policy will not impact cultural resources.	No Impact
Provide More Public Area Recycling	This program/policy will not directly impact cultural resources.	No Impact
C&D Ordinance	This program/policy will not impact cultural resources.	No Impact
Mandatory Participation Programs[3]		
Mandatory Recycling Separation	This program will not directly impact cultural resources.	No Impact
Mandatory Organics Separation	This program will not directly impact cultural resources.	No Impact
Resource Recovery Centers (RRC) at Transfer Stations and Landfills	This program will not directly impact cultural resources.	No Impact
Recycling Ambassadors (Reinforcement)	This program will not directly impact cultural resources.	No Impact
Direct Technical Assistance (Reinforcement)	This program will not directly impact cultural resources.	No Impact
Increased Diversion Requirements at C&D Facilities	This program will not directly impact cultural resources.	No Impact

Table 4.5-2. Analysis of SWIRP Policies and Programs (Cultural Resources) (Continued)

Initiative	Impact Analysis for Cultural Resources	Significance Conclusion
Upstream Policies[4]		
Extended Producer Responsibility (EPR) for Toxics	Results in a reduction of waste generation. No impact to cultural resources.	No Impact
EPR for Difficult to Recycle Materials	Results in a reduction of waste generation. No impact to cultural resources.	No Impact
Single-use Bag Ban	Results in a reduction of waste generation. No impact to cultural resources.	No Impact
Disposal of Remaining Residual Waste[5]		
Landfill Disposal –Truck Haul, Rail Haul	This program will not directly impact cultural resources.	No Impact

(1) Depending on phasing and implementation of various proposed programs and policies, along with anticipated growth in the City, there will be a need for additional facilities to process the diverted materials. Please refer to Section 4.5.3 for an impact analysis of the future facilities.
(2) Refer to Chapter 2.0, Table 2.3-1 for a detailed description of the Downstream Policies and Programs.
(3) Refer to Chapter 2.0, Table 2.3-2 for a detailed description of the Mandatory Participation Programs.
(4) Refer to Chapter 2.0, Section 2.3.4 for a detailed description of the Upstream Policies
(5) Refer to Chapter 2.0, Section 2.3.6 for detailed description of Disposal of Remaining Residual Waste.

Mitigation measure CR-1 requires that prior to ground disturbing projects in native sediments with the potential for producing archaeological materials, or projects located near known cultural resources, a Phase I study must be performed. If archaeological sites or resources are discovered as a result of the Phase I study, a Phase II study of the significance of any prehistoric material that is present must be undertaken. If the Phase II study indicates that a significant site is present, the qualified Archaeologist shall determine appropriate actions, in cooperation with the City, for preservation and/or data recovery of the resource. Implementation of CR-1 would ensure that potential impacts to archeological resources would be less than significant.

Paleontological Resources/Unique Geologic Features

The paleontological literature review by the Natural History Museum of Los Angeles County (NHMLAC) revealed that much of the Los Angeles Basin and outlying areas within the 100-mile study area are sensitive for the presence of fossil resources. Eleven major sedimentary rock units have been identified in the City that have yielded or have the potential to yield significant vertebrate fossils. Similarly, the outlying lands that make up the other eight counties in this study also have significant sedimentary units that lie throughout. Specific SWIRP projects may impact significant fossil resources if they are exposed during project related earth-moving activities.

The City's conservation element's objectives, policies, and programs are the baseline through which to consider mitigation measures for significant paleontological resources, impacted by the SWIRP program, pursuant to CEQA. The City's objective of protecting its paleontological resources includes the policy to identify and protect significant paleontological sites and resources known to exist or that are identified during land development, demolition or property modification activities.

Mitigation measure CR-2 will be implemented prior to ground disturbing projects in areas where alluvial sediments and/or bedrock formations are anticipated to be encountered. CR-2 requires an archival records search to evaluate the likelihood of fossils being present at the project site. A field survey would be undertaken in areas of potential, but unknown sensitivity to evaluate the site for the presence of significant fossil resources and establish the need for paleontological salvage and/or monitoring. If significant fossils are discovered as a result of a field survey or during monitoring operations, a qualified Paleontologist would determine appropriate actions, in cooperation with the City, for the preservation and/or salvage of the resource. Implementation of CR-2 would ensure that potential impacts to paleontological resources would be less than significant.

Human Remains

Future SWIRP projects that would result in earth-disturbing activities within native sediments could have the potential to disturb Native American buried human remains that were on or near burial sites, and outside of formal cemeteries. It would be impossible to predict where such remains may be located since individuals were buried in a wide variety of locales. Mitigation measure CR-3 requires that in the event that remains are discovered, they are treated in accordance with state law and the wishes of tribal most likely descendant. Implementation of CR-3 would ensure that potential impacts to the discovery of human remains would be less than significant.

Historic Resources

Thousands of historic resources are located within the City and the 100-mile study area. They represent a number of historical contexts such as Spanish, Mexican, and United States occupation in urban, suburban, and rural contexts. Some of these resources are currently listed on either local, State, or National

Registers of Historic Places, or are eligible for listing. Any proposed facility that involves earth-disturbing activities, such as grading and excavation, or alterations to existing infrastructure such as objects, buildings, or structures has the potential to impact significant historic resources and/or has the potential to cause adverse change to historic objects, buildings, or structures.

The City of Los Angeles, Municipal Code, General Plan Framework EIR, and conservation element's objectives, policies, and programs are the baseline through which to consider mitigation measures for significant historical resources, pursuant to CEQA, impacted by the SWIRP program. The City's objective of protecting the City's historical resources includes the policy to identify and protect significant historic resources known to exist, or that are identified during land development, demolition or property modification activities.

Mitigation measure CR-4 requires that prior to development activities that would demolish or otherwise physically affect objects, buildings, or structures 45 years old or older or affect their historic setting, the project applicant shall retain a cultural resource professional who meets the Secretary of the Interior's Professional Qualifications Standards for Architectural History to determine if the project would cause a substantial adverse change in the significance of a historical resource. If the study indicates that a significant historical resource is present, the qualified cultural resource professional shall determine appropriate actions, in cooperation with the City, for eliminating or reducing impacts to historical resources. However, the project could still result in significant cumulative impacts to historical resources because whereas local regulations provide for the mitigation of impacts, they do not explicitly prohibit the demolition or alteration of historical resources.

Table 4.5-3, provides a summary of the cultural resource impacts, by facility type. As noted in Table 4.5-3, with implementation of mitigation measures, all anticipated facility impacts to cultural resources can be reduced to below a level of significance.

Table 4.5-3. Summary of Impact by Facility Type (Cultural Resources)

Facility Type	Impact
Clean Material Recovery Facilities	Less than significant with implementation of mitigation.
Composting (Aerobic)	Less than significant with implementation of mitigation.
Composting (Anaerobic Digestion)	Less than significant with implementation of mitigation.
Resource Recovery Centers	Less than significant with implementation of mitigation.
Mixed Material Processing	Less than significant with implementation of mitigation.
Alternative Technology – Advanced Thermal Recycling	Less than significant with implementation of mitigation.
Alternative Technology – Biological (Anaerobic Digestion)	Less than significant with implementation of mitigation.
Alternative Technology – Thermal (Plasma Arc, Gasification, Pyrolysis, and Others)	Less than significant with implementation of mitigation.

4.5.4 Cumulative-Level Analysis

Direct impacts to cultural resources are generally site specific. As defined in Section 15130 of the *CEQA Guidelines*, a cumulative impact consists of an impact that is created as a result of the incremental effects of a proposed project together with the effects of other projects, causing related impacts. Although a project, in conjunction with the effects of past projects, other current projects, and probable future projects, could potentially result in the disturbance of prehistoric archaeological resource sites,

paleontological resources, and human remains throughout the region, the City requires the mitigation of impacts to these resources (i.e., CR-1 through CR-3). Therefore, despite the site-specific nature of the resources, the mitigation identified would reduce the potential for cumulative impacts. As a result, anticipated development on a project site would not contribute to a significant cumulative impact.

Future SWIRP projects that would require earth-disturbing activities, in combination with other cumulative projects resulting from growth and development in the study area, have the potential to result in significant cumulative impacts to archaeological resources. Implementation of CR-1 would require a Phase I study, and possibly a Phase II study, to adequately evaluate and provide for the preservation or recovery of significant resources. Additionally, other projects in the study area are subject to similar requirements. Assuming implementation of CR-1 and compliance with applicable laws and regulations, the project would not result in cumulatively significant impacts to archaeological resources.

Developments that would disturb native soils or where no previous development has occurred have the potential to disturb or destroy unknown paleontological resources. The extent or significance of these resources cannot be determined until discovery during surveys and evaluation or excavation of native soils. Mitigation on a case-by-case basis would reduce impacts. Implementation of CR-2 would prevent significant adverse impacts on paleontological resources in the City and surrounding areas and would avoid its cumulative contribution to the loss of paleontological resources in the region. Compliance with CR-3 related to the disposition of human remains discovered during excavation or grading would prevent significant adverse impacts. Cumulative impacts on human remains would be less than significant.

Future SWIRP projects that would require earth-disturbing activities or alterations to existing infrastructure (including objects, buildings, or structures) in combination with other cumulative projects resulting from growth and development in the study area, have the potential to result in significant cumulative impacts to historical resources. Implementation of CR-4 would require an historic resources inventory to evaluate and provide for the preservation or recovery of significant resources. Additionally, other projects in the study area are subject to similar requirements. The implementation of CR-4 and compliance with applicable laws and regulations may eliminate and/or decrease significant impacts. However, the project could still result in significant cumulative impacts to historical resources because whereas local regulations provide for the mitigation of impacts, they do not explicitly prohibit the demolition or alteration of historical resources.

4.5.5 Mitigation Measures

CR-1 Future SWIRP projects that would result in earth-disturbing activities within native sediments with the potential for producing archaeological materials, or projects located near known cultural resources, shall implement the following:

1. Prior to commencement of any earth-disturbing activities, a Phase 1 study shall be undertaken to evaluate the current conditions of a project site. The study shall consist of: (1) an initial records search including records, maps, and literature housed at the appropriate Archaeological Information Center depending on the specific county that the project is within; (2) a Sacred Lands check with the Native American Heritage Commission (NAHC) and initial scoping with interested Indian Tribes and individuals identified by the NAHC; (3) a pedestrian field survey by a qualified Archaeologist to determine the presence or absence of surficial artifactual material and/or the potential for buried resources; and (4) a technical report describing the study and offering management recommendations for potential further investigation.

2. If archaeological sites or resources are discovered as a result of the Phase I study, a Phase II study of the significance of any prehistoric material that is present shall be undertaken. The evaluation shall include further archival research, ethnographic research, and subsurface testing/excavation to determine the site's horizontal and vertical extent, the density and diversity of cultural material, and the site's overall integrity. The evaluation shall include a technical report describing the findings and offering management recommendations for sites determined to be significant. Non-significant resources would require no further study.
3. If the Phase II study indicates that a significant site is present, the qualified Archaeologist shall determine appropriate actions, in cooperation with the City, for preservation and/or data recovery of the resource. Preservation in place is the preferred manner of mitigation, as provided in the California Code of Regulations (CCR) Title 14 Section 15126.5(b)(3). This could include (1) avoidance of resources; (2) incorporation of resources into open space; (3) capping the resource with chemically stable sediments; and/or (4) deeding the resource into a permanent conservation easement. To the extent that a resource cannot be preserved in place, a Phase III data recovery excavation shall be completed to recover the resource's scientifically consequential information. A technical report shall be completed that adheres to the Office of Historic Preservation's (OHP) Archaeological Resources Management Report (ARMR) guidelines.
4. Monitoring of ground-disturbing activities shall be undertaken by a qualified Archaeologist as a final mitigation measure in areas that contain or are sensitive for the presence of cultural resources.

CR-2 Future SWIRP projects that would excavate into alluvial sediments (e.g. Older Quaternary Alluvium deposits) or bedrock formations shall implement the following:

1. Prior to commencement of any earth-disturbing activities, an archival records search shall be undertaken at the Natural History Museum of Los Angeles County (NHMLAC), San Bernardino County Museum, or other appropriate institution to determine the depositional environment within the project area and to evaluate the likelihood of fossils being present.
2. A field survey shall be undertaken prior to ground-disturbing activities in areas of potential but unknown sensitivity to evaluate the site for the presence of significant fossil resources and to establish the need for paleontological salvage and/or monitoring.
3. If significant fossils are discovered as a result of a field survey or during monitoring operations, a qualified Paleontologist shall determine appropriate actions, in cooperation with the City, for the preservation and/or salvage of the resource.
4. Any monitoring activities shall be accomplished by a qualified Paleontologist so that fossils discovered during grading can be scientifically and efficiently recovered and preserved.
5. A qualified Paleontologist shall prepare collected specimens to the point of identification and place the prepared fossils in the appropriate institution for permanent curation.

6. Upon completion of recovery and curation, all studies and actions shall be described in a paleontological technical report prepared by a qualified Paleontologist.

CR-3 If human remains are encountered during SWIRP related projects, no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains shall occur until the County Coroner has determined the appropriate treatment and disposition of the human remains. Section 7050.5 of the California Health and Safety Code provides for the disposition of accidentally discovered human remains and states that if human remains are found, no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains shall occur until the County Coroner has determined the appropriate treatment and disposition of the human remains. Section 5097.98 of the Public Resources Code states that if remains are determined by the Coroner to be of Native American origin, the Coroner must notify the NAHC within 24 hours, which in turn must identify the person or persons it believes to be the most likely descended from the deceased Native American. The descendents shall complete their inspection within 48 hours of being granted access to the site. The designated Native American representative would then determine, in consultation with the property owner, the disposition of the human remains.

CR-4 Implementation of SWIRP could include development near historical resources or resources considered to be potential historical resources. This development has the potential to result in significant impacts to individual historical resources within the project area, including resources listed in or eligible for listing in the National Register of Historic Places (NRHP), California Register of Historical Resources (CRHR) and Local Registers. This could include the delisting or loss of eligibility of such resources. In addition, there is the potential for significant impacts to buildings or structures of historic age (45 years old or older), or buildings or structures which may eventually be of historic age, and which may qualify as historical resources pursuant to CEQA.

Prior to development of future facilities that would demolish or alter buildings or structures 45 years old or older or affect their historic setting, the project applicant shall employ a cultural resource professional who meets the Secretary of the Interior's Professional Qualifications Standards for Architectural History to determine if the project would cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5 of the *CEQA Guidelines*. The cultural resource professional in conjunction with the City of Los Angeles shall determine an appropriate scope of investigation including archival research, if necessary, an updated records search at any of the appropriate California Historical Resources Information System (CHRIS) information centers, and a pedestrian survey of the project area to determine if any significant historical resources would be adversely affected by the proposed development. A technical report shall be completed per the Office of Historic Preservation's (OHP's) Archaeological Resources Management Report (ARMR) guidelines which evaluates any historical resources within the project area and includes recommendations for eliminating or reducing impacts to historical resources. The technical report shall be submitted to the Lead Agency for approval. As determined necessary by the Lead Agency, environmental documentation (e.g., CEQA documentation) prepared for future development within the project site shall utilize the findings and recommendations of the technical report. The project applicant shall be responsible for implementing methods for eliminating or reducing impacts to historical resources. Such methods could include, but not be limited to: (1) preparing a preservation plan or element which provides guidelines to

ensure that the project conforms to the standards for rehabilitation established by the Secretary of the Interior and the OHP; (2) requiring new construction to be compatible with historical resources on the site and in the vicinity (e.g., mass, height, materials, setback, retention of mature landscaping); (3) requiring the project sponsor to relocate the historical resource or offer it for relocation by another individual or organization (provided that eligibility will be maintained following the relocation); (4) requiring the project sponsor to adaptively reuse the historical resource or incorporate it into the project; (5) undertaking documentation according to the requirements of the Historic American Building Survey such as large format photography, measured drawings, and written narrative; (6) making copies of this documentation available to the Los Angeles Public Library and local preservation organizations and historical societies; or (7) requiring the project sponsor to allow local preservation organizations and historical societies to document the resource and/or remove significant historic elements for archives. .

4.5.6 Conclusion

The construction of future facilities identified in SWIRP has the potential to impact archaeological, historical, and paleontological resources if such facilities are proposed in areas that support significant cultural resources. Potential impact to archaeological resources would be mitigated with implementation of mitigation measure CR-1. Potential impacts to paleontological resources would be mitigated to below a level of significance with implementation of mitigation measure CR-2. In the event that human remains are identified during grading activities for future facilities, mitigation measure CR-3 will be implemented to minimize potential impacts. If future facility construction involves the demolition of structure greater than 45 years old, there is a potential for an impact to historical resources. Implementation of mitigation measure CR-4 will reduce the potential impact to below a level of significance.

4.6 GEOLOGY AND SOILS

This section analyzes the potential for the proposed project to have impacts related to geology and soils. It includes a discussion of the applicable regulatory environment, existing conditions, a project-level and cumulative-level impact analysis, and any applicable mitigation measures. The analysis area for geology and soils resources covers the City of Los Angeles (City and the area within 100 miles of the City). While the Solid Waste Integrated Resources Plan (SWIRP) emphasizes local processing and handling of discarded materials generated within the City, it may not be feasible for all facility types to be built within the City, either due to lack of available space or potential land use conflicts. Therefore, a 100-mile study area is included in the analysis to capture any potential impacts to areas outside of the City.

The SWIRP addresses the handling of solid waste for the City, which covers approximately 470 square miles and is home to approximately 3.8 million residents. The programs and policies identified in the SWIRP would apply to residential, commercial, industrial, and institutional generators in the City. The SWIRP also identifies a variety of facilities that would need to be constructed to meet the City's recycling and solid waste infrastructure needs through 2030. Specific locations for these facilities have not been identified at this time; rather, the SWIRP notes the number and type of facilities that would be required through 2030.

4.6.1 Environmental Setting

The project analysis area (City and the area within 100 miles of the City) has varied geology and topography. The region spans from the Pacific Ocean islands, shorelines, beaches, and coastal plains, through the mountain ranges, into the large and small interior valleys, to the vast deserts of California, including Anza Borrego and Mojave.

The 100-mile study area encompasses nine counties in Southern California: Kern, Los Angeles, Orange, Riverside, San Bernardino, San Diego, San Luis Obispo, Santa Barbara, and Ventura. The 100-mile buffer area also includes 190 cities.

4.6.1.1 Regulatory Setting

Federal

There are no applicable federal regulations pertaining to geology and soils.

State

Alquist-Priolo Earthquake Fault Zoning Act (Public Resources Code §2621 et seq.)

The Alquist-Priolo Earthquake Fault Zoning Act works to avoid the hazard of surface fault rupture by regulating the development and construction of buildings intended for human occupancy. The act helps to define areas where fault rupture is likely to occur.

The Alquist-Priolo Earthquake Fault Zoning Act of 1972 was created to prohibit the location of most structures for human occupancy across the traces of active faults, thus lessening the hazard of fault rupture. Los Angeles County development complies with all aspects of the Alquist-Priolo Act. The three main provisions are to:

- Require the California Geological Survey to implement maps of the surface traces of known active faults, including both the best known location where faults cut the surface and a buffer zone around the known trace(s);
- Require property owners (or their real estate agents) to disclose that their property lies within identified hazard zones; and
- Prohibit new construction of projects as defined by the Alquist-Priolo Act within these identified hazard zones until a comprehensive geological study has been completed.

California Building Code

The California Building Code (CBC) (CCR Title 24) has its base in the Uniform Building Code (UBC), although the CBC includes more extensive provisions relating to seismic hazards. The code also defines procedures to calculate seismic forces on structures.

Seismic Hazards Mapping Act (Public Resources Code §2690–2699.6)

The Seismic Hazards Mapping Act aims to reduce the threat of seismic hazard to public health and safety by identifying and mitigating seismic hazards. Through the act, the California Department of Conservation, Division of Mines and Geology, is directed to delineate seismic hazard zones. State, County, and City agencies are directed to utilize such maps in land use and permitting processes. The act also requires geotechnical investigations particular to the site be conducted before permitting occurs on sites within seismic hazard zones.

The California Geologic Survey has published Special Publication 117A, Guidelines for Evaluating and Mitigating Seismic Hazards in California (California Geologic Survey, 1997). These guidelines are to: (1) assist in the evaluation and mitigation of earthquake-related hazards for projects within designated zones of required investigations; and (2) to promote uniform and effective statewide implementation of the evaluation and mitigation elements of the Seismic Hazards Mapping Act.

Local

City of Los Angeles

City of Los Angeles General Plan Safety Element (Adopted November 1996)

Objective 1.1: Implement comprehensive hazard mitigation plans and programs that are integrated with each other and with the City's comprehensive emergency response and recovery plans and programs.

> ***1.1.1.*** Risk reduction. Reduce potential risk hazards due to natural disaster to the greatest extent feasible within the resources available, including provision of information and training. All programs that incorporate current data, knowledge and technology in revising and implementing plans (including this Safety Element), codes, standards, and procedures that are designed to reduce potential hazards and risk from hazards potentially associated with natural disasters implement this policy.
>
> ***1.1.2.*** State and federal regulations. Assure compliance with applicable state and federal planning and development regulations; e.g., Alquist-Priolo Earthquake Fault Zoning Act, State Mapping Act and Cobey-Alquist Flood Plain Management Act.

City of Los Angeles General Plan Conservation Element (Adopted September 2001), Resource Management: Mineral Resources (Sand and Gravel), Section 19: Resource Management (Fossil Fuels) and Section 20: Resource Management (Gas)

City Regulation/Management. To comply with the State Surface Mining and Reclamation Act (SMARA), Los Angeles adopted (1975) the 'G' Surface Mining Supplemental Use Provisions (Los Angeles Municipal Code Section 13.03). Subsequent amendments have brought the City's provisions into consistency with new state requirements. The 'G' provisions are land use, not mineral conservation regulations. They regulate the establishment of sand and gravel districts, extraction operations, mitigation of potential noise, dust, traffic, and other potential impacts, as well as post-extraction site restoration. Other conditions may be imposed by the City if deemed appropriate.

General Plan References. SMARA requires that the general plan identify the MRZ-2 sites and contain resource management provisions. MRZ-2 sites are areas where adequate information indicates that significant mineral deposits are present or where it is judged that a high likelihood for their presence exists.MRZ-2 sites are identified in two community plan elements of the City's General Plan, the Sun Valley and the Sunland-Tujunga-Lake View Terrace-Shadow Hills-East La Tuna Canyon community plans.

Conservation. It is the City's policy that construction materials, such as concrete and rock, be recycled to reduce the amount of solid waste that goes into local landfills, thereby extending the life of the landfills. Recycling has a secondary benefit of reducing the demand for sand and gravel, producing recycled materials, and also extending and conserving our natural resources, which can be substituted for natural materials.

Resource Management - Mineral Resources (Sand and Gravel) Objective, Policies and Programs

Objective: Conserve sand and gravel resources and enable appropriate, environmentally sensitive extraction of sand and gravel deposits.

> ***Policy 1:*** Continue to implement the provisions of the California Surface Mining and Reclamation Act (Public Resources Code Section 2710 et seq.) so as to establish extraction operations at appropriate sites; to minimize operation impacts on adjacent uses, ecologically important areas (e.g., the Tujunga Wash) and ground water; to protect the public health and safety; and to require appropriate restoration, reclamation, and reuse of closed sites.
>
> ***Program 1:*** Administration and periodic updating of the 'G' Surface Mining District overlay zone provisions (LAMC 13.03).

Resource Management (Fossil Fuels) - Petroleum (Oil and Gas) Objective, Policies and Programs

Objective: Conserve petroleum resources and enable appropriate, environmentally sensitive extraction of petroleum deposits located within the City's jurisdiction so as to protect the

petroleum resources for the use of future generations and to reduce the City's dependency on imported petroleum and petroleum products.

Policy 1: Continue to encourage energy conservation and petroleum product reuse.

Policy 2: Continue to protect neighborhoods from potential accidents and subsidence associated with drilling, extraction and transport operations, consistent with California Department of Conservation, Division of Oil and Gas requirements.

Other Jurisdictions

In addition to the City, the 100-mile study area includes all or part of 190 cities and nine counties. Each of these cities and counties has adopted General Plans and Municipal Codes which may include specific policies related to geology and soils. Depending where future facilities are located, local plans and policies would be applicable to those facilities.

4.6.1.2 Existing Conditions

Seismic hazards that occur as a result of the presence of faults capable of generating earthquakes are: (1) strong ground motion/shaking; (2) ground rupture; (3) liquefaction; and (4) landslides. Ground motion occurs when faults rupture at depths where pressures are high and result in earthquakes. Ground rupture occurs when the fault ruptures and movement along the fault propagates to the ground surface, resulting in vertical and/or lateral displacement. Liquefaction and landslides are the result of ground motions where localized surface and subsurface ground unit conditions are susceptible to collapse or flow.

Geologic Setting and Topography

More than 50 percent of Los Angeles County is comprised of hilly or mountainous terrain. The Los Angles Basin occurs at the intersection of the north-northwest trending Peninsular Ranges Geomorphic Province and the east-west trending Transverse Ranges Geomorphic Province. The Peninsular Ranges are characterized by a series of mountain ranges and intervening valleys that extend from Orange County to Baja California. The Transverse Ranges extend eastward where they merge with the Mojave and Colorado Deserts. Chapter 4.0, Section 4.4., Figure 4.4-2 shows the regional topography.

The Verdugo and Santa Susana Mountains bound the City on the north, the Santa Monica Mountains extend across the middle of the City, and the Palos Verdes Hills and Pacific Ocean are on the south and west. The topography rises from sea level to 5,074 feet (Sister Elsie station in the San Gabriel Mountain foothills in Tujunga).

Faulting and Seismicity

The State of California defines active faults as those that show evidence of movement in the last 11,000 years. Potentially active faults are those that are not known to have experienced movement in the past 11,000 years but have moved during Quaternary time (in the past 1.6 million years).

The United States Geologic Survey (USGS) maintains a database of faults, including maps of Class A and B faults. Class A faults are defined as having geologic evidence that demonstrates the existence of a Quaternary fault of tectonic origin, whether the fault is exposed by mapping or inferred from liquefaction

or other deformational features. Class B faults are defined as having geologic evidence that demonstrates the existence of Quaternary deformation, but either: (1) the fault might not extend deeply enough to be a potential source of significant earthquakes; or (2) the currently available geologic evidence is too strong to confidently assign the feature to Class C but not strong enough to assign it to Class A.

The seismicity of Southern California is dominated by the intersection of the north-northwest trending San Andreas Fault system and the east-west trending Transverse Ranges fault system. The Transverse Ranges include a series of east–west trending mountain ranges that extend from Point Conception at the western tip of Santa Barbara County, eastward (and a bit south) to the east end of the San Jacinto Mountains in western Riverside County. According to data compiled from the USGS, there are 3,706 named faults and fault zones located within the project buffer zone, with 832 named faults and fault zones identified as latest quaternary age.

Figure 4.6-1 illustrates the map location of the identified faults and Table 4.6-1 presents 22 Class A and B faults located within the project study area (City and the area within 100 miles of the City).

Table 4.6-2 presents historic earthquakes (greater than 6.0 magnitude) that have occurred within the project study area since recorded history according to data maintained by the State of California, Department of Conservation (2010).

Liquefaction

Liquefaction is the process by which water-saturated granular soils transform from a solid to a liquid state during strong ground shaking. Liquefaction occurs when there are low-density sandy soils, shallow groundwater, and intense ground motion. According to the Los Angeles Citywide General Plan Framework EIR and Los Angeles County Safety Element (1990), relatively shallow groundwater occurrences are found in the valley and basin areas as perched water and in shallow aquifers. The San Fernando Valley has two areas of concentrated shallow water, with the largest extending from the north edge of the Santa Monica Mountains, north from one to six miles. The second area is the northeast portion of the Valley along Tujunga Wash and in zones beneath Sylmar and San Fernando. Additionally, the northern Los Angeles Basin has large patches of 0 to 30-foot depths along the south edge of the Santa Monica Mountains, narrow strips along the immediate coastline, as well as broad areas east and north of Baldwin-Rosecrans Hills. From the harbor area north into the southern part of the basin, 0 to 30-foot depths are found bordering the Palos Verdes Hills on the north and east, and in isolated patches along the Harbor Freeway. Figure 4.6-2 gives a general illustration of areas that have been identified with high, medium, and low potential for containing soils that may be susceptible to liquefaction hazards.

Landslides/Mudslide

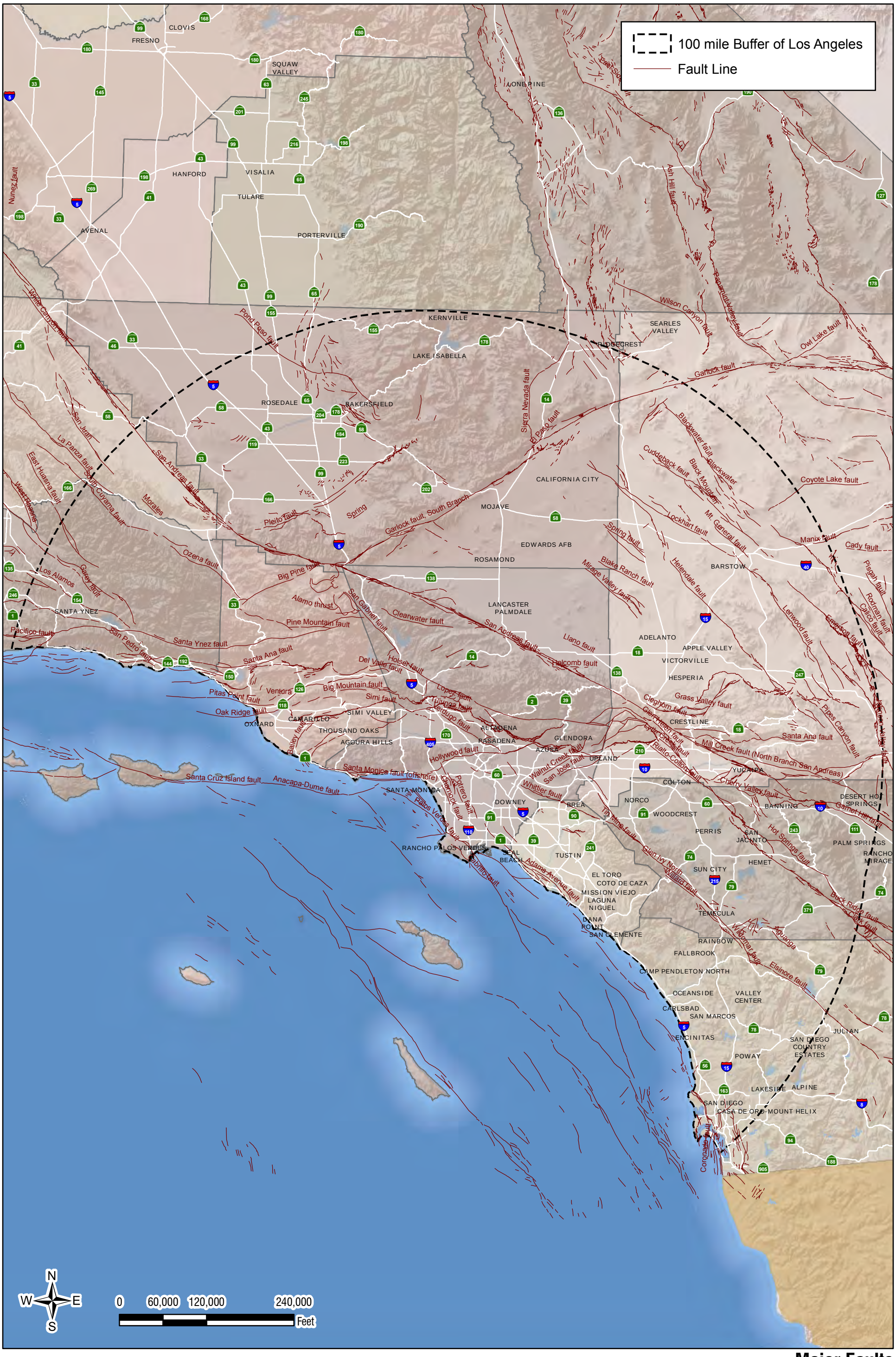
Landslides or mudslides are generally the falling, sliding, or flowing masses of soil, rocks, water and debris. The project analysis area (City and the area within 100 miles of the City) includes areas comprised of hilly or mountainous terrain and the potential for slides is a problem throughout Los Angeles County. Mud and debris flows, active deep-seated landslides, hillside erosion and man-induced slope instability comprise the vast majority of hillside hazards, in addition to areas that have experienced post-fire conditions which can exacerbate the potential for landslides.

Table 4.6-1. Identified Active Faults Location in Project Study Area

Fault Zone Name	General Location	County/Counties in Project Study Area[1]
Cabrillo	Trends northeasterly across Palos Verdes Hills.	Los Angeles
Cleghorn	Trends east/west, located west of San Bernardino.	San Bernardino
Elsinore	Trends north/south from Orange to San Diego County.	Orange and San Diego
Garlock	Trends southwest to northeast, located east of Bakersfield.	Los Angeles
Helendale-South Lockhart	Trends northwest to southeast, north of the San Bernardino Mountains.	San Bernardino
Hollywood	Extends through Beverly Hills, West Hollywood, to the L.A. River and I-5.	Los Angeles
Johnson Valley	Located in the central Mojave Desert.	San Bernardino
Lenwood-Lockhart	Located in the central Mojave Desert.	San Bernardino
Malibu Coast	Located adjacent to the coast in Malibu.	Los Angeles and Ventura
Newport-Inglewood-Rose Canyon	East of Ladera Heights and Dana point to Newport Beach north/south.	Los Angeles
North Frontal Thrust System	Major east-west trending fault zone between the Transverse Ranges and the Mojave Desert.	San Bernardino
Palos Verdes	Follows the northeastern range front of the Palos Verdes Hills between Redondo Beach and San Pedro, extending across Los Angeles harbor.	Los Angeles
Pleito	Along the border of the Transverse Ranges and the Great Valley. Located west of Bakersfield.	Kern
Pinto Mountain	Trends east/west, along boundary between the Transverse Ranges and the Mojave Desert in the area of Twenty-nine Palms.	San Bernardino and Riverside
Raymond	Trends east/west, extends from the Los Angeles River east of Griffith Park through Pasadena to the foot of San Gabriel Mountains.	Los Angeles
San Andreas	Trends northwesterly through the Coastal Mountains south through Frazier Mountain on the eastern side of the San Gabriel Mountains to the Mojave Desert.	San Bernardino
San Gabriel	Extends northeasterly from Frazier Mountain to Lukens Mountain through the Angeles National Forest.	Los Angeles and San Bernardino
San Jacinto	Branches off from the San Andreas near Cajon Pass and extends southeastward through the Peninsular Ranges to the Imperial Valley.	Riverside and San Bernardino
Santa Monica	Extends east from the coastline in Pacific Palisades through Santa Monica and West Los Angeles and merges with the Hollywood fault at West Beverly Hills.	Los Angeles
Santa Ynez	Alegria Canyon, Rancho San Marcos.	Ventura
Sierra Madre, Clamshell-Sawpit Section	Lies at or south of the San Gabriel Mountains.	Los Angeles, Ventura, and San Bernardino
Simi-Santa Rosa, Simi Santa Rosa Section	Base of the San Gabriel Mountains. From San Fernando Pass to the eastern San Gabriel Mountains.	Los Angeles

Source: USGS Quaternary Fault and Fold Database for the United States - http://earthquake.usgs.gov/hazards/qfaults/ca/lax.html. Site Accessed 2010

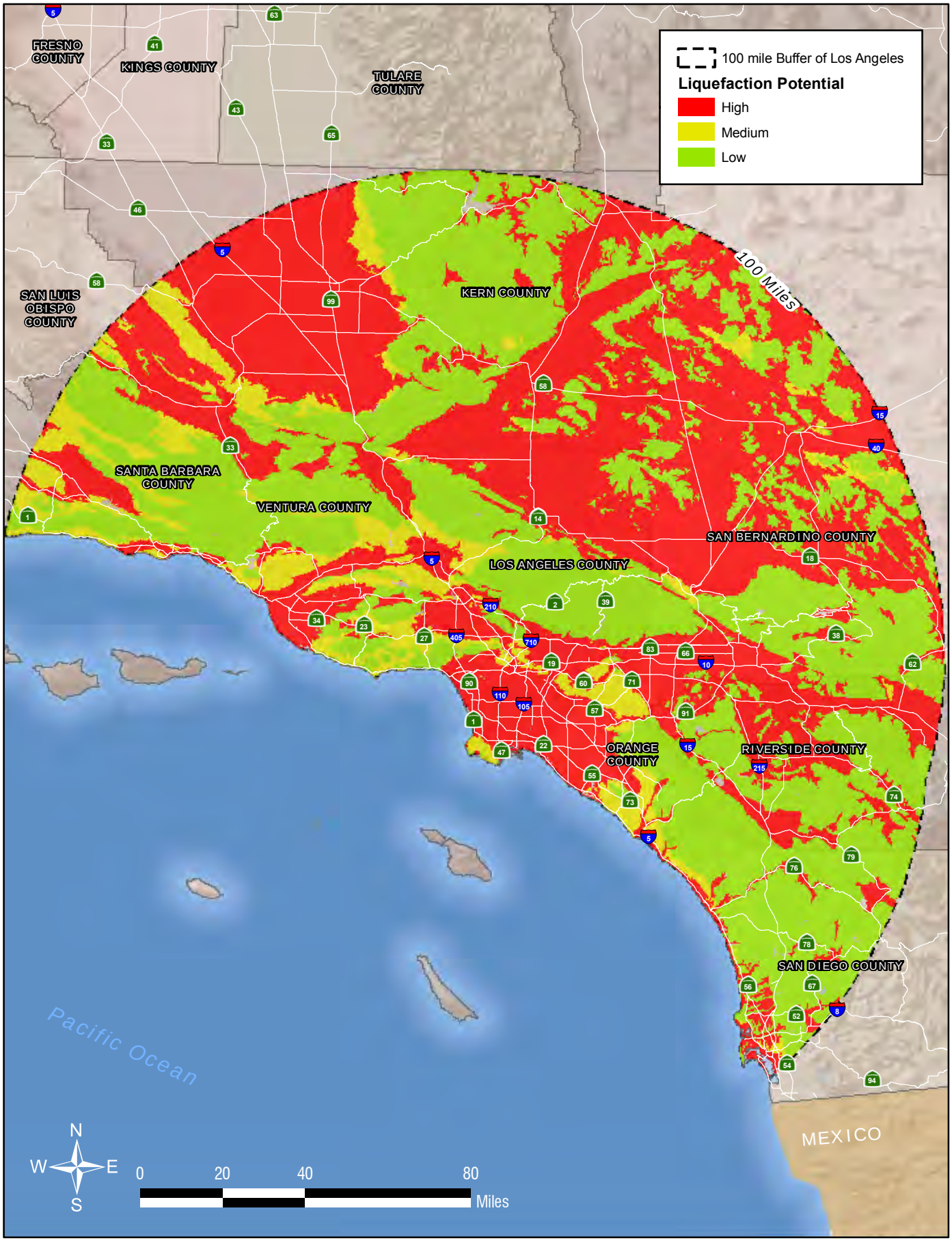
Note: [1] Faults in this table may pass through additional counties besides those listed in this column. Only counties that are within the project study area (City and the area within 100 miles of the City) are included.



Major Faults

FIGURE 4.6-1

SWIRP | City of Los Angeles | Final Progarm Environmental Impact Report



Liquifaction Areas

FIGURE 4.6-2

SWIRP | City of Los Angeles | Final Program Environmental Impact Report

Table 4.6-2. Significant Earthquakes within the Project Analysis Area

Year	Date	Magnitude	Location	Reported Damage
1857	January 9	7.9	Fort Tejon	2 killed, 220-mile surface scar
1952	July 21	7.5	Kern County	12 killed, 3 aftershocks of 6+
1971	February 9	6.6	San Fernando	65 killed, $50 million in damage
1987	October 1	6.0	Whittier Narrows	8 dead; $358 million in property damage to 10,500 homes and businesses
1987	November 24	6.2 and 6.6	Superstition Hills	$3 million in property damage
1992	June 28	7.3	Landers	1 killed; 402 injured; $91.1 million in property damage
1992	June 28	6.5	Big Bear	Included with Landers losses, above
1994	January 17	6.7	Northridge	57 killed; more than 9,000 injured; about $40 billion in property damage
1999	October 16	7.1	Bullion Mountains (Hector Mine)	Minimal injuries and damage due to sparse population in affected area
2003	December 22	6.6	San Simeon	2 killed and 40 buildings collapsed or severely damaged at Paso Robles.

Source: Department of Conservation, 2010.
Note: This table only presents earthquakes of 6.0 or greater magnitude.

Los Angeles is traversed by the Santa Monica Mountains and bound by the Santa Susana Mountains, Verdugo Mountains, and the Palos Verdes Hills. Beverly Hills and Baldwin Hills cross other sections of the City. The coastal boundaries of these ranges create seaside cliffs and beaches, which under natural conditions, these slopes often give way, resulting in landslides. According to the Los Angeles County General Plan, the Santa Monica Mountains, and the western portion of the Angeles National Forest, is identified as containing areas with landslide potential. According to the City's General Plan Safety Element, the Topanga State Park area north of Santa Monica and east to Glendale/Eagle Rock contains areas of 5 to 100 acres and over 100 acres of bedrock landslide sites or probable bedrock landslide sites. The northwest portion of the City in Granada Hills and the northeast portion of the City in Lake View Terrace area also contain areas with the potential for landslides.

Expansive Soils

The project analysis area (City and the area within 100 miles of the City) has a large variety of soil types, including areas of expansive soils. An example of this would be clay-type soils that expand or swell when wet, and contract or shrink when dried.

4.6.2 Thresholds of Significance

The impact analysis for geology and soils will use the CEQA thresholds and the *L.A. CEQA Thresholds Guide* to determine significance. For the purpose of this analysis, the project study area is defined as the City and the area within 100 miles of the City. The SWIRP emphasizes local processing and handling of the City's waste, including locating needed facilities within the City limits. However, it may not be feasible for all facility types to be built within the City, either due to lack of available space or potential land use conflicts. Therefore, a 100-mile study area is included in the analysis to capture any potential impact to areas outside of the City.

The following information is provided in accordance with Section 15126.2 of the *CEQA Guidelines*. Appendix G of the *CEQA Guidelines* suggests that a development project could have a significant impact related to geology and soils if the project would cause any of the following effects:

- *Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:*
  - *i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo; Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault;*
  - *ii. Strong seismic ground shaking;*
  - *iii. Seismic-related ground failure, including liquefaction; and*
  - *iv. Landslides.*
- *Result in substantial soil erosion or the loss of topsoil.*
- *Occur on a geologic unit or soil that is unstable or that would become unstable as a result of the project and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse.*
- *Occur on expansive soil, as defined in Table 18-1B of the UBC (1994), creating substantial risks to life or property.*
- *Support soils incapable of adequate permeability supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater.*

4.6.3 Project-Level Analysis

SWIRP Policy and Program Analysis

SWIRP proposes a variety or policies and programs to increase recycling and to increase diversion from landfills. Table 4.6-3 analyzes the potential for the policies and programs to result in an impact related to geology and soils. As shown in Table 4.6-3, none of the policies would result in direct impacts related to geology and soils; however, depending on phasing and implementation, certain policies may result in project-level impacts through facility expansion or construction of new facilities. A facilities analysis is provided below.

Disposal of residual waste in existing local or remote landfills would not result in impacts related to geology and soils.

SWIRP Facility Analysis

Implementation of the policies and programs identified in Table 4.6-3 will result in the need for additional processing facilities to handle the additional materials that would be diverted from the landfill. The following analysis describes the potential impact that future facilities could have related to geology and soils.

Table 4.6-3. Analysis of SWIRP Policies and Programs (Geology and Soils)

Initiative	Impact Analysis for Geology and Soils[1]	Significance Conclusion
Downstream Policies and Programs[2]		
Expand Recycling Ambassador Program	This program will not impact geology and soils.	No Impact
Adding Textiles to the Blue Bins	This policy/program will not impact geology and soils.	No Impact
Bulky Item Reuse and Refurbishment	This policy/program will not impact geology and soils.	No Impact
Expand Residential Food Scrap Program	This program will not impact geology and soils.	No Impact
Large Scale Media/Social Marketing	This policy/program will not impact geology and soils.	No Impact
Modify Residential Collection Rates	This policy/program will not impact geology and soils	No Impact
Modify Commercial Collection Rates	This policy/program will not impact geology and soils.	No Impact
Multi-Family Recycling	This policy/program will not impact geology and soils.	No Impact
Multi-Family Green Bins	This policy/program will not impact geology and soils.	No Impact
All Businesses to have Recycling Services	This policy/program will not impact geology and soils.	No Impact
Commercial Haulers to Offer Recycling Services to Customers	This policy/program will not impact geology and soils.	No Impact
Expand Commercial Technical Assistance	This policy/program will not impact geology and soils.	No Impact
Expand Construction and Demolition (C&D) Technical Assistance	This policy/program will not impact geology and soils.	No Impact
Provide More Public Area Recycling	This policy/program will not impact geology and soils.	No Impact
C&D Ordinance	This policy/program will not impact geology and soils.	No Impact
Mandatory Participation Programs[3]		
Mandatory Recycling Separation	This program will not impact geology and soils.	No Impact
Mandatory Organics Separation	This program will not impact geology and soils.	No Impact
Resource Recovery Centers (RRC) at Transfer Stations and Landfills	This program will not impact geology and soils.	No Impact.
Recycling Ambassadors (Reinforcement)	This program will not impact geology and soils.	No Impact
Direct Technical Assistance (Reinforcement)	This program will not impact geology and soils.	No Impact
Increased Diversion Requirements at C&D Facilities	This program will not impact geology and soils.	No Impact

Table 4.6-3. Analysis of SWIRP Policies and Programs (Geology and Soils) (Continued)

Initiative	Impact Analysis for Geology and Soils	Significance Conclusion
Upstream Policies[4]		
Extended Producer Responsibility (EPR) for Toxics	This policy will not impact geology and soils.	No Impact
EPR for Difficult to Recycle Materials	This policy will not impact geology and soils.	No Impact
Single-use Bag Ban	This policy will not impact geology and soils.	No Impact
Disposal of Remaining Residual Waste[5]		
Landfill Disposal – Truck Haul, Rail Haul	This program will not impact geology and soils.	No Impact

(1) Depending on phasing and implementation of various proposed programs and policies, along with anticipated growth in the City, there will be a need for additional facilities to process the diverted materials. Please refer to Section 4.6.3 for an impact analysis of the future facilities.
(2) Refer to Chapter 2.0, Table 2.3-1 for a detailed description of the Downstream Policies and Programs.
(3) Refer to Chapter 2.0, Table 2.3-2 for a detailed description of the Mandatory Participation Programs.
(4) Refer to Chapter 2.0, Section 2.3.4 for a detailed description of the Upstream Policies.
(5) Refer to Chapter 2.0, Section 2.3.6 for a detail description of Disposal of Residual Waste.

Earthquake Faults, Seismic Hazards and Groundshaking

Southern California is a seismically active area. As presented in Table 4.6-1, there are 22 Class A and B faults within the project analysis area (City and the area within 100 miles of the City). While specific locations for facilities have not been identified, there is a potential for facilities to be located in proximity to active faults which could experience significant groundshaking during an earthquake.

As described in Section 4.6.5, mitigation measure GS-1 has been identified which will require that future facilities not be located within an area mapped as an Alquist-Priolo Earthquake Fault Zone, and the placement of structures for human occupancy shall be restricted from these areas. Additionally, future facilities will be subject to the requirements of the UBC and CBC as it pertains to resistance to seismic shaking. Further, site-specific geotechnical investigations would be undertaken once specific sites for facilities are identified (mitigation measure GS-2). Further design requirements (e.g., structural enhancements/reinforcements) may be identified during those investigations to further minimize potential seismic risk. Implementation of mitigation measures outlined in Section 4.6.5 would reduce potential impacts to below a level of significance.

Ground Failure/Liquefaction

As presented in Figure 4.6-2, portions of the project analysis area (City and the area within 100 miles of the City) have been identified as areas that contain liquefaction zones. These include the southeastern portion and the area north of the Santa Monica Mountains, as well as areas of Bakersfield, and areas northeast of Lancaster to Ridgecrest. While specific locations for facilities have not been identified, there is a potential for facilities to be located in areas that have a liquefaction potential. Mitigation measure GS-3 has been identified which will require that future facilities not be located in areas of high liquefaction potential or to limit habitable buildings from areas where known liquefaction may occur. Further, site specific geotechnical investigations would be undertaken once specific sites for facilities are identified. Further design requirements (e.g., structural enhancements/reinforcements) may be identified during those investigations to minimize potential loss related to construction on low to medium liquefaction-potential areas. Therefore, impacts would be reduced to below a level of significance.

Landslides

Portions of the project analysis area (City and the area within 100 miles of the City) contain areas that may be subject to landslides. While specific locations for facilities have not been identified, if a site was selected that is prone to landslides there is a potential for a significant impact. Mitigation measure GS-4 prohibits the development of facilities in areas that are mapped as landslide or mudslide prone in local planning documents (e.g., General Plans). With implementation of GS-4, the potential impact would be reduced to below a level of significance.

Erosion

Differing soil types have differing potential for erosion. Depending on where future facilities are sited, they may be located in areas that contain soils with a high erosion potential. Current regulations pertaining to water quality require that site erosion be minimized, so as to not degrade water quality. Future facilities will be required to prepare a Stormwater Pollution Prevention Plan (SWPPP), which would include an identification of best management practices (BMPs) to be implemented during project construction. Sample BMPs that minimize erosion include covering of exposed soils with a tarp or

stabilizer, and reseeding and landscaping to minimize soil loss. Implementation of BMPs, which would be required as part of the SWPPP, would keep potential erosion impacts to below a level of significance.

Unstable and Expansive Soils

Differing soil types have differing potential instability and expansive properties. Depending on where future facilities are sited, they may be located in areas that contain soils that are inherently unstable or exhibit expansive properties. As required by mitigation measure GS-2, site specific geotechnical investigations would be undertaken once specific sites for facilities are identified. Further design requirements (e.g., structural enhancements/reinforcements) may be identified during those investigations to minimize impacts should facilities be proposed on sites that are prone to instability or have soils that exhibit expansive properties. Further design requirements may be identified during those investigations to minimize potential loss related to unstable or expansive soils (if applicable). Implementation of mitigation measures outlined in Section 4.6.5 would reduce potential impacts to geology and soils to below a level of significance.

Septic/Alternative Wastewater Disposal

Future facilities will have a high probability of being located in an area where connections to a municipal sewer system would be available. In the event a septic system is proposed, soil testing would be required to determine soils permeability as to adequately support the use of a septic system. Impacts are considered less than significant.

Table 4.6-4 provides a summary of the impact analysis for proposed SWIRP facilities relative to geology and soils.

Table 4.6-4. Facility Impact Summary (Geology and Soils)

Facility Type*	Impact
Clean Material Recovery Facilities	Less than significant with mitigation
Composting (Aerobic)	Less than significant with mitigation
Composting (Anaerobic Digestion)	Less than significant with mitigation
Resource Recovery Centers	Less than significant with mitigation
Mixed Material Processing	Less than significant with mitigation
Alternative Technology – Advanced Thermal Recycling	Less than significant with mitigation
Alternative Technology – Biological (Anaerobic Digestion)	Less than significant with mitigation
Alternative Technology – Thermal (Plasma Arc, Gasification, Pyrolysis, and Others)	Less than significant with mitigation

*Trigger for facility needs will depend on implementation and phasing of various SWIRP policies and programs (refer to Table 4.6-3).

4.6.4 Cumulative-Level Analysis

Geology and soils impacts are very site-specific and are generally mitigated on a project-by-project basis and, thus, do not typically contribute to a cumulative impact. Upon determination of the facility location, a project-level CEQA analysis can be conducted to determine if the construction of such facilities would have a cumulative impact. The future cumulative analysis will utilize a list of project and/or use projections to determine the project-level impacts to geology and soils within the City and surrounding areas.

4.6.5 Mitigation Measures

Earthquake Faults and Seismic Hazards

GS-1 Future facilities shall not be located within a mapped Alquist-Priolo Earthquake Fault Zone. Placement of structures for human occupancy shall be restricted from areas designated as an Alquist-Priolo Earthquake Fault Zone.

GS-2 At the time a site is selected for a facility, a site-specific geotechnical report shall be prepared in areas subject to earthquake-induced landslides or liquefaction as mandated by the State Seismic Hazard Mapping Act. Mitigation measures and design recommendations identified in those site-specific reports shall be implemented to minimize the potential for injury and loss related to earthquake-induced landslides, liquefaction, or seismic hazards.

Ground Failure/Liquefaction

GS-3 Future facilities shall not be located within an area known for or designated with a high liquefaction potential. Placement of structures for human occupancy shall be restricted from areas known for ground failure or liquefaction.

Landslides

GS-4 Future facilities shall not be located in areas mapped as a landslide or mudslide hazard area in local planning documents (e.g., General Plans).

4.6.6 Conclusion

SWIRP policies and programs would not have an impact on area geology and soils. However, future facilities have the potential to have significant impacts depending on where the facilities are sited. If sites are selected that are on a mapped earthquake fault, in a high liquefaction potential zone, or in an area subject to landslide or mudslide hazards, then a potentially significant impact could occur. Mitigation measures GS-1, GS-3, and GS-4 have been identified to reduce these potential impacts to below a level of significance. These mitigation measures promote sites that are not prone to seismic or geologic hazards. Additionally, as future facilities are proposed, site-specific geotechnical investigations would be conducted (GS-2), and would identify mitigation measures and design recommendations so as to mitigate site-specific conditions related to geology and soils. In summary, implementation of mitigation measures GS-1 through GS-4 would reduce potential impacts to below a level of significance.

4.7 HAZARDS AND HAZARDOUS MATERIALS

This section analyzes potential impacts to human health and the environment from the transportation, use, storage, recycling, and disposal of hazardous wastes that may be generated during implementation of the proposed project. It includes a discussion of the applicable regulatory environment, existing conditions, a project-level and cumulative-level impact analysis, and any applicable mitigation measures. The study area for recreation covers the City of Los Angeles (City and the area within 100 miles of the City). While the Solid Waste Integrated Resources Plan (SWIRP) emphasizes local processing and handling of discarded materials generated within the City, it may not be feasible for all facility types to be built within the City, either due to lack of available space or potential land use conflicts. Therefore, the area within 100 miles of the City is included in the analysis to capture any potential impact to areas outside of the City. All or portions of the Counties of Kern, Los Angeles, Orange, Riverside, San Bernardino, San Diego, San Luis Obispo, Santa Barbara, and Ventura are included within the 100-mile study area

4.7.1 Environmental Setting

This section describes the regulatory setting and existing conditions for recreation.

4.7.1.1 Regulatory Setting

In California, hazardous wastes are subject to federal and state requirements by statute and regulation. Federal and state requirements for hazardous waste overlap to a considerable extent, but California requirements are typically more stringent. Below is a summary of federal and state hazardous waste laws.

Federal

The federal government has cooperative agreements with the state of California to implement and enforce the majority of the federal hazardous waste laws because California laws and regulations are typically more stringent. Although the federal Environmental Protection Agency (EPA) and Department of Transportation (DOT) have primary oversight authority, the state, regional, and local agencies discussed below have the responsibility to regulate hazardous waste associated with the proposed project.

- ***Resource Conservation and Recovery Act (RCRA)*** regulates the identification, generation, transportation, storage, treatment, and disposal of hazardous materials and wastes from generation to disposal (cradle to grave).
- ***Comprehensive Environmental Response and Liability Act (CERCLA)*** regulates former and newly discovered uncontrolled waste disposal and spill sites identified on the National Priorities List (NPL) of contaminated sites, and the "Superfund" cleanup program.
- ***Clean Water Act (CWA)*** regulates discharges and spills of pollutants (including hazardous materials) to surface waters and groundwater.
- ***Safe Drinking Water Act (SDWA)*** regulates discharges of pollutants to aquifers.
- ***Toxic Substances Control Act (TSCA)*** regulates the manufacturing, inventory, and disposition of industrial chemicals and hazardous materials.
- ***Federal Insecticide, Fungicide & Rodenticide Act (FIFRA)*** regulates the manufacturing, distribution, sale, and use of pesticides.
- ***Hazardous Materials Transportation Act (HMTA)*** regulates the transport of hazardous materials by motor vehicles, marine vessels, and aircraft.

- ***Emergency Planning & Community Right to Know Act (EPCRA)*** regulates facilities that use hazardous materials and wastes in quantities that require reporting to emergency response officials of the applicable Local Emergency Planning Committee (LEPC).
- ***Medical Waste Tracking Act (MWTA)*** established a tracking system, and requires management standards for segregation, packaging, labeling and marking, and storage of medical waste from generation to disposal (cradle to grave).
- ***Clean Air Act*** establishes a national program for air pollution control, and requires states to develop state implementation plans (SIPs) to achieve primary and secondary ambient air quality standards to protect human health and the public welfare (visibility, aesthetics, property, and crop protection).
- ***Executive Order 12088, Federal Compliance with Pollution Control*** requires federal agencies to take necessary actions to prevent, control, and abate environmental pollution from facilities and activities under control of federal agencies.

Federal Regulatory Agencies

United States Environmental Protection Agency (EPA)

The EPA is the enforcement authority responsible for regulating a multitude of environmental regulations and standards set by the federal government, including regulations as described above. The EPA has the authority to control hazardous waste, including the generation, transportation, treatment, storage, and disposal of hazardous waste in accordance with the RCRA, and requires reporting, record-keeping and testing requirements, and restrictions relating to chemical substances and/or mixtures in accordance with the TSCA. The EPA implements pollution control programs such as setting wastewater standards for industry and water quality standards for all contaminants in surface waters, including the administration of the EPA's National Pollutant Discharge Elimination System (NPDES) permit. The EPA sets standards for drinking water quality and oversees the states, localities, and water suppliers who implement those standards in accordance with the Safe Drinking Water Act. The EPA administers CERCLA relative to hazardous waste sites, the transportation of hazardous material in accordance with the HMTA, and the administration of the EPCRA. The EPA regulates pesticide distribution, sale, and use and registers pesticides under FIFRA. The EPA regulates medical waste management in accordance with the MWTA. The EPA also administers the Clean Air Act.

State

State Regulations

- ***Porter Cologne Water Quality Act*** regulates water quality through the State Water Resources Control Board (SWRCB) and Regional Water Quality Control Boards (RWQCBs), including oversight of water monitoring and contamination cleanup and abatement.
- ***Hazardous Materials Release Response Plans & Inventory Act*** requires facilities using hazardous materials or generating hazardous wastes to prepare Hazardous Materials Business Plans.
- ***Hazardous Waste Control Act*** is similar to RCRA on the federal level, and regulates the identification, generation, transportation, storage, and disposal of materials deemed hazardous by the State of California.

- ***Safe Drinking Water & Toxic Enforcement Act*** is similar to the federal CWA and SDWA and regulates the discharge of contaminants to groundwater.
- ***Medical Waste Management Act*** governs the management of medical waste in all jurisdictions of the state
- ***California Clean Air Act*** specifies the California SIP to satisfy the federal Clean Air Act.
- ***California Government Code Section 65962.5*** requires the Department of Toxic Substances Control (DTSC) to compile and maintain lists of potentially contaminated sites located throughout the state of California (includes the Hazardous Waste and Substances Sites [Cortese] List).

State Regulatory Agencies

Department of Resources Recycling and Recovery

The Department of Resources Recycling and Recovery (CalRecycle) is responsible for assigning county health departments or local agencies the responsibility to develop and implement local plans, oversees Local Enforcement Agencies (LEAs) for the permitting of solid waste facilities, and conducts inspections of compliance with state minimum standards for solid waste handling and disposal.

State Water Resources Control Board

The SWRCB is responsible for maintaining the quality of surface water and groundwater in the state and delegates local authority for permitting landfills and surface water discharges to RWQCBs.[1] Solid waste facilities are permitted by RWQCBs through Waste Discharge Requirements (WDRs), which specify protection and monitoring programs to protect water quality.

Air Quality Management Districts

Air Quality Management Districts (AQMDs)[2] are responsible for protecting the air quality within the SWIRP project area and preventing further degradation. The AQMDs issue permits related to construction and operation of landfill gas recovery projects, landfill gas flare stations, landfill gas-to-energy facilities, and alternative technology facilities, such as waste-to-energy plants.

Department of Health Services

The Department of Health Services adopted and enforces procedures for the management, storage, treating, disposal, and tracking of medical and infectious waste, and requires Medical Waste Management Plans for facilities that treat or dispose of medical and infectious waste.

[1] Los Angeles, Central Coast, Central Valley, Lahontan, Santa Ana, Colorado River Basin, and San Diego Regional Water Quality Control Boards are within the SWIRP project area.
(see http://www.swrcb.ca.gov/water_boards.shtml)
[2] South Coast, Ventura County, Santa Barbara County, Kern County, Antelope Valley, San Joaquin Valley, Mojave Desert, and San Diego County Air Pollution Control Districts are within the SWIRP project area.
(see http://www.arb.ca.gov/capcoa/dismap.htm)

Local

Los Angeles County

Department of Health Services

The Los Angeles County Department of Public Health, Environmental Health, Solid Waste Management Program is the designated Local Enforcement Agency (LEA) for solid waste facilities within the unincorporated portion of Los Angeles County and in cities in the County that are not designated LEAs.

Department of Public Works

The Los Angeles County Department of Public Works (LACDPW) prepares, maintains, and administers the Los Angeles County Solid Waste Management Plan, the County's Siting Element, and maintains the integrity of public drainage structures. The LACDPW is consulted during landfilling activities and upon closure of a solid waste disposal facility.

City of Los Angeles Agencies

Department of City Planning

The Department of Planning issues land use permits and zoning clearances within City limits. The Planning Commission issues Conditional Use Permits (CUPs) for the operation of a publicly owned solid waste landfill. The Planning Commission approves the use of lots in zones if it finds the proposed location to be consistent with the General Plan and desirable to the public. Zoning Administration issues CUPs and variances for solid waste projects and for privately owned and operated landfills.

Department of Public Works

Several agencies within the City of Los Angeles Department of Public Works (LADPW) are involved with solid waste facilities and solid waste management. These agencies include the Bureau of Sanitation (LASAN) and the Bureau of Engineering. LASAN provides refuse, recyclables, and yard trimmings collection; household hazardous waste drop off centers (SAFE-Solvent/Automotive/Flammable/Electronics Centers); sewer and storm drain maintenance and repair; wastewater collection and treatment; and other related services. The Bureau of Engineering prepares preliminary designs, specifications, and cost estimates for major storm water, sewer, street, solid waste, and other infrastructure improvement projects, is responsible for subdivision requirements and checking public improvement plans of private developers, issues engineering permits, and provides construction contract management. The Solid Resources Citywide Recycling Division (SRCRD) of LASAN implements green business initiatives and other environmentally preferable purchasing and Brownfield programs and the Regulatory Affairs Division (RAD) coordinates tree planting, water and natural resources, carbon footprint inventories and other air-related issues.

Department of Transportation

The Department of Transportation is responsible for the development of plans to meet the ground transportation needs of the traveling public and commerce, with centralized authority over the conceptual planning and operation of the City's streets and highways. The Department provides for the installation and maintenance of traffic signs, signals, parking meters, pavement markings, street name signs, and

other control devices; enforcement of parking regulations and removal of abandoned vehicles from public streets; acquisition, development and operation of off-street parking facilities, regulation of privately-owned public utilities, the overview, control and operation of intra-community transit activities and grant funded ground transportation projects, and the review and regulation of taxicabs and ambulances, including enforcement of franchise provisions.

Department of Building and Safety

The Department of Building and Safety issues permits for projects that involve building structures; including transfer stations, SAFE Centers, materials recovery facilities (MRFs), alternative technology facilities that use enclosed buildings for waste processing or product storage, and facilities that use certain types of composting processes. The LEA for the City of Los Angeles is the Department of Building and Safety and ensures that solid waste facilities in the City are operated in a manner that protects the public health, safety, and environment. Building and Safety is an authorized LEA by CalRecycle to permit and oversee landfills, transfer stations/processing stations, and other waste facilities within the City, including facilities owned and operated by the LADPW.

Fire Department

The City of Los Angeles Fire Department (LAFD) is responsible for reviewing plans for handling hazardous materials and wastes in the City, and for issuing permits for junk yards including recycling facilities. The LAFD serves as the Certified Unified Program Agency (CUPA) for the City's Household Hazardous Waste Program. A CUPA is a local agency in California that coordinates the consistent implementation of hazardous materials regulatory programs.

Other Jurisdictions

In addition to the City, the 100-mile study area includes all or part of 190 cities and nine counties. Each of these cities and counties may have adopted plans and policies related to hazards and hazardous materials. Depending where future facilities are located, local plans and policies would be applicable to those facilities. Each of the other counties in the project study area has an Environmental Health Department that serves as the CUPA for the county, and participates in the regulation of hazardous, solid and medical waste management.

4.7.1.2 Existing Conditions

The City conducted numerous studies related to the management of hazardous waste. In 2006, the Department of Public Works, Bureau of Sanitation, completed a residential baseline study which identified volumes and percentages of both solid and hazardous waste streams generated within the City in 2002 (LADPW, January 2006). The City's residential baseline data and waste streams identified for 2002 are summarized in Table 4.7-1. In addition, the California Chamber of Commerce identified commonly generated hazardous waste streams for typical industrial small quantity generators (SQG) (Dufour, 1997),[3] and a listing of hazardous waste streams from industrial SQGs is provided in Table 4.7-2.

[3] A SQG is a business that generates, in any calendar month, between 100 and 1,000 kilograms (220 and 2,200 pounds) of hazardous waste, and accumulates no more than 6,000 kilograms of hazardous waste onsite at any time (22 CCR §66265).

Table 4.7-1. City of Los Angeles Waste Composition by Sector

Waste	2002 Estimated Tons					Total	Percent of All 2002 Waste					Total
	Residential						Residential					
	Single Family	Multi-family	C&D	Green Waste	Overall Waste		Single Family	Multi-family	C&D	Green Waste	Overall Waste	
Hazardous Waste Breakout												
Hazardous Waste												
Paint	2	456	0	0	1,417	1,875	0.00%	0.01%	0.00%	0.00%	0.04%	0.05%
Treated Medical Waste	0	15	0	0	230	245	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%
Unspecified	455	0	3	0	5,317	5,775	0.01%	0.00%	0.00%	0.00%	0.15%	0.16%
Universal Waste												
Batteries	523	316	8	0	773	1,620	0.01%	0.01%	0.00%	0.00%	0.02%	0.05%
Special Waste												
Ash	708	126	0	0	1,063	1,897	0.02%	0.00%	0.00%	0.00%	0.03%	0.05%
Sewage Solids	0	0	0	0	0	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Industrial Sludge	0	0	0	0	0	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Unspecified	1,259	204	13	22	1,561	3,059	0.04%	0.01%	0.00%	0.00%	0.04%	0.09%
Recyclable Materials												
Vehicle & Equipment Fluids	0	121	0	0	16	137	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Used Oils	436	1,005	0	5	208	1,654	0.01%	0.03%	0.00%	0.00%	0.01%	0.05%
Major Appliances												
Bulky Items	2,445	12,687	345	259	2,377	18,113	0.07%	0.36%	0.01%	0.01%	0.07%	0.52%
All Waste Breakout												
Solid Waste												
Paper	196,176	178,255	1,203	1,419	523,581	900,634	5.60%	5.09%	0.03%	0.04%	14.96%	25.73%
Glass	18,331	30,425	2,130	4	33,303	84,193	0.52%	0.87%	0.06%	0.00%	0.95%	2.41%
Metal	41,336	31,561	8,088	449	62,941	144,375	1.18%	0.90%	0.23%	0.01%	1.80%	4.12%
Plastic	86,601	53,295	1,061	430	191,273	332,660	2.47%	1.52%	0.03%	0.01%	5.46%	9.50%

Table 4.7-1. City of Los Angeles Waste Composition by Sector (Continued)

Waste	2002 Estimated Tons						Percent of All 2002 Waste					
	Residential						Residential					
	Single Family	Multi-family	C&D	Green Waste	Overall Waste	Total	Single Family	Multi-family	C&D	Green Waste	Overall Waste	Total
Other Organic	403,737	224,506	8,928	20,337	678,601	1,336,109	11.53%	6.41%	0.26%	0.58%	19.39%	38.17%
Construction & Demolition	81,187	11,904	447,079	8,248	119,005	667,423	2.32%	0.34%	12.77%	0.24%	3.40%	19.07%
Tire Waste*	16	0	18	0	315	349	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%
Subtotal	*827,384*	*529,946*	*468,507*	*30,887*	*1,609,019*	*3,465,743*	*23.64%*	*15.14%*	*13.39%*	*0.88%*	*45.97%*	*99.02%*
Hazardous Waste (total from listing above)												
Hazardous Waste	457	471	3	0	6,964	7,895	0.01%	0.01%	0.00%	0.00%	0.20%	0.23%
Universal Waste	523	316	8	0	773	1,620	0.01%	0.01%	0.00%	0.00%	0.02%	0.05%
Special Waste	1,967	330	13	22	2,624	4,956	0.06%	0.01%	0.00%	0.00%	0.07%	0.14%
Recyclable Materials	436	1,126	0	5	224	1,791	0.01%	0.03%	0.00%	0.00%	0.01%	0.05%
Major Appliances	2,445	12,687	345	259	2,377	18,113	0.07%	0.36%	0.01%	0.01%	0.07%	0.52%
Subtotal	*5,828*	*14,930*	*369*	*286*	*12,962*	*34,375*	*0.17%*	*0.43%*	*0.01%*	*0.01%*	*0.37%*	*0.98%*
All Waste Total	833,212	544,876	468,876	31,173	1,621,981	3,500,118	23.81%	15.57%	13.40%	0.89%	46.34%	100.00%

Source: LADPW. January 2006. City of Los Angeles Solid Waste Planning Background Studies Summary Report: Bureau of Sanitation, Los Angeles City Department of Public Works (Table 3-2, pp. 17-18).

*Although tires are a solid waste, tires were included under the hazardous waste classification in original source document

Notes:

1. Single-family residential waste data based on 80 disposal-site samples. In year 2000 there were an estimated 740,000 households.
2. Multi-family waste density was estimated to be 110 pounds per cubic foot (lb/cu. ft). There were an estimated 593,000 units in 2000.
3. Construction and demolition (C&D) data based on 160 disposal-site samples. C&D waste disposed by commercial sector only, and does not include C&D waste from residential or other Municipal Solid Waste (MSW) sources. All C&D waste materials are considered recoverable.
4. Green waste data based on 83 disposal-site samples and composed mostly of prunings, trimmings, leaves, grass, branches and stumps. All waste materials are considered recoverable.
5. Overall (commercial) wastes developed from data provided by industry groups.

Table 4.7-2. Typical Hazardous Waste Streams from Industrial Small Quantity Generators

Industry	Hazardous Waste Classification																	
	Hazardous													Universal		Special		Recyclable
	Solvents	Acid/Bases	Ignitable Wastes	Heavy Metals/ Inorganics	Reactives	Pesticides	Cyanide Wastes	Spent Plating Wastes	Contaminated Waste Water	Asbestos Waste	Antifreeze	Preserving Agents	Embalming Fluids	Lead Acid Batteries	Fluorescent Tubes/Ballasts	Ink sludge	Dry Cleaning Filtration Residues	Waste Oil/Fuels
Building Cleaning & Maintenance	x	x	-	-	-	-	-	-	-	x	-	-	-	-	x	-	-	-
Chemical Manufacturers	x	x	x	x	x	-	x	-	-	-	-	-	-	-	-	-	-	-
Cleaning Agents and Cosmetics	x	x	x	x	-	x	-	-	-	-	-	-	-	-	-	-	-	-
Construction	-	x	x	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Educational & Vocational shops	x	x	x	-	x	x	-	-	-	-	-	-	-	-	-	-	-	x
Equipment Repair	-	x	x	-	x	-	-	-	-	-	-	-	-	x	-	-	-	-
Formulators (Blending Materials/Solutions)	x	x	x	x	x	x	x	-	-	-	-	-	-	-	-	-	-	-
Funeral Services	-	-	-	-	-	-	-	-	-	-	-	-	x	-	-	-	-	-
Furniture/Wood Manufacturing & Refinishing	x	-	x	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Laboratories	x	x	x	x	x	-	-	-	-	-	-	-	-	-	-	-	-	-
Laundries Dry Cleaners	x	-	-	-	-	-	-	-	x	-	-	-	-	-	-	-	x	-
Metal Manufacturing	x	x	x	x	x	-	x	x	-	-	-	-	-	-	-	-	-	-
Motor Freight/Railroad Transportation	x	x	x	x	-	-	-	-	-	-	-	-	-	x	-	-	-	x
Pesticide End Users and Application Services	x	-	-	x	-	x	-	-	-	-	-	-	-	-	-	-	-	-
Printing and Allied Industries	x	x	-	x	-	-	-	x	-	-	-	-	-	-	-	x	-	-
Textiles/Plastics/Leather Manufacturing	x	-	-	x	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vehicle Maintenance	x	x	x	x	-	-	-	-	-	-	x	-	-	x	-	-	-	x
Wood Preserving	-	-	-	-	-	-	-	-	-	-	-	x	-	-	-	-	-	-
Total Number SQG Source Industries	14	12	11	10	6	4	3	2	1	1	1	1	1	3	1	1	1	3

Source: Dufour, 1997. Hazardous Waste Management Manual: California Chamber of Commerce, Sacramento, CA, p. 56.
SQG = Small Quantity Generator

Utilizing information from the baseline study, hazardous waste accounted for less than one percent (34,375 tons) of the total waste stream generated in the City in 2002, as shown in Table 4.7-1. According to the California Chamber of Commerce, most SQGs generate hazardous waste solvents, acid/bases, ignitable wastes, and heavy metals/organics, as shown in Table 4.7-2.

Hazardous Waste Classes

There are five classes of waste that are considered hazardous or potentially hazardous. These are: (1) hazardous waste; (2) universal waste; (3) special waste; (4) recyclable materials; and (5) major appliances (i.e., bulky items). Below is a description of each class of hazardous waste generated within the City. Facilities that handle and dispose of such contaminated waste within the 100-mile buffer project area are shown in Table 4.7-3, Hazardous/Non-Hazardous Waste Disposal and Treatment Facilities (within the Project Study Area).

In addition to the facilities listed in Table 4.7-3, the City maintains six permanent Solvent/Automotive/Flammable/Electronics (SAFE) centers throughout the City to collect household hazardous waste. SAFE centers also take some business waste from conditionally-exempt small quantity generators.

Hazardous Waste

A waste can be solid, semi-solid, liquid, or gaseous, and is considered hazardous if it exhibits at least one of the four characteristics of ignitability, corrosivity, reactivity, or toxicity, or is a "listed waste."[4] Acutely hazardous[5] and extremely hazardous[6] wastes are included in the definition of hazardous waste. Laboratory samples, animal carcasses, radioactive materials, scrap metal, and excluded recyclable materials[7] are not considered hazardous waste. In California, the term "solid waste" refers to waste that is not hazardous.

A facility is likely to generate hazardous wastes if it handles the following types of materials where these materials are not entirely consumed by the operation.

- Dyes, paints, printing inks, thinners, solvents, and cleaning fluids
- Pesticides
- Acids and bases that dissolve metal, wood, paper, or clothing
- Flammable materials
- Material that burn or corrode surfaces or cause injury upon contact with skin, or bubble or fume upon contact with water
- Products accompanied by shipping, labeling, or material safety data sheets (MSDS) indicating that the product is hazardous
- Impacted soil and other wastes from site remediation and cleanup

[4] Listed wastes are provided in Appendix X of 22 CCR §66261.
[5] Acutely hazardous wastes are defined by being listed on the RCRA hazardous "P" list (22 CCR §66261.33(e)) and are federal and state regulated.
[6] Extremely hazardous wastes are designated with an asterisk on the list of hazardous wastes in Appendix X of 22 CCR §66261, and are also identified by following criteria in 22 CCR §§66261.110 and 113. These wastes are state-only regulated, although there is considerable overlap with acutely hazardous waste.
[7] Materials that are used or reused as an ingredient or feedstock in an industrial process to make a commercial product.

Table 4.7-3. Hazardous/Non-Hazardous Waste Treatment and Disposal Facilities (within the Project Study Area)

Facility Name	Type	Phone	Location					Waste Accepted					Contaminants	
			Address	City	State	Zip	County	Haz	Non Haz	Liquid	Solid	Soil	Accepted	Prohibited
Clean Harbors Wilmington	Class I	(310) 233-3486	1737 E. Denni Street	Wilmington	CA	90744	Los Angeles	X	X	X[1]	--	--	Haz Waste, High BTU Liquid & Sludge, Wastewater	All other waste
Crosby & Overton, Inc.	Water Treatment/ Recycler	(562) 532-5445	1630 W. 17th Street	Long Beach	CA	90813	Los Angeles	X	X	X	X	--	Wastewater treatment (hydrocarbons/oily waters): Non haz, Non RCRA (oily waters, clarifier waste), RCRA D001/D018(oil waters w/ gasoline only)	Water w/ high concentration of soluble contaminants, RCRA codes other than D001/D018; waste with cyanides, sulfides, high metals. Bulk solids, drummed liquids and solids.
DeMenno Kerdoon	Oil, Wastewater, Antifreeze Recycler	(310) 537-7100	2000 N. Alameda Street	Compton	CA	90222	Los Angeles	X	--	X	X	X	Used oil, oily water, waste antifreeze and glycol, waste RCRA fuels, soil transfer only	All other hazardous waste
Lancaster Landfill and Recycling Center	Class III, Non-Haz Landfill	(661) 726-3468	600 East Avenue F	Lancaster	CA	93535	Los Angeles	--	X	--	X	X	Agricultural, Construction/demolition, Industrial, Mixed municipal, Tires, Inert, Green Materials, Asbestos Non-friable, Sludge (Bio-Solids),	Hazardous
McKittrick	Class II, Non-Haz Landfill	(559) 834-9151 x240	56533 Highway 58 West	McKittrick	CA	93251	Kern	--	X	X[1]	X	X	E&P Waste[2], Non-Haz Soil, Wastewater, Car Wash Grit, Contaminated Soil, Asbestos Non-friable,, Auto Shredder Fluff, Industrial, Solidification, drum management (solids/liquid).	Hazardous, solids

Table 4.7-3. Hazardous/Non-Hazardous Waste Treatment and Disposal Facilities (within the Project Study Area) (Continued)

Facility Name	Type	Phone	Location					Waste Accepted					Contaminants	
			Address	City	State	Zip	County	Haz	Non Haz	Liquid	Solid	Soil	Accepted	Prohibited
Siemens	Water Treatment/ Recycler	(323) 277-1495	5375 S. Boyle Avenue	Vernon	CA	90058	Los Angeles	X	X	X[1]	X	X	Liquids (inorganic and trace organic), RCRA and Cal Haz solids, cyanides, metal bearing solutions, off specification chemicals, copper or nickel bearing wastes for recycling	Ignitable, water reactive wastes, infectious, radioactive, air reactive, and biological wastes; compressed gas, pesticides, dioxins
Veolia	Solvent Recycling	(626) 334-5117 x350	1704 W. First Street	Azusa	CA	92273	Los Angeles	--	X	X	--	--	Waste in bulk and drums (solvents)	Dioxins, PCBs, radioactives, reactive wastes, biological wastes and infectious materials
Clean Harbors Buttonwillow LLC	Class I	(661) 762-6200	2500 West Lokern Road	Buttonwillow	CA	93206	Kern	X	X	X[1]	X	X	California and non-hazardous soil, hazardous and non-hazardous liquid	All other waste
Mercury Disposal Systems, Inc	Universal Waste	(714) 505-6100	2650 Walnut Avenue, Unit D	Tustin	CA	92780	Orange	--	--	--	X	--	Fluorescent lamps, batteries	All other waste
Lighting Resources, LLC	Universal Waste	(888) 923-7252	805 East Francis Street	Ontario	CA	91761	San Bernardino	--	X	--	X	X	Lamp/bulbs, ballasts, mercury, battery, waste electrical	All other waste
TPST Soil Recyclers of CA	Kiln (HT Thermal) Non-Haz Recycler	(800) 862-8001	12328 Hibiscus Road	Adelanto	CA	92301	San Bernardino	--	X	--	X	X	Non-Haz Soil Sandblast Grit, hydrocarbon impacted soil	Hazardous wastes and liquids; P-listed wastes, and acutely hazardous wastes

Source: CalRecycle, 2010. Solid Waste Information System (SWIS) Online Directory: http://www.calrecycle.ca.gov/SWFacilities/Directory/

[1] For solidification (e.g., liquids are mixed with other materials to form a solid before being disposed)

[2] E&P Waste = Commercial Exploration and Production waste

[3] Max treatment capacity per day

[4] Drum management

- = not accepted

Many industrial facilities treat hazardous liquid wastes on-site under the California tiered permitting program (HSC §25200 et seq.) and discharge treated fluid wastes to the sanitary sewer under a permit issued by a Publicly Owned Treatment Works (POTW). In these instances, the facility may generate a residual industrial sludge that may be managed as a "Special Waste" (see below). On-site treatment at industrial facilities reduces the volume of hazardous waste that must be transported off-site.

Medical and infectious wastes generated by California-registered hospitals, laboratories, biotechnology facilities, nursing centers and clinics that use, store or dispose of medical materials are not included in the definition of hazardous waste, but are regulated separately under the 1990 California Medical Waste Management Act (as amended).[8] However, minor amounts of sharps (such as needles and broken glass items), pharmaceuticals, and biohazardous wastes (such as contaminated blood) may inadvertently enter the municipal solid waste stream through disposal from households or at other non-registered public and private facilities (e.g., materials placed in trash bins in public restroom). For this reason, biohazardous and sharps waste generated by non-registered sources is included under the hazardous waste category for the purpose of this Final PEIR.

Hazardous waste accounted for less than one percent of the total 2002 City waste stream (Table 4.7-1).

Universal Waste

Universal wastes are hazardous wastes that are widely produced by households and many different types of businesses. California hazardous waste regulations (22 §CCR 66261.9) identify seven categories of hazardous wastes that can be managed as universal wastes, as shown in Table 4.7-4.

Table 4.7-4. Potential Sources of Universal Waste

Universal Waste	Potential Sources
Electronic devices	Any electronic device that is a hazardous waste (with or without a Cathode Ray Tube (CRT)), including televisions, computer monitors, cell phones, videocassette recorders (VCRs), computer central processing units (CPUs), and portable digital versatile disc (DVD) players.
Batteries	Most household-type batteries, including rechargeable nickel-cadmium batteries, silver button batteries, mercury batteries, alkaline batteries, and other batteries that exhibit a characteristic of a hazardous waste.
Electric lamps	Fluorescent tubes and bulbs, high-intensity discharge lamps, sodium vapor lamps, and electric lamps that contain added mercury, as well as any other lamp that exhibits a characteristic of a hazardous waste (i.e., lead).
Mercury-containing equipment	Thermostats, mercury switches, mercury thermometers, pressure or vacuum gauges, dilators and weighted tubing, mercury rubber flooring, mercury gas flow regulators, dental amalgams, counterweights, dampers, and mercury added novelties such as jewelry, ornaments, and footwear.
Cathode Ray Tubes (CRTs)	The glass picture tubes removed from devices such as televisions and computer monitors.
CRT glass	A CRT that has been accidently broken or processed for recycling.
Non-empty aerosol cans	Suspended fine solid or liquid particles in a gaseous medium.

Source: DTSC. January 2010. Universal Waste Fact Sheet: Department of Toxic substances Control, Sacramento, CA

Universal waste accounted for approximately 0.05 percent of the total 2002 City waste stream (Table 4.7-1).

[8] Medical wastes are normally treated by incineration, steam (autoclave) sterilization, incubation, or microwave technology on-site or at a permitted medical waste treatment facility. Medical waste haulers must be registered hazardous waste haulers.

Special Waste

Special wastes are specifically identified waste or hazardous wastes that satisfy certain criteria (see 22 CCR §66261.122). These criteria are summarized below.

- The waste is a solid, water-based sludge/slurry substantially insoluble in water
- The waste is only hazardous because soluble threshold limit concentrations (STLCs)[9] or total threshold limit concentrations (TTLCs)[10] criteria are exceeded
- The waste soluble extract does not exceed both STLC and TTLC
- The TTLC is not exceeded for extremely hazardous waste
- The waste is not ignitable, corrosive, reactive, or toxic
- The waste does not contain more than 1 percent organic substance or 0.1 percent extremely hazardous waste
- The waste is not a RCRA hazardous waste

Special waste may be managed or disposed in a manner less stringent than hazardous waste, but transporter requirements for special wastes are equivalent to hazardous waste handling requirements. Examples of special wastes are listed below in Table 4.7-5.

Table 4.7-5. Potential Sources of Special Waste

Special Waste	Potential Sources
Ash	Residue from burning of fossil fuels, biomass, and other combustible materials: refractory residues from industrial furnaces, kilns and ovens, slag from coal gasification, and sulfur dioxide scrubber waste from flue gas emission control in combustion of fossil fuels.
Industrial Sludge	Dewatered sludge from treatment of industrial process water; dewatered tannery sludge, drilling mud from drilling of gas and oil wells, catalyst from petroleum refining and chemical plant processing, and tailings from processing ores and minerals.
Sewage sludge	Semi-liquid material consisting of suspended, colloidal, and dissolved organic and inorganic matter derived from human waste treatment.
Other	Baghouse and scrubber wastes for air pollution control, cement kiln dust, sand from sand blasting, sand from foundry casting, and auto shredder waste.

Source: http:ecarcenter.org/ca/ca-hazwaste.htm (Section F)

Special waste accounted for approximately 0.14 percent of the total 2002 City waste stream (Table 4.7-1).

Recyclable Materials

Recyclable materials are excluded as hazardous wastes if used or reused as an ingredient or feedstock in an industrial process to make a commercial product. However, recyclable materials, classified as household hazardous waste (HHW) are considered hazardous until effectively recycled. Certain

[9] A solid material which, after treatment through a waste extraction test (WET), produces dissolved concentrations of specific elements or compounds equal to or above the soluble threshold limit concentration (STLC) is considered a solid hazardous waste because of the extractable and persistent bio-accumulative nature of the specific toxic substance (22 CCR §66261.24).

[10] A solid material with concentrations of specific elements or compounds equal to or above the total threshold limit concentration (TTLC) is considered a hazardous solid waste because of the persistent and bio-accumulative nature of the specific toxic substance (22 CCR §66261.24).

recyclable materials have special management requirements. These materials and management requirements are listed below in Table 4.7-6.

Table 4.7-6. Materials and Management Requirements

Material	Special Management Requirements
Used Industrial and Vehicle Oil	Recycling facilities are exempt from hazardous waste facility permits, transporters may use milk run manifest, and generator must have EPA ID number.
Used Dry Cell Batteries	Employees must be trained in proper handling and response to leaks, shipping papers must meet DOT requirements, shipments must be sent to approved treatment facilities, and disposal/dilution of batteries is prohibited.
Spent Lead-Acid Storage Batteries	Shipments of spent batteries to a recycling or reclamation[11] facility must be shipped with bill of lading, and records maintained for three years.
Agricultural Recyclable Materials	DTSC may specify provisions governing use of pesticides, fertilizers, animal drugs, and feed additives that are licensed by the California Department of Food and Agriculture for processing for agricultural use.
Waste Elemental Mercury[12]	Must be transferred as hazardous waste if over 10 pounds and recovery facilities must comply with requirements for operation of a hazardous waste facility.
Contaminated Containers[13]	Containers must be empty so that the contents cannot pour out in any orientation. Solid residue must be scraped out to the extent practical. Containers greater than five gallons must be returned to vendor, transferred to drum recycler, or reused on-site.
Waste Oil Filters	Used, metal canister oil filters can be managed as non-hazardous waste if thoroughly drained, and the filters are accumulated, stored and transferred in closed, rainproof containers, and transferred for the purpose of metal recycling or energy recovery by burning.

Source: Dufour, 1997. Hazardous Waste Management Manual: California Chamber of Commerce, Sacramento, CA, pp. 38 to 42.

Recyclable materials accounted for approximately 0.05 percent of the total 2002 City waste stream (Table 4.7-1).

Major Appliances

A major appliance (i.e., bulky item) is referred to as a "domestic or commercial device" (PRC §42166), and includes: washer or dryer, refrigerator or freezer, water and space heaters, furnace or boiler, air-conditioner or dehumidifier, trash compactor, stove, oven, and microwave oven. Materials that require special handling are materials that, when removed from a discarded appliance, may not be disposed of in the garbage or at a solid waste facility (HSC §25212).

The following materials must be removed from an appliance prior to the appliance being crushed, baled, shredded, sawed or sheared apart, disposed of, or otherwise processed in a manner that could result in the release of a hazardous material (PRC §42167):

- Mercury, found in switches and temperature control devices
- Used oil, from compressors and transmissions
- Chlorofluorocarbons (CFCs), hydrochlorofluorocarbons (HCFCs), and other non-CFC replacement refrigerants injected in air-conditioning/refrigerant units

[11] Reclamation means any form of physical separation or reprocessing.
[12] Typically contained in fluorescent tubes and mercury vapor lamps.
[13] Does not include empty containers of five gallons or less, or containers composed of wood, paper, cardboard, fabric or other absorptive materials. However, empty aerosol cans are included.

- All metal-encased capacitors
- Any parts that contain encapsulated polychlorinated biphenyls (PCBs) or diethylhexylphthalate (DEHP)
- Any other material that is a regulated hazardous waste

The person or entity that removes these materials is considered a hazardous waste generator, and must comply with applicable laws for generators of hazardous waste. Materials removed from appliances are managed as hazardous waste, universal waste or special waste (DTSC, December 2007).

Major appliances accounted for approximately 0.52 percent of the total 2002 City waste stream (Table 4.7-1).

Transportation

Currently, generators may transport up to 50 pounds of solid or five gallons of liquid hazardous waste in separate one-gallon containers in a private vehicle to a permitted facility or state-authorized collection facility. All other hazardous wastes that are not reused on-site must be shipped off-site to a licensed recycling, treatment, or disposal facility by a DTSC-registered hazardous waste transporter. These wastes are subject to documentation, packaging, labeling, and vehicle placarding requirements.

In addition, hazardous waste transporters must comply with DTSC, EPA, and DOT regulations that protect human health and the environment, and require: (1) vehicle and container specifications; (2) hazardous materials incident (spills) and handling (cleanup) reporting; (3) segregation of hazardous materials; and (4) safe loading and unloading practices.

Hazardous Waste Facilities

The 2002 baseline study conducted by the City identified transfer stations, waste-to-energy facilities, and materials recovery facilities (MRF) in Los Angeles County (LADPW, January 2006) that are available to the City for municipal solid waste processing, recycling, and disposal. Some of these facilities may accept universal wastes, special wastes, recyclable materials and major appliances, but they cannot knowingly accept hazardous wastes. An additional list of existing landfills and recycling facilities that can accept hazardous waste from the City is provided in Table 4.7-3. [14] Further, LASAN provides hazardous waste drop off centers (SAFE Centers).

4.7.2 Thresholds of Significance

The impact analysis for hazards and hazardous materials will use the CEQA thresholds and the *L.A. CEQA Thresholds Guide* to determine significance. Analysis is undertaken on a program level. The following information is provided in accordance with Section 15126.2 of the *CEQA Guidelines*. A project could have a significant impact from the generation of hazardous waste if the project would:

- *Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;*
- *Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous chemicals into the environment;*
- *Be located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project create a safety hazard for people residing or working in the project area;*

[14] http://www.calrecycle.ca.gov/SWFacilities/Directory/ (accessed October 3, 2013).

- *Be within the vicinity of a private airstrip, and the project results in a safety hazard for people residing or working in the project area;*
- *Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan;*
- *Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school; and*
- *Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment.*

4.7.3 Project-Level Analysis

The project-level analysis includes an assessment of potential impacts to human health and the environment from the transportation, use, storage, recycling and disposal of hazardous wastes that may be generated during implementation of the proposed project, including policies, programs and facilities associated with SWIRP. Waste processing or handling facilities and the types of hazardous waste (i.e., hazardous, universal, special, recyclable materials and major appliances) that may arrive at these facilities are listed in Table 4.7-7. Provisions to segregate these hazardous wastes at these facilities, and then transport the segregated wastes for recycling or disposal, is required to be integrated into the facility design and operations plans.

Table 4.7-7. Summary of Facilities and Waste Streams

Facility	Waste Accepted	Potential Hazardous Waste Streams
Blue Bin Processing (Commingled Recycling)		
Clean Materials Recovery Facility (MRF)	Residential blue bin materials and commercial source-separated recyclables	Hazardous, Universal, Special, and Recyclable Wastes
Resource Recovery Center	Self-hauled recyclable and useable materials	Universal & Recyclable Wastes and Major Appliances
Construction and Demolition (C&D)	Mixed C&D debris	Provided by commercial vendors and considered inert (non-hazardous) and recoverable
Green Bin Processing (Yard Trimmings, Food Scraps and Source-Separated Compostable Items)		
Composting (aerobic mulching)	Yard trimmings, food scraps, source-separated organics, manure, and wood wastes	Provided by commercial vendors and households and considered non-hazardous
Black Bin Processing (Municipal Solid Waste)		
Mixed Material Processing ("dirty" MRF)	Residential black bin materials and commercial solid waste	Hazardous, Universal, Special, and Recyclable Wastes
Alternative Technology - Advanced Thermal Recycling	Residential black bin materials and commercial solid waste	Hazardous, Universal, and Special Wastes
Alternative Technology - Biological (Anaerobic Digestion)*	Residential black bin materials and commercial solid waste	Hazardous, Universal, and Special Wastes
Alternative Technology - Non-combustion Thermal (Plasma Arc/Gasification/Pyrolysis)	Residential black bin materials and commercial solid waste	Hazardous, Universal, and Special Wastes

Source: City of Los Angeles, Volume II SWIRP Phase 2 Policy, Program and Facility Plan. 2011. p. 52.
* Regulated as composting under Public Resources Code 40200(b)(3). Alternative Technology means alternative to landfill disposal. This includes "conversion technology" which is new and emerging non-combustion thermal, chemical and biological technologies.
MRF = Materials Recovery Facility
tpd = Tons per day

SWIRP Policy and Program Analysis

Table 4.7-8 analyzes impacts from the transportation, use, storage, recycling and disposal of hazardous wastes in light of the proposed policies and programs identified as part of SWIRP. Based on the analysis, the proposed policies and programs would not result in a significant impact related to hazards and hazardous materials. Some policies and programs may provide educational and information opportunities for residential and commercial generators to find out about proper ways to dispose of hazardous waste and universal waste.

Disposal of residual waste in existing local or remote landfills may involve the transport and disposal of hazardous waste, however, extensive safety procedures and measures required by federal, state, and local laws protect worker health and safety and the environment to the maximum extent possible. Compliance with all applicable regulations involving the use, transport, and disposal of hazardous substances would minimize the risk of an accidental release of hazardous materials during disposal. Mandatory compliance with these required procedures would ensure a less than significant impact related to disposal of potentially hazardous residual waste.

SWIRP Facility Analysis

The following analysis describes potential impacts to human health and the environment from the transportation, use, storage, recycling and disposal of hazardous wastes that may be generated during the siting, construction, and operation of SWIRP facilities.

Use, Transport, and Disposal of Hazardous Waste

Construction activities associated with future facilities could involve the use, transport, and disposal of hazardous substances such as diesel fuel, gasoline, equipment fluids, cleaning solutions and solvents, lubricant oils, adhesives, human waste, and chemical toilets. These materials and waste have the potential to be toxic and may pollute, poison, or degrade environmental resources in the project area.

However, extensive safety procedures and measures required by federal, state, and local laws protect worker health and safety and the environment to the maximum extent possible. Compliance with all applicable regulations involving the use, transport, and disposal of hazardous substances would minimize the risk of an accidental release of hazardous materials during construction. Other known hazardous substances and toxic emissions are controlled by existing rules and regulations regarding lead-based paint, polychlorinated biphenyls, and contaminated soils. Mandatory compliance with these required procedures would ensure a less than significant impact related to the removal of these materials during construction.

Accidental Release of Hazardous Chemicals

Although accidents and spills may increase proportionally to the increase in facility construction and hazardous waste transportation activities, infrastructure and programs to protect human health and the environment from new construction and transportation activities are already in place throughout the nation and in California. No new significant hazards to the public or the environment are anticipated since existing regulations are in place relating to hazardous waste transportation treatment, storage and disposal regulations. Impacts would be less than significant.

Table 4.7-8. Analysis of SWIRP Policies and Programs (Hazards and Hazardous Materials)

Initiative	Impact Analysis for Hazards and Hazardous Materials[1]	Significance Conclusion
Downstream Policies and Programs[2]		
Expand Recycling Ambassador Program	This program will not have a direct impact related to hazards and hazardous materials. Expanding the recycling ambassador programs may serve as an educational tool to inform residential customers about the appropriate means of disposing hazardous and universal waste.	No impact Potential beneficial impact.
Adding Textiles to the Blue Bins	This program will not have a direct impact related to hazards and hazardous materials.	No impact
Bulky Item Reuse and Refurbishment	This program will not have a direct impact related to hazards and hazardous materials.	No impact
Expand Residential Food Scrap Program	This program will not have a direct impact related to hazards and hazardous materials.	No impact
Large-Scale Media/Social Marketing	This program will not have a direct impact related to hazards and hazardous materials. Undertaking a large-scale media may serve as an educational tool to inform residential customers about the appropriate means of disposing of hazardous and universal waste.	No impact Potential beneficial impact.
Modify Residential Collection Rates	This program will not have a direct impact related to hazards and hazardous materials.	No impact
Modify Commercial Collection Rates	This program will not have a direct impact related to hazards and hazardous materials.	No impact
Multi-Family Recycling	This program will not have a direct impact related to hazards and hazardous materials. Hazardous materials that end up in the waste stream will continue to be handled in the appropriate manner.	No impact
Multi-Family Green Bins	This program will not have a direct impact related to hazards and hazardous materials. Hazardous materials that end up in the waste stream will continue to be handled in the appropriate manner.	No impact
All Businesses to have Recycling Services	This program will not have a direct impact related to hazards and hazardous materials. Hazardous materials that end up in the waste stream will continue to be handled in the appropriate manner.	No impact
Commercial Haulers to Offer Recycling Services to Customers	This program will not have a direct impact related to hazards and hazardous materials. Hazardous materials that end up in the waste stream will continue to be handled in the appropriate manner.	No impact
Expand Commercial Technical Assistance	This program will not have a direct impact related to hazards and hazardous materials. Expanding commercial technical assistance may serve to further educate customers about the appropriate means of disposing of hazardous and universal waste.	No impact Potential beneficial impact
Expand Construction and Demolition (C&D) Technical Assistance	This program will not have a direct impact related to hazards and hazardous materials. Expanding C&D technical assistance may serve to further educate customers about the appropriate means of disposing of hazardous materials that are generated during the C&D process.	No impact Potential beneficial impact.
Provide More Public Area Recycling	This program will not have a direct impact related to hazards and hazardous materials. Hazardous materials that end up in the waste stream will continue to be handled in the appropriate manner.	No impact
C&D Ordinance	This program will not have a direct impact related to hazards and hazardous materials. Hazardous materials that end up in the waste stream will continue to be handled in the appropriate manner.	No impact

Table 4.7-8. Analysis of SWIRP Policies and Programs (Hazardous Waste) (Continued)

Initiative	Impact Analysis for Hazardous Wastes	Significance Conclusion
Mandatory Participation Programs[3]		
Mandatory Recycling Separation	This program will not have a direct impact related to hazards and hazardous materials. Hazardous materials that end up in the waste stream will continue to be handled in the appropriate manner.	No impact
Mandatory Organics Separation	This program will not have a direct impact related to hazards and hazardous materials. Hazardous materials that end up in the waste stream will continue to be handled in the appropriate manner.	No impact
Resource Recovery Centers (RRC) at Transfer Stations and Landfills	This program will not have a direct impact related to hazards and hazardous materials. Hazardous materials that end up in the waste stream will continue to be handled in the appropriate manner.	No impact
Recycling Ambassadors (Reinforcement)	No direct impact related to hazards and hazardous materials. Recycling enforcement may also have an indirect effect of keeping potential hazardous materials out of the waste stream.	No impact Potential beneficial impact
Direct Technical Assistance (Reinforcement)	No direct impact related to hazards and hazardous materials. Providing direct technical assistance may also have an indirect of effect of keeping potential hazardous materials out of the waste stream.	No impact Potential beneficial impact
Increased Diversion Requirements at C&D Facilities	This program will not have a direct impact related to hazards and hazardous materials. Hazardous materials that end up in the waste stream will continue to be handled in the appropriate manner.	No impact
Upstream Policies(4)		
Extended Producer Responsibility (EPR) for Toxics	This policy will require extended produce responsibility for toxics. This could result in the use of less toxic and more easily recycled material being used.	No impact Potential beneficial impact
EPR for Difficult to Recycle Materials	This policy will work to keep difficult to recycle material out of the waste stream. This could include materials that contain hazardous waste or universal waste. This program will not have a direct impact related to hazards and hazardous materials.	No impact Potential beneficial impact
Single-use Bag Ban	This program will not have a direct impact related to hazards and hazardous materials.	No impact
Disposal of Remaining Residual Waste[5]		
Landfill Disposal – Truck Haul, Rail Haul	This program will not have a direct impact related to hazards and hazardous materials. Hazardous materials that end up in the waste stream will continue to be handled in the appropriate manner.	No impact

(1) Depending on phasing and implementation of various proposed programs and policies, along with anticipated growth in the City, there will be a need for additional facilities to process the diverted materials. Please refer to Section 4.7.3 for an impact analysis of the future facilities.
(2) Refer to Chapter 2.0, Table 2.3-1 for a detailed description of the Downstream Policies and Programs.
(3) Refer to Chapter 2.0, Table 2.3-2 for a detailed description of the Mandatory Participation Programs.
(4) Refer to Chapter 2.0, Section 2.3.4 for a detailed description of the Upstream Policies.
(5) Refer to Chapter 2.0, Section 2.3.6 for a detailed description of Disposal of Residual Waste.

Public and Private Airports

As stated previously, SWIRP notes that additional facilities would be required to meet the need for additional wastes that would be diverted from landfills, but specific locations of future facilities have not yet been identified. The potential for these future facilities to conflict with an airport land use plan, or operations at a public or private airport is dependent upon where future facilities are sited. Due to the uncertainty at this time, a potentially significant impact to airports is identified. Mitigation measure HAZ-1 provided in Section 4.7.5 has been identified to reduce potentially significant impacts to airports to a less than significant level. Future facilities would be subject to additional review pursuant to CEQA, and any potential conflicts with existing airports would be identified.

Adopted Emergency Response Plans

As stated previously, the SWIRP notes that additional facilities would be required to meet the need for additional solid waste/resources that would be diverted from landfills, but specific locations of future facilities have not yet been identified. The Hazardous Materials Release Response Plans & Inventory Act requires facilities using hazardous materials or generating hazardous wastes to prepare Hazardous Materials Business Plans (see Section 4.7.1.1). These plans specify storage, secondary containment and proper hazardous material and waste management procedures and practices, including personnel training and emergency response actions to contain, cleanup and report unauthorized releases or spills. In addition, EPCRA (see Section 4.7.1.1) was enacted to help communities protect public health, safety, and the environment from chemical hazards. To implement EPCRA, California has been divided into emergency planning districts and identifies a local emergency planning committee for each district. EPCRA provides the requirements for emergency release notification, chemical inventory reporting, and toxic release inventories for facilities that handle chemicals. Depending on where the future facilities are located and the types of materials they handle, community emergency plans may need to be reviewed and updated. This represents a potentially significant impact. Mitigation measure HAZ-5 has been identified, which will reduce this impact to below a level of significance. This mitigation measure requires, that, upon approval of future facilities proposed under SWIRP, an applicable community emergency plan shall be developed, reviewed and updated, as needed, to account for new waste facilities and updated routes for the transportation of hazardous wastes.

Proximity to Schools

As stated previously, the SWIRP notes that additional facilities would be required to meet the need for additional wastes that would be diverted from landfills, but specific locations of future facilities have not yet been identified. The AQMDs regulate emissions according to the geographic area and potential sensitive receptors. As noted previously, all facilities are required to prepare Hazardous Materials Release Response Plans & Inventory Act that specify storage, secondary containment and proper hazardous material and waste management procedures and practices, including personal training and emergency response actions to contain, cleanup and report unauthorized releases or spills. Emissions from waste incineration and potential for handling hazardous wastes must be assessed on a case-by-case basis to determine if siting of waste, processing or handling facilities is protective of existing and future school students and staff within one-quarter mile.

Hazardous Materials Database Listed Sites

Government Code Section 65962.5(a)(1) requires DTSC to compile and update, at least annually, a list of all hazardous waste facilities where DTSC has: (1) taken corrective action because a facility owner or

operator has failed to comply with corrective action requirements (HSC §25187); or (2) has determined that immediate corrective action is necessary to abate an imminent or substantial endangerment. Due to the uncertainty of where future facilities would be located, there is a potential that the facility could be located on or adjacent to a site that is listed by DTSC as needing corrective action. This represents a potentially significant impact. Mitigation measure HAZ-2 has been identified, which will reduce this impact to below a level of significance.

Table 4.7-9 provides a summary of the impact analysis for proposed SWIRP facilities relative to hazards and hazardous materials.

Table 4.7-9. Facility Impact Summary Table (Hazards and Hazardous Materials)

Facility Type	Impact
Clean Material Recovery Facilities	Less than significant with mitigation
Composting (Aerobic)	Less than significant with mitigation
Composting (Anaerobic Digestion)	Less than significant with mitigation
Resource Recovery Centers	Less than significant with mitigation
Mixed Material Processing	Less than significant with mitigation
Alternative Technology – Advanced Thermal Recycling	Less than significant with mitigation
Alternative Technology – Biological (Anaerobic Digestion)	Less than significant with mitigation
Alternative Technology – Thermal (Plasma Arc, Gasification, Pyrolysis, and Others)	Less than significant with mitigation

4.7.4 Cumulative-Level Analysis

Depending on the location of future facilities, as well as other projects that are proposed in the vicinity, there may be a cumulative impact from the transportation, use, storage, recycling and disposal of hazardous wastes that may be generated during implementation of the proposed project. Upon determination of the facility location, a project-level CEQA analysis can be conducted to determine if the construction of such facilities would have a cumulative impact. The future cumulative analysis will utilize a list of project and/or use projections to determine the project-level impacts from the transportation, use, storage, recycling and disposal of hazardous wastes within the City and the 100-mile study area.

4.7.5 Mitigation Measures

The following mitigation measures are proposed to reduce potentially significant impacts relative to hazards and hazardous materials to a level considered less than significant under CEQA.

Airports

HAZ-1 If future facilities are sited within an area governed by an airport land use plan or within two miles of a public or private airport, analysis shall be undertaken to assess if the proposed facility would result in any impacts to airport operations or if it would subject people to a significant risk due to airport operations. If potential impacts are identified, a different site shall be selected or mitigation measures shall be implemented during the project level environmental analysis to reduce the potential impact to airport operations to below a level of significance. Such mitigation measures could include maintaining certain

percentages of low-occupancy areas (e.g., undeveloped areas, parking areas), building heights and building lights.

Hazardous Materials Database Listed Sites

HAZ-2 Prior to siting waste facilities, a Phase I Environmental Site Assessment (ESA) shall be conducted in conformance with industry-accepted practices, American Society of Testing Materials (ASTM) Designation E1527-05, and the EPA All Appropriate Inquiry Rule (40 Code of Federal Regulations §312). Based on the Phase I ESA findings, recommendations for further assessment or mitigation measures shall be recommended, as appropriate, to assess or mitigate potential environmental impacts.

Human Health Hazards

HAZ-3 Future facilities shall provide barriers, as needed, to contain hazardous materials. Such barriers could include providing appropriate buffers between facility operations and adjacent, off-site uses and/or providing air curtains of sufficient strength to control insect vectors.

HAZ-4 At future facilities, hazardous substances shall be stored away from site boundaries.

HAZ-5 Upon approval of future facilities proposed under SWIRP, an applicable community emergency plan shall be developed, reviewed and updated, as needed, to account for new waste facilities and updated routes for the transportation of hazardous wastes.

HAZ-6 A Health and Safety Plan shall be developed in accordance with local, state, and federal occupational health regulations.

HAZ-7 Spill containment measures shall be developed and implemented on site for any new SWIRP facility.

4.7.6 Conclusion

Based upon the analysis presented in Sections 4.6.3 and 4.6.4, potential hazards and hazardous materials impacts related to airports, listed sites and human health hazards were identified for the project. Mitigation measure HAZ-1 will reduce the potential future facility-related impacts to airports by requiring, if facilities are proposed within two miles of an airport, an analysis to assess if the proposed facility would result in any impacts to airport operations or if it would subject people to a significant risk due to airport operations. If potential impacts are identified, a different site shall be selected or mitigation measures shall be implemented during the project level environmental analysis to reduce the potential impact to airport operations to below a level of significance. Such mitigation measures could include maintaining certain percentages of low-occupancy areas (e.g., undeveloped areas, parking areas), building heights and building lights. Mitigation measure HAZ-2 requires preparation of a Phase 1 ESA prior to siting a facility in a specific location. Finally, mitigation measures HAZ-3 through HAZ-7 are provided to minimize potential human health hazard impacts. These mitigation measures address appropriate land use buffer, proper storage of hazardous materials, updating community emergency plans, if needed, preparing a health and safely plan for future facilities and implementing spill containment measures at future facilities. Implementation of these mitigation measures will reduce the potential impacts to below a level of significance.

4.8 HYDROLOGY AND WATER QUALITY

This section analyses the potential for the proposed project to impact hydrology and water quality. It includes a discussion of the applicable regulatory environment, existing conditions, a project-level and cumulative-level impact analysis, and any applicable mitigation measures. The analysis area for hydrology and water quality covers the City of Los Angeles (City and the area within 100 miles of the City). While the Solid Waste Integrated Resources Plan (SWIRP) emphasizes local processing and handling of discarded materials generated within the City, it may not be feasible for all facility types to be built within the City, either due to lack of available space or potential land use conflicts. Therefore, the area within 100 miles of the City is included in the analysis to capture any potential impact to areas outside of the City.

4.8.1 Environmental Setting

This section describes the regulatory setting and existing conditions for hydrology and water quality.

4.8.1.1 Regulatory Setting

Federal, state, regional, and local requirements influence hydrology and water quality within the project analysis area. This section lists and briefly describes the relevant plans, policies, and regulations that pertain to hydrology and water quality.

Federal

Clean Water Act of 1977 Section 311 and 402, United States Code Title 33 Section 1342, Code of Federal Regulations Title 40 Parts 123-136

The federal Water Pollution Control Act (also known as the Clean Water Act [CWA]) was amended in 1972 to prohibit discharge of any pollutant into Waters of the United States unless the discharge is authorized by a National Pollutant Discharge Elimination System (NPDES) Permit. Originally, the NPDES program focused on reducing pollutants from discharges from industrial process wastewater and municipal sewage treatment plants. In 1987, the CWA was amended to require the United States Environmental Protection Agency (EPA) to regulate stormwater discharges through use of NPDES stormwater permits. Section 402(p) of the CWA established a framework for regulating discharges under the NPDES program.

In California, the EPA has delegated authority to issue NPDES permits to the State Water Resources Control Board (SWRCB). The SWRCB and nine California Regional Water Quality Control Boards (RWQCBs) carry out the regulation, protection, and administration of water quality. The state is divided into nine regions related to water quality and quantity characteristics. Each RWQCB is required to adopt a Water Quality Control Plan that recognizes and reflects the regional differences in existing water quality, the beneficial uses of the region's ground and surface water, and local water quality conditions and problems. The project analysis area includes all or part of seven RWQCBs: Los Angeles, Santa Ana, San Diego, Colorado River, Lahontan, Central Valley and Central Coast. The various Water Quality Control Plans for these basins are designed to preserve and enhance water quality and protect the beneficial uses of all regional waters.

State

California Porter-Cologne Water Quality Control Act 1998, California Water Code Section 13000-14957, Division 7

The California Water Code contains provisions regulating water and its use. Division 7 establishes a program to protect water quality and beneficial uses of the state water resources including groundwater and surface water. The SWRCB and RWQCB administer the program and are responsible for control and water quality. They establish waste discharge requirements, water quality control planning and monitoring, enforcement of discharge permits, and ground and surface water quality objectives.

National Pollutant Discharge Elimination System (NPDES) Permits

The NPDES permit system was established in the federal CWA to regulate municipal and industrial discharges to surface waters of the U.S. Sections 401 and 402 of the CWA contain general requirements regarding NPDES permits. Section 307 of the CWA describes the factors that the federal EPA must consider in setting effluent limits for priority pollutants.

Non-point sources are diffuse and originate over a wide area rather than from a definable point. Non-point pollution often enters receiving water in the form of surface runoff, but is not conveyed by way of pipelines or discrete conveyances. As defined in the federal regulations, such non-point sources are generally exempt from federal NPDES permit program requirements. However, three types of non-point source discharges are controlled by the NPDES program: non-point source discharge caused by general construction activities, the general quality of stormwater in municipal stormwater systems, and discharges associated with industrial operations. The 1987 amendments to the CWA directed the federal EPA to implement the stormwater program in two phases.

In accordance with NPDES regulations, in order to minimize the potential effects of construction runoff on receiving water quality, the State requires that any construction activity affecting one acre or more must obtain a General Construction Activity Stormwater Permit. Permit applicants are required to prepare a Stormwater Pollution Prevention Plan (SWPPP) and implement Best Management Practices (BMPs) such as erosion and sediment control and non-stormwater management measures to reduce construction effects on receiving water quality. Because construction of the project would collectively disturb more than one acre, the project would be subject to permit requirements, and would develop and implement project-specific SWPPPs to minimize construction activity impacts.

Examples of typical BMPs implemented in SWPPPs include: using temporary mulching, seeding, or other suitable stabilization measures to protect uncovered soils; storing materials and equipment to ensure that spills or leaks cannot enter the storm drain system or surface water; developing and implementing a spill prevention and cleanup plan; installing traps, filters, or other devices at drop inlets to prevent contaminants from entering storm drains; and using barriers, such as straw bales or plastic, to minimize the amount of uncontrolled runoff that could enter drains or surface water.

Table 4.8-1 lists the applicable NPDES permits for the project study area.

Table 4.8-1. NPDES Permits within the Project Study Area

Applicable NPDES Permit	County/Region
2010 Permit by California Regional Water Quality Control Board Order No. R8-2002-0012, NPDES No. CAS618036	Region 8 RWQCB NPDES permit for discharges into Municipal Separate Storm Sewer Systems (MS4s) for San Bernardino within the Santa Ana Region.
2010 Permit by California Regional Water Quality Control Board Order No. R8-2010-0033, NPDES No. CAS618033	Region 8 RWQCB NPDES permit for discharges into MS4s for Orange County and Riverside County
2009 Permit by California Regional Water Quality Control Board Order No. 09-0057, NPDES No. CAS004002	Ventura County Region 4 RWQCB NPDES permit for discharges into MS4s.
2007 Permit by California Regional Water Quality Control Board Order No. R9-2007-0001, NPDES No. CAS0108758	Region 9 RWQCB NPDES permit for discharges into MS4s.
2003 Permit by California Regional Water Quality Control Board Order No. 2003-0005-DWQ, NPDES No. CAS000004	San Luis Obispo County, Santa Barbara County and other small municipal NPDES permit for discharges into MS4s.
2001 Permit by California Regional Water Quality Control Board Order No. 5-01-130, NPDES No. CA00883399	Region 5F RWQCB NPDES permit for discharges into MS4s for Kern County.
2001 Permit by California Regional Water Quality Control Board Order No. 01-182, NPDES No. CAS004001	Los Angeles County Region 4 RWQCB NPDES permit for discharges into MS4s.
General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities, Order No. 2009-0009-DWQ	NPDES permit for stormwater quality associated with construction activities.

Source: California RWQCB, http://www.waterboards.ca.gov/santaana/board_decisions/adopted_orders/

Regional

In general, water quality requirements are not determined at the County level; rather, the RWCQBs drive water quality regulations. Each of the separate counties within a RWCQB may have subtle differences in the interpretation of the NPDES permit, but all are required to meet the same overall RWCQB regulations. Typically, these County water quality criteria are presented in a Standard Urban Stormwater Mitigation Plan (SUSMP), a Water Quality Management Plan (WQMP), or a Storm Water Management Plan (SWMP).

All counties include requirements to identify water bodies receiving runoff from the project and any associated environmental impact. Projects need to identify the potential pollutants the project will discharge and compare with downstream water body impairments to create a list of pollutants of concern which could impact beneficial uses. BMPs will be required for almost all development and redevelopment projects in the form of site design features, source control alternatives, and treatment devices in order to address water quality concerns to the Maximum Extent Practicable (MEP). Site design features are intended to limit pollution and runoff through organization and implementation of project features. Typically site design features are Low Impact Development (LID) facilities or design approaches, such as disconnection of impervious surfaces or use of permeable pavements. Source control BMPs are intended to limit pollution through control of pollutant exposure to runoff; typically in the form of pollutant management education and isolation of pollutant sources. Treatment devices physically remove pollutants from discharges or reduce runoff, and typically consist of proprietary underground filtration devices or infiltration or detention type facilities. Each county has various BMP applications through differing alternatives, implementation strategies, and sizing requirements.

The EPA maintains a list of water quality impaired water bodies, called a 303(d) list. On November 12, 2010, the EPA approved California's 2008-2010 Section 303(d) list of impaired waters and disapproved

the omission of several water bodies and associated pollutants that meet federal listing requirements. The EPA is providing public review of its decisions to add waters and pollutants to California's 2008-2010 Section 303(d) list. The EPA will consider public comments received, and may revise its decision if appropriate (USEPA, 2010).

Project developments are required to identify 303(d) listed water bodies in the vicinity of the proposed facility. Any project facility discharging directly to a 303(d) listed water body will have to verify that anticipated pollutants will not exacerbate existing impairments and demonstrate mitigation measures implemented to the maximum extent practicable.

Based on the current direction of water quality regulations, LID features are increasingly required on development and redevelopment projects. RWCQBs are taking different approaches to address the impacts of increased project runoff rates, volumes, velocities, and durations in the form of hydromodification management plans or simplified hydromodification considerations. The nine counties associated with this project have developed approaches to address alterations in water quality flow rates, volumes, durations, and velocities, as summarized in Table 4.8-2, below.

Table 4.8-2. Low Impact Development (LID) Approach for the Nine Counties in the Project Study Area

County	LID Approach
Kern	No specific criteria for water quality flow comparison.
Los Angeles	Peak runoff comparison when erosion can result from development.
Orange	Comparison of 2-year and 10-year volume, flow, velocity, and duration in Region 8 RWQCB and continuous hydrologic simulation for hydrologic conditions of concern for Region 9 RWQCB.
Riverside	Comparison of the 2-year and 10-year volume, flow, velocity, and duration.
San Bernardino	Comparison of 1-year, 2-year, and 5-year volume, flow, velocity, and duration.
San Diego	Continuous hydrologic simulations for hydrologic conditions of concern.
San Luis Obispo	Currently developing hydromodification criteria.
Santa Barbara	Currently developing hydromodification criteria.
Ventura	Currently developing hydromodification criteria.

Sources: County of Los Angeles, 2002; County of Orange, 2010; County of Riverside, 2006; County of San Bernardino, 2005; County of San Diego, 2010; County of San Luis Obispo, 2006; County of Santa Barbara, 2010; County of Ventura, 2010.

There are also subtle differences between county and city implementation of the hydromodification requirements; however, these are generally limited to variances in form submittals and report formats.

Any construction activity proposed as part of the project will be required to meet the water quality requirements presented in the General Construction Permit through the preparation of a SWPPP. Any project component disturbing over one acre is required to prepare a SWPPP prior to commencement of construction activities.

Table 4.8-3 presents a summary of the water quality policies and programs for the nine counties that are within the project analysis area.

Prior to any project planning a thorough investigation of the appropriate local policies and programs will be required in order to demonstrate that the design implements the desired features and operation standards.

Table 4.8-3. Stormwater and Water Quality Policy and Program Summary

County	Policies/Programs
Kern	• Kern County Engineering Surveying and Permit Services Department
Los Angeles	• Development Planning for Storm Water Management, September 2002, A Manual for the Standard Urban Storm Water Mitigation Plan (SUSMP); • How to Build Protection for Mother Nature into Your Project, 2009, Standard Urban Mitigation Plans (SUSMP) Site-Specific Mitigation Plans
Orange	• Orange County 2003 Drainage Area Master Plan Section 7 New Development/Significant Redevelopment, September 24, 2003 • Orange County Watersheds Water Quality Management Plan
Riverside	• Riverside County Water Quality Management Plan for Urban Runoff, July 24, 2006 • Riverside County Flood Control and Water Conservation District Santa Margarita Region Stormwater Management Plan, January 2007 • Storm Water Clean Water Protection Program
San Bernardino	• Model Water Quality Management Plan Guidance, June 9, 2005 • San Bernardino County Stormwater Program
San Diego	• County of San Diego Standard Urban Stormwater Mitigation Plan Requirements for Development Applications, March 25, 2010 • Final Hydromodification Management Plan December 2009 • Project Clean Water
San Luis Obispo	• National Pollutant Discharge Elimination System Phase II Stormwater Management Program County of San Luis Obispo, June 2006 • San Luis Obispo County Stormwater Management Plan
Santa Barbara	• County of Santa Barbara Storm Water Management Program, Revised February 2010 • Project Clean Water County of Santa Barbara
Ventura	• Ventura Countywide Stormwater Quality Management Program, Stormwater Quality Management Plan, November 2001 • Ventura County Technical Guidance Manual for Stormwater Quality Control Measures, Manual Update 2010 • Ventura Countywide Stormwater Quality Management Program

Local

City of Los Angeles

The Conservation Element of the City's General Plan has specific policies related to ocean and bay water quality. They include:

> Policy 1: Continue to reduce pollutant discharge into the bays from both natural and human sources.
>
> Policy 2: Continue to support legislation and to seek funding and legislation intended for bay and coastal protection, enhancement and habitat restoration.
>
> Policy 3: Continue to support and/or participate in programs to clean bay sediments and/or mitigate potentially harmful effects of contaminants in the sediments and waters of the bays.

Other Jurisdictions

In addition to the City, the 100-mile buffer includes all or part of 190 cities and nine counties. Each of these cities and counties may have adopted plans and policies related to hydrology and water quality. Depending where future facilities are located, local plans and policies would be applicable to those facilities.

4.8.1.2 Existing Conditions

The project analysis area (City and the area within 100 miles of the City) crosses a large number of jurisdictional boundaries from a hydrology and water quality perspective. The project study area includes 190 cities, nine counties, seven RWQCBs, the SWRCB, and the FEMA. Due to the programmatic nature of this environmental document, the existing conditions section focuses on the County-level, RWQCB, SWRCB, and FEMA.

County regulatory requirements will apply to the hydrology and drainage design of a project, typically in the form of a hydrology manual and a drainage design manual. Water quality concerns are also addressed at the county level, but are typically an application of water quality standards developed by the governing regional water quality control board in order to obtain a general NPDES permit. RWQCBs associated with the project analysis area are listed below and shown on Figure 4.8-1:

- Region 3 – Central Coast RWQCB
- Region 4 – Los Angeles RWQCB
- Region 5F – Central Valley RWQCB
- Region 6V – Lahontan Regional RWQCB
- Region 7 – Colorado Regional RWQCB
- Region 8 – Santa Ana Regional RWQCB
- Region 9 – San Diego Regional RWQCB

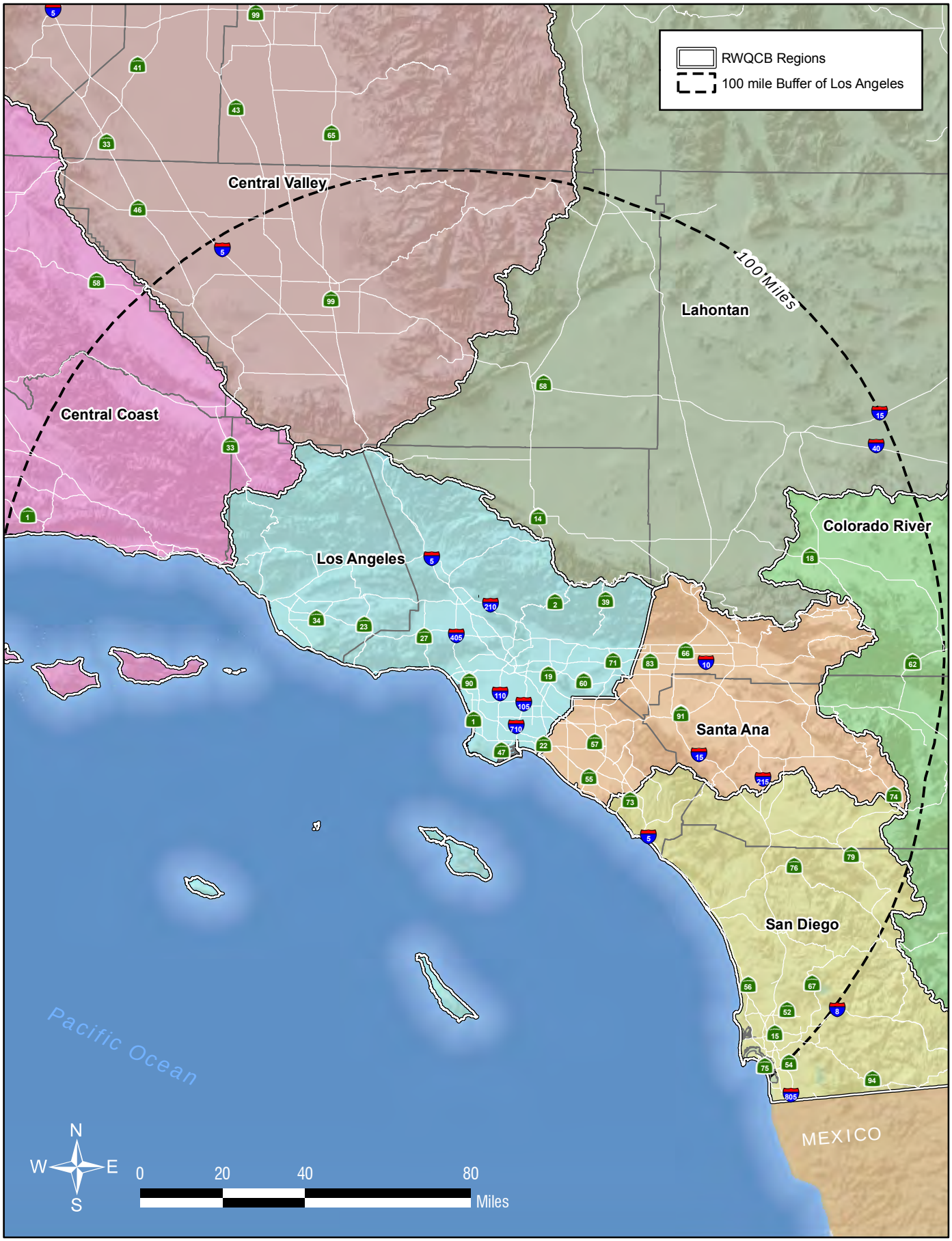
Water Quality

RWQCBs address water quality issues for a given watershed area. Newer requirements from several of the RWQCBs identify hydrology constraints that can be very restrictive, which are discussed in further detail later in this section.

A general construction NPDES permit (General Construction Permit) has been created for the whole state and is implemented through the SWRCB which addresses all water quality concerns associated with construction activities. In addition, the recently adopted General Construction Permit includes post-construction BMPs for projects that are outside of the Phase I and Phase II NPDES permits for the RWQCBs. These SWRCB post-construction BMP requirements went into effect September of 2012, and required all projects outside of the Phase I and Phase II NPDES permits to consider treatment control for stormwater runoff (SWRCB, 2010).

Floodplains

FEMA provides regulation of the floodplains and floodways for the United States and will have requirements that need to be considered anytime the project proposes to impact these features. Typical FEMA requirements are outlined in Title 44 of the Code of Federal Regulations (CFRs) Part 59-78.



Jurisdiction of Regional Water Quality Control Boards in Project Analysis Area

FIGURE 4.8-1

In addition, each of the counties will have a division that deals with flood control which will require consultation on any project that could potentially impact flood control. The following flood control agencies are associated with the project.

- County of Kern Floodplain Management
- County of Santa Barbara Public Works Department – Floodplain Management Section
- San Luis Obispo County Water Resources – Division of Public Works
- Ventura County Watershed Protection District
- County of Los Angeles Department of Public Works – Flood Control District
- County of Orange Public Works
- County of San Bernardino Department of Public Works – Flood Control District
- Riverside County Flood Control and Water Conservation District
- County of San Diego Department of Public Works – Flood Control Section

FEMA and the County floodplain management agencies or department of public works will need to be consulted for any project development which could impact a floodplain or floodway. A floodplain as defined by FEMA is, "Any land area susceptible to being inundated by water from any source." Generally, flooding of concern in project development will be from existing channels and the adjacent flat or nearly flat land. From a regulatory standpoint, a floodplain can include the floodway, which consists of the stream channel and adjacent areas that carry flood flows and the flood fringe, which are areas covered by the flood, but which do not experience strong currents.

A "Regulatory Floodway" means the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood (flood having a one percent chance of being equaled or exceeded in any given year – CFR Part 59) without cumulatively increasing the water surface elevation more than a designated height. Communities must regulate development in these floodways to identify that there are no increases in upstream flood elevations. For streams and other watercourses where FEMA has provided Base Flood Elevations (BFEs), but no floodway has been designated, the community must review.

Flood hazard areas identified on the Flood Insurance Rate Map (FIRM) are identified as a Special Flood Hazard Area (SFHA). SFHAs are defined as the area that will be inundated by the flood event having a 1 percent chance of being equaled or exceeded in any given year. The 1 percent annual chance flood is also referred to as the base flood or 100-year flood. The SFHA is the area where the National Flood Insurance Program's (NFIP) floodplain management regulations must be enforced and the area where the mandatory purchase of flood insurance applies.

Zone A is the flood insurance rate zone used for 1 percent-annual chance (base flood) floodplains that are determined for the Flood Insurance Study (FIS) by approximate methods of analysis. Because detailed hydraulic analyses are not performed for such areas, no BFEs or depths are shown in this zone. Mandatory flood insurance purchase requirements apply.

The 100-year floodplains are identified on the FEMA Flood Insurance Rate Map and will have to be referenced during any development proposed for the project which could potentially impact a floodplain or floodway.

Drainages

Major drainages for the nine counties that make up all or part of the project analysis area are presented in Table 4.8-4.

Table 4.8-4. Major Drainages in Project Study Area

County/Applicable RWQCB(s)	Major Drainage Features
Kern RWQCB 5F and 6V	Major topographic features of Kern County within the study radius are the Temblor Range and the San Andreas Rift along the western boundary, the Tehachapis along the southern end, which curve northward into the Greenhorn Mountains, the beginnings of the Sierra Nevada Range. The Buena Vista and Kern Lakebeds are sinks at the southern end of the San Joaquin Valley. To the east of the Tehachapis lies the Mojave Desert and Antelope Valley. Watersheds along the eastern portions of the Temblor Range drain primarily to the southeast with an ultimate destination of the Buena Vista Lakebed. Drainages of the western slopes of the Greenhorn Mountains drain to the San Joaquin Valley. The Kern River drains the eastern faces of the Greenhorn Mountains, as well as substantial portions of the southern Sierra Nevadas. The Kern's ultimate destination is the Buena Vista and Kern Lakebeds. Eastern portions of the county drain to the Mojave Desert and the sinks of Rosamond Lake and Rogers Lake.
Los Angeles RWQCB 4 and 6V	Los Angeles County is generally divided north to south by the San Gabriel Mountains, with the San Andreas Rift Zone and the Antelope Valley to the north, and the coastal plains of the Los Angeles Basin to the south. The Malibu Mountains are distinctly separate to the west, as well as the adjacent San Fernando Valley and the Palos Verdes Peninsula to the south. The northern portion of the county drains to the Antelope Valley, comprising the western edge of the Mojave Desert and the southern extent of the Great Basin. The northwestern portion of the County drains to the Santa Clara River of Ventura County. The Los Angeles River originates from the Santa Susana Mountains and the Simi Hills on the Ventura County line. The river drains the San Fernando Valley north of the Santa Monica Mountains, turning south to meet downtown Los Angeles. The current course of the river drains south through the Los Angeles Basin to Long Beach Harbor. Major tributaries include Tujunga Wash, Verdugo Wash, Arroyo Seco, Rio Hondo, and Compton Creek. The San Gabriel River watershed lies to the east of the Los Angeles River watershed and drains the majority of the southern face of the San Gabriel Mountains, including the 10,000-foot peak of Mount San Antonio. Exiting San Gabriel Canyon in the vicinity of Duarte and Azusa, the San Gabriel flows south to the eastern boundary of the City of Long Beach, along the Orange County line. Major tributaries include Walnut Creek, San Jose Creek, and Coyote Creek.
Orange RWQCB 8 and 9	Major features of Orange County include the Puente Hills to the north, the Santa Ana Mountains to the east, and the San Joaquin Hills along the southern coast. The Santa Ana River divides the county as it flows to the Pacific. The western edge of Orange County follows Coyote Creek as it and its tributaries drain the northern portion of the county, with the boundary continuing along San Gabriel River after the confluence of the two drainages. The lower portion of the Santa Ana River drains the heart of the urban plain of Orange County, as well as the western slopes of the Santa Ana Mountains. Smaller coastal drainages dominate the southern portions of the county, to include San Diego Creek, Aliso Creek, and San Juan Creek.
Riverside RWQCB 7, 8 and 9	The western portion of Riverside County lies within the study radius. Portions of the San Bernardino and Little San Bernardino Mountains provide an east to west topographic divide. The San Jacinto Mountains provide a north to south divide, separating the Coachella Valley from San Jacinto, Perris, and Moreno valleys. Areas to the north of the San Bernardinos and Little San Bernardinos drain to desert sinks of the Mojave Desert. The Whitewater River and its tributaries drain the southern slopes of these mountains through the Coachella Valley, with the Salton Sea as its final destination. The San Jacinto River drains the western slopes of the San Jacinto Mountains and terminates in the vicinity of Lake Elsinore. Small, local drainages contribute to the Santa Ana River.

County/Applicable RWQCB(s)	Major Drainage Features
San Bernardino RWQCB 6Vand 7	The majority of San Bernardino County within the study radius is located within the Mojave Desert. The southwest corner of the county is separated by the San Gabriel and San Bernardino Mountains and extends into the Inland Empire. Inland desert sinks of the Great Basin are the final destination for the majority of San Bernardino drainages. Notably, the Mojave River flows north from the San Bernardinos in the Mojave Desert, following a north and northeast course. Flowing mostly underground, the Mojave River ultimately flows to Soda Lake. The southwestern corner of the county sees local drainages coming off the southern slopes of the San Gabriels, notably Cucamonga Creek, Lytle Creek, and Cajon Wash flowing down the San Andreas Rift. The Santa Ana River drains southern slopes of the San Bernardinos and merges with the San Gabriel Mountain drainages.
San Diego RWQCB 9 and 7	Most of the northern and western portions of San Diego County lie within the study radius. Major topographic features of these areas are the Santa Margarita Mountains in the northwest corner, Palomar Mountain in the north, the Anza Borrego Desert in the east, and a multitude of coastal drainages and lagoons. The major drainages along the coast are the Santa Margarita River, San Luis Rey River, San Marcos Creek, Escondido Creek, San Dieguito River, Los Peñasquitos Creek, and the San Diego River. These east-to-west drainages characteristically empty to coastal estuaries. Eastern portions of the study area within San Diego County lie east of the Tecate Divide and drain to the Salton Sea, via desert washes of the Anza Borrego Desert.
San Luis Obispo RWCQB 3	Southeastern portions of San Luis Obispo County lie within the 100 mile study radius. This portion of the County is dominated by the San Andreas Rift Zone of the Carrizo Plain, as well as the La Planza Rand and Garcia Mountains of the Los Padres National Forest. Drainages surrounding the Carrizo Plain drain to the Soda Lake Basin. The remainder of the study vicinity is ultimately drained by the Cuyama River of Ventura County and the headwaters of the Salinas River.
Santa Barbara RWCQB 3	The majority of Santa Barbara County lies within the 100-mile study radius. These portions of the county are defined by the ranges of Los Padres National Forest, specifically the Sierra Madre Mountains, San Rafael Mountains, and the San Ynez Mountains, all apart of the Transverse Ranges. Northern portions of the county drain via the Sisquoc River of the Santa Maria Valley, San Antonio Creek of the Los Alamos Valley, and the Santa Ynez River as the southernmost major watershed above Point Conception. The remaining portions of Santa Barbara County are drained by small, local watersheds coming off the southern facing slopes of the Santa Ynez Mountains, with Arroyo Hondo, Tajiguas Creek, Atascadero Creek, Mission Creek, and Carpinteria Creek, as examples.
Ventura RWCQB 4 and 3	Ventura County sits adjacent to Los Angeles County within the study radius. The upper half of the county is defined by several mountain ranges of the Transverse Ranges within Los Padres National Forest, with the southern portion a mixture of small ranges and east to west drainages. The northwest corner of the county forms the headwaters of the Cuyama River. The western edge of the county is primarily drained by the Ventura River. The majority of the County drains to the Santa Clara River, with major tributaries being Piru Creek, Sespe Creek, and Santa Paula Creek. This watershed drains portions of the Oxnard Plain, prior to reaching the Pacific Ocean, only a few miles south of the Ventura River Mouth.

Groundwater

There are numerous groundwater basins within the project analysis area. Specifically, the City overlies eight groundwater basins. The Los Angeles Coastal Plain includes the West Coast Basin, the Central Basin, the Santa Monica Basin, and the Hollywood Basin. The San Fernando Valley overlies the San Fernando Basin and portions of the Eagle Rock, Verdugo, and Sylmar Basins. Groundwater is a major component of the water supply for many public water suppliers in the Los Angeles metropolitan area, and is also used by private industries, as well as a limited number of private agricultural and domestic users.

Seiche, Tsunami, and Mudflow

A seiche is a wave that oscillates in a water body (e.g., lake, bays, or gulf) from a few minutes to a few hours as a result of seismic or atmospheric disturbances. There are several lakes and bays within the project study are that could be subject to seiche and result in adjacent flooding.

A tsunami is a wave caused by the sudden displacement of a large volume of water, usually an ocean, but can also occur in large lakes. The project study area includes coastal and low-lying areas that could be inundated in the event of a tsunami. Communities that are located within potential tsunami impact areas typically include tsunami warning plans and evacuation routes as part of their safety elements of the general plans. Tsunami inundation zones within the City include portions of the San Pedro and Harbor area, portions of Venice, Playa del Rey and Westchester areas, as well as a portion of Pacific Palisades.

A mudflow is a fast-moving downhill flow of mud and soil loosened by rainfall or melting snow. An area of potential mudflow within the project study area would be associated with steeper sloped areas, particularly areas that may have been recently subject to wildland fires.

4.8.2 Thresholds of Significance

The impact analysis for geology and soils will use the CEQA thresholds and the *L.A. CEQA Thresholds Guide* to determine significance. For the purpose of this analysis, the project study area is defined as the City and the area within 100 miles of the City. The SWIRP emphasizes local processing and handling of the City's waste, including locating needed facilities within the City limits. However, it may not be feasible for all facility types to be built within the City, either due to lack of available space or potential land use conflicts. Therefore, a 100-mile study area is included in the analysis to capture any potential impact to areas outside of the City.

The following information is provided in accordance with Section 15126.2 of the *CEQA Guidelines*. Appendix G of the *CEQA Guidelines* and the *L.A CEQA Thresholds Guide* suggests that a development project could have a significant impact related to geology and soils if the project would cause any of the following effects:

Water Quality

- *Violate any federal water quality standards or state waste discharge requirements.*
- *Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater*

table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted).

- *Otherwise substantially degrade water quality.*

Hydrology

- *Substantially alter the existing drainage pattern of the site or area, including the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or offsite (e.g., downstream).*
- *Substantially alter the existing drainage pattern of the site or area, including the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding onsite or offsite.*
- *Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary, Flood Insurance Rate Map, or other flood hazard delineation map.*
- *Place within a 100-year flood hazard area structures which would impede or redirect flood flows.*
- *Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam.*
- *Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.*
- *Inundation by seiche, tsunami, or mudflow.*

4.8.3 Project-Level Analysis

SWIRP Policy and Program Analysis

The project-level analysis includes an assessment of the proposed project's impacts on hydrology and water quality. Table 4.8-5 analyzes the potential impacts on these resources in light of the proposed policies and programs that are identified as part of the proposed project. As shown in Table 4.8-5, individual programs and policies are not anticipated to result in an impact to hydrology and water quality.

Disposal of residual waste in existing local or remote landfills would not result in impacts to hydrology and water quality.

SWIRP Facility Analysis

When the SWIRP programs and policies are considered in conjunction with other programs and policies, they may result in the need for additional facilities to process diverted materials, depending on phasing and implementation including, but not limited to, clean material recovery facilities and composting facilities. The analysis below discusses the potential for the facilities to impact hydrology and water quality.

Table 4.8-5. Analysis of SWIRP Policies and Programs (Hydrology and Water Quality)

Initiative	Impact Analysis for Hydrology and Water Quality[1]	Significance Conclusion
Downstream Policies and Programs[2]		
Expand Recycling Ambassador Program	This program will not directly impact hydrology and water quality.	No Impact
Adding Textiles to the Blue Bins or partner with a non-governmental organization to increase textile diversion	This program/policy will not directly impact hydrology and water quality.	No Impact
Bulky Item Reuse and Refurbishment	This program/policy will not directly impact hydrology and water quality.	No Impact
Expand Residential Food Scrap Program	This program will not directly impact hydrology and water quality.	No Impact
Large Scale Media/Social Marketing	This program/policy will not directly impact hydrology and water quality.	No Impact
Modify Residential Collection Rates	This program/policy will not directly impact hydrology and water quality.	No Impact
Modify Commercial Collection Rates	This program/policy will not directly impact hydrology and water quality.	No Impact
Expand Multi-Family Recycling	This program/policy will not directly impact hydrology and water quality.	No Impact
Multi-Family Green Bins	This program/policy will not directly impact hydrology and water quality.	No Impact
All Businesses to have Recycling Services	This program/policy will not directly impact hydrology and water quality.	No Impact
Commercial Haulers to Offer Recycling Services to Customers	This program/policy will not directly impact hydrology and water quality.	No Impact
Expand Commercial Technical Assistance	This program/policy will not directly impact hydrology and water quality.	No Impact
Expand Construction and Demolition (C&D) Technical Assistance	This program/policy will not impact hydrology and water quality.	No Impact
Provide More Public Area Recycling	This program/policy will not directly impact hydrology and water quality.	No Impact
C&D Ordinance	This program/policy will not directly impact hydrology and water quality.	No Impact
Mandatory Participation Programs[3]		
Mandatory Recycling Separation	This program will not directly impact hydrology and water quality.	No Impact
Mandatory Organics Separation	This program will not directly impact hydrology and water quality.	No Impact
Resource Recovery Centers (RRC) at Transfer Stations and Landfills	This program will not directly impact hydrology and water quality.	No Impact
Recycling Ambassadors (Reinforcement)	This program will not directly impact hydrology and water quality.	No Impact
Direct Technical Assistance (Reinforcement)	This program will not directly impact hydrology and water quality.	No Impact
Increased Diversion Requirements at C&D Facilities	This program will not impact hydrology and water quality.	No Impact

Table 4.8-5. Analysis of SWIRP Policies and Programs (Hydrology and Water Quality) (Continued)

Initiative	Impact Analysis for Hydrology and Water Quality	Significance Conclusion
Upstream Policies[4]		
Extended Producer Responsibility (EPR) for Toxics	This policy will not impact hydrology and water quality.	No Impact
EPR for Difficult to Recycle Materials	This policy will not impact hydrology and water quality.	No Impact
Single-use Bag Ban	There is a potential for this policy to have a beneficial water quality impact, since the number of plastic bags entering waterway as debris would be decreased. No impact to hydrology is identified for this policy.	Potential Beneficial Impact for Water Quality No Impact to Hydrology
Disposal of Remaining Residual Waste[5]		
Landfill Disposal – Truck Haul, Rail Haul	This program will not impact hydrology and water quality	No Impact

(1) Depending on phasing and implementation of various proposed programs and policies, along with anticipated growth in the City, there will be a need for additional facilities to process the diverted materials. Please refer to Section 4.8.3 for an impact analysis of the future facilities.
(2) Refer to Table Chapter 2, 2.3-1 for a detailed description of the Downstream Policies and Programs.
(3) Refer to Table Chapter 2, 2.3-2 for a detailed description of the Mandatory Participation Programs.
(4) Refer to Chapter 2, Section 2.3.4 for a detailed description of the Upstream Policies.
(5) Refer to Chapter 2, Section 2.3.6 for a detailed discussion of Disposal of Residual Waste.

Water Quality Standards

There are eight types of facilities that could be developed under the proposed project. Table 4.8-6 contains a summary of the facilities and the anticipated pollutants generated. Generated pollutants are taken from typical development pollutant loading tables, included in nearly all of the counties water quality programs.

Table 4.8-6. Industrial Facility Pollutant Generation Summary

Processing Facility	Anticipated Pollutants
Clean Material Recovery Facility	Sediment, Heavy Metals, Organic Compounds, Trash & Debris, Oxygen Demanding Substances, Oil & Grease
Composting (Aerobic - Large-Scale and Small-Scale)	Sediment, Nutrients, Heavy Metals, Organic Compounds, Trash & Debris, Oxygen Demanding Substances, Oil & Grease, Bacteria & Viruses, Pesticides
Composting (Anaerobic Digestion)	Sediment, Nutrients, Heavy Metals, Organic Compounds, Trash & Debris, Oxygen Demanding Substances, Oil & Grease, Bacteria & Viruses, Pesticides
Resource Recovery Centers	Sediment, Heavy Metals, Organic Compounds, Trash & Debris, Oxygen Demanding Substances, Oil & Grease
Mixed Material Processing	Sediment, Nutrients, Heavy Metals, Organic Compounds, Trash & Debris, Oxygen Demanding Substances, Oil & Grease, Bacteria & Viruses, Pesticides
Alternative Technology – Advanced Thermal Recycling	Ash residue (including unused flue gas cleaning reagents (i.e. lime, carbon, ammonia or urea), Sediment, Heavy Metals, Organic Compounds, Trash & Debris, Oxygen Demanding Substances, Oil & Grease
Alternative Technology – Biological (Anaerobic Digestion)	Sediment, Nutrients, Heavy Metals, Organic Compounds, Trash & Debris, Oxygen Demanding Substances, Oil & Grease, Bacteria & Viruses, Pesticides
Alternative Technology – Thermal (Plasma Arc, Gasification and Pyrolysis)	Ash residue (including unused flue gas cleaning reagents (i.e. lime, carbon, ammonia or urea), Sediment, Heavy Metals, Organic Compounds, Trash & Debris, Oxygen Demanding Substances, Oil & Grease

Composting facilities, mixed material processing facilities, and alternative technology biological facilities include anticipated pollutant generation of nutrients, bacteria and viruses, and pesticides due to the handling of food waste and other "non-clean" recyclable materials.

Table 4.8-7 identifies the typical facility size assumed for the Final PEIR analysis and the average amount of waste processed per day.

Table 4.8-7. Processing Facility Size and Processing Capacity Assumptions [(1)]

Processing Facility	Average Facility Size	Average Waste Processing
Clean Material Recovery Facility	7 acres	300 tons per day
Composting (Aerobic - Large-Scale and Small-Scale)	30 acres	600 tons per day
Composting (Anaerobic Digestion)	5 to 10 acres	200 to 500 tons per day
Resource Recover Centers	2 acres	100 tons per day
Mixed Material Processing	6 acres	300 tons per day
Alternative Technology – Advanced Thermal Processing	10 acres	1,200 tons per day
Alternative Technology – Biological (Anaerobic Digestion)	7 acres	350 tons per day
Alternative Technology – Thermal (Plasma Arc, Gasification and Pyrolysis)	5 acres	250 tons per day

(1) For more detailed facility information, Refer to Chapter 2, Table 2.3-3.

Project development has the potential to reduce the beneficial uses of surface waters. Waste processing has the potential for increasing water temperature in surface waters through coolant circulation in energy generation processes. Increased water temperatures can adversely impact the beneficial uses of local water bodies resulting from changes in habitat for biological resources.

Facility Siting

Depending on the type of facility, the footprint of development can range from 2 acres for a resources recovery facility to 100 acres for a large-scale composting facility. Based on a thorough investigation of the hydrologic and water quality concerns within an area, feasibility of construction at a given location can be evaluated.

From a hydrologic standpoint, facilities will need to be located outside of any floodways, but could potentially be located within a floodplain, barring water quality considerations. Given the likelihood of large impervious areas associated with facility construction, it will be important to site facilities at a location that will be able to safely convey runoff away from the site. If existing drainage facilities do not have sufficient capacity for increased flood flows, site selection will require additional space to detain flows to a level that can be safely conveyed by the existing facilities. It will also be important to site facilities such that they do not create adverse impacts on either upstream or downstream properties.

Water quality considerations for project siting will need to consider the impairments of the local water bodies. There could be sites that may function well from a hydrologic standpoint, but if runoff discharges potential pollutants into an environmentally sensitive water body, mitigation measures may not be available to make the facility feasible. It will be important to identify potential site pollutants, locally impaired water bodies, and their specific impairments to demonstrate project development would not further degrade water quality. Additionally, it will be important to identify any untreated upstream run-on, which would comingle with project flows and require treatment as part of project mitigation measures.

In general, selection of project facility sites will need to confirm all regulations and guidelines are met, and that there is sufficient space to construct facilities including any required mitigation measures. The project will aim to locate facilities such that they will have the smallest impact on the surrounding water bodies and properties.

Potential impacts to water quality and state discharge requirements are considered a significant impact unless mitigation measures are incorporated. Please refer to Section 4.8.5 for a discussion of proposed mitigation measures.

Groundwater

The project will most likely access water through the city water source and will not require the use of well water which would deplete groundwater supplies. Therefore, no impact is identified for this issue area.

Degradation of Water Quality

As stated in the previous significance criteria, the development of the proposed facilities has the potential to impact water quality. Composting facilities, mixed material processing facilities, and alternative technology biological facilities include anticipated pollutant generation of nutrients, bacteria and viruses, and pesticides due to the handling of food waste and other "non-clean" recyclable materials. Impacts to

water quality are considered significant unless mitigation measures are incorporated. Please refer to Section 4.8.5 for a discussion of proposed mitigation measures.

Drainage Patterns

Currently, the facility locations are undetermined. Volume, flow rate, duration, and velocity of runoff can create significant damage to a drainage system. Hydromodification requirements identify what local agencies have determined are acceptable levels of increased project runoff for the local drainage systems. Additionally, project development could increase flood flows to a point that downstream drainage facilities cannot safely convey runoff during design storm events. Each waste processing facility could potentially increase the amount of runoff from the project through impervious area increases and diversion or redirection of flows. This increase in runoff volume, rate, duration, and velocity could create sediment transport issues for existing natural streams, resulting in increased channel erosion, bank failure, increased scour at crossing structures, change of channel form, etc. Increase in flood discharges could also create downstream flooding and failure of drainage facilities. Site specific hydrology analysis will be required upon determination of the facility location. Impacts to existing drainage patterns and erosion are considered significant unless mitigation measures are incorporated. Please refer to Section 4.8.5 for a discussion of proposed mitigation measures.

Flood Hazards

Three thresholds of significance address flooding and flood hazards (refer to Section 4.8.2). Implementation of the project would not result in the construction of any residential uses; therefore, the project does not have the potential to result in an impact in that issue area. However, in the event that one or more of the processing facilities are proposed within a 100-year floodplain, there would be a potential for that facility to add to a flooding hazard which would impeded or redirect flows. This represents a potentially significant impact unless mitigation measures are incorporated. Please refer to Section 4.8.5 for a discussion of proposed mitigation measures.

Stormwater Drainage System Capacity

As previously noted, the specific location of the facilities is undetermined at this time. Upon determination of the site location, site specific hydrological analysis will be conducted to determine if the facility would contribute or create runoff, exceeding the existing capacity of stormwater drainage systems. Impacts are considered significant upon determination of site location unless mitigation measures are incorporated. Please refer to Section 4.8.5 for a discussion of proposed mitigation measures.

Seiche, Tsunami, and Mudflows

The potential for a facility to be impacted by a seiche, tsunami, or mudflow depends on the ultimate site of the future SWIRP facilities.

The project study area includes coastal and low-lying areas that could be inundated in the event of a tsunami. Advance tsunami warning systems are in place to notify people in low-lying areas. Additionally, communities that could be impacted by tsunamis have evacuation routes identified. Given the planning measures that are in place with regard to a tsunami, in the event a future facility is located in a tsunami inundation area, it is anticipated that emergency systems would be activated in the event of a tsunami and impacts would be less than significant.

Table 4.8-8 provides a summary of the impact analysis for proposed SWIRP facilities relative to hydrology and water quality.

Table 4.8-8. Facility Impact Summary Table (Hydrology and Water Quality)

Facility Type	Impact Conclusion
Clean Material Recovery Facilities	Less than significant with mitigation
Composting (Aerobic)	Less than significant with mitigation
Composting (Anaerobic Digestion)	Less than significant with mitigation
Resource Recovery Centers	Less than significant with mitigation
Mixed Material Processing	Less than significant with mitigation
Alternative Technology – Advanced Thermal Recycling	Less than significant with mitigation
Alternative Technology – Biological (Anaerobic Digestion)	Less than significant with mitigation
Alternative Technology – Thermal (Plasma Arc, Gasification, Pyrolysis, and Others)	Less than significant with mitigation

4.8.4 Cumulative-Level Analysis

Implementation of the project will require the construction and operation of several facilities throughout the City and potentially the area within 100 miles of the City. Future facilities will be required to investigate, quantify, and mitigate the hydrologic and water quality impacts from individual facilities, in addition to analyzing watershed impacts. At the time future projects are proposed, additional environmental analysis would be undertaken including an assessment of cumulative impacts from projects that are in the vicinity of proposed facilities. Similarly, the other cumulative projects would have to adhere to regulatory requirements pertaining to water quality and runoff.

Each of the seven RWQCBs have completed Basin Plans which identify water quality standards and control measures for surface and ground waters in the specific regions. Basin plans also identify beneficial uses for water bodies and identify water quality improvement objectives, waste discharge prohibitions, and other implementation measures to protect beneficial uses. Any Total Maximum Daily Load (TMDL) requirements are also identified. Development of project facilities would require the review, consideration, and implementation of the applicable Basin Plan directives. Individual facility planning will attempt to best define additional future facilities and include those potential future impacts in the overall considerations for implementing mitigation measures. Review of basin wide or jurisdiction wide master plans will allow individual project facility development to evaluate larger scale impacts to the region.

Any future development (proposed project or cumulative project) will need to review master drainage plans in the vicinity of the proposed development and those continuing downstream to the ultimate discharge of the drainage. Generally, urban areas will have a drainage master plan which identifies the project site conditions assumed during design of master drainage facilities. A number of natural drainages within the project area may also have current geomorphologic studies which would more clearly identify potential impacts to the overall system. All project development (proposed project and cumulative projects) will address any deviations from these master plans and studies.

With implementation of project-level hydrology and water quality mitigation, the project's contribution to a cumulative impact would be less than significant.

4.8.5 Mitigation Measures

Hydrology

HWQ-1 Prior to entitlement of any future facility and to assist in preparation of final engineering documents, a project-specific drainage study will be required for development of any facility demonstrating the impacts on local and regional hydrology. The drainage study shall include a review of the existing drainage facility capacity and demonstrate that site runoff will not overwhelm existing drainage capacities. Any increase in runoff above the existing drainage facility capacity would require hydraulic analysis to determine alternatives to safely convey the design storm. Future facilities would implement improvements to the drainage system, if the analysis concludes that existing capacity is not adequate.

HWQ-2 Future facilities shall include the construction of new or improved storm water management facilities to reduce or retard the amount of peak runoff from the facility sites. Such measures may include the construction of detention basins or other structures that will slow down or delay the peak flow of storm water runoff from the site.

HWQ -3 Future facilities shall reduce impervious surfaces and materials and maximize landscaped and natural areas.

Water Quality

HWQ-4 Prior to entitlement of any future facility and to assist in preparation of final engineering documents, a project-specific water quality study would be required to address impacts on water quality and identify potential mitigation measures. The project-specific water quality study shall identify downstream water bodies, their beneficial uses, and any impairment. The water quality report shall identify permanent BMPs to mitigate water quality impacts, including hydromodification.

HWQ-5 Specific and detailed BMPs shall be required and included in the Storm Water Management Plan (SWMP). BMPs will need to address the site design, source control, and treatment. Potential BMP options are identified in Table 4.8-9 of the PEIR.

Individual facility development shall review and implement the local jurisdictional BMP standards. Project development will be required to implement all site design, source control, and treatment BMPs to the maximum extent practicable. A number of counties and cities are emphasizing low impact development (LID) design features as a way to address water quality concerns through the use of multiple sustainable BMP alternatives at the local level. In order to facilitate this sustainable approach, development should aim to maximize the number of LID mitigation alternatives implemented in site design.

In addition to the construction of BMPs, an acceptable operation and maintenance plan must be established to demonstrate long-term performance of the features. Typically, part of the operation and maintenance discussion for BMPs will include a funding source and identify the entity responsible for implementing the operation and maintenance plan.

Table 4.8-9. Best Management Practices Options for Future Facilities

Site Design BMP Options(1)	Source Control BMP Options(2)	Treatment Control BMP Options(3)
• Conserve natural areas, soils, and vegetation • Minimize disturbance to natural drainages • Restrict heavy construction equipment access to planned green/open space areas • Minimize and disconnect impervious surfaces • Minimize soil compaction • Drain runoff from impervious surfaces to pervious areas • LID Street and Road Design: curb-cuts to landscaping, rural swales, concave median, cul-de-sac landscaping design • LID parking lot design: permeable pavements; curb cuts to landscaping • LID driveway, sidewalk design: permeable pavements; and pitch pavements toward landscaping • LID building design: cisterns and rain barrels, downspout to swale, and vegetated roofs • LID landscaping design: soil amendments, Reuse of native soils, smart irrigation systems, and street trees • Minimize erosion from slopes • Collect concentrated flows in stabilized drains and channels	• On-site storm drain inlets • Interior floor drains and elevator shaft sump pumps • Interior parking garages • Need for future indoor and structural pest control • Landscape/outdoor pesticide use • Pools, spas, ponds, decorative fountains, and other water features • Food service • Refuse areas • Industrial processes • Outdoor storage of equipment or materials • Vehicle and equipment cleaning • Vehicle/equipment repair and maintenance • Fuel dispensing areas • Loading docks • Fire sprinkler test water • Miscellaneous drain or wash water	• Infiltration trench • Infiltration basin • Retention/irrigation • Wet ponds • Constructed wetlands • Extended detention basin • Vegetated swale • Vegetated buffer strip • Bioretention • Media filter • Water quality inlet • Wet vault • Vortex separator

(1) This column identifies site design BMPs, which include LID features for certain site design options. The California Stormwater Quality Association (CASQA) and the New Development and Redevelopment BMP Handbook (BMP Handbook) discusses many of these BMPs in detail. Many of the counties and cities associated with the Project will have similar BMP lists and discussions associated with them. Site design BMPs will be implemented to the maximum extent practicable.

(2) This column identifies typical features that require source control BMPs in order to control generation of potential pollutant. The CASQA BMP handbook discusses many of these source control BMPs in detail. Individual counties and cities will have specific source control BMP lists and implementation procedures similar to CASQA.

(3) This column identifies typical treatment BMPs. Each county and city will have specific acceptable treatment BMPs. The CASQA BMP Handbook discusses these treatment BMPs in much more detail.

HWQ-6 Prior to construction of any future facilities, construction stormwater quality will need to be addressed in a Stormwater Pollution Prevention Plan (SWPPP), in accordance with the State General Construction Permit. The SWPPP shall provide a plan for addressing water quality associated with construction activities. SWPPPs are intended to be dynamic and change as a project undergoes various stages of construction. SWPPPs are prepared during final engineering; however, new General Construction Permit post-construction BMP requirements will need to be considered during entitlement and final engineering.

Floodplains

HWQ-7 If a future facility is proposed within a floodplain, a floodplain study shall be prepared to address FEMA or jurisdictional floodplain management requirements. The floodplain study shall be completed during entitlement and final engineering. The floodplain study shall investigate the hydrology of the river system and develop a hydraulic model to quantify existing and proposed water surface elevations and velocities. The study shall identify feasible mitigation measures to meet FEMA water surface elevation requirements[1]. These mitigation measures shall be implemented as part of the project design and/or construction.

HWQ -8 Future facilities shall be designed so that structures and other important facilities that would be adversely affected by flooding are no longer located within flood hazard areas or so that the floodway open space is preserved.

HWQ -9 Future facilities shall raise the building pad or ground floor of proposed structures to an elevation above flood prone areas.

4.8.6 Conclusion

The project study area consists of nine counties, 190 cities, seven RWQCBs, the SWRCB, and FEMA. Given the large project area a preliminary summary of the hydrologic and water quality considerations required for the project have been identified. Future project development will require careful review of the appropriate local, state, and federal regulations in order to properly address all hydrologic and water quality concerns. Mitigation measures have been identified to reduce potential hydrology, water quality and floodplain impacts to below a level of significance.

[1] These requirements are based on Title 44 Code of Federal Regulations: Emergency Management and Assistance, Chapter 1: Federal Emergency Management Agency, Department of Homeland Security.

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4.9 LAND USE AND PLANNING

The Solid Waste Integrated Resources Plan (SWIRP) objectives were derived from the *Recovering Energy Natural Resources and Economic Benefit from Waste for Los Angeles (RENEW L.A.) Plan* and include, but are not limited to, enhancement of existing policies and programs, implementation of new policies and programs, and the development of future facilities to meet the City of Los Angeles' (City) recycling and solid waste infrastructure needs through 2030. This section provides an analysis of potential impacts relative to land use and planning that could occur from implementation of programs, policies, or facilities associated with SWIRP. This section also includes a discussion of the applicable regulatory environment, existing conditions, and any applicable mitigation measures. The study area for land use planning covers the City and the area within 100 miles of the City. While SWIRP emphasizes local processing and handling of discarded materials generated within the City, it may not be feasible for all facility types to be built within the City, either due to a lack of available space or potential land use conflicts. Therefore, a 100-mile study area is included in the analysis to capture any potential impact to areas outside of the City.

4.9.1 Environmental Setting

The City encompasses 472 square miles of land area[1]. Various land use types extend across the middle of the City, and throughout the 100-mile study area. The 100-mile study area encompasses all or part of nine counties in Southern California: Kern, Los Angeles, Orange, Riverside, San Bernardino, San Diego, San Luis Obispo, Santa Barbara, and Ventura. The 100-mile study area also includes all or part of 190 cities.

4.9.1.1 Regulatory Setting

In order to assess the potential for impacts to land use and community planning, this section identifies the regulatory environment relative to solid waste management and the siting of new solid waste facilities.

Federal

Resource Conservation and Recovery Act

The Resource Conservation and Recovery Act (RCRA) was enacted by Congress in 1976 to protect human health and the environment from the potential hazards of waste disposal, conserve energy and natural resources, reduce the amount of waste generated, and ensure that wastes are managed in an environmentally sound manner. RCRA gives the Environmental Protection Agency (EPA) the authority to control hazardous waste from "cradle-to-grave." This includes the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA also sets forth a framework for the management of non-hazardous solid waste.

A series of amendments to RCRA were adopted in 1984, known as the Federal Hazardous and Solid Waste Amendments, and focused on waste minimization and phasing out land disposal of hazardous waste, as well as corrective action[2] for releases. Some of the other mandates of this law include increased

[1] City of Los Angeles, Your Government at a Glance, 2006 Edition.

[2] The RCRA Corrective Action Program requires facilities that treat, store or dispose of hazardous wastes and that have resulted in releases of hazardous waste or hazardous constituents into soil, groundwater, surface water, sediments, or air to conduct investigations and cleanup actions as necessary to protect human health and the environment. Refer to e.g., RCRA Sections 3004(u)(v), and 3008(h) and 40 C.F.R. Section 264.101.

enforcement authority for EPA, more stringent hazardous waste management standards, and a comprehensive underground storage tank program.

State

The California Integrated Waste Management Act

The California Integrated Waste Management Act (Assembly Bill [AB] 939), Chapter 1095, Statutes of 1989, as amended) mandated that all California cities, counties, and regional solid waste management agencies are responsible for planning and implementing programs for diversion of solid waste from solid waste disposal facilities. The purpose of AB 939 is to facilitate the reduction, recycling, and reuse of solid waste to the greatest extent possible. AB 939 established the statewide solid waste planning requirements for cities and counties in California and set diversion goals of 25 percent diversion by 1995 and 50 percent diversion by 2000. Senate Bill 2202 mandated that jurisdictions continue the 50 percent diversion after January 1, 2000.

Assembly Bill (AB) 341, Chapter 476, Statutes of 2011, established a statewide goal of 75 percent source reduction, recycling and composting by 2020. AB 341 also requires commercial businesses that generate 4 cubic yards or more of commercial solid waste per week or multi-family complexes with five units or more to arrange for recycling services

The California Department of Resources Recycling and Recovery (CalRecycle) is a department within the California Natural Resources Agency. CalRecycle administers recycling and waste reduction programs that were formerly managed by the California Integrated Waste Management Board (CIWMB) and Department of Conservation. CalRecycle oversees and assists local governments to develop and implement programs required by the AB 939 mandates and subsequent legislation.

To meet the mandates in AB 939, CalRecycle implements programs to reduce waste generation, divert materials from landfills, recover resources, direct them to their highest and best use in accordance with the waste management hierarchy[3] (Public Resources Code Section 40051), combat illegal dumping and remediate contaminated sites, and enforce applicable state standards. CalRecycle programs are also conducted in support of the California Global Warming Solutions Act of 2006. There are multiple planning documents required (on behalf of the City and the County) to meet the mandates of AB 939. A complete description of the required planning documents is found within Public Resources Code Section 41750. A brief description of the required planning documents to meet the mandates of AB 939 is provided as follows:

a) All city source reduction and recycling elements prepared pursuant to Chapter 2.0 (commencing with Section 41000) and submitted to the county.

b) The county's source reduction and recycling element for the unincorporated area of the county prepared pursuant to Chapter 3.0 (commencing with Section 41300).

c) All city household hazardous waste elements which were prepared pursuant to Article 1 (commencing with Section 41500) of Chapter 3.5 and submitted to the county.

[3] AB 939 established an integrated waste management hierarchy in the following order of importance: (1) Source reduction; (2) Recycling and composting; and (3) Environmentally safe transformation and land disposal of solid wastes

d) The county household hazardous waste element for the unincorporated area of the county prepared pursuant to Article 2 (commencing with Section 41510) of Chapter 3.5.

e) The countywide siting element prepared pursuant to Chapter 4.0 (commencing with Section 41700).

f) All city non-disposal facility elements prepared pursuant to Chapter 4.5 (commencing with Section 41730) and submitted to the county.

g) The county non-disposal facility element for the unincorporated area of the county prepared pursuant to Chapter 4.5 (commencing with Section 41730).

As described above, AB 939 requires that cities and counties develop a Source Reduction and Recycling Element (SRRE), describing the policies and programs that would be implemented to reach the diversion requirements of the act; a Household Hazardous Waste Element (HHWE), describing the programs and facilities that would be implemented to appropriately handle household hazardous waste generated within a community; and a Non-Disposal Facility Element (NDFE), identifying facilities that will be used to implement the diversion programs described in the SRRE. Each county must prepare each planning document for unincorporated areas within their boundaries, plus a Countywide Siting Element (CSE) and a summary plan (SP).

New "non-disposal" facilities that would be used by the City to help reach the diversion mandates set by the AB 939 must be included in the City's NDFE. The NDFE would identify all new disposal facilities, including landfills and non-disposal facilities, including but not limited to, materials recovery facilities (MRFs), compost facilities, and transfer stations. The City's NDFE may also discuss recycling centers, drop-off centers and household hazardous waste (HHW) facilities. Transformation facilities (including some types of alternative technology facilities) must be included in the Siting Element of the County Integrated Waste Management Plan. A description of the County's existing and proposed Alternative Technology facilities can be found in Chapter 5 of the Los Angeles County Countywide Siting Element. Changes to the County Integrated Waste Management Plan must be approved by a "double majority" of the jurisdictions in the County, a majority of the jurisdictions representing a majority of the population.

Enforcement of the regulations is primarily carried out by local enforcement agencies (LEAs) with CalRecycle acting as the enforcement agency. The LEA for the City of Los Angeles is the Department of Building and Safety. The LEA for the County of Los Angeles is the Los Angeles County Department of Public Health/Environmental Health. Noncompliance with the goals and timelines set forth within AB 939 can be severe, as the bill imposes fines of up to $10,000 per day on cities and counties not meeting these recycling and planning goals.

Regional

The SWIRP addresses solid waste management in the City of Los Angeles. The Southern California Association of Governments (SCAG) requires an inter-governmental review and analysis of regional transportation policies and strategic growth initiatives included within the Regional Transportation Plan and Compass Blueprint Growth Vision to ensure the protection of the region's transportation system and to accommodate growth, reduce traffic congestion, preserve open space, manage and minimize pollution, and manage resources more efficiently.

An analysis of transportation goals is provided in Section 4.15, Transportation and Traffic. The following discussion provides a description of the SCAG Compass Blueprint Growth Vision. Refer to Table 4.9-1 under Section 4.9.3, Project Level Analysis for an analysis of applicable SCAG goals and principles relative to the Compass Blueprint Growth Vision.

2004 Compass Blueprint Growth Vision – SCAG[4]

In an effort to provide local decision-makers with the tools they need to plan more effectively for the six million new residents projected to live in Southern California by 2030, SCAG undertook a growth visioning initiative called Southern California Compass. The objective of this effort was to develop a comprehensive new vision for Southern California over the next 30 years by taking an inclusive approach to planning at both the local and regional levels.

The input derived from this multi-phased involvement effort led directly to the development of a new vision for Southern California. The Southern California Compass vision adopted by SCAG's Regional Council in June 2004 helps to set a new course for Southern California. Cities and counties develop strategies to accommodate future growth while promoting SCAG's regional principles of mobility, livability, prosperity and sustainability for current and future generations of Southern Californians.

Local

County of Los Angeles

Countywide Siting Element

In accordance with State law, the purpose of the Countywide Siting Element for the County of Los Angeles is to address the management of that portion of solid waste that remains after the 88 cities in Los Angeles County and the unincorporated communities have completed their recycling, composting, and other waste diversion activities for each year of the 15-year planning period. The CSE identifies how the county and the cities within the county will address the need for 15 years of disposal/transformation capacity to safely handle solid waste generated in the county which cannot be reduced, recycled, or composted.

The CSE provides a description of the areas and strategies that may be used to address the State mandates for adequate transformation or disposal capacity during the 15-year planning period. The CSE serves as a policy manual rather than a specific development program. Definitive information can only be accomplished for specific sites and projects. As they develop, specific sites and projects must each fully comply with all requirements of the California Environmental Quality Act (CEQA), as well as compliance with all Federal, State, and local rules and regulations including consistency with the local jurisdiction Genera Plan.

City of Los Angeles

RENEW L.A.

In February 2006, the City Council adopted RENEW L.A., a plan for solid waste and resource management for the City of Los Angeles for the next 20 years. RENEW L.A. provides the foundation for

[4] http://www.compassblueprint.org/about/vision

the SWIRP planning process. RENEW L.A. establishes the vision for Zero Waste and includes the goal of 90 percent diversion by 2025. RENEW L.A. recognizes that to manage solid waste appropriately in the future, the City and its residents and businesses will need a new paradigm of sustainability and resource conservation. The strategies outlined in RENEW L.A. were carried forward in the stakeholder planning process for SWIRP and include but are not limited to:

- Residential food scrap collection (co-collected with yard trimmings in the green bin)
- Multi-family blue bin recycling
- Pre-processing of commercial waste at mixed material processing facilities
- Investment in new technologies – RENEW L.A. includes a description of "conversion technologies" including thermal conversion technologies (gasification and pyrolysis); anaerobic digestion; municipal solid waste composting; autoclaving; and fermentation

City of Los Angeles General Plan (December 1996, Readopted August 2001)

The provision of infrastructure and public services is outlined in Chapter 9, Infrastructure and Public Services of the Framework Element of the City's General Plan. The Framework Element contains specific goals, objectives, and policies relative to solid waste management in the City, as described below:

- ***Goal 9D:*** An integrated solid waste management system that maximizes source reduction and materials recovery and minimizes the amount of waste requiring disposal.
- ***Goal 9E:*** Adequate Recycling Facility Development - expanded siting of facilities that enhance the City's reduction, recycling, and composting efforts using methods and strategies that are economically, socially, and politically acceptable.
- ***Goal 9F:*** Adequate collection, transfer, and disposal of mixed solid waste - the City shall seek to ensure that all mixed solid waste that cannot be reduced, recycled, or composted is collected, transferred, and disposed of in a manner that minimizes adverse environmental impacts.
- ***Goal 9G:*** An environmentally sound solid waste management system that protects public health, safety, and natural resources and minimizes adverse environmental impacts.
- ***Goal 9H:*** A cost-effective solid waste management system that emphasizes source reduction, recycling, reuse, and market development and is adequately financed to meet operational and maintenance needs.
- ***Objective 9.12:*** Support integrated solid waste management efforts.
- ***Policy 9.12.1:*** Prepare a 30-year policy plan that provides direction for the solid waste management decision-making process.
- ***Policy 9.12.2:*** Establish citywide diversion objectives.
- ***Policy 9.12.3:*** Define specific programmatic tasks, roles, and responsibilities for source reduction, composting, special waste, and public education goals, as well as an implementation schedule.

Implementation of the city-wide policies and programs associated with the SWIRP would be subject to the city-wide General Plan provisions outlined above. In addition to the provisions above, any goals, objectives, and policies included within any applicable Community Plan would be applicable to the proposed facility, if a new facility is sited in an area where there is a governing Community Plan document.

City of Los Angeles Zoning Ordinance

Table 4.9-1 provides a description of zoning provisions applicable to solid waste operations (or future operations), as provided in the City of Los Angeles Municipal Code.[5]

City of Los Angeles "Green" Ordinances

The City has already taken many initiatives to assist in the reduction of solid waste in the City. Many of the ordinances below will assist with the implementation of SWIRP, and ultimately help the City to achieve Zero Waste.

Private Hauler Fee Ordinance

Adopted by the City Council in July 2002, the Private Hauler Fee Ordinance requires non-exclusive permitting of private haulers who operate in the City, and collects fees from those haulers who collect more than 1,000 tons annually from City customers to subsidize existing commercial recycling programs.

Green Building Ordinance

Adopted by the City Council on April 22, 2008, the Green Building Ordinance establishes the Standard of Excellence incentive program for projects that register with the U.S. Green Building Council's LEED (Leadership in Energy and Environmental Design) program, and the Standard of Sustainability which requires residential and non-residential projects 50,000 square feet or above and residential projects 50 units or more to meet the intent of LEED at the Certified level.

Plastic Bag and Polystyrene Policy

Passed by the City Council in July 2008, the policy signaled the City's intent to ban plastic bags at supermarkets and retail locations by 2010 if the state did not impose a 25-cent per bag fee for each bag requested by a customer. A single-use bag ban is included as one of the SWIRP Policies. State legislation has been introduced, but has failed passage. On May 23, 2012, the City Council adopted a policy to ban distribution of single-use plastics bags and impose a 10-cent fee on single-use paper bags at supermarkets and select retail stores within the City. The City Council also voted to ban all polystyrene food service products at City offices, facilities, and City-sponsored events as of July 1, 2008. The City Council also voted to ban polystyrene food service products at City-permitted events by July 1, 2009, and to renegotiate all lease and concession agreements to phase out polystyrene food service products by 2010.

[5] http://cityplanning.lacity.org/

Table 4.9-1. Solid Waste Zoning Provisions

Zone	Permitted Use	Notes
C-1 (Limited Commercial Zone)	Recycling Collection and Buyback Centers in conjunction with a grocery store	Subject to the provisions of Section 12.21 A 18 of the City Municipal Code.
C-2 (Commercial Zone)	Community facilities	As defined in Section 13.09 B 3 of the City Municipal Code
	Transfer businesses	Without storage of trucks
C-4 (Commercial Zone)	Recycling Collection and Buyback Centers in conjunction with a grocery store	Subject to the provisions of Section 12.21 A 18 of the City Municipal Code.
CM (Commercial Manufacturing) Zone	Assembly, manufacturing, processing or treatment products (plastics, rubber, paints, etc.)	When conducted wholly within a completely enclosed building.
	Recycling Material Sorting Facility	Subject to the provisions of Section 12.21 A 18 (e) of the City Municipal Code.
MR2 (Restricted Light Industrial Zone)	Building Materials Salvage Yard when conducted wholly within a completely enclosed building or enclosed by a solid wall or solid fence at least 6 feet in height	Per Section 12.17.6 B 3 of the City Municipal Code. No stored material or equipment may be higher than the enclosing wall or fence, (except for lumber yards).
	Junk Collection (sorting, storage or baling)	When conducted wholly within an enclosed building
	Paper Collection (sorting, storage or baling)	
	Rag Collection (sorting, storage or baling)	
	Scrap Metal Collection (sorting, storage, baling)	
M2 (Light Industrial Zone)	Solid Waste Alternative Technology Processing Facilities	Subject to the provisions of Sections 12.03 and 12.24 of the City Municipal Code
	Building Materials Salvage Yard	Same limitations as for Automobile Wrecking
	Chipping and grinding facilities, composting facilities, and mulching facilities (green waste)	When operations are conducted within an enclosed building
	Recyclable Materials Collection Buyback Centers and Mobile Recycling Centers	Subject to the provisions of Section 12.21 A 18 of the City Municipal Code
	Recycling Materials Processing Facilities	
M3 (Heavy Industrial)	Solid Waste Alternative Technology Processing Facilities	Subject to the provisions of Sections 12.03 and 12.24 of the City Municipal Code
	Refuse dumps	No garbage, offal or dead animals
	Refuse transfer stations	Bones, suet, scrap meat, garbage, and rubbish. No incineration, reduction, distillation, rendering or dumping - no refuse kept over 48 hours
	Secondhand Furniture and Appliance Storage	Display, processing and sales, as described within the limitations under Section 12.20 A 6 (b) of the City Municipal Code
	Garbage Incineration	Reduction or dumping
	Gardner's Refuse Collection Yards	Located at least 500 feet from any more restrictive zone (inner M3 Zone)
PF (Public Facilities)	Solid Waste Alternative Technology Processing Facilities	Subject to the provisions of Sections 12.03 and 12.24 of the City Municipal Code

Source: City of Los Angeles Municipal Code, 2010.

Environmentally Preferable Procurement Ordinance

Adopted on June 12, 2009, the Environmentally Preferable Procurement Ordinance establishes the policy for the City to:

- Purchase environmentally preferable products by including environmental considerations in the City's purchasing decisions, along with traditional criteria of price, performance, and availability.
- Incorporate environmental factors into the City's product specifications.
- Raise staff awareness of environmentally preferable products.
- Encourage suppliers and service providers to use environmentally preferable products when providing goods or services to the City.

Recycling Chute Ordinance

Adopted July 7, 2010, this ordinance defines trash and recycling chutes; requires recycling chutes for commercial and multi-family buildings when new or expanding projects are adding trash chutes; and requires proper identification for recycling chutes.

Solid Waste Alternative Technology Processing Facility Ordinance

Adopted August 4, 2010, this ordinance amended Sections 12.03 and 12.24 of the Los Angeles Municipal Code to establish regulations for Solid Waste Alternative Technology Processing Facilities throughout the City and allow the City Planning Commission to permit such facilities via a conditional use procedure allowing alternative technology facilities[6] to be sited in M2 (light industrial/commercial), M3 (heavy industrial), and PF (Public Facility) zones within the City provided that:

- The facility location would not result in an undue concentration of such facilities.
- An effort was made to locate the facility near existing solid waste facilities.
- The facility will not detrimentally affect residential or other sensitive land uses within a 1,500-foot radius of the proposed site.
- The facility operator will provide a quarterly newsletter and other benefits to the surrounding community.
- The facility and vehicles used for the facility are designed to mitigate noise, odor, and visual blight.
- Access, parking, and vehicle storage will not cause a traffic hazard.
- Radioactive waste, hazardous waste, household hazardous waste and source-separated materials or by-products will not be disposed or treated at the facility.

[6] For clarification, RENEW L.A. uses the term "conversion technology" whereas this report uses "alternative technology," which is a broader umbrella of technologies.

Construction and Demolition (C&D) Debris Ordinance

City Public Works construction projects are required to divert 75 percent of inert materials (concrete, asphalt, dirt) and 50 percent of all other materials generated by the construction project. The C&D ordinance, approved by the City Council on March 5, 2010, requires all mixed C&D debris generated within the City to be taken to a C&D debris processor certified by the City. Residential self-hauled material and source-separated recycled material would be exempted. The ordinance became effective on January 1, 2011.

Commercial and Multi-Family Private Hauler Franchise Initiative

The City currently manages a private hauler permit system for the commercial and multi-family sector of the City, which includes industrial and institutional generators. Additionally, the City manages a multi-family recycling program that is available to all multi-family buildings in the City, and managed through three recycling contracts.

In 2012, the City Council indicated its intention to move from the current private waste hauler permit system to a franchise system for the collection of waste from both multi-family and commercial properties, not collected by the City of Los Angeles Bureau of Sanitation (LASAN). The franchise system is intended to help the City reach its Zero Waste goals, and may contain elements such as maximum disposal amounts per zone, aggressive diversion programs, including outreach and education, clean fuel requirements, and worker health and safety requirements, to be administered by LASAN.

In November 2012, the City Council directed LASAN to begin the environmental review process pursuant to CEQA for the commercial and multi-family private hauler franchise initiative adopted by Council, to return with an implementation plan for the franchise system, and requested the City Attorney to draft required ordinances for the project.[7] On April 25, 2013 the City Council approved LASAN's Implementation Plan, adopted the 10 goals of the Franchise program, and directed LASAN to proceed with the development of a Request for Proposals (RFP). The City Council is expected to consider the commercial and multi-family private hauler franchise ordinance and associated CEQA documentation in early 2014.

Other Jurisdictions

California law requires every city and county to adopt a comprehensive general plan to guide future development. A jurisdiction's general plan and zoning ordinance are the primary regulatory documents for effectively guiding growth and orderly development, achieving compatibility between land uses, and assessing if a project would result in potential environmental impacts relative to land use and community planning. The general plan land use designations and zoning classifications are utilized to regulate the development of future land uses throughout a respective jurisdiction.

The project analysis area includes the City, as well the area within 100 miles of the City. The 100-mile study area includes all or part of nine counties and 190 cities. Each of these jurisdictions have a variety of planning documents (i.e., General Plan, Zoning Ordinance, Redevelopment Plan, Habitat Conservation Plan, etc.) that contain numerous goals, policies, and objectives to appropriately manage land use development and community planning. Individual jurisdictions approach solid waste management

[7] The Private Hauler Franchise Initiative documentation is available through City of Los Angeles Council File 10-1797.

differently; however, each jurisdiction maintains a common goal relative to solid waste management: to maximize diversion efforts and minimize the amount of waste being transported to landfills.

Implementation of SWIRP would be subject to the land use policies, development standards, and regulations set forth in the City's General Plan and Municipal Code. Additionally, the City has recently established a New Community Plan Program (NCPP) to ensure that community plans are kept up to date for the City's individual neighborhoods. Under the NCPP, the Community Plans will aim to encourage sustainable growth patterns, while balancing the unique character of individual communities and addressing infrastructure, design, transportation, and mobility issues within the community.

Other policies, standards, and regulations included in any other jurisdiction's General Plan, Community Plan, and/or Municipal Code would also be applicable; in the instance where a new facility is sited outside of the City.

4.9.1.2 Existing Conditions

SWIRP addresses the handling of solid waste for the City of Los Angeles, which covers approximately 470 square miles and is home to approximately 3.8 million residents (Chapter 2.0, Figure 2-1). The implementation of the policy and program component of SWIRP would be carried out citywide and would be effective through 2030, if feasible within the city limits of Los Angeles.

If all SWIRP programs and policies are implemented, additional solid waste facilities would be required to achieve the recycling and solid waste infrastructure needs through 2030. At this stage of the planning process, the exact location of future facilities is unknown. While SWIRP emphasizes local processing and handling of the City's waste, it may not be feasible for all facility types to be built within the City, either due to lack of available space or potential land use conflicts. Therefore, a 100-mile study area is included in the analysis to capture any potential impact to areas outside of the City. Due to the ambiguity of specific locations for future facilities, it is assumed that the facilities would be within the City or the area within 100 miles of the City.

Solid Waste Infrastructure in City

Solid waste infrastructure, owned and operated by the City, include:

- Central Los Angeles Recycling and Transfer Station (CLARTS)
- Griffith Park Composting Facility
- Harbor Mulching Facility
- Lopez Canyon Environmental Center, including a composting/mulching facility
- Seven SAFE[8] Centers for proper management of household hazardous wastes located throughout the City
- Six District Collection Yards serving each of the City's six wastesheds

Much of the recycling and solid waste infrastructure used by generators in the City is owned and operated by the private sector and other public agencies, including the County Sanitation Districts of Los Angeles

[8] Solvents, Automotive, Flammables, and Electronics

County. Additionally, there are over 40 facilities that are operating in and around the City that receive, process, and transport recyclable material and yard trimmings to markets and solid waste to disposal. These include:

- Material Recovery Facilities (MRFs)
- Yard Trimmings Processing Facilities
- Construction and Demolition (C&D) Debris Processing Facilities
- Transfer Stations
- Landfills and Waste-to-Energy (WTE) Facilities

The City has implemented many state-of-the-art programs for managing solid waste and diverting waste from landfills, including:

- Four bin collection program for residential curbside generators (blue for commingled recycling, green for yard trimmings, and black for residual waste, and brown bin for horse manure).
- Multi-family blue bin recycling available to all multi-family buildings in the City.
- Bulky item collection available to all residential curbside and multi-family generators.
- School site blue bin recycling and classroom recycling presentations available to all schools within the Los Angeles Unified School District that are within the City limits.
- Commercial recycling technical assistance program available to all businesses in the City.
- Restaurant food scraps collection available to all restaurants in the City.
- City Department recycling available to all City offices and facilities.
- Seven SAFE Centers for proper management of electronic waste, universal waste, and household hazardous wastes located throughout the City.

Land Use

Each of the nine counties and 190 individual local jurisdictions within the 100-mile study area contain an array of various land use patterns and uses. Due to the programmatic nature of the project, it is infeasible to identify the existing underlying general plan land use designations and zoning classifications throughout the nine counties.

Within the City, alternative technology facilities (similar to those proposed under SWIRP) can be permitted within M2 (light industrial/commercial), M3 (heavy industrial) and PF (Public Facility) zones, subject to the provisions outlined above under the Solid Waste Alternative Technology Processing Facility Ordinance and the City's Municipal Code.

Outside the City, land use provisions and regulations for the siting of new alternative technology facilities is typically included within the Municipal Services/Public Facilities Element within the General Plan or any applicable Solid Waste Management Plans or Recycling/Solid Waste Reduction Plan. Each respective jurisdiction typically utilizes the municipal code to regulate performance objectives, noise levels, land use compatibility, and other land use and community planning matters.

Community Planning

The City organized the SWIRP planning process around the City's six collection districts or "wastesheds." These wastesheds include East Valley, West Valley, Western, North Central, South Los Angeles, and Harbor.

RENEW L.A. anticipated the need for seven new technology facilities for both residential and commercial solid waste, one for each wasteshed, and an additional facility outside of the City for use by generators within the City. As previously mentioned, the regulations set forth in the City's General Plan, including any applicable community plan, would be the primary documents to identify the existing goals, policies, and objectives for a given area at the time a specific location for a new facility is identified. Outside of the City, the General Plan/community plan for the respective jurisdiction would act as the primary regulatory document for land use and community planning matters.

4.9.2 Thresholds of Significance

The impact analysis for land use and planning will use the CEQA thresholds and the *L.A. CEQA Thresholds Guide* to determine significance. For the purpose of this analysis, the project study area is defined as the City and the area within 100 miles of the City. The SWIRP emphasizes local processing and handling of the City's waste, including locating needed facilities within the City limits. However, it may not be feasible for all facility types to be built within the City, either due to lack of available space or potential land use conflicts. Therefore, a 100-mile study area is included in the analysis to capture any potential impact to areas outside of the City.

The following section describes the thresholds of significance to determine if the project would have a potential impact relative to land use and community planning. The following thresholds of significance were derived from *CEQA Guidelines* Appendix G, and the *City of Los Angeles CEQA Thresholds Guide.* The project would have a significant impact if it would:

- *Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, redevelopment plan, interim control ordinance, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?*
- *Require a General Plan amendment or zone change?*
- *Include a land use type that is incompatible with existing or proposed adjacent land uses (due to size, intensity, density or type of use)?*
- *Conflict with any applicable habitat conservation plan or natural community conservation plan?*
- *Physically divide an established community?*
- *Include features such as a highway, aboveground infrastructure, or an easement through an established neighborhood community that could cause a permanent disruption in the physical arrangement of that established community or otherwise isolate an existing land use?*
- *Result in a "spot" zone[9]?*

[9] Spot zoning occurs when a small area of land or section in an existing neighborhood is singled out and placed in a different zone from that of neighboring property.

4.9.3 Project Level Analysis

SWIRP is the successor of multiple planning studies; builds on their findings and research; and will be the solid waste master planning document for the City's solid waste programs through 2030. Feedback received throughout the SWIRP planning process was incorporated into the policy, program, and facility phasing approach. The policy, program, and facility phasing approach will achieve the City's goals of 75 percent diversion by 2013 and 90 percent diversion by 2025. The following section provides a description of potential impacts that could result from implementation of the following project components (as described in Chapter 2.0, Project Description):

- Expansion of Existing Programs (Chapter 2.0, Section 2.3.1)
- Downstream Policies and Programs (Chapter 2.0, Section 2.3.2)
- Mandatory Participation Programs (Chapter 2.0, Section 2.3.3)
- Upstream Policies (Chapter 2.0, Section 2.3.4)
- Processing Facilities (Chapter 2.0, Section 2.3.5)

Regional Land Use Analysis

A review of SCAG policies and goals has been conducted, and this section provides in a tabular format a discussion of the consistency, non-consistency or non-applicability of the policy. Applicable policies and goals from the SCAG Compass Blueprint Growth Vision are analyzed in Table 4.9-1.

SWIRP Policy and Program Analysis

This section provides an analysis of potential impacts that could result from implementation of the policies and programs components of SWIRP relative to land use and community planning. The City's existing policies and programs, as well as new policies and programs identified through the stakeholder planning process, were analyzed to determine if a potential significant impact would occur as a result of project implementation. The policies and programs were categorized according to the Phase 2 Policy, Program, and Facility Plan.

Policies and programs were estimated based on data from comparable policies and programs implemented in other communities, research based on national studies and City pilot data, and educated estimates based on experiences with other similar programs. Several policies will require new ordinances which will require City Council action and time to implement. By implementing all of the Zero Waste policies and programs identified by the stakeholders, the City could achieve as much as 86 percent diversion citywide, diverting over 9.5 million tons annually; nearly 2 million tons per year more than the 2010 baseline levels.

Table 4.9-2 provides an analysis of the policies and programs that were prepared for the development of the Policy, Program, and Facility Plan that will be needed to implement the SWIRP vision.

Disposal of residual waste in existing local or remote landfills would not impact zoning, community or land use planning given that the landfill accepting residual would be an existing operation.

Table 4.9-1. Analysis of SCAG Compass Blueprint Growth Vision

Applicable Plan	Goal	Regulation Description	Consistency Analysis
SCAG Compass Blueprint Growth Vision	Compass/ Growth Visioning Principles	The implementation framework known as the 2% Strategy: Shared Values, Shared Future seeks to assist cities and counties to develop strategies to accommodate future growth while promoting SCAG's regional principles of Mobility, Livability, Prosperity and Sustainability for current and future generations of Southern Californians. The following are the Compass/Growth Visioning Principles: 1) Improve mobility for all residents • Transportation investments and land use decisions that are mutually supportive. • Locate new housing near existing jobs and new jobs near existing housing. • Encourage transit-oriented development. • Promote a variety of travel choices. 2) Foster livability in all communities • Promote infill development and redevelopment to revitalize existing communities. • Promote developments, which provide a mix of uses. • Promoted "people scaled," walkable communities. • Support the preservation of stable, single-family neighborhoods. 3) Enable prosperity for all people • Provide, in each community, a variety of housing types to meet the housing needs of all income levels. • Support educational opportunities that promote balanced growth. • Ensure environmental justice regardless of race, ethnicity, or income class. • Support local and state fiscal policies that encourage balanced growth. • Encourage civic engagement. 4) Promote sustainability for future generations • Preserve rural, agricultural, recreational, and environmentally sensitive areas. • Focus development in urban centers and existing cities. • Develop strategies to accommodate growth that uses resources efficiently, eliminate pollution, and significantly reduce waste. • Utilize "green" development techniques.	Principles #1 and #2 are not applicable to the proposed project, although an extensive public participation program has been incorporated into the project development. The proposed project supports Principle #3 and is consistent with the intent. Although the project does not include new housing units, it does support educational opportunities that promote balanced growth with projected demands, ensure environmental justice regardless of race, ethnicity, or income class by conducting a thorough and detailed siting analysis. The project supports local and state fiscal policies that encourage balanced growth, and encourages civic engagement by engaging the public and stakeholders throughout the planning process of the project. Therefore, the project is consistent with the goal. The proposed project supports Principle #4 and is consistent with the intent. The proposed project has the potential to preserve rural, agricultural, recreational and environmentally sensitive areas by reducing landfilling and materials resource extraction through waste prevention, recycling and composting. The proposed project anticipates the development of new facilities within the City limits and includes strategies for using resources efficiently eliminating pollution, and reducing waste.

Source: SCAG Policies for Intergovernmental Review, Updated 10-31-2008

Table 4.9-2. Analysis of SWIRP Policies and Programs (Land Use and Planning)

Initiative	Impact Analysis for Land Use and Planning[1]	Significance Conclusion
Downstream Policies and Programs[2]		
Expand Recycling Ambassador Program	This program will not have a direct impact related to land use and planning.	No Impact
Adding Textiles to the Blue Bins or partner with non-governmental organization to increase textile diversion	This policy/program will not have a direct impact related to land use and planning.	No Impact
Bulky Item Reuse and Refurbishment	This policy/program will not have a direct impact related to land use and planning.	No Impact
Expand Residential Food Scrap Program	This program will not have a direct impact related to land use and planning.	No Impact
Large Scale Media/Social Marketing	This policy/program will not have a direct impact related to land use and planning.	No Impact
Modify Residential Collection Rates	This policy/program will not have a direct impact related to land use and planning.	No Impact
Modify Commercial Collection Rates	This policy/program will not have a direct impact related to land use and planning.	No Impact
Expand Multi-Family Recycling	This policy/program will not have a direct impact related to land use and planning.	No Impact
Multi-Family Green Bins	This policy/program will not have a direct impact related to land use and planning.	No Impact
All Businesses to Have Recycling Services	This policy/program will not have a direct impact related to land use and planning.	No Impact
Commercial Haulers to Offer Recycling Services to Customers	This policy/program will not have a direct impact related to land use and planning.	No Impact
Expand Commercial Technical Assistance	This policy/program will not have a direct impact related to land use and planning.	No Impact
Expand Construction and Demolition (C&D) Technical Assistance	There is adequate capacity at existing C&D facilities, so additional facilities of that type would not be required. No impact related to land use and planning is identified for this policy/program.	No Impact
Provide More Public Area Recycling	This policy/program will not have a direct impact related to land use and planning.	No Impact
C&D Ordinance	There is adequate capacity at existing C&D facilities, so additional facilities of that type would not be required. No impact related to land use and planning is identified for this policy/program.	No Impact
Mandatory Participation Programs[3]		
Mandatory Recycling Separation	This program will not have a direct impact related to land use and planning.	No Impact
Mandatory Organics Separation	This program will not have a direct impact related to land use and planning.	No Impact
Resource Recovery Centers (RRC) at Transfer Stations and Landfills	This program will not have a direct impact related to land use and planning.	No Impact
Recycling Ambassadors (Reinforcement)	This program will not have a direct impact related to land use and planning.	No Impact
Direct Technical Assistance (Reinforcement)	This program will not have a direct impact related to land use and planning.	No Impact

Table 4.9-2. Analysis of SWIRP Policies and Programs (Land Use and Planning) (Continued)

Initiative	Impact Analysis for Land Use and Planning	Significance Conclusion
Increased Diversion Requirements at C&D Facilities	This program will not have a direct impact related to land use and planning.	No Impact
Upstream Policies[4]		
Extended Producer Responsibility (EPR) for Toxics	Results in a reduction of waste generation. No impact related to land use and planning.	No Impact
EPR for Difficult to Recycle Materials	Results in a reduction of waste generation. No impact related to land use and planning.	No Impact
Single-use Bag Ban	Results in a reduction of waste generation. No impact related to land use and planning.	No Impact
Disposal of Residual Waste[5]		
Landfill Disposal – Truck Haul, Rail Haul	This program will not have a direct impact related to land use and planning.	No Impact

(1) Depending on phasing and implementation of various proposed programs and policies, along with anticipated growth in the City, there will be a need for additional facilities to process the diverted materials. Please refer to Section 4.9.3 for an impact analysis of the future facilities.
(2) Refer to Chapter 2.0, Table 2.3-1 for a detailed description of the Downstream Policies and Programs.
(3) Refer to Chapter 2.0, 2.3-2 for a detailed description of the Mandatory Participation Programs.
(4) Refer to Chapter 2.0, Section 2.3.4 for a detailed description of the Upstream Policies.
(5) Refer to Chapter 2.0, Section 2.3.6 for a detailed description of the Disposal of Residual Waste component.

SWIRP Facility Analysis

By implementing all of the policies and programs identified by the stakeholders and described in SWIRP[10], the City could achieve a citywide diversion rate of 86 percent. However, at that rate of recovery, City generators would still produce nearly 1.5 million tons of solid waste annually. This material would need to either be disposed in local or remote landfills or processed for further recovery.

An essential component of SWIRP is the identification and development of future facilities to meet the City's recycling and solid waste infrastructure needs through 2030 to achieve Zero Waste. Throughout Phase 1 of the SWIRP planning process, stakeholders discussed facility options and toured local facilities. During Phase 2, stakeholders identified the specific facility needs resulting from the implementation of the SWIRP policies and programs and discussed options for maximizing diversion from disposal through residual waste processing and treatment through alternative technologies. Potential facilities, identified through the SWIRP planning process, are categorized into three categories: blue bin facilities, green bin facilities, and black bin facilities, as shown in Table 4.9-3, Facility Types. The SWIRP stakeholder process also identified the desire to site the facilities in a geographically-equitable manner, preferring a larger number of smaller facilities evenly dispersed through the City rather than large centralized facilities.

Table 4.9-3. Facility Types

Facility Category	Facility Type	Materials Processed
Blue and green bin facilities	Clean Material Recovery Facilities (MRFs)	Residential blue bin materials and commercial source-separated recyclables
	Composting Facilities (Large Scale and Small Scale)	Yard trimmings, food scraps and other compostable materials
	Resource Recovery Center	Self-hauled recyclable and reusable materials including hard to recycle items
Black bin facilities	Mixed Material Processing Facilities (MMP)	Residential black bin materials and commercial solid waste
	Alternative Technology – Advanced Thermal Recycling	Residential black bin materials and commercial solid waste
	Alternative Technology – Biological (Anaerobic Digestion)	Residential black bin materials and commercial solid waste
	Alternative Technology – Thermal (Plasma Arc, Gasification, and Pyrolisis)	Residential black bin materials and commercial solid waste

Blue and Green Bin Facilities Analysis

Blue bin facilities would be capable of processing source-separated recyclable and reusable materials, including materials recovered from the City's blue bin program and source-separated commercial recycling. Other facilities for source separated materials were also discussed within this category, including resource recovery centers for self-hauled materials.

[10] Solid Waste Integrated Resources Plan Volume II, October 31, 2013.

Green bin material is processed at both private sector facilities and at City-owned composting and mulching facilities. Compost facilities are required to control their emissions and can be difficult to site in urban areas. Most of the existing private-sector composting operations are located in agricultural areas outside of the City.

Clean Material Recovery Facilities

Clean MRFs receive and process source separated recyclables from residential blue bin programs and commercial recycling programs. Clean MRFs use various technologies and methods to sort, bale, and ship material by commodity type to markets. Clean MRFs typically recover traditional recyclable materials, including newspaper, cardboard, mixed paper, aluminum cans, bi-metal cans, plastic bottles, mixed plastics, and glass containers.

A Clean MRF can be considered a light industrial to heavy industrial land use due to the size, intensity, and type of use. As such, this type of facility would be best suited in an industrial zone or commercial zone with minimal intensity to avoid the need for any general plan amendments, zoning reclassifications, or creation of potential "spot" zoning. Clean MRFs would not be of a size that would divide an established community (refer to Table 2.3-3 in Section 2 for a description of these facilities).

Given the type of facility, potential impacts to land use and community planning would occur if a Clean MRF was proposed in or near a residential land use, or where nearby land uses, residents, and/or businesses would be adversely affected by the day to day activities occurring at the facility (e.g., noise, intensity, traffic, and odor). If a proposed facility is not found to be compatible with the surrounding land uses at the time of proposal, a significant impact to land use and planning could occur.

At the time a location is identified to site a new Clean MRF, the proposed facility would be subject to the applicable land use plans, policies, or regulation of the agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, redevelopment plan, interim control ordinance, habitat/community conservation plan, or zoning ordinance) for the respective jurisdiction.

Composting Facilities

Composting facilities are designed for collecting, grinding, mixing, piling, and supplying sufficient moisture and air to organic materials to speed natural decay. The finished product is compost, a soil amendment suitable for incorporating into topsoil and for growing plants.

Composting can be considered an industrial or agricultural land use due to the type of use and activities conducted on site. As such, this type of facility would be best suited in an industrial zone or agricultural zone to avoid the need for any general plan amendments, zoning reclassifications, or creation of potential "spot" zoning. Composting facilities would not be of a size that would divide an established community (refer to Table 2.3-3 for a description of these facilities).

Given the type of facility, potential impacts to land use and community planning would occur if a composting facility was proposed in or near a residential land use or where nearby land uses, residents, and/or businesses would be adversely affected by the day-to-day activities occurring at the facility (e.g., noise, intensity, traffic, and odor). If a proposed facility is not found to be compatible with the surrounding land uses at the time of proposal, a significant impact to land use and planning could occur.

At the time a location is identified to site a new composting facility, the proposed facility would be subject to the applicable land use plans, policies or regulation of the agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, redevelopment plan, interim control ordinance, habitat/community conservation plan, or zoning ordinance) for the respective jurisdiction.

Resource Recovery Centers

Resource recovery centers are small centers for drop-off of hard to recycle items, including mattresses, large blocks of expanded polystyrene foam, and textiles. Resource recovery centers can be considered an industrial land use due to the type of use and activities conducted on site. Typically, these facilities are located in industrially zoned areas that are reserved for companies that process secondary materials or make other products from these materials. As such, this type of facility would be best suited in an industrial zone or commercial zone with minimal intensity to avoid the need for any general plan amendments, zoning reclassifications, or creation of potential "spot" zoning. Resource recovery centers would not be of a size that would divide an established community (refer to Table 2.3-3 in Chapter 2.0 for a description of these facilities).

Given the type of facility, potential impacts to land use and community planning would occur if a resource recovery center was proposed in or near a residential land use or where nearby land uses, residents, and/or businesses would be adversely affected by the day-to-day activities occurring at the facility (e.g., noise, intensity, traffic, and odor). If a proposed facility is not found to be compatible with the surrounding land uses at the time of proposal, a significant impact to land use and planning could occur.

At the time a location is identified to site a new resource recovery center, the proposed facility would be subject to the applicable land use plans, policies, or regulation of the agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, redevelopment plan, interim control ordinance, habitat/community conservation plan, or zoning ordinance) for the respective jurisdiction.

Black Bin Facilities Analysis

To support the City's goal of ending urban landfilling, LASAN has investigated options for diverting waste through alternative technologies such as: biological, thermal, chemical, and physical technologies for treating waste. LASAN defines black bin processing facilities as "alternative technology", meaning alternatives to landfill disposal. A subset of these black bin processing facility types is called "conversion technology;" the term used by CalRecycle to describe "new and emerging non-combustion thermal, chemical, and biological technologies."

Black bin processing facilities target residual waste that is leftover after recycling and composting, and can include residual waste from blue bin and green bin processing facilities. These technologies are all methods to process residual waste as alternatives to landfilling in order to generate renewable energy (both electrical and thermal) and/or recover useful by-product materials. Black bin processing facilities proposed as part of the SWIRP include mixed-material processing facilities, anaerobic digestion, advanced thermal recycling, and non-combustion thermal technologies such as gasification, plasma arc gasification, and pyrolysis.

Mixed Material Processing Facility

A mixed material processing (MMP) facility, also referred to as a dirty MRF, is a facility that sorts recyclable material from residual waste from residential and commercial sources. These facilities can also be adapted to sort or remove different materials to prepare residual waste for composting, advanced thermal recycling, and other alternative technologies.

MMP facilities can be considered a heavy industrial land use due to the size, intensity, and type of use conducted on site. As such, this type of facility would be best suited in a heavy industrial zone to avoid the need for any general plan amendments, zoning reclassifications, or creation of potential "spot" zoning. Within the City, an optimal location for an MMP would be within the M-3 (Heavy Industrial) Zone, and subject to the applicable provisions of the City Municipal Code. MMP facilities would not be of a size that would divide an established community (refer to Table 2.3-4 in Section 2 for a description of these facilities).

Given the type of facility, potential impacts to land use and community planning would occur if a new MMP facility was proposed in or near a residential land use, commercial land use, or where nearby land uses, residents, and/or businesses would be adversely affected by the day-to-day activities occurring at the facility (e.g., noise, intensity, traffic, and odor). If a proposed facility is not found to be compatible with the surrounding land uses at the time of proposal, a significant impact to land use and planning could occur.

At the time a location is identified to site a new MMP facility, the proposed facility would be subject to the applicable land use plans, policies, or regulation of the agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, redevelopment plan, interim control ordinance, habitat/community conservation plan, or zoning ordinance) for the respective jurisdiction.

Alternative Technology - Advanced Thermal Recycling

Advanced thermal recycling facilities produce energy and reduce waste volume by combusting the waste and injecting air at atmospheric pressure to reach the chemically balanced air-fuel ratio for combustion. This combustion provides energy to produce steam, which is used to turn a steam turbine that generates electricity. Exhaust air is treated to remove air pollutants to meet clean air emissions standards from environmental regulatory agencies.

Advanced thermal recycling facilities can be considered a heavy industrial land use due to the size, intensity, and type of use conducted on site. As such, this type of facility would be best suited in a heavy industrial zone to avoid the need for any general plan amendments, zoning reclassifications, or creation of potential "spot" zoning. Within the City, an optimal location for a waste to energy facility would be within the M-3 (Heavy Industrial) Zone, and subject to the applicable provisions of the City Municipal Code. Advanced thermal recycling/waste to energy facilities would not be of a size that would divide an established community (refer to Table 2.3-4 in Section 2 for a description of these facilities).

Given the type of facility, potential impacts to land use and community planning would occur if a new facility were proposed in or near a residential land use, commercial land use, or where nearby land uses, residents, and/or businesses would be adversely affected by the day-to-day activities occurring at the facility from either: noise, intensity, traffic, odor, etc. If a proposed facility is not found to be compatible with the surrounding land uses at the time of proposal, a significant impact to land use and planning could occur.

At the time a location is identified to site a new advanced thermal recycling/waste to energy facility, the proposed facility would be subject to the applicable land use plans, policies, or regulation of the agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, redevelopment plan, interim control ordinance, habitat/community conservation plan, or zoning ordinance) for the respective jurisdiction.

Alternative Technology – Biological (Anaerobic Digestion)

Anaerobic digestion is a biological process where micro-organisms break down biodegradable materials, (e.g., food and paper) in an oxygen-deficient system, creating a biogas that can be used to produce electricity or can be converted into a transportation fuel. The technology converts waste to energy using bacteria to breakdown waste to produce biogas. This type of biogas consists primarily of methane and carbon dioxide. These facilities process paper, compostable plastics, food scraps, and other organics.

Anaerobic digestion facilities can be considered a heavy industrial land use due to the size, intensity, and type of use conducted on site. As such, this type of facility would be best suited in a light or heavy industrial zone to avoid the need for any general plan amendments, zoning reclassifications, or creation of potential "spot" zoning. Within the City, an optimal location for an alternative technology facility would be within the M2 (light industrial/commercial), M3 (heavy industrial) and PF (Public Facility) zones, subject to the provisions of the Solid Waste Alternative Technology Processing Facility Ordinance and the City Municipal Code. Anaerobic digestion facilities would not be of a size that would divide an established community (refer to Table 2.3-4 in Section 2 for a description of these facilities).

Given the type of facility, potential impacts to land use and community planning would occur if a new facility were proposed in or near a residential land use, commercial land use, or where nearby land uses, residents, and/or businesses would be adversely affected by the day-to-day activities occurring at the facility (e.g., noise, intensity, traffic, and odor). If a proposed facility is not found to be compatible with the surrounding land uses at the time of proposal, a significant impact to land use and planning could occur.

At the time a location is identified to site a new anaerobic digestion facility, the proposed facility would be subject to the applicable land use plans, policies, or regulation of the agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, redevelopment plan, interim control ordinance, habitat/community conservation plan, or zoning ordinance) for the respective jurisdiction.

Alternative Technology – Thermal (Plasma Arc, Gasification and Pyrolysis)

Pyrolysis, gasification, and plasma arc gasification are all technologies used to treat waste producing a synthesis gas ("syngas") that can be used to produce electricity or can be converted into a transportation fuel. Pyrolysis uses an indirect external source of heat in the absence of oxygen; gasification partially oxidizes the waste; and plasma arc uses a plasma torch to super-heat the waste to produce the synthesis gas. These facilities use an external heat source to heat waste to high temperatures in a low oxygen environment.

Non-combustion thermal technology facilities can be considered an industrial land use due to the size, intensity, and type of use conducted on site. As such, this type of facility would be best suited in a light or heavy industrial zone to avoid the need for any general plan amendments, zoning reclassifications, or creation of potential "spot" zoning. Within the City, an optimal location for an alternative technology facility would be within the M2 (light industrial/commercial), M3 (heavy industrial) and PF (Public

Facility) zones, subject to the provisions of the Solid Waste Alternative Technology Processing Facility Ordinance and the City Municipal Code. Alternative Technology facilities would not be of a size that would divide an established community (refer to Table 2.3-4 in Section 2 for a description of these facilities).

Given the type of facility, potential impacts to land use and community planning would occur if a new facility were proposed in or near a residential land use, or where nearby land uses, residents, and/or businesses would be adversely affected by the day-to-day activities occurring at the facility (e.g., noise, intensity, traffic, and odor). If a proposed facility is not found to be compatible with the surrounding land uses at the time of proposal, a significant impact to land use and planning could occur.

At the time a location is identified to site a new Non-Combustion Thermal Technology facility, the proposed facility would be subject to the applicable land use plans, policies, or regulation of the agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, redevelopment plan, interim control ordinance, habitat/community conservation plan, or zoning ordinance) for the respective jurisdiction.

Table 4.9-4 provides a summary of the impact analysis for proposed SWIRP facilities relative to land use and planning.

Table 4.9-4. Facility Impact Summary Table (Land Use and Planning)

Facility Type	Impact
Clean Material Recovery Facilities	Less than significant with mitigation
Composting (Aerobic)	Less than significant with mitigation
Composting (Anaerobic Digestion)	Less than significant with mitigation
Resource Recovery Centers	Less than significant with mitigation
Mixed Material Processing	Less than significant with mitigation
Alternative Technology – Advanced Thermal Recycling	Less than significant with mitigation
Alternative Technology – Biological (Anaerobic Digestion)	Less than significant with mitigation
Alternative Technology – Thermal (Plasma Arc, Gasification, Pyrolisis, and Others)	Less than significant with mitigation

4.9.4 Cumulative Impacts

Land use impacts tend to be localized and site-dependent. Plan consistency would be determined on a facility-by-facility basis and would also take into consideration the existing and proposed development (other cumulative projects) in the vicinity a propose facility.

The ability for the project and the future facilities to contribute to a cumulative land use impacts will be dependent upon the siting of the future facilities, what the applicable General Plan and Zoning is for the site, and what the surrounding uses are. Additionally, other projects proposed or under construction in the vicinity of the future facilities would be considered. Due to the long-range planning nature of SWIRP, and the phased development of facilities, coupled with the uncertainty of their location within the City and project analysis area makes it difficult to provide a specific cumulative analysis.

The project-level mitigation identified for the project, LU-1 through LU-4, is designed to minimize the potential for land use impacts at the project-level and would also reduce the potential for the project to contribute a cumulative impact.

4.9.5 Mitigation Measures

LU-1 Future facilities shall be sited in locations that support the appropriate General Plan and Zoning designations for the use being proposed. The project's proposed land use shall be modified to be consistent with designated land uses, zoning classification, and/or General Plan element(s).

LU-2 Future facilities shall be fully enclosed to the maximum extent practicable to minimize nuisance issues such as noise, odor and visual impact and achieve maximum compatibility with surrounding land uses. If a nuisance is found to occur as result of facility operations, certain restrictions on the operational characteristics of the facility shall be implemented to reduce or eliminate impacts, such as limiting hours of operation or placing restrictions on specific types of uses or activities proposed for the facility.

LU-3 Project design, configuration, visual screening, setbacks, building heights, etc., shall be compatible with surrounding uses.

LU-4 The site shall be designed to provide buffer(s) (such as a decorative wall or landscaping) if residential uses are adjacent to a proposed facility. The buffer(s) shall be included in the site plan for the future facilities, and reviewed and approved by the local jurisdiction that will issue the building and/or occupancy permit for the facility.

4.9.6 Conclusion

Implementation of proposed policies and programs in addition to construction of SWIRP facilities would be consistent with applicable goals and policies geared toward solid waste reduction; therefore, the proposed project would not result in significant impacts related to land use and planning as a result of project implementation. The proposed programs, policies would not conflict with any applicable land use plan, policy or regulation of an agency including, but not limited to, any general plan, specific plan, local coastal program, or zoning ordinance. Construction of the proposed facilities would result in a less than significant impact, if sited appropriately and with implementation of the mitigation measures set forth in Section 4.9.5 of this chapter. If at the time of construction, the proposed project is consistent with all applicable plans, policies, and regulations including any general plan, specific plan, local coastal program, or zoning ordinance, the project would not result in significant impacts to land use and planning. If a conflict arises that would make the project inconsistent with applicable plans and polices, implementation of mitigation measure LU-1 would be required and would reduce the impact to below a level of significance.

Mitigation measures are included to serve as siting parameters for the location of new facilities. Given compliance with applicable rules and regulations relative to solid waste management and adherence to the mitigation measures (as provided in Section 4.9.5 above), implementation of the project policies, programs, and operation of new facilities, would reduce impacts to below a level of significance. However, at the time of construction, a project-level CEQA analysis would be conducted to ensure that construction would not result in impacts exceeding the identified significance thresholds.

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4.10 MINERAL RESOURCES

This section analyzes the potential for the proposed project to impact mineral resources. It includes a discussion of the applicable regulatory environment, existing conditions, project level impacts, cumulative level impact analysis, and any applicable mitigation measures. The analysis area for mineral resources covers the City of Los Angeles (City) and the area within 100 miles of the City. While the Solid Waste Integrated Resources Plan (SWIRP) emphasizes local processing and handling of discarded materials generated within the, it may not be feasible for all facility types to be built within the City, either due to lack of available space or potential land use conflicts. Therefore, a 100-mile study area is included in the analysis to capture any potential impact to areas outside of the City.

4.10.1 Environmental Setting

The project study area (City and the area within 100 miles of the City) contains an array of various mineral resources. The region spans from the Pacific Ocean islands, shorelines, beaches, and coastal plains, through the mountain ranges, into the large and small interior valleys, to the vast deserts of California, including Anza Borrego and Mojave.

The 100-mile study area encompasses nine counties in Southern California: Kern, Los Angeles, Orange, Riverside, San Bernardino, San Diego, San Luis Obispo, Santa Barbara, and Ventura. The 100-mile study area also includes 190 cities.

4.10.1.1 Regulatory Setting

Federal

There are no applicable federal regulations pertaining to mineral resources.

State

California Surface Mining and Reclamation Act of 1975

The California Surface Mining and Reclamation Act of 1975 (SMARA) is the primary regulator of onshore surface mining in the state. It delegates specific regulatory authority to local jurisdictions. The act requires the State Geologist (Division of Mines and Geology) to identify all mineral deposits within the state and to classify them as: (1) containing little or no mineral deposits; (2) significant deposits; or (3) deposits identified but further evaluation is needed. Local jurisdictions are required to enact specific plan procedures to guide mineral conservation and extraction at particular sites and to incorporate mineral resource management policies into their general plans. A particular concern of state legislators in enacting SMARA was the premature loss of minerals and protection of sites threatened by development practices that might preclude future mineral extraction.

Surface Mining and Reclamation Act (Public Resources Code §2710 et seq.)

The State Mining and Geology Board identifies adopted regulations and areas of regional significance that are known to contain mineral deposits judged to be important in meeting the future needs of the area (refer to Public Resources Code §§2726 and 2790; Title 14 C.C.R. 3550, et seq.). The State Mining and Geology Board also adopts state policy for the reclamation of mined lands and certifies local ordinances

for the approval of reclamation plans as being consistent with state policies (Public Resources Code §§2755–2764, 2774 et seq.).

The California Mineral Land Classification System

To implement Article 4, Section 2761b of SMARA, the State Geologist developed the Mineral Resource Zone (MRZ) nomenclature and criteria based on the California Mineral Land Classification System. The four major divisions are:

1. Areas of Identified Mineral Resource Significance;
2. Areas of Undetermined Mineral Resource Significance;
3. Areas of Unknown Mineral Resource Significance; and
4. Areas of No Mineral Resource Significance.

The divisions between these major "knowledge" categories marks the divisions between areas classified MRZ-2, MRZ-3, MRZ-4, and MRZ-1. Aggregate resources are classified using the California State-adopted definition for each classification as shown in Table 4.10-1:

Table 4.10-1. California Mineral Resource Classification Zones

Mineral Resources Zones	Description
MRZ-1	Areas where adequate information indicates that no significant mineral deposits are present, or where it is judged that little likelihood exists for their presence. This zone shall be applied where well developed lines of reasoning based upon economic, geologic principles, and adequate data demonstrate that the likelihood for occurrence of significant mineral deposits is slight.
MRZ-2[1]	Areas where adequate information indicates that significant mineral deposits are present or where it is judged that a high likelihood for their presence exists. This zone shall be applied to known mineral deposits or where well developed lines of reasoning based upon economic, geologic principles, and adequate data demonstrate that the likelihood for occurrence of significant mineral deposits is high.
MRZ-2(a)	Areas containing discovered mineral deposits that are either measured or indicated reserves as determined by such evidence as drilling records, sample analysis, surface exposure, and mine information. Land included in the MRZ-2a category is of prime importance because it contains known economic mineral deposits.
MRZ-2(b)	Areas containing discovered deposits that are either inferred reserves or deposits that are presently sub-economic as determined by limited sample analysis, exposure, and past mining history. Further exploration work and/or changes in technology or economics could result in upgrading areas classified MRZ-2b to MRZ-2a.
MRZ-3[1]	Areas containing mineral deposits, the significance of which cannot be evaluated from available data.
MRZ-3(a)	Areas, judged on the basis of the limited available geologic data and field work, to have higher potential as sources of aggregate material suitable for Portland Cement Concrete than other deposits classified MRZ-3.
MRZ-3(b)	Land that represents areas in geologic settings which appear to be favorable environments for the occurrence of specific mineral deposits. Further exploration work could result in the reclassification of all or part of these areas into the MRZ-3a category or specific localities into the MRZ-2a or MRZ-2b categories.
MRZ-4	Areas where available information is inadequate for assignment to any other MRZ zone.

Source: State of California, Department of Conservation, State of Mining and Geology Board, 2010.

[1] Exhibit E.41 of *LA CEQA Thresholds Guide*, page E.4-5 (City of Los Angeles 2006).

California Department of Conservation, Division of Oil, Gas, and Geothermal Resources

The Department of Conservation, Division of Oil, Gas, and Geothermal Resources (DOGGR) is charged with implementing Section 3208.1 of the Public Resources Code. As a result, DOGGR developed the Construction-Site Plan Review Program to assist local permitting agencies in identifying and reviewing the status of oil or gas wells located near or beneath proposed structures.

Before issuing building or grading permits, local permitting agencies review and implement the DOGGR's preconstruction well requirements. Interaction between local permitting agencies and DOGGR helps resolve land use issues and allows for responsible development in oil and gas fields.

The Construction Site Review process varies depending on the location of the land being developed. The review process for land located in parts of Los Angeles, Orange, and Riverside Counties (District 1) is slightly different from the Construction Site Review process for district offices. The project study area (City and the area within 100 miles of the City) covers all or part of four districts (Cypress, Ventura, Santa Maria, and Bakersfield)[2].

California Laws for Conservation of Geothermal Resources

California Laws for Conservation of Geothermal Resources, Division 3, Chapter 4, of the Public Resources Code governs the regulation of geothermal operations. These laws are based on the determination that the people of the State of California have a direct and primary interest in the development of geothermal resources, and that the State of California, through the authority vested in the State Oil and Gas Supervisor, should exercise its power and jurisdiction to require that wells for the discovery and production of geothermal resources be drilled, operated, maintained, and abandoned in such manner as to safeguard life, health, property, and the public welfare, and to encourage maximum economic recovery.

Local

As described in the environmental setting, the City and the 100-mile study area includes land within nine counties, as well as multiple local jurisdictions. Mineral resources within each jurisdiction, if present, are subject to the policies and regulations set by the applicable elements of individual jurisdiction's General Plans. The following section addresses the City-specific policies within the Conservation Element of the General Plan, which address mineral resources.

City of Los Angeles

City of Los Angeles General Plan Conservation Element (Adopted September 2001)

Resource Management - Mineral Resources (Sand and Gravel)

Objective: Conserve sand and gravel resources and enable appropriate, environmentally sensitive extraction of sand and gravel deposits.

> **Policy 1:** Continue to implement the provisions of the California Surface Mining and Reclamation Act (Public Resources Code Section 2710 et seq.) so as to establish extraction operations at appropriate sites; to minimize operation impacts on adjacent uses, ecologically

[2] California Department of Conservation (http://www.conservation.ca.gov/dog/maps/Pages/index_map.aspx).

important areas (e.g., the Tujunga Wash) and ground water; to protect the public health and safety; and to require appropriate restoration, reclamation and reuse of closed sites.

Policy 2: Continue to encourage the reuse of sand and gravel products, such as concrete, and of alternative materials use in order to reduce the demand for extraction of natural sand and gravel.

Conservation: It is the City's policy that construction materials, such as concrete and rock, be recycled to reduce the amount of solid waste that goes into local landfills, thereby extending the life of the landfills. Recycling has a secondary benefit of reducing the demand for sand and gravel and produces recycled materials, which can be substituted for the natural materials (City of Los Angeles 2001a).

Resource Management – Fossil Fuels (Petroleum)

Objective: Conserve petroleum resources and enable appropriate, environmentally sensitive extraction of petroleum deposits located within the City's jurisdiction so as to protect the petroleum resources for the use of future generations and to reduce the City's dependency on imported petroleum and petroleum products.

Policy 1: Continue to encourage energy conservation and petroleum product reuse.

Policy 2: Continue to support state and federal bans on drilling in the Santa Monica Bay and on new drilling along the California coast in order to protect the San Pedro and Santa Monica bays from potential spills associated with drilling, extraction and transport operations.

Policy 3: Continue to protect neighborhoods from potential accidents and subsidence associated with drilling, extraction and transport operations, consistent with California Department of Conservation, Division of Oil and Gas requirements.

Other Jurisdictions

In addition to the City, the 100-mile study area includes all or part of 190 cities and nine counties. Each of these Cities and Counties has adopted General Plans and Municipal Codes which may include specific policies related to mineral resources. Depending where future facilities are located, local plans and policies would be applicable to those facilities.

4.10.1.2 Existing Conditions

Mineral Resources

California ranks fifth in the country for value of non-fuel mineral resource production, accounting for approximately $4.0 billion dollars or 5.6 percent of the national total (USGS 2008). According to 2007 California Geological Survey, there are 717 active mines in California producing 30 different commercial and industrial minerals. California leads the nation in the production of aggregate (sand, gravel, and crushed rock), diatomite and natural sodium sulfate, boron, and rare earth minerals. Other minerals produced commercially include common clay, bentonite clay (including hectorite), crushed stone, dimension stone, feldspar, fuller's earth, gemstones, gypsum, iron ore (used in cement manufacture), kaolin clay, lime, magnesium compounds, perlite, pumice, pumicite, salt, soda ash, and zeolites. The only metals produced in California are gold and silver.

According to the State of California Department of Conservation, State Mining and Geology Board, the classification of aggregate resources in the three-county area of Los Angeles, Orange, and Ventura, was followed by a "designation" process that formally recognized significant deposits that could provide for future needs. Maps and descriptions of the deposits were placed in the California Public Resources Code and officially transmitted to those County and City governments having decision-making authority over the use of those lands. To maximize land-use options for local governments, designated areas contain aggregate resources in excess of the region's 50-year need (Beeby et al., 1999). Since the designation of the aggregate resource areas in the 1980s, about six percent of those resources have been covered by urbanization.

The primary mineral resources within the City are rock, gravel and sand deposits. Sand and gravel deposits follow the Los Angeles River flood plain, coastal plain and water courses. Significant potential deposit sites have been identified by the state geologist. They lie along the flood plain from the San Fernando Valley through the downtown area. Much of the area identified has been developed with structures and is inaccessible for mining extraction. Mining of sand and gravel began in Los Angeles around 1900 when concrete became popular as a building material. Extraction began in the Arroyo Seco and the Big Tujunga Wash. From 1920 to the present, the demand for sand and gravel has been spurred by construction associated with growth in California and the southwestern United States. The only currently available deposit site in the City is the Tujunga alluvial fan, which is rich in accumulations of high quality sand and gravel washed from the adjacent mountains (Conservation Element, Section 18: Resources Management: Mineral Resources–Sand and Gravel).

SMARA requires that general plans identify the MRZ-2 sites and contain resource management provisions. MRZ-2 sites are identified in two community plan elements of the City's General Plan: (1) the Sun Valley community plan; and (2) the Sunland-Tujunga-Lake View Terrace-Shadow Hills-East La Tuna Canyon community plan. These community plans contain resource management provisions.

Current production areas are located outside of the City, and within the project 100-mile study area. Local aggregate resources are considered an important local resource due to the correlation between availability and construction costs to haul the aggregate. According to the Department of Conservation, Division of Mines and Geology, Aggregate Resources in the Los Angeles Metropolitan Area Map (1999), the following production areas are located within the project study area: Moorpark, Simi, Soledad, Little Rock Creek Fan, Sun Valley, Irwindale, San Antonio Fan, Santa Ana Canyon, Irvine Lake, Corona, and Glen Ivy. Figure 4.10-1 depicts these production areas.

Fossil Fuel Resources (Oil/Gas)

California has 51,776 oil wells in production (California Department of Conservation 2009). In the Los Angeles Basin area, oil field properties offer one of the few open areas still available for development. The conditions of oilfield properties vary, with some in heavily urbanized areas, hillsides, and in coastal zones. Individual lots containing plugged or abandoned oil wells are often the last oilfield areas to be developed. There are numerous oil fields located throughout the study area. Oil fields are located parallel along the coast line from Ventura County to the Newport Beach area. Additional pockets of oil fields are located west of the City in the Beverly Hills area, south in the Inglewood and Rosecrans area, and in the area of Montebello extending east to the City of Corona. The Bakersfield area has a vast amount of oil fields located in the San Joaquin Valley, west of the Sierra Mountain Range and Coastal Mountain Range. There is one isolated oil field located east of the San Clemente area. No oil fields are located in the San Diego area. Figure 4.10-2 depicts the distribution of oil and gas wells in the project study area.

Geothermal Resources

According to DOGGR Online Mapping System (DOMS), the proposed project area is located in Geothermal District G2. The area of Desert Hot Springs is identified as the only geothermal activity located within the project study area (City and the area within 100 miles of the City).

4.10.2 Thresholds of Significance

The impact analysis for mineral resources will use the CEQA thresholds to determine significance. For the purpose of this analysis, the project study area is defined as the City and a 100-mile study area surrounding it. SWIRP emphasizes local processing and handling of the materials generated in the City, including locating needed facilities within the City limits. However, it may not be feasible for all facility types to be built within the City, either due to lack of available space or potential land use conflicts. Therefore, a 100-mile study area is included in the analysis to capture any potential impact to areas outside of the City.

The following information is provided in accordance with Section 15126.2 of *CEQA Guidelines*. Appendix G of *CEQA Guidelines* suggests that a development project could have a significant impact on Mineral Resources if the project would cause any of the following effects:

- *Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state; or*
- *Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan.*

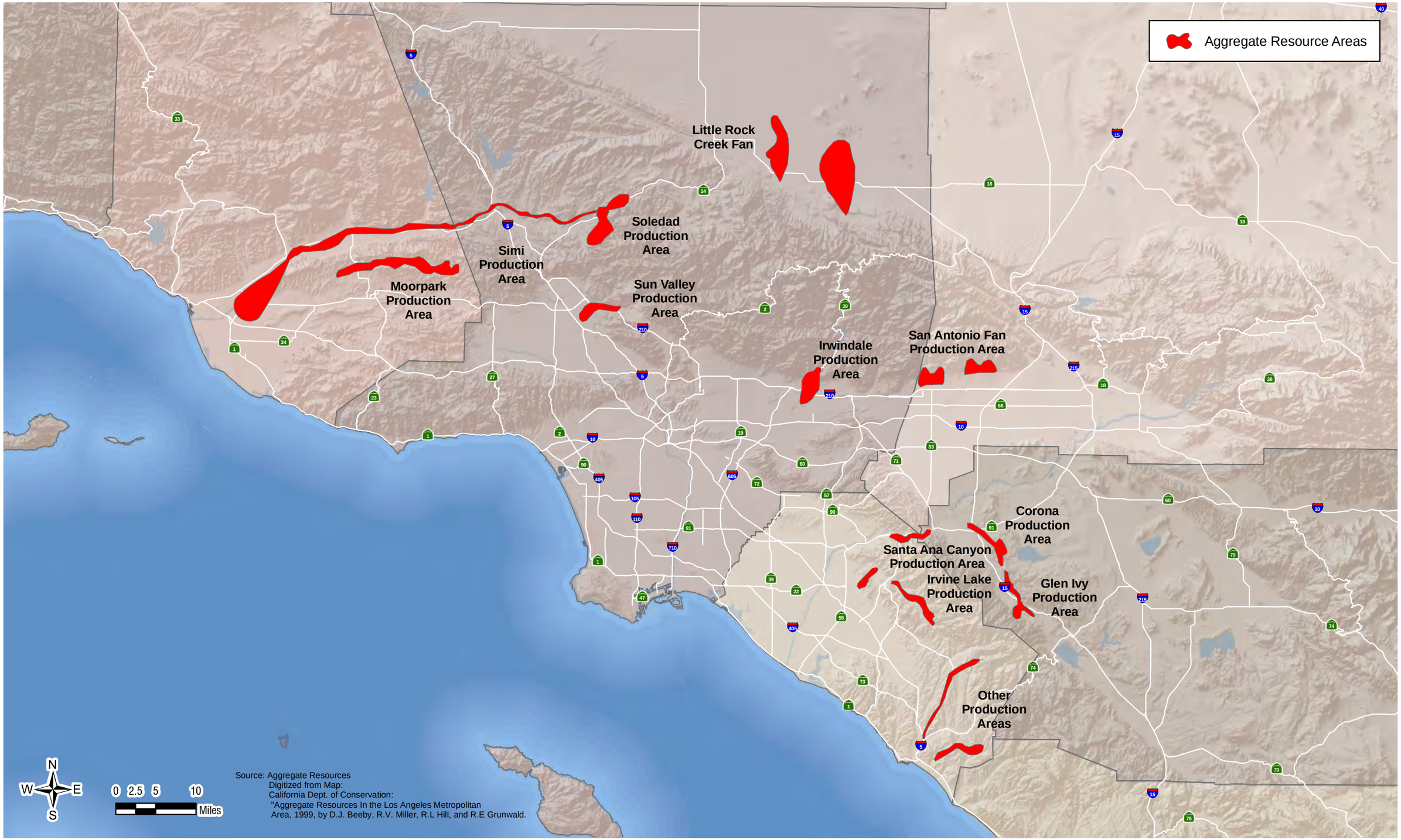
4.10.3 Project-Level Analysis

The project-level analysis includes an assessment of the proposed project's impacts on mineral resources.

SWIRP Policy and Program Analysis

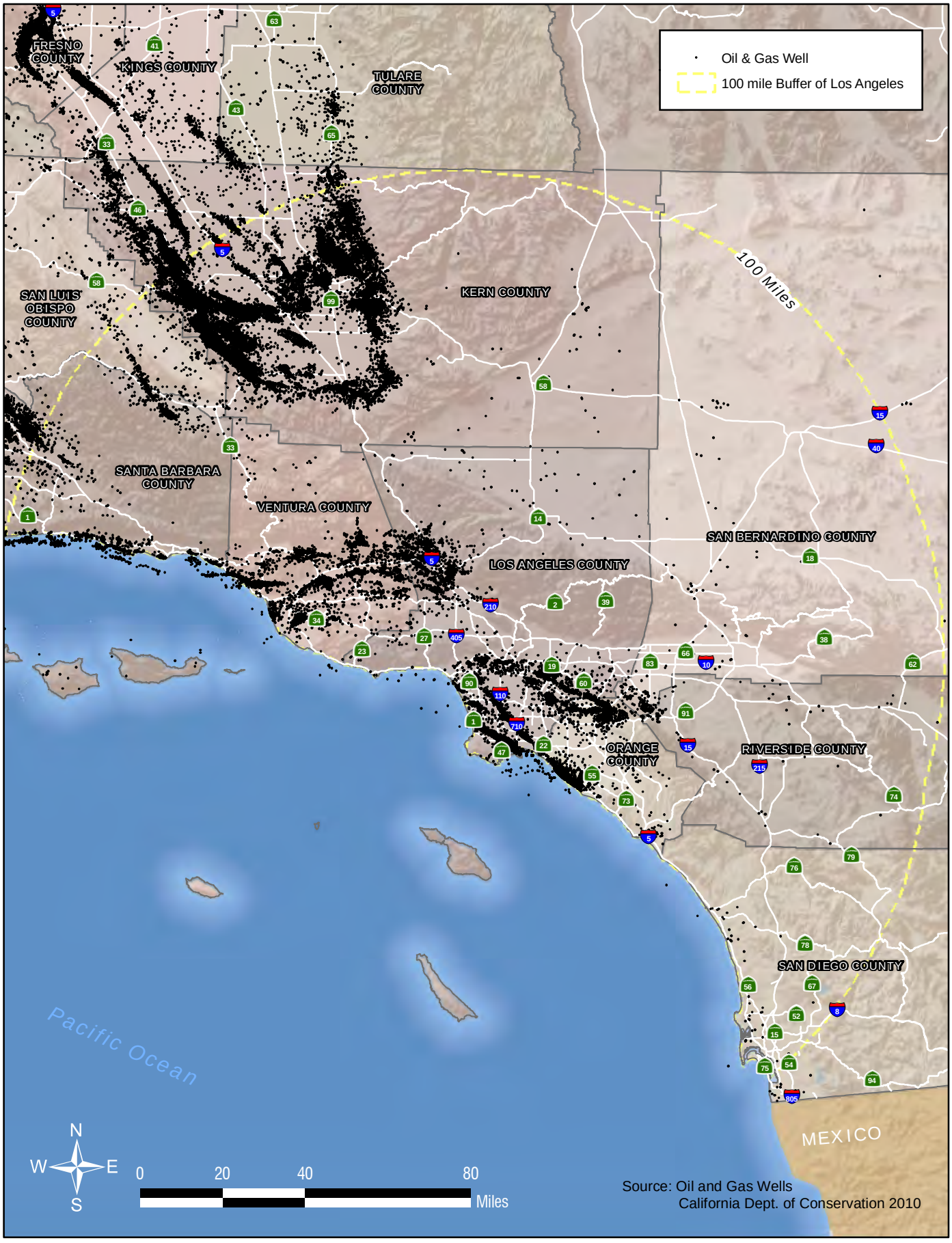
Table 4.10-2 analyzes the potential impacts on mineral resources in light of the proposed policies and programs that are identified as part of the proposed project.

As shown in Table 4.10-2, the proposed policies and programs are not anticipated to have a significant impact on mineral resources. In some instances, proposed policies and programs could actually result in a decreased demand for mineral resources extraction. For example, increasing recycling programs is likely to result in higher rates of metal recycling (e.g., soda cans, food cans) which keeps this resource available for future use instead of placing it in a landfill. This can decrease the amount of new resource extraction, since recycled materials are available. Additionally, an increase in C&D materials recycling would result in less demand for new gypsum and aggregate resources. Similarly, a single use bag ban, which would prohibit the use of plastic bags, would reduce the amount of fossil fuels that are used in plastic bag production, thus decreasing demand for natural gas.



Aggregate Resources in the Los Angeles Metropolitan Area

FIGURE 4.10-1



Oil and Gas Wells

FIGURE 4.10-2

Table 4.10-2. Analysis of SWIRP Policies and Programs (Mineral Resources)

Initiative	Impact Analysis for Mineral Resources[1]	Significance Conclusion
Downstream Policies and Programs[2]		
Expand Recycling Ambassador Program	Increasing recycling under the program could potentially increase the amount of aluminum and other resources that are recycled, thus potentially reducing the amount of new minerals that would need to be mined.	Potential Beneficial Impact
Adding Textiles to the Blue Bins or Partner with Non-Government Organizations	This policy/ program will not directly impact mineral resources.	No Impact
Bulky Item Reuse and Refurbishment	Increasing recycling under this policy/program could potentially increase the amount of aluminum and other resources that are recycled, thus potentially reducing the amount of new minerals that would need to be mined.	Potential Beneficial Impact
Expand Residential Food Scrap Program	This program will not directly impact mineral resources.	No Impact
Large-Scale Media/Social Marketing	Increasing recycling under this policy/program could potentially increase the amount of aluminum and other resources that are recycled, thus potentially reducing the amount of new minerals that would need to be mined.	Potential Beneficial Impact
Modify Residential Collection Rates	Increasing recycling under this policy/program could potentially increase the amount of aluminum and other resources that are recycled, thus potentially reducing the amount of new minerals that would need to be mined.	Potential Beneficial Impact
Modify Commercial Collection Rates	Increasing recycling under this policy/program could potentially increase the amount of aluminum and other resources that are recycled, thus potentially reducing the amount of new minerals that would need to be mined.	Potential Beneficial Impact
Expand Multi-Family Recycling	Increasing recycling under this policy/program could potentially increase the amount of aluminum and other resources that are recycled, thus potentially reducing the amount of new minerals that would need to be mined.	Potential Beneficial Impact
Multi-Family Green Bins	This program will not directly impact mineral resources.	No Impact
All Businesses to have Recycling Services	Increasing recycling under this policy/program could potentially increase the amount of aluminum and other resources that are recycled, thus potentially reducing the amount of new minerals that would need to be mined.	Potential Beneficial Impact
Commercial Haulers to Offer Recycling Services to Customers	Increasing recycling under this policy/program could potentially increase the amount of aluminum and other resources that are recycled, thus potentially reducing the amount of new minerals that would need to be mined.	Potential Beneficial Impact
Expand Commercial Technical Assistance	Increasing recycling under this policy/program could potentially increase the amount of aluminum and other resources that are recycled, thus potentially reducing the amount of new minerals that would need to be mined.	Potential Beneficial Impact
Expand Construction and Demolition (C&D) Technical Assistance	Increasing recycling and landfill diversion under the program could potentially increase the amount of aggregate and resources that are recycled thus potentially reducing the amount of new minerals that would need to be mined.	Potential Beneficial Impact

Table 4.10-2. Analysis of SWIRP Policies and Programs (Mineral Resources) (Continued)

Initiative	Impact Analysis for Mineral Resources	Significance Conclusion
Provide More Public Recycling Areas	Increasing recycling under this policy/program could potentially increase the amount of aluminum and other resources that are recycled, thus potentially reducing the amount of new minerals that would need to be mined.	Potential Beneficial Impact
C&D Ordinance	Increasing recycling and landfill diversion under the program will increase the amount of aggregate, gypsum and resources that are recycled thus potentially reducing the amount of new minerals that would need to be mined.	Potential Beneficial Impact
Mandatory Participation Programs[3]		
Mandatory Recycling Separation	Increasing recycling under this policy/program could potentially increase the amount of aluminum and other resources that are recycled, thus potentially reducing the amount of new minerals that would need to be mined.	Potential Beneficial Impact
Mandatory Organics Separation	Increasing recycling under this policy/program could potentially increase the amount of aluminum and other resources that are recycled, thus potentially reducing the amount of new minerals that would need to be mined.	Potential Beneficial Impact
Resource Recovery Centers (RRC) at Transfer Stations and Landfills	Improvement of recycling through resources recovery centers at transfer stations under this program could potentially increase the amount of aluminum and other resources that are recycled, thus potentially reducing the amount of new minerals that would need to be mined.	Potential Beneficial Impact
Recycling Ambassadors (Reinforcement)	Increasing recycling under this policy/program could potentially increase the amount of aluminum and other resources that are recycled, thus potentially reducing the amount of new minerals that would need to be mined.	Potential Beneficial Impact
Direct Technical Assistance (Reinforcement)	Increasing recycling under this policy/program could potentially increase the amount of aluminum and other resources that are recycled, thus potentially reducing the amount of new minerals that would need to be mined.	Potential Beneficial Impact
Increased Diversion Requirements at C&D Facilities	Improvement of recycling and landfill diversion under the program could potentially increase the amount of aggregate and metals that are recycled thus potentially reducing the amount of new minerals that would need to be mined. Beneficial impact to aggregate and gypsum mineral resources could be realized due to this ordinance requiring recycling.	Potential Beneficial Impact
Upstream Policies[4]		
Extended Producer Responsibility (EPR) for Toxics	Results in a reduction of waste generation. No impact to mineral resources.	No Impact
EPR for Difficult to Recycle Materials	Results in a reduction of waste generation. No impact to mineral resources.	No Impact
Single-use Bag Ban	Plastic bags require fossil fuels in the production process. A reduction in the number of bags manufactured results in a corresponding decrease in the need for fossil fuels.	Potential Beneficial Impact

Initiative	Impact Analysis for Mineral Resources[1]	Significance Conclusion
Disposal of Remaining Residual Waste[5]		
Landfill Disposal – Truck Haul, Rail Haul	Disposal of residual waste from implementation of SWIRP programs and policies above (25% residual waste in 2013 and 10% residual waste in 2020). Although some items such as aluminum or other resources may end up as residual waste, the amount would be significantly decreased after implementation of SWIRP. No impact to mineral resources.	No Impact

(1) Depending on phasing and implementation of various proposed programs and policies, along with anticipated growth in the City, there will be a need for additional facilities to process the diverted materials. Please refer to Section 4.10.3 for an impact analysis of the future facilities.
(2) Refer to Chapter 2.0, Table 2.3-1 for a detailed description of the Downstream Policies and Programs.
(3) Refer to Chapter 2.0, Table 2.3-2 for a detailed description of the Mandatory Participation Programs.
(4) Refer to Chapter 2.0, Section 2.3.4 for a detailed description of the Upstream Policies.
(5) Refer to Chapter 2.0, Sectio 2.3.6 for a detailed description of Disposal of Remaining Residual Waste

Disposal of residual waste in existing local or remote landfills would not impact existing mineral resource sites given that the landfill accepting residual waste would be an existing operation. Additionally, disposal of residual waste from implementation of SWIRP programs and policies (25% residual waste in 2013 and 10% residual waste in 2025) may include mineral resource items such as aluminum or other resources; however, the amount would be significantly decreased after implementation of SWIRP. No impact to mineral resources is identified.

SWIRP Facility Analysis

Mineral Resources of Value to the State

At this time, the specific location of future facilities have not been identified; rather, SWIRP notes that additional facilities would be required to meet the need for additional waste that would be diverted from landfills. The potential for these future facilities to result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state is not known. If future sites include locations that contain mineral resources, such as areas mapped MRZ-2a, MRZ-2b, MRZ-3, MRZ-3a or MRZ-3b, there is a potential for a significant impact. As future facilities are proposed, they would be subject to additional review pursuant to CEQA. At that time, the potential site-specific impacts would be analyzed.

Additionally, if future facilities were proposed in areas that support oil well or gas wells, there is potential for an impact. The presence of oil or gas in the subsurface can be toxic and would be a major consideration for future solid waste facility siting. Wells are identified as new, active, active injector, dual, plugged, or geothermal. If the siting of a future facility is located in an area supporting oil or gas wells, coordination with DOGGR, District 1 would be required. The local permitting agency in coordination with DOGGR, District 1 would conduct a Construction Site Review. The Construction Site Review process varies depending on where the land being developed is located.

Locally Important Mineral Resources

As previously noted, the specific location of future facilities have not been identified; rather, SWIRP notes that additional facilities would be required to meet the need for additional waste that would be diverted from landfills. The potential for these future facilities to result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan is dependent upon where these facilities are sited. As future facilities are proposed, they would be subject to additional review pursuant to CEQA. Part of that analysis would include a review of any applicable general plans, specific plans, or other land use plans to identify any locally important mineral resources.

Table 4.10-3 provides a summary of the impact analysis for proposed SWIRP facilities relative to mineral resources.

Table 4.10-3. Facility Impact Summary Table (Mineral Resources)

Facility Type	Impact
Clean Material Recovery Facilities	Less than significant with mitigation
Composting (Aerobic)	Less than significant with mitigation
Composting (Anaerobic Digestion)	Less than significant with mitigation
Resource Recovery Centers	Less than significant with mitigation
Mixed Material Processing	Less than significant with mitigation
Alternative Technology –- Advanced Thermal Recycling	Less than significant with mitigation
Alternative Technology – Biological (Anaerobic Digestion)	Less than significant with mitigation
Alternative Technology – Thermal (Plasma Arc, Gasification, Pyrolysis, and Others)	Less than significant with mitigation

4.10.4 Cumulative-Level Analysis

Depending on the location of future facilities, as well as other projects that are proposed in the vicinity, and their relationship to valuable mineral resources sites, there could be a cumulative impact on mineral resources. It is primarily dependent upon where future facilities are proposed for construction. However, if mitigation measures presented in Section 4.10.5 are implemented, potential project-level impacts would be minimized and would be less likely to contribute to a cumulative impact. Upon determination of the facility location, a project-level CEQA analysis can be conducted to determine if the construction of such facilities would have a cumulative impact. Further, the actual footprint of disturbance for the future facilities would not be significant, in terms of the overall land area in the project study area (City and the area within 100 miles of the City). If all the policies and programs for SWIRP were implemented, total footprint impacts would range between 133 and 163 acres[3]. Considering that there are over 16.6 million acres in the project study area (City and the area within 100 miles of the City), the actual disturbance that would be realized from the future SWIRP facilities is not considered significant.

4.10.5 Mitigation Measures

The following mitigation measures are proposed to reduce potentially significant impacts to mineral resources to a level considered less than significant under CEQA.

MR-1 Future facilities shall be sited so as to avoid areas mapped as MRZ-2, MRZ-3, and MRZ-3a by the California Mineral Land Classification System. Other known or potential mineral resource areas shall be avoided to the maximum extent[4].

[3] If all policies and programs for SWIRP were implemented, the following facilities would be required: one large-scale composting facility or six small-scale composting facilities, three clean MRFs, one resource recovery center and five black bin processing facilities. This analysis assumes 15 acres of impact for each small-scale composting facility, 60 acres of impact for each large-scale composting facility, 7 acres of impact for each clean MRF, 2 acres for a resource recovery center and up to 10 acres for each black bin facility. Depending on whether six small-scale compost facilities or one large-scale compost facility was constructed, total footprint impacts would be 133 to 163 acres.

[4] See Exhibit A of the Conservation Element of the City's General Plan for distribution of MRZ land within the City. Maps of MRZ land outside the City and within the 100-mile study are available from the California Department of Conservation, California Geological Survey.

MR-2 Future facilities shall be sited so as to avoid active oil, gas or geothermal operations. The project shall be designed so that no or only nonpermanent structures are atop or blocking the mineral resource area.

MR-3 Future facilities shall be sited so as to avoid area mapped as locally important mineral resources on general plans, specific plans, or other land use plans.

MR-4 Easements shall be established, when necessary, to preserve possible future use of mineral resources.

4.10.6 Conclusion

Based upon the analysis presented in Sections 4.10.3 and 4.10.4, there is a potential for future facilities to have an impact on mineral resources. This impact is entirely dependent on where the future facilities are sited. Mitigation Measures MR-1 through MR-4 are identified to keep future facilities from being sited on areas mapped as important mineral resources zones in state or local jurisdictions, as well as avoiding and or preserving active oil, gas, geothermal operations and other mineral resources. With implementation of these mitigation measures, it is anticipated that project and cumulative level impacts would be reduced to below a level of significance.

4.11 NOISE

This section provides an overview of the basics of environmental acoustics and general noise characteristics. Applicable federal, state, and local noise regulations are reviewed, followed by an analysis of potential noise impacts associated with construction and operation of the proposed SWIRP facilities. Furthermore, mitigation measures are identified to reduce potential noise impacts. The analysis area covers the City of Los Angeles (City) and the area within 100 miles of the City. While SWIRP emphasizes local processing and handling of discarded materials generated within the City, it may not be feasible for all facility types to be built within the City, either due to lack of available space or potential land use conflicts. Therefore, a 100-mile study area is included in the analysis to capture any potential impact to areas outside of the City.

4.11.1 Environmental Setting

The SWIRP study area includes the City and the area within 100 miles of the City. The area thus encompasses all or part of nine California counties (Kern, Los Angeles, Orange, Riverside, San Bernardino, San Diego, San Luis Obispo, Santa Barbara, and Ventura) and includes a diverse range of environmental regions. The Los Angeles Basin itself is bordered by the Santa Monica Mountains to the northwest, the San Gabriel Mountains to the north/northeast, and the Santa Ana Mountains to the south/southeast.

Sound is mechanical energy transmitted by pressure waves through a medium such as air. Noise is defined as unwanted sound. Sound is characterized by various parameters that include the rate of oscillation of sound waves (frequency), the speed of propagation, and the pressure level or energy content (amplitude). In particular, sound pressure level has become the most common descriptor used to characterize the "loudness" of an ambient sound level. Sound pressure level is measured in decibels (dB), with zero dB corresponding roughly to the threshold of human hearing, and 120 to 140 dB corresponding to the threshold of pain.

Sound pressure fluctuations can be measured in units of hertz (Hz), which correspond to the frequency of a particular sound. Typically, sound does not consist of a single frequency, but rather a broad band of frequencies varying in levels of magnitude (sound power). The typical human ear is not equally sensitive to all frequencies of the audible sound spectrum. As a consequence, when assessing potential noise impacts, sound is measured using an electronic filter that de-emphasizes frequencies below 1,000 Hz and above 5,000 Hz in a manner corresponding to the human ear's decreased sensitivity to low and extremely high frequencies. This method of frequency weighting is referred to as A-weighting and is expressed in units of A-weighted decibels (dBA). Frequency A-weighting follows an international standard methodology of frequency de-emphasis and is typically applied to community noise measurements. Sample representative noise sources and their corresponding A-weighted noise levels are shown in Table 4.11-1.

Noise consists of any sound that may produce physiological or psychological damage and/or interfere with communication, work, rest, recreation, and sleep. To the human ear, sound has two significant characteristics: pitch and loudness. A specific pitch can be an annoyance, while loudness can affect our ability to hear. Pitch is the number of complete vibrations or cycles per second of a wave that results in the range of tone from high to low. Loudness is the strength of a sound that describes a noisy or quiet environment, and it is measured by the amplitude of the sound wave. Loudness is determined by the intensity of the sound waves combined with the reception characteristics of the human ear. Sound intensity refers to how hard the sound wave strikes an object, which in turn produces the sound's effect.

Table 4.11-1. Typical A-Weighted Noise Levels

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	— 110 —	Rock band
Jet fly-over at 1000 feet		
	— 100 —	
Gas lawn mower at 3 feet		
	— 90 —	
Diesel truck at 50 feet at 50 mph		Food blender at 3 feet
	— 80 —	Garbage disposal at 3 feet
Noisy urban area, daytime		
Gas lawn mower, 100 feet	— 70 —	Vacuum cleaner at 10 feet
Commercial area		Normal speech at 3 feet
Heavy traffic at 300 feet	— 60 —	
		Large business office
Quiet urban daytime	— 50 —	Dishwasher next room
Quiet urban nighttime	— 40 —	Theater, large conference room (background)
Quiet suburban nighttime		
	— 30 —	Library
Quiet rural nighttime		Bedroom at night, concert
	— 20 —	
		Broadcast/recording studio
	— 10 —	
Lowest threshold of human hearing	— 0 —	Lowest threshold of human hearing

Source: Caltrans, Technical Noise Supplement, November, 2009.

When excessive noise interrupts ongoing activities, such as sleeping, conversing, and watching television, it can create annoyance in communities, especially residential areas. In order to quantify and measure this noise annoyance in the environment, beginning in the 1970s, the United States Environmental Protection Agency (USEPA) undertook a number of research and synthesis studies relating to community noise of all types. As a result of this research, the USEPA developed descriptors, noise impact criteria, and methods of noise assessment.

Ambient noise level (sometimes referred to as background noise) is the background sound pressure level at a given location. It serves as the noise baseline by which noise changes from a project can be modeled. Ambient noise levels can be obtained through various methods, including: (1) Field Measurements involving the use of a meter at and surrounding the area of interest; (2) "Presumed Ambient Noise Levels" as set forth in the Los Angeles Municipal Code (LAMC), Section 111.03; or (3) a noise monitoring program performed according to the procedures set forth in the LAMC, Sections 111.02 and 112.05 (City of Los Angeles, 2010).

Noise Exposure and Community Noise

An individual's noise exposure is a measure of the noise experienced by the individual over a period of time. A noise level is a measure of noise at a given instant in time. The noise levels presented in Table 4.11-1 represent noise measured at a given instant in time; however, noise levels rarely persist

consistently over a long period of time. Rather, community noise varies continuously over time because of the contributing sound sources of the community noise environment. Community noise is primarily the product of many distant noise sources, which constitute a relatively stable background noise, with the individual contributors unidentifiable. The background noise level changes throughout a typical day, but does so gradually, corresponding with the addition and subtraction of distant noise sources such as traffic and wind. What makes community noise constantly variable throughout the day, besides the slowly changing background noise, is the addition of short duration single event noise sources (e.g., aircraft flyovers, motor vehicles, sirens), which are readily identifiable to the individual.

These successive additions of sound to the community noise environment varies the community noise level from instant to instant requiring the measurement of noise exposure over a period of time to accurately characterize a community noise environment and evaluate cumulative noise impacts. This time-varying characteristic of environmental noise is described using statistical noise descriptors. The most frequently used noise descriptors are summarized below:

- ***Decibel (dB)*** – The logarithmic unit used to measure sound; it indicates the relative intensity of a sound. The 0 point on the dB scale is based on the lowest sound level that the healthy, unimpaired human ear can detect. Changes of 3.0 dB or less are only perceptible in laboratory environments.
- ***A-weighting Sound Level (dBA)*** – The basic noise unit that measures sound audible to humans. Noises contain sound energy at different frequencies whose range depends on the individual noise source. Human hearing does not register the sound levels of all noise frequencies equally, and can reduce the impression of the magnitude of high and low pitched sounds. dBA units are sound levels measured through a process that filters noise levels to predominantly include sounds that are audible to humans. This process reduces the strength of very low and very high pitched sounds, such as low-frequency seismic disturbances and dog whistles, to more accurately measure sounds that affect humans. Normally occurring sounds lie in the range of 40 to 120 dBA.
- ***Equivalent Sound Level (L_{eq})*** – A single value of sound level that quantifies the amount of noise in a specific environment for a particular period of time.
- ***Hourly Equivalent Sound Level (L_{eq} (h))*** – A value that accounts for all levels of sound that occur in a particular location for one hour. For example, as a train approaches, passes by, and recedes into the distance, the dBA will rise, reach a maximum level, and eventually fade. The L_{eq} (h) for this event would be a value that measures the cumulative impact of each level of sound that resulted from the train's passing, in addition to any other sounds that occurred during one hour. It is particularly useful when measuring the cumulative noise impact for communities.
- ***Day-Night Sound Level (L_{dn})*** – A value that accounts for all levels of sound that occur in a particular location for 24 hours. This cumulative value also includes a 10 dB penalty imposed on any noise that occurs between 10:00 PM and 7:00 AM. L_{dn} is used to measure the cumulative noise impact at residential areas primarily because it takes into account the increased sensitivity to noise at night, which is when most people are sleeping.
- ***CNEL (Community Noise Equivalent Level)*** – Similar to L_{dn}, CNEL is the energy average of the A-weighted sound levels occurring over a 24-hour period, with a 10 dB penalty applied to A-weighted sound levels occurring during the nighttime hours between 10:00 PM and 7:00 AM, and a 5 dB penalty applied to the A-weighted sound levels occurring during the evening hours between 7:00 PM and 10:00 PM.

A few general relationships may be helpful in understanding the dB scale:

- An increase of 1 dBA cannot be perceived by the human ear
- A 3 dBA increase is normally the smallest change in sound levels that is perceptible to the human ear
- A 10 dBA increase in noise level corresponds to tenfold increase in noise energy, but a listener would only judge a 10 dBA increase as being twice as loud
- A 20 dBA increase would result in a dramatic change in how a listener would perceive the sound

Noise impacts can be described as inaudible, potentially audible, and audible. Inaudible impacts are less than 1.0 dB and are not detectable by the human ear. Potentially audible refers to changes in noise levels ranging between 1.0 and 3.0 dB. This range has only been found to be noticeable in laboratory environments. Lastly, the audible impacts generally refer to a change of 3.0 dB or greater which refers to increases in noise levels noticeable to humans. However a change in 3.0 dB or less has been found to be barely perceptible in exterior environments.

As noise spreads from a source, it loses energy so that the farther away the noise receiver is from the noise source, the lower the perceived noise level would be. Geometric spreading causes the sound level to attenuate or be reduced, resulting in a 6 dB reduction in the noise level for each doubling of distance from a single-point source of noise to the noise sensitive receptor of concern. There are many ways to rate noise for various time periods, but an appropriate rating of ambient noise affecting humans also accounts for the annoying effects of sound.

Physiological Effects of Noise

Physical damage to human hearing begins at prolonged exposure to noise levels higher than 85 dBA. Exposure to high noise levels affects our entire system, with prolonged noise exposure in excess of 75 dBA increasing body tension, and thereby affecting blood pressure, functions of the heart, and the nervous system. In comparison, extended periods of noise exposure above 90 dBA would result in permanent cell damage. When the noise level reaches 120 dBA, a tickling sensation occurs in the human ear even with short-term exposure. This level of noise is called the threshold of feeling. As the sound reaches 140 dBA, the tickling sensation is replaced with the feeling of pain in the ear. This is called the threshold of pain. It is not only exposure to extremely high noise levels that can lead to hearing loss. Irreversible hearing damage can occur with long-term cumulative exposure to levels as low as 70 dBA. This 70 dBA threshold is not for singular or peak events; rather it is the average environmental sound level a person is exposed to over weeks and years that is critical in preventing hearing loss. If enough "quiet times" are experienced, this threshold can be surpassed without significant damage occurring.

Effects of Noise on People

Excessive noise can pose a serious public health problem and is one of the most widespread environmental pollutants affecting communities. Sensitive receptors to noise, such as children or the elderly, are at particularly high risk of being affected by excessive noise levels.

The effects of noise on people can be placed into three categories:

- Subjective effects of annoyance, nuisance, dissatisfaction
- Interference with activities such as speech, sleep, learning
- Physiological effects such as hearing loss or sudden startling

Environmental noise typically produces effects in the first two categories. Workers in industrial plants generally experience noise in the last category. There is no completely satisfactory way to measure the subjective effects of noise, or the corresponding reactions of annoyance and dissatisfaction. A wide variation exists in individual thresholds of annoyance, and different tolerances to noise tend to develop based on an individual's past experiences with noise. Thus, an important way of predicting a human reaction to a new noise environment is the way it compares to the existing environment to which one has adapted: the so called "ambient noise" level. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged by those hearing it. With regard to increases in A-weighted noise level, the following relationships occur:

- Under controlled conditions in an acoustics laboratory, the trained healthy human ear is able to discern changes in sound levels of 1 dBA
- Outside these controlled conditions, the trained ear can detect changes of 2 dBA in normal environmental noise
- It is widely accepted that the average healthy ear, however, can barely perceive changes in the noise level of 3 dBA
- A change in level of 5 dBA is a readily perceptible increase in noise level
- A 10 dBA change is recognized as twice as loud as the original source

4.11.1.1 Regulatory Setting

Federal, state, and local agencies have established regulations and guidelines for evaluating potential noise impacts associated with construction and operation of transit and development projects that will alter the existing environment. The following is a discussion of the regulatory setting for the proposed project area. All levels of government have responsibilities for exercising control to mitigate the annoyances caused by noise. The following section outlines the noise level standards set by federal, state, and the City and County of Los Angeles.

Federal

The adverse impact of noise was officially recognized by the federal government in the Noise Control Act of 1972, which serves three purposes:

1. Promulgating noise emission standards for interstate commerce;
2. Assisting state and local abatement efforts; and
3. Promoting noise education and research.

The development of noise policies and programs has been established by federal agencies and interagency committees. The USEPA has established general guidelines for noise levels in sensitive areas to provide state and local agencies guidance in establishing local laws, ordinances, and standards. The EPA guidelines suggest that the average residential outdoor noise level be 55 dBA and the indoor level be 45 dBA. Most metropolitan areas in the United States have outdoor noise levels above the 55 dBA guideline.

Federal regulations have established noise limits for medium and heavy trucks under Title 40 Code of Federal Regulations (CFR) Part 205, Subpart B. The federal truck pass-by noise standard is 80 dB at

50 feet from the centerline of the roadway. These standards are implemented through regulatory controls on truck manufacturers.

The federal government actively advocates that local jurisdictions use their land use regulatory authority to arrange new development in such a way that "noise sensitive" uses are either prohibited from being sited adjacent to a highway or that the developments are planned and constructed in such a manner that potential noise impacts are minimized. Since the federal government has pre-empted the setting of standards for noise levels that can be emitted by transportation sources, the County is restricted to regulating the noise generated by the transportation system through nuisance abatement ordinances and land use planning. These are discussed further under county regulations.

State

California Noise Control Act of 1973

The California Health and Safety Code established the California Noise Control Act of 1973 (§46000 et seq.) to "establish and maintain a program on noise control." This act mirrors the federal Noise Control Act of 1972 and also defers the enforcement of noise emission standards to local county and city agencies.

California Government Code Section 65302 (f)

California Government Code Section 65302 (f) states that general plans must include a noise element section which identifies and appraises noise problems in the community, and recognize the guidelines established by the Office of Noise Control. The adopted noise element should serve as a guideline for compliance with the state's noise standards. Table 4-11.2 identifies normally acceptable, conditionally acceptable and clearly unacceptable noise levels for various land uses.

Local

County of Los Angeles

The County of Los Angeles is chiefly involved in maintaining the health and welfare of its residents in respect to noise through nuisance abatement ordinances and land use planning. The County Noise Control Ordinance, Title 12 of the County Code, was adopted by the Board of Supervisors in 1977 "…to control unnecessary, excessive, and annoying noise and vibration …." It declared that County policy was to "…maintain quiet in those areas which exhibit low noise levels and to implement programs aimed at reducing noise in those areas within the county where noise levels are above acceptable values" (Section 12.08.010 of the County Code). On August 14, 2001, the Board of Supervisors approved an ordinance amending Title 12 of the County Code to prohibit loud, unnecessary, and unusual noise that disturbs the peace and/or quiet of any neighborhood or which causes discomfort or annoyance to any reasonable person of normal sensitivity residing in the area. Regulations can include requirements for sound barriers, mitigation measures to reduce excessive noise, or the placement and orientation of buildings, and can specify the compatibility of different uses with varying noise levels, as shown in Table 4.11-3. In addition to the countywide noise ordinance, many communities address noise concerns in their individual area or community plans.

Table 4.11-2. Land Use Compatibility for Community Noise Environments

Land Use Category	Community Noise Exposure Level Ldn or CNEL, dBA						
	50	55	60	65	70	75	80
Residential-Low Density Single Family, Duplex, Mobile Homes							
Residential-Multiple Family							
Transient Lodging-Motels, Hotels							
Schools, Libraries, Churches, Hospitals, Nursing Homes							
Auditoriums, Concert Halls, Amphitheaters							
Sports Arena, Outdoor Spectator Sports							
Playgrounds, Neighborhood Parks							
Golf Courses, Riding Stables, Water Recreation, Cemeteries							
Office Buildings, Business, Commercial, and Professional							
Industrial, Manufacturing, Utilities, Agriculture							

Normally Acceptable:
Specified land use is satisfactory based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.

Conditionally Acceptable:
New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice. Outdoor environment may seem noisy.

Normally Unacceptable:
New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made with needed noise insulation features included in the design. Outdoor areas must be shielded.

Clearly Unacceptable:
New construction or development should generally not be undertaken. Construction costs to make the indoor environment acceptable would be prohibitive and the outdoor environment would not be usable.

Source: State of California Governor's Office of Planning and Research, General Plan Guidelines, 1990.

Table 4.11-3. Los Angeles County Exterior Noise Standards

Noise Zone	Designated Noise Zone Land Use (Receptor Property)	Time Interval Exterior Noise	Exterior Noise Level (dB)
I	Noise-sensitive area, designated to ensure exceptional quiet	Anytime	45
II	Residential properties, zoned as such in County Code Title 22	10:00 PM to 7:00 AM (nighttime)	45
		7:00 AM to 10:00 PM (daytime)	50
III	Commercial properties, zoned as such in County Code Title 22	10:00 PM to 7:00 AM (nighttime)	55
		7:00 AM to 10:00 PM (daytime)	60
IV	Industrial properties, zoned as such in County Code Title 22	Anytime	70

Source: Los Angeles County Code Section 12.08.390 (a portion of the Noise Control Ordinance)

City of Los Angeles

California State Government Code Section 65302 (f) mandates that noise elements be included as a part of city general plans and that cities adopt comprehensive noise ordinances. The City adopted the Noise Element of the General Plan in 1999 which establishes a policy foundation to implement local noise measures and provides a framework for coordination of planning efforts with surrounding jurisdictions. The City's objectives related to noise issues stress the importance of protecting residents from excessive noise and reducing the high levels of noise exposure associated with the existing development and transportation facilities in the City. Specific objectives include:

- Enforce and/or implement applicable city, state, and federal regulations intended to mitigate proposed noise producing activities, reduce intrusive noise, and alleviate noise that is deemed a public nuisance
- Reduce or eliminate noise impacts associated with proposed development of land and changes in land use

The City has numerous ordinances and enforcement practices that apply to intrusive noise and that guide new construction. The City's noise ordinance establishes sound measurements and criteria, minimum ambient noise levels for different land use zoning classifications, sound emission levels for specific uses (radios, television sets, vehicle repairs and amplified equipment, etc.), hours of operation for certain uses (construction activity, rubbish collection, etc.), standards for determining noise deemed a disturbance of the peace, and legal remedies for violations. The noise ordinance ambient noise standards are consistent with current state and federal noise standards. They are correlated with land use zoning classifications in order to guide the measurement of intrusive noise that results in intermittent (periodic) or extended impacts on a geographically specific site. The intent is to maintain identified ambient noise levels and to

limit, mitigate, or eliminate intrusive noise that exceeds the ambient noise levels within the zones specified. These standards guide building construction and equipment installation, equipment maintenance, and nuisance noise enforcement. The City Council initially adopted the ordinance in 1973, and periodically amends it to reflect current issues and noise management approaches.

Applicable sections of the LAMC relating to noise are as follows:

LAMC Chapter/Section	Description
Chapter 4, Section 41.40 Construction Noise	No person shall, between the hours of 9:00 PM and 7:00 AM of the following day, perform any construction or repair work of any kind upon, or any excavating for, any building or structure, where any of the foregoing entails the use of any power driven drill, riveting machine excavator or any other machine, tool, device or equipment which makes loud noises to the disturbance of persons occupying sleeping quarters in any dwelling hotel or apartment or other place of residence. In addition, the operation, repair or servicing of construction equipment and the job-site delivering of construction materials in such areas shall be prohibited during the hours herein specified.
Chapter 11, Section 113.01 Rubbish and Garbage Collection	It shall be unlawful for any person engaged in the business of collecting or disposing of rubbish or garbage to operate any refuse disposal truck, parking lot sweeper, or vacuum truck, or to collect, load, pick up, transfer, unload, dump, discard, sweep, vacuum, or dispose of any rubbish or garbage, within 200 feet of any residential building between the hours of 9:00 PM and 6:00 AM of the following day, unless a permit therefore has been duly obtained beforehand from the Board of Police Commissioners.
Chapter 11, Section 114.01 Vehicle Repair	It shall be unlawful for any person, within any residential property located within any residential zone of the City or within 500 feet thereof, to repair, rebuild, reconstruct or dismantle any motor vehicle between the hours of 8:00 PM. of one day and 8:00 AM of the next day in such manner: a) that a reasonable person residing in the area is caused discomfort or annoyance; (b) that such activity is audible to the human ear at a distance in excess of 150 feet from the property line of the noise source: or (c) as to create any noise which would cause the noise level on the premises of any occupied residential property, or if a condominium, apartment house or duplex, within any adjoining unit, to exceed the ambient noise level by more than five (5) decibels.
Chapter 11, Section 116.01 General Noise	Notwithstanding any other provisions of this chapter and in addition thereto, it shall be unlawful for any person to willfully make or continue, or cause to be made or continued, any loud, unnecessary, and unusual noise which disturbs the peace or quiet of any neighborhood or which causes discomfort or annoyance to any reasonable person of normal sensitiveness residing in the area

The LAMC adopts the County of Los Angeles' exterior noise standards. The County's exterior noise standards (shown in Table 4.11-3) range from 45 dB for noise-sensitive areas to 70 dB for industrial areas. The maximum acceptable exterior noise levels for highly sensitive receivers (residential properties) is 45 dBA for the nighttime and 50 dBA for the daytime. The City's interior noise standards are shown in Table 4.11-4. Interior noise levels are slightly lower at 40 dBA and 45 dBA for single-family and multi-family residences, respectively.

Table 4.11-4. City of Los Angeles Interior Noise Standards

Noise Zone	Designated Land Use	Time Interval	Allowable Interior Noise Level (dB)
All	Single-Family Residential	10:00 PM to 7:00 AM	40
	Multifamily	7:00 AM to 10:00 PM	45

Source: City of Los Angeles Municipal Code Section 12.08.

Construction noise standards are also included in the City's Municipal Code to protect sensitive receivers located within the City limits. The operation or causing the operation of any tools or equipment used in construction between weekday hours of 7:00 PM and 7:00 AM, or at any time on Sundays or holidays, such that the sound creates a noise disturbance across a residential or commercial property, except for emergency work of public service utilities, is prohibited. Furthermore, construction shall not exceed the noise standards shown in Tables 4.11-5 and 4.11-6.

Table 4.11-5. City of Los Angeles Construction Noise Standards for Mobile Equipment (Short-Term)

Time	Single-Family Residential (dBA)	Multi-family Residential (dBA)	Semi-residential/ Commercial (dBA)
Daily, except Sundays and legal holidays, 7:00 AM to 8:00 PM	75	80	85
Daily, 8:00 PM to 7:00 AM and all day Sunday and legal holidays	60	64	70

Source: City of Los Angeles Municipal Code Section 12.08
Note: Short-term is 20 days or less.

Table 4.11-6. City of Los Angeles Construction Noise Standards for Mobile Equipment (Long-Term)

Time	Single-Family Residential (dBA)	Multi-family Residential (dBA)	Semi-residential/ Commercial (dBA)
Daily, except Sundays and legal holidays, 7:00 AM to 8:00 PM	60	65	70
Daily, 8:00 PM to 7:00 AM and all day Sunday and legal holidays	50	55	60

Source: City of Los Angeles Municipal Code Section 12.08
Note: Long-term is 21 days or more.

Other Jurisdictions

Other jurisdictions outside the City and the County of Los Angeles would have their own applicable Noise Ordinance and Noise Element, which would outline acceptable construction noise levels, as well as acceptable operational noise levels by land use type.

4.11.1.2 Existing Conditions

Unacceptable noise levels have a significant impact on the overall quality of life and can result in increased neighborhood annoyance, dissatisfaction, and declining property values. The typical community noise environment is made up of background or "ambient" noise and other higher, "intrusive" levels of noise. These levels frequently emanate from what are considered to be the major sources of noise. In the geographic SWIRP project area footprint, the levels and types of noise issues vary significantly throughout the project study area.

The major sources of noise come from various transportation systems that operate throughout the greater Los Angeles area: commercial and private airports, the Los Angeles County Metropolitan Transportation Authority's (Metro) rail and bus networks, and the extensive freeway and highway system of the region. Other major sources of noise have historically been identified with industrial uses, such as manufacturing plants and barking dogs. Typical ranges for community noise in various settings are shown in Table 4.11-7.

Table 4.11-7. Typical Range of L_{dn} in Populated Areas

Type of Populate Area	L_{dn}, dBA
Downtown City	75–85
"Very Noisy" Urban Residential Areas	65-75
"Quiet" Urban Residential Areas	60-65
Suburban Residential Areas	55-60
Small Town Residential Areas	45-55

Source: Federal Transit Administration, 2006
Note: L_{dn}= cumulative noise exposure

Site-specific noise measurements are not appropriate for a programmatic-level document, as it is uncertain where future facilities will be located. At the time a specific facility is proposed, additional environmental review, pursuant to the California Environmental Quality Act (CEQA), would be required, including an analysis of noise. The future noise analysis would include a characterization of the existing ambient noise condition in and around the proposed site.

4.11.2 Thresholds of Significance

The impact analysis for noise will use the CEQA thresholds and the *L.A. CEQA Thresholds Guide* to determine significance. For the purpose of this analysis, the project study area is defined as the City and a 100-mile radius surrounding it. SWIRP emphasizes local processing and handling of the City's waste, including locating needed facilities within the City limits. However, it may not be feasible for all facility types to be built within the City, either due to lack of available space or potential land use conflicts. Therefore, a 100-mile study area is included in the analysis to capture any potential impact to areas outside of the City.

The following information is provided in accordance with Section 15126.2 of the *CEQA Guidelines*. Appendix G of the *CEQA Guidelines* suggests that a development project could have a significant impact related to noise if the project would cause any of the following effects:

- *Result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.*
- *Result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.*
- *Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.*
- *Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.*
- *Be located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels.*
- *Be located within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels.*

4.11.3 Project-Level Analysis

The project-level analysis includes an assessment of the proposed SWIRP policies and programs, as well as the analysis of future facilities that could be developed under SWIRP.

SWIRP Policies and Programs

Table 4.11-8 provides an analysis of potential impacts that could result from implementation of the policies and programs associated with SWIRP relative to noise. The City's existing policies and programs, as well as new policies and programs identified through the stakeholder planning process, were analyzed to determine if a potential significant impact would occur as a result of project implementation. As shown in Table 4.11-8, many of the policies and programs associated with SWIRP would not result in any additional truck trips; therefore, additional truck-related noise would not occur. The others may result in additional truck trips to pick up blue and green bins in areas that were not previously receiving recycling service; thus, additional truck-related noise could occur. However, noise associated with solid waste collection is governed by LAMC Chapter 11, Section 113.01 (Rubbish and Garbage Collection) which addresses operational hours of solid waste collection activities. Therefore, impacts are expected to be less than significant.

SWIRP Facilities

Noise standards vary within the City and the 100-mile study area, which make up the project study area. The potential for a future facility to exceed an adopted noise standard (interior or exterior) will vary depending on where the future facility is located, what materials the facility is made of, what type of operation, and also what uses are adjacent to the future facility. Implementation of SWIRP can result in noise generation in several ways. Future facilities can have short-term noise generation associated with facility construction. Long-term noise generation would be associated with the operational activities of the facilities, which can include traffic-associated noise from vehicles, as well as equipment in the facility. Potential impacts due to construction and operation are discussed below.

Table 4.11-8. Analysis of SWIRP Policies and Programs (Noise)

Initiative	Impact Analysis for Noise[1]	Significance Conclusion
Downstream Policies and Programs[2]		
Expand Recycling Ambassador Program	Implementation of this program is expected to result in additional materials placed in blue and green bins and less material in black bins. Additional truck trips are not expected, since trucks are already coming to pick up the three bins. The change will be the quantity of material in each bin. Since additional trucks are not anticipated, there would not be any additional truck noise. Therefore, no noise impacts are identified.	No Impact
Adding Textiles to the Blue Bins or Partner with Non-Government Organizations	Implementation of this program is expected to result in additional materials placed in blue bins and less material in black bins. Additional truck trips are not expected, since trucks already pick up the blue bins. The change will be the quantity of material in each bin. Since additional trucks are not anticipated, there would not be any additional truck noise Therefore, no noise impacts are identified.	No Impact
Bulky Item Reuse and Refurbishment	Under this policy/program bulky materials may be collected by crews for use by non-profits. Currently, bulky items picked up are taken to the landfill. This program/policy would not result in an increase in truck trips or truck related noise; rather the destination of the materials would change. Therefore, no noise impacts are identified.	No Impact
Expand Residential Food Scrap Program	Implementation of this program is expected to result in additional materials placed in green bins and less material in black bins. Additional truck trips are not expected, since trucks already pick up the green bins. The change will be the quantity of material in each bin. Since additional trucks are not anticipated, there would not be any additional truck noise. Therefore, no noise impacts are identified.	No Impact
Large-Scale Media/Social Marketing	Implementation of this program is expected to result in additional materials placed in blue and green bins and less material in black bins. Additional truck trips are not expected, since trucks already pick up the three bins. The change will be the quantity of material in each bin. Since additional trucks are not anticipated, there would not be any additional truck noise. Therefore, no noise impacts are identified.	No Impact
Modify Residential Collection Rates	Modifying residential collection rates would likely decrease the amount of material that is placed in black bins and increase the amount of material in the blue and green bins. Additional truck trips are not expected, since trucks are already coming to pick up the three bins. The change will be the quantity of material in each bin. Since additional trucks are not anticipated, there would not be any additional truck noise. Therefore, no noise impacts are identified.	No Impact
Modify Commercial Collection Rates	Implementation of this program is expected to result in additional materials placed in blue and green bins and less material in black bins. Additional truck trips are not expected, since trucks already pick up the three bins. The change will be the quantity of material in each bin. Since additional trucks are not anticipated, there would not be any additional truck noise. Therefore, no noise impacts are identified.	No Impact

Table 4.11-8. Analysis of SWIRP Policies and Programs (Noise) (Continued)

Initiative	Impact Analysis for Noise	Significance Conclusion
Expand Multi-Family Recycling	Implementation of this policy/program will result in additional blue bin pick ups as the program expands to more multi-family residential areas. At this time, this program is assumed to be rolled out Citywide. The number of trucks and their ultimate destination for the increased blue bin materials is unknown, thus a policy-specific noise analysis cannot be conducted. Noise associated with solid waste collection is governed by LAMC Chapter 11, Section 113.01 (Rubbish and Garbage Collection) which addresses operational hours of solid waste collection activities. Therefore, impacts are expected to be less than significant.	Less than Significant
Multi-Family Green Bins	Implementation of this policy/program will result in additional green bin pick up as the program expands to multi-family residential areas. At this time, the number of trucks and their ultimate destination for the increased green bin materials is unknown, thus a policy-specific noise analysis cannot be conducted. Noise associated with solid waste collection is governed by LAMC Chapter 11, Section 113.01 (Rubbish and Garbage Collection) which addresses operational hours of solid waste collection activities. Therefore, impacts are expected to be less than significant.	Less than Significant
All Businesses to have Recycling Services	Implementation of this policy/program will result in additional truck pick up as the program requires recycling for all businesses. At this time, the number of trucks and their ultimate destination for the increased recycled materials collection is unknown, thus a policy-specific noise analysis cannot be conducted. Noise associated with solid waste collection is governed by LAMC Chapter 11, Section 113.01 (Rubbish and Garbage Collection) which addresses operational hours of solid waste collection activities (if within 200 feet of any residential building). Therefore, impacts are expected to be less than significant.	Less than Significant
Commercial Haulers to Offer Recycling Services to Customers	Implementation of this policy/program will result in additional recycled material pick up as the program requires commercial haulers to offer recycling service. At this time, the number of trucks and their ultimate destination for the increased recycled material pick up is unknown, thus a policy-specific noise analysis cannot be conducted. Noise associated with solid waste collection is governed by LAMC Chapter 11, Section 113.01 (Rubbish and Garbage Collection) which addresses operational hours of solid waste collection activities (if within 200 feet of any residential building). Therefore, impacts are expected to be less than significant.	Less than Significant
Expand Commercial Technical Assistance	Implementation of this policy/program will result in additional recycled material pick up as the program requires three-bin recycling for commercial. At this time, the number of trucks and their ultimate destination for the increased recycled materials collection is unknown, thus a policy-specific noise analysis cannot be conducted. Noise associated with solid waste collection is governed by LAMC Chapter 11, Section 113.01 (Rubbish and Garbage Collection) which addresses operational hours of solid waste collection activities (if within 200 feet of any residential building). Therefore, impacts are expected to be less than significant.	Less than Significant
Expand Construction and Demolition (C&D) Technical Assistance	Expanding C&D technical assistance would enhance the processing at C&D-certified processing facilities. It would not result in an increase in truck noise due to increased truck trips. Therefore, no noise impact is identified.	No Impact

Table 4.11-8. Analysis of SWIRP Policies and Programs (Noise) (Continued)

Initiative	Impact Analysis for Noise	Significance Conclusion
Provide More Public Area Recycling	Providing more public recycling areas would result in additional collection of recycling materials and additional blue bins. Depending on where the blue bins are placed, the recyclables may be picked up by maintenance or park crews or by collection trucks along City streets. This has the potential to result in additional truck trips. At this time, the number of trucks and their ultimate destination for the increased recycled materials collection is unknown, thus a policy-specific noise analysis cannot be conducted. Noise associated with solid waste collection is governed by LAMC Chapter 11, Section 113.01 (Rubbish and Garbage Collection) which addresses operational hours of solid waste collection activities (if within 200 feet of any residential building). Therefore, impacts are expected to be less than significant.	Less than Significant
C&D Ordinance	Implementing a C&D Ordinance would make materials separation at C&D processing facilities mandatory. It would not result in an increase in truck-related noise due to increased truck trips. Therefore, no noise impact is identified.	No Impact
Mandatory Participation Programs[3]		
Mandatory Recycling Separation	Implementation of this policy/program will result in additional recycled material pick up as the program requires mandatory recycling separation for all waste generators (residential and commercial businesses). This may result in additional blue bin pick ups. This has the potential to result in additional truck trips. At this time, the number of trucks and their ultimate destination for the increased recycled materials collection is unknown, thus a policy-specific noise analysis cannot be conducted. Noise associated with solid waste collection is governed by LAMC Chapter 11, Section 113.01 (Rubbish and Garbage Collection) which addresses operational hours of solid waste collection activities (if within 200 feet of any residential building). Therefore, impacts are expected to be less than significant.	Less than Significant
Mandatory Organics Separation	Implementation of this program is expected to result in additional materials placed in green bins and less material in black bins. Additional truck trips are not expected, since trucks already pick up the green bins. Therefore, additional truck-related noise would not occur. The change will be the quantity of material in each bin. Since additional trucks are not anticipated, there would not be any additional truck noise. Therefore, no noise impacts are identified	No Impact
Resource Recovery Centers (RRC) at Transfer Stations and Landfills	The addition of resource recovery centers at landfills would divert recycled materials from the landfill. Additional truck trips and truck-related noise is not anticipated.	No Impact
Recycling Ambassadors (Reinforcement)	Implementation of this program is expected to result in additional materials placed in blue and green bins and less material in black bins. Truck-related noise due to additional truck trips is not expected, since trucks already pick up the three bins. The change will be the quantity of material in each bin. Since additional trucks are not anticipated, there would not be any additional truck noise. Therefore, no noise impacts are identified.	No Impact

Table 4.11-8. Analysis of SWIRP Policies and Programs (Noise) (Continued)

Initiative	Impact Analysis for Noise	Significance Conclusion
Direct Technical Assistance (Reinforcement)	Implementation of this program is expected to result in additional materials placed in blue and green bins and less material in black bins. Truck-related noise due to additional truck trips is not expected, since trucks already pick up the three bins. The change will be the quantity of material in each bin. Since additional trucks are not anticipated, there would not be any additional truck noise. Therefore, no noise impacts are identified.	No Impact
Increased Diversion Requirements at C&D Facilities	Increasing diversion requirements at C&D facilities would result in a change of destination for materials. This would not represent an increase in trips, rather a redistribution of trips. Therefore, noise impacts are determined to be less than significant.	Less than Significant
Upstream Policies[4]		
Extended Producer Responsibility (EPR) for Toxics	This policy is anticipated to reduce waste generation, specifically black bin materials and could increase blue bin materials. This would result in a redistribution of trips to pick up black bin and blue bin materials, and thus no net change in truck-related noise. Therefore, no noise impact is identified.	No Impact
EPR for Difficult to Recycle Materials	Implementation of this program is expected to result in additional materials placed in blue bins and less material in black bins, since more materials would be recyclable. Additional truck trips are not expected, since trucks already pick up the blue bins. The change will be the quantity of material in each bin. Since additional trucks are not anticipated, truck-related noise would not be realized. Therefore, no noise impact is identified.	No Impact
Single-use Bag Ban	This policy is anticipated to reduce waste generation, specifically black bin materials due to a shift away from single-use bags. This could result in a reduction of trips to pick up black bin materials, and thus reduction in truck-related noise. Therefore, no noise impact is identified.	No Impact
Disposal of Remaining Residual Waste[5]		
Landfill Disposal – Truck Haul, Rail Haul	This program would not result in additional truck trips given that the waste generated since trucks already pick up municipal solid waste and transport it to landfills. Raul-haul trips may also occur to transport residual waste to remote landfill locations; however, this would be minimal and infrequent. Noise impacts are not identified.	No Impact.

(1) Depending on phasing and implementation of various proposed programs and policies, along with anticipated growth in the City, there will be a need for additional facilities to process the diverted materials. Please refer to Section 4.11.3 for an impact analysis of the future facilities.
(2) Refer to Chapter 2.0, Table 2.3-1 for a detailed description of the Downstream Policies and Programs.
(3) Refer to Chapter 2.0, Table 2.3-2 for a detailed description of the Mandatory Participation Programs.
(4) Refer to Chapter 2.0, Section 2.3.4 for a detailed description of the Upstream Policies.
(5) Refer to Chapter 2.0, Section 2.3.6 for a detailed description of the Disposal of Remaining Residual Waste program.

SWIRP Facilities Construction

Construction activities for future facilities will vary depending on the type of facility, but it is assumed that some type of grading and excavating would occur to prepare the site for structures. Additionally, equipment will be used to construct the facility and could include equipment such as cranes, concrete saws and pneumatic tools. Construction-related traffic, including construction crew trips and material deliveries are additional sources of noise associated with facility construction. Additionally, final site preparation, including paving of travel ways and parking areas is likely to occur. Table 4.11-9 provides dBA levels for typical construction equipment at 50 feet from the noise source.

Table 4.11-9. Typical Construction Equipment Noise Levels

Type of Equipment	Maximum (Lmax) Level, dBA (50 feet)
Backhoe	78
Concrete saw	90
Crane	81
Excavator	81
Front-end loader	79
Jackhammer	89
Paver	77
Pneumatic tools	85
Dozer	82

Source: Federal Transit Administration, Transit Noise and Vibration Impact Assessment, 2006

During construction of future facilities, noise from construction activities could adversely affect noise-sensitive land uses if they are located in the immediate area.

Most of the heavy equipment that produces the highest noise levels would be in use during the excavation and grading phases of construction, as well as during the finishing phase of construction. Sensitive receivers near a particular SWIRP facility location would not experience the same level of noise as the focus of construction activities.

For the purposes of this Final PEIR, a typical construction scenario was developed to represent construction noise for commercial and industrial development of SWIRP facilities. It is assumed that a calculated noise level of 84 dBA CNEL at a reference distance of 50 feet would be representative of construction noise levels associated with the construction of proposed SWIRP facilities. This value takes into account the number of heavy equipment used during construction. In later phases of construction, noise levels are typically reduced from these values as the physical structures that have been assembled further break up noise traveling to nearby receivers.

It is anticipated that the SWIRP facilities will be located in commercial and industrial zones where sensitive receivers (e.g., residential, schools) would not be located adjacent to the facilities. Therefore, noise exposure from periodic pass-bys of construction equipment would not have a significant impact on sensitive receivers and would not exceed established noise standards. However, in the event a facility is located in an area that does have sensitive receptors, there is a potential for an impact. Implementation of mitigation measures N-1 through N-8 would reduce this impact. These measures require a project-specific

noise study, limiting construction to the daytime hours, providing temporary barriers near sensitive receiving properties, and ensuring that construction equipment is adequately maintained and muffled would further reduce noise impacts from construction activities.

SWIRP Facilities Operation

The specific location of future facilities have not been identified; rather SWIRP notes that additional facilities would be required to meet the need for additional municipal solid waste (MSW) that would be diverted from the landfill. Transport of solid waste in the City and surrounding areas would generate noise from truck traffic that would affect traffic noise levels.

The proposed SWIRP facilities have the potential to generate noise resulting from the transport of solid waste to the facility and from stationary noise-generating equipment located at the facility. The increase in traffic resulting from implementation of SWIRP would increase the ambient noise levels at sensitive off-site locations in the vicinity of future facilities. Because traffic is considered to be a long-term noise source, a substantial permanent increase in ambient noise levels in the facility vicinity could potentially occur.

It is unknown at this time the specific truck haul routes that will be utilized for transport. As the locations of the facilities are determined, a specific traffic study would be required to evaluate the incremental increase over existing noise levels. Further, the specific location of noise-generating equipment at the various SWIRP facilities would need to be identified whether they are located within an enclosed building and their distance to the nearest sensitive receptor. The proposed future facilities would be subject to additional environmental review pursuant to CEQA to determine noise impacts.

Ground-borne Vibrations/Noise

Depending on the construction or operational equipment used, ground-borne vibrations can be perceptible within 30 to 100 feet of a source. Structural damage from pile driving typically does not occur in buildings more than 50 feet from the location of the activity (Caltrans, 2004). It is anticipated that pile driving would not be required to construct the type of facilities that would be proposed under SWIRP. In addition, it is likely that neighboring buildings would be located more than 100 feet away. Therefore, ground-borne vibrations or noise levels associated with the project would be a less than significant impact.

Permanent Increase in Ambient Noise Levels

Future facilities have the potential to generate noise resulting from the transport of recyclables, organic matter, and MSW to the facility, and having stationary noise-generating equipment located at the facility. The increase in traffic resulting from implementation of SWIRP would increase the ambient noise levels at sensitive off-site locations in the vicinity of the future facilities. Because traffic is considered to be a long-term noise source, a permanent increase in ambient noise levels in the vicinity of the facility could potentially occur. The determination of whether this increase would be deemed substantial and significant depends on the current level of traffic in the vicinity, as well as the ambient noise environment. For purposes of this PEIR, truck trips were estimated for each proposed SWIRP facility type. As noted in Table 4.11-10, depending on the facility type, trip generation could vary from 114 to 756 trips per day. Table 4.11-10 also depicts the anticipated noise generation due to facility traffic for each facility type. Appendix F of the PEIR presents the complete noise model input assumptions.

Table 4.11-10. Anticipated Noise from Facility Traffic

Facility Type	Trips per Day per Facility(1)	Anticipated Noise Generation at a Reference Distance of 50 feet (L_{eq})
Composting Facilities	440	73
Material Recovery Facilities	328	72
Resource Recovery Center	114	68
Mixed Material Processing	340	72
Advanced Thermal Recycling	756	77
Alternative Technology (Biological)	248	72
Alternative Technology (Thermal)	200	70

[1]As shown in Table 4.15-7, SWIRP Facility Trip Generation, of the PEIR.

As shown in Table 4.11-10, noise generation per facility type ranges from 68 Leq to 73 Leq. The determination of whether this increase would be deemed substantial and significant depends on the current level of traffic in the vicinity of the future facility as well as the ambient noise environment. It typically takes a doubling of traffic to result in an audible noise increase. Due to the uncertainty of future facility locations and the current traffic level in those vicinities, there is a potential for future facilities to contribute to a significant traffic impact. Mitigation measure N-1 requires the preparation of a project-specific noise analysis once a facility has been proposed at a specific location. The project-specific noise analysis would determine the existing noise environment. It would also use project-specific traffic data to characterize the increase of the ambient noise environment due to the addition of traffic coming to and from the facility. Mitigation measure N-1 also requires further mitigation measures be implemented to reduce sound levels down to a level that is consistent with the applicable jurisdiction's noise ordinance or noise element.

Temporary/Periodic Increase in Noise Levels

As noted earlier, construction-related noise levels could have the potential to exceed the construction noise standard at the property boundary depending upon where the sensitive receiving property boundary is located. Upon determining the location of the SWIRP facility, existing background levels would be determined. Construction-related noise levels that increase existing noise levels above the construction noise standard established within the City, or pertinent jurisdiction, and surrounding areas would be considered a potentially significant impact. However, it is anticipated that the proposed SWIRP facilities would be located in commercial and industrial zones where sensitive receivers would be at distances of greater than 1,000 feet. Therefore noise exposure from construction equipment would not have a significant impact on sensitive receivers and would not exceed established noise standards. Implementation of the required mitigation measures would also result in the potential of construction noise impacts being reduced to a less than significant impact.

Airport-Related Noise (Public Airport)[1]

SWIRP identifies the need for additional facilities required due to additional solid waste that would be diverted from landfills, but specific locations of future facilities have not yet been identified. If these

[1] While CEQA thresholds do not specifically address port-related noise, in the event that future SWIRP facilities are proposed adjacent to port areas, noise impacts from material processing would not be expected, since ports are set in industrial areas that typically have a high ambient noise condition.

facilities are located within an airport land use plan area or within two miles of a public airport, there is a potential for noise exposure from airport activities to people working in the facility. Depending on the proximity and level of activity at an airport, this could result in a significant impact. Implementation of mitigation measure N-10 would reduce this potential impact to below a level of significance. Mitigation measure N-10 requires the preparation of a project-specific noise study to include an analysis of the potential for the facility's adjacency to an airport to result in exposure of employees to excessive noise levels. If excessive noise levels are identified, mitigation measures shall be implemented to reduce the interior noise levels to acceptable levels. Such mitigation could include, but is not limited to, enhanced insulation or dual-paned windows.

Airport-Related Noise (Private Airstrip)

SWIRP identifies the need for additional facilities to meet the need for additional solid waste that would be diverted from landfills, but specific locations of future facilities have not yet been identified. If these facilities are located within the vicinity of a private airstrip, there is a potential for noise exposure from airport activities to people working in the facility. Depending on the proximity and level of activity at the private airstrip, this could result in a significant impact. Implementation of mitigation measure N-10 would reduce this potential impact to below a level of significance. Mitigation measure N-10 requires the preparation of a project-specific noise study to include an analysis of the potential for the facility's adjacency to an airport to result in exposure of employees to excessive noise levels. If excessive noise levels are identified, mitigation measures shall be implemented to reduce the interior noise levels to acceptable levels. Such mitigation could include, but is not limited to, enhanced insulation or dual-paned windows.

Summary

Table 4.11-11 provides a summary of noise impacts, per facility type. As shown in Table 4.11-11, construction and operational impact will be less than significant with the incorporation of mitigation.

Table 4.11-11. Summary of Noise Impacts by Facility Type

Facility Type	Construction	Operation
Clean Material Recovery Facilities	Less than significant with implementation of mitigation.	Less than significant with implementation of mitigation.
Composting (Aerobic)	Less than significant with implementation of mitigation.	Less than significant with implementation of mitigation.
Composting (Anaerobic Digestion)	Less than significant with implementation of mitigation.	Less than significant with implementation of mitigation.
Resource Recovery Centers	Less than significant with implementation of mitigation.	Less than significant with implementation of mitigation.
Mixed Material Processing	Less than significant with implementation of mitigation.	Less than significant with implementation of mitigation.
Alternative Technology – Advanced Thermal Recycling	Less than significant with implementation of mitigation.	Less than significant with implementation of mitigation.
Alternative Technology – Biological (Anaerobic Digestion)	Less than significant with implementation of mitigation.	Less than significant with implementation of mitigation.
Alternative Technology – Thermal (Plasma Arc, Gasification, Pyrolysis, and Others)	Less than significant with implementation of mitigation.	Less than significant with implementation of mitigation.

4.11.4 Cumulative-Level Analysis

Depending on the location of future facilities, as well as other projects that are proposed in the vicinity, there may be a cumulative noise impact. Upon determination of the facility location, a project-level CEQA analysis can be conducted to determine if the operation of such facilities would have a cumulative noise impact. The future cumulative analysis will utilize the traffic circulation analysis and noise levels of stationary sources to determine the project-level impacts surrounding the project site. If a cumulative impact is identified, implementation of mitigation measures N-1 through N-10 would reduce potential impacts to below a level of significance by reducing the facility's contribution to a cumulative noise impact.

4.11.5 Mitigation Measures

N-1 A noise study shall be prepared for future facilities. The noise study shall include measurements of the existing noise environment and quantify the facility's noise contribution to the ambient environment for both the construction and operation phase. If impacts are identified, mitigation measures shall be implemented to reduce sound levels to a level that is consistent with the applicable jurisdiction's noise ordinance or noise element. Such mitigation measures could include, but are not limited to: fencing; noise walls; or increasing the distance between noise generating equipment and off-site sensitive receptors. The noise study shall be submitted to, and approved by, the Planning Director, or designee, of the jurisdiction where the facility will be constructed.

Construction-Related Impacts

N-2 Prior to construction, the construction contractor shall obtain authorization approval to exceed the ambient base noise level by more than five dBA at the property boundary for industrial zoned land use.

N-3 Construction activities shall be limited to 7:00 AM to 7:00 PM, Monday through Saturday. If the local jurisdiction has more stringent construction timing limits, those limits shall be applied.

N-4 The construction contractor shall operate and maintain a City-approved haul truck traffic route along major traffic arteries.

N-5 All construction equipment shall be equipped, operated, and maintained with manufacturer-recommended mufflers or the equivalent.

N-6 Mobile and stationary construction equipment shall be turned-off when not in operation.

N-7 All construction equipment powered by gasoline or diesel engines shall be required to have sound-control devices at least as effective as those originally provided by the manufacturer; no equipment will be permitted to have an unmuffled exhaust.

N-8 All stationary noise-generating construction equipment, such as pumps and generators, shall be located as far as possible from nearby noise-sensitive receptors. Noise-generating equipment shall be shielded from nearby noise sensitive receptors by noise-attenuating

buffers, such as structures or haul truck trailers. Water tanks and equipment storage, staging, and warm-up areas will be located as far from noise sensitive receptors as possible.

Operational-Related Noise

N-9 Operational activities at future facilities shall not produce noise levels at the property line that exceed the levels identified in the applicable jurisdiction's noise ordinance. If proposed activities are forecast to exceed property line levels, noise attenuation measures shall be implemented to reduce the property line noise levels to the appropriate level. Such measures could include, but are not limited to, fencing, sound walls, and screening of mechanical equipment.

Public and Private Airports

N-10 If future facilities are proposed within two miles of a public or private airport, the project-specific noise study shall include an analysis of the potential for the facility's adjacency to an airport to result in exposure of employees to excessive noise levels. If excessive noise levels are identified, mitigation measures shall be implemented to reduce the interior noise levels to acceptable levels. Such mitigation could include, but is not limited to, enhanced insulation or dual-paned windows.

4.11.6 Conclusion

Implementation of the SWIRP programs and policies will result in the need for additional facilities to handle MSW, recyclables, and organic matter. Construction and operation of these facilities have the potential to result in short-term and long-term noise impacts, depending on where they are sited, what the adjacent land uses are, and what the noise standards are for the local jurisdiction where the facilities will be proposed. Mitigation measure N-1 shall be required for all future facilities. N-1 requires measurements of the existing noise environment and quantifications of the facility's noise contribution to the ambient environment for both the construction and operation phases. If impacts are identified, mitigation measures shall be implemented to reduce sound levels to a level that is consistent with the applicable jurisdiction's noise ordinance or noise element. Such mitigation measures could include, but are not limited to: fencing, noise walls, or increasing the distance between noise generating equipment and off-site sensitive receptors.

For potential construction-related impacts, mitigation measures N-2 through N-8 are identified to reduce potential construction related impacts. These mitigation measures address good neighbor practices related to construction operations and equipment, including the timing of construction activities, as well as performance requirements for construction equipment. For potential operational-related impacts, implementation of mitigation measure N-9 is identified. This mitigation measure requires that operational activities at future facilities shall not produce noise levels at the property line that exceed the levels identified in the applicable jurisdiction's noise ordinance. If proposed activities are forecast to exceed property line levels, noise attenuation measures shall be implemented to reduce the property line noise levels to the appropriate level. Such measures could include, but are not limited to: fencing, sound walls, and screening of mechanical equipment. Finally, depending on where future facilities are located, there is a potential for worker exposure to noise from public or private airports, if facilities are sited near airports. If future facilities are proposed within two miles of a public or private airport, mitigation measure N-10 requires that the project-specific noise study (as required by mitigation measure N-1) shall include an analysis of the potential for the facility's adjacency to an airport to result in exposure of employees to

excessive noise levels. If excessive noise levels are identified, mitigation measures shall be implemented to reduce interior noise levels to acceptable levels. Such mitigation could include, but is not limited to, enhanced insulation or dual-paned windows.

With implementation of mitigation measures N-1 through N-10, it is expected that any potential construction- or operational-related impacts will be reduced to below a level of significance.

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4.12 POPULATION AND HOUSING

This section analyzes the potential for the proposed project to result in an impact related to population and housing. It includes a discussion of the applicable regulatory environment, existing conditions, a project-level and cumulative-level impact analysis, and any applicable mitigation measures. The analysis area for population and housing covers the City of Los Angeles (City and the area within 100 miles of the City). While the Solid Waste Integrated Resources Plan (SWIRP) emphasizes local processing and handling of discarded materials generated within the City, it may not be feasible for all facility types to be built within the City, either due to lack of available space or potential land use conflicts. Therefore, a 100-mile study area is included in the analysis to capture any potential impact to areas outside of the City.

4.12.1 Environmental Setting

This section describes the regulatory setting and existing conditions for population and housing.

4.12.1.1 Regulatory Setting

Federal

There are no federal regulations pertaining to populations and housing that apply to the project.

State

Housing Law

In response to the Fair Housing Act of 1968 and Fair Housing Amendments Act of 1988, the State of California passed the State Housing Law (SHL) which includes building standards that apply to newly constructed multi-family dwelling units in buildings having three or more dwelling units and four or more condominium dwelling units. The SHL Program develops statewide building standards for new construction of hotels, motels, lodging houses, apartments, dwellings and buildings accessory thereto. The building standards are published in the California Code of Regulations, Title 24, known as the California Building Standards Code. The SHL Program adopts regulations for maintenance, use, occupancy, repair, alteration, moving, and demolition of existing hotels, motels, lodging houses, apartments, dwellings, and buildings accessory thereto. The regulations are published in the California Code of Regulations, Title 25, Division 1, Chapter 1.

Housing Element Law

State law requires each city and county to adopt a general plan containing at least seven mandatory elements[1], including housing. Unlike the other general plan elements, the housing element, required to be updated every five to six years, is subject to detailed statutory requirements and mandatory review by the California Department of Housing and Community Development. Housing element law requires local governments to adequately plan to meet their existing and projected housing needs including their share of the regional housing need. A region's share of the statewide housing need is based on the Department of Finance population projections and regional population forecasts used in preparing regional transportation plans. A Regional Housing Need Plan (RHNP) allocates the region's share of the statewide need to the cities and counties within the region. The law recognizes that in order for the private sector to

[1] The seven mandated elements are: Land Use, Open Space, Conservation, Housing, Circulation, Noise, and Safety (Government Code Section 65302).

adequately address housing needs and demand, local governments must adopt land-use plans and regulatory schemes that provide opportunities for, and do not unduly constrain, housing development in order to meet the regional housing need identified in each Regional Housing Needs Allocation (RHNA) for each locality.

Local

City of Los Angeles

City of Los Angeles Department of City Planning Housing Element of the General Plan 2006-2014 (Adopted January 14, 2009)

Goal 1: A City where housing production and preservation result in an adequate supply of ownership and rental housing that is safe, healthy, sanitary, and affordable to people of all income levels, races, ages, and suitable for their various needs. Objectives were established to divide this goal into five areas:

1. Producing rental and ownership housing.
2. Preservation of rental and ownership housing.
3. Forecasting changing housing needs.
4. Distributing affordable housing citywide.
5. Reducing barriers.

The policies and programs for production include targeted loan programs for homeowners and housing developers, and land use changes to increase opportunity sites. Preservation programs include inspection of housing units for building code violations, funding incentives to rehabilitate and maintain the housing stock, and mechanisms to extend the affordability terms of units facing expiring covenants. The City will track its efforts through monitoring programs which assess production and preservation accomplishments against forecasted housing needs. Financing incentives and land use policies and programs, such as density bonus and redevelopment project area activities, will be pursued to encourage the development of affordable housing across the City. Finally, zoning code amendments and case processing streamlining will facilitate housing production and preservation in general.

Other Jurisdictions

In addition to the City, the 100-mile study area includes all or part of 190 cities and nine counties. Each of these cities and counties has adopted General Plans and Municipal Codes which may include specific policies related to housing. Depending where future facilities are located, local plans and policies would be applicable to those facilities.

4.12.1.2 Existing Conditions

The 100-mile study area encompasses all or part of nine counties in Southern California: Kern, Los Angeles, Orange, Riverside, San Bernardino, San Diego, San Luis Obispo, Santa Barbara, and Ventura. The 100-mile study area also includes all or part of 190 cities.

The following tables provide population, employment, and household estimates and forecasts for the nine counties included within the 100-mile study area of the proposed project. In addition, an estimate for the City is also provided.

Population Estimates

The California Department of Finance (DOF) prepares reports on population statistics and demographics throughout the State on an annual basis. Table 4.12-1 presents the most recent annual population estimates for the City and the nine counties that are fully or partially within the 100-mile study area.

Table 4.12-1. Population Estimates

County	Total Population		Percent Change
	1/1/2008	1/1/2009	
Kern	814,995	827,173	1.5
Los Angeles	10,301,658	10,393,185	0.9
Orange	3,107,500	3,139,017	1.0
Riverside	2,078,601	2,107,653	1.4
San Bernardino	2,044,895	2,060,950	0.8
San Diego	3,131,552	3,173,407	1.3
San Luis Obispo	268,290	270,429	0.8
Santa Barbara	426,915	431,312	1.0
Ventura	827,267	836,080	1.1
Total	23,001,673	23,239,206	1.0
City of Los Angeles	*4,022,450*	*4,065,585*	*1.1*

Source: California Department of Finance Table E-1, 2009.

The individual population forecasts for the nine counties and the City are anticipated to increase in population over the next 25 years, with the most substantial increase anticipated to occur in the unincorporated County of Los Angeles, as shown in Table 4.12-2.

Table 4.12-2. Population Forecasts

County	2010	2020	2030
Kern	845,600	1,010,800	1,208,200
Los Angeles	10,615,730	11,329,829	12,015,889
Orange	3,314,948	3,533,935	3,629,539
Riverside	2,242,745	2,809,003	3,343,777
San Bernardino	2,182,049	2,582,765	2,957,753
San Diego	3,245,279	3,635,855	3,984,753
San Luis Obispo	273,444	296,634	321,964
Santa Barbara	462,000	505,000	521,000
Ventura	860,607	937,372	996,104
Total	24,042,402	26,641,193	28,978,979
City of Los Angeles	*4,057,484*	*4,204,329*	*4,348,281*

Source: SCAG Adopted Integrated Growth Forecast for 2008 RTP (SCAG, 2008a), SLOCOG Update to Long Range Socio-Economic Projections (SLOCOG, 2010), SBCAG Regional Growth Forecasts 2000-2030 (SBCOG, 2007), Final Kern COG Regional Growth Forecast Report 2009 (Kern COG, 2009), SANDAG 2030 Regional Growth Forecast Update (SANDAG, Accessed March 14, 2011).

Employment Information

Table 4.12-3 shows employment information provided by the California Employment Development Department (EDD) for the City and nine counties within the project analysis area.

Table 4.12-3. Employment Information

County	Number of Employed Persons
Kern	308,100
Los Angeles	4,271,700
Orange	1,456,100
Riverside	774,200
San Bernardino	736,600
San Diego	1,407,200
San Luis Obispo	120,300
Santa Barbara	204,100
Ventura	382,300
Total	9,660,600
City of Los Angeles	*1,651,500*

Source: California EDD Industry Employment, Total Non Farm Workers, January 2010; Riverside and San Bernardino Counties, December 2008.

According to the Kern Council of Governments (KCOG), employment forecasts were not available for Kern County. It is estimated that the employment forecasts for the remaining eight counties and the City will have an increase in employment opportunities. Overall employment forecasts for the nine counties are as shown in Table 4.12-4. According to the Draft Los Angeles County General Plan (2007) (County of Los Angeles 2007), the County will continue to be a major regional economic center and existing employment trends are likely to continue, although communities throughout unincorporated Los Angles County are anticipated to face unique and diverse economic conditions and challenges due to job losses, slow job growth, and reduced investment and funding in community development.

Table 4.12-4. Employment Forecasts

County	2010	2020	2030
Kern	Data Not Available		
Los Angeles	2,732,306	2,862,592	2,986,027
Orange	1,755,167	1,897,352	1,960,633
Riverside	784,998	1,042,145	1,295,487
San Bernardino	810,233	965,778	1,134,960
San Diego	1,573,742	1,741,033	1,913,682
San Luis Obispo	100,590	114,000	131,590
Santa Barbara	205,000	231,000	257,000
Ventura	2,252,776	2,502,969	2,752,209
Total	10,214,812	11,356,869	12,431.588
City of Los Angeles	*1,820,092*	*1,892,139*	*1,960,393*

Source: SCAG, Adopted Integrated Growth Forecast for 2008 RTP; SLOCOG Update to Long Range Socio-Economic Projections; SBCAG Regional Growth Forecasts 2000-2030; Final Kern COG Regional Growth Forecast Report 2009; SANDAG 2030 Regional Growth Forecast Update.

Housing Information

According to the DOF calculations for 2009, the nine counties located within the project area and the City are currently not experiencing a housing shortage. As shown in Table 4.12-5, vacancy rate percentages range from 3.35 percent in Orange County to 13.14 percent in Riverside County. There is an average of 2.96 persons per household in the nine-county project analysis area.

Table 4.12-5. Housing Information

County	Population	Housing Units			Persons per Household
		Total	Occupied	Percent Vacant	
Kern	827,173	279,769	252,216	9.85	3.13
Los Angeles	10,393,185	3,418,698	3,274,667	4.21	3.12
Orange	3,139,017	1,035,491	1,000,798	3.35	3.09
Riverside	2,107,653	780,112	677,582	13.14	3.06
San Bernardino	2,060,950	690,234	610,352	11.57	3.29
San Diego	3,173,407	1,149,647	1,099,130	4.39	2.80
San Luis Obispo	270,429	117,319	106,416	9.29	2.40
Santa Barbara	431,312	156,221	149,157	4.52	2.77
Ventura	836,080	277,895	268,444	3.40	3.06
Total	23,239,206	7,905,386	7,438,762	7.08	2.96
City of Los Angeles	*4,065,585*	*1,407,967*	*1,342,543*	*4.65*	*2.97*

Source: California Department of Finance, Table E-5a, 2009

It is forecasted that all counties and the City will experience increased housing demands through 2030, based on an increase in population. As shown in Tables 4.12-5 and 4.12-6, based on the 2030 population and household projections for the nine counties population is anticipated to reach up to 23,239,206 persons, with an estimated 7,656,929 households, with an occupancy rate of 2.96 persons per household. Housing demand, especially for affordable housing, is expected to remain high.

Table 4.12-6. Household Forecasts

County	2010	2020	2030
Kern	Not Available		
Los Angeles	1,990,813	2,181,112	2,328,001
Orange	1,039,201	1,088,375	1,110,659
Riverside	720,531	913,207	1,097,950
San Bernardino	637,250	787,142	914,577
San Diego *	1,174,180	1,309,330	1,383,803
San Luis Obispo	Not Available		
Santa Barbara	443,169	484,925	500,157
Ventura	275,117	302,949	321,782
Total	6,280,261	7,067,040	7,656,929
City of Los Angeles	*1,366,985*	*1,485,519*	*1,578,850*

Source: SCAG Adopted Integrated Growth Forecast for 2008 RTP; SLOCOG Update to Long Range Socio-Economic Projections; SBCAG Regional Growth Forecasts 2000-2030; Final Kern COG Regional Growth Forecast Report 2009; SANDAG 2030 Regional Growth Forecast Update, Housing Unit Forecasts.

4.12.2 Thresholds of Significance

The impact analysis for population and housing will use the CEQA thresholds and the *L.A. CEQA Thresholds Guide* to determine significance. For the purpose of this analysis, the project study area is defined as the City and the area within 100 miles of the City. The SWIRP emphasizes local processing and handling of the City's waste, including locating needed facilities within the City limits. However, it may not be feasible for all facility types to be built within the City, either due to lack of available space or potential land use conflicts. Therefore, a 100-mile study area is included in the analysis to capture any potential impact to areas outside of the City.

The following information is provided in accordance with Section 15126.2 of the *CEQA Guidelines* and the *Los Angeles CEQA Thresholds Guide* which provide thresholds for determining significant environmental impacts. Appendix G of the *CEQA Guidelines* and the *Los Angeles CEQA Thresholds Guide* suggests that a development project could have a significant impact related to population and housing if the project would cause any of the following effects:

- *The project induces substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure).*
- *The project displaces substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere.*
- *The project displaces substantial numbers of people, necessitating the construction of replacement housing elsewhere.*
- *The project would causes growth (i.e., new housing or employment generators) or accelerate development in an undeveloped area that exceeds projected/planned levels for the year of project occupancy/build out, and that would result in an adverse physical change in the environment;*
- *Whether the project would introduce unplanned infrastructure that was not previously evaluated in the adopted Community Plan or General Plan; and*
- *The extent to which growth would occur without implementation of the project.*

4.12.3 Project-Level Analysis

SWIRP Policy and Program Analysis

Table 4.12-7 presents the policies and programs that will be implemented as part of SWIRP and an impact analysis of the policies and programs as related to population and housing. As shown in Table 4.12-7, the individual policies and programs would not result in a significant impact related to population and housing.

SWIRP Facility Analysis

An essential component of SWIRP is the identification and development of future facilities to meet the City's recycling and solid waste infrastructure needs through 2030 to achieve Zero Waste. Potential facilities, identified through the SWIRP planning process, are categorized into three categories: blue bin facilities, green bin facilities, and black bin facilities. The physical facilities proposed as part of the SWIRP would not result in significant impacts to population and housing if sited appropriately. See the analysis under the "Displacement of Housing and People" header following Table 4.12-7. Additionally, appropriate siting parameters are also included in Chapter 4.0, Section 4.9, Land Use and Planning.

Table 4.12-7. Analysis of SWIRP Policies and Programs (Population and Housing)

Initiative	Impact Analysis for Population and Housing[1]	Significance Conclusion
Downstream Policies and Programs[2]		
Expand Recycling Ambassador Program	This policy/program will not have an impact related to population and housing.	No Impact
Adding Textiles to the Blue Bins	This policy/program will not have an impact related to population and housing.	No Impact
Bulky Item Reuse and Refurbishment	This policy/program will not have an impact related to population and housing.	No Impact
Expand Residential Food Scrap Program	This policy/program will not have an impact related to population and housing.	No Impact
Large Scale Media/Social Marketing	This policy/program will not have an impact related to population and housing.	No Impact
Modify Residential Collection Rates	This policy/program will not have an impact related to population and housing.	No Impact
Modify Commercial Collection Rates	This policy/program will not have an impact related to population and housing.	No Impact
Expand Multi-Family Recycling	This policy/program will not have an impact related to population and housing.	No Impact
Multi-Family Green Bins	This policy/program will not have an impact related to population and housing.	No Impact
All Businesses to have Recycling Services	This policy/program will not have an impact related to population and housing.	No Impact
Commercial Haulers to Offer Recycling Services to Customers	This policy/program will not have an impact related to population and housing.	No Impact
Expand Commercial Technical Assistance	This policy/program will not have an impact related to population and housing.	No Impact
Expand Construction and Demolition (C&D) Technical Assistance	This policy/program will not have an impact related to population and housing.	No Impact
Provide More Public Area Recycling	This policy/program will not have an impact related to population and housing.	No Impact
C&D Ordinance	There is no potential for impact related to populations and housing.	No Impact
Mandatory Participation Programs[3]		
Mandatory Recycling Separation	This program will not have an impact related to population and housing.	No Impact
Mandatory Organics Separation	This program will not have an impact related to population and housing.	No Impact
Resource Recovery Centers (RRC) at Transfer Stations and Landfills	This program will not have an impact related to population and housing.	No impact
Recycling Ambassadors (Reinforcement)	This program will not have an impact related to population and housing.	No Impact
Direct Technical Assistance (Reinforcement)	This program will not have an impact related to population and housing.	No Impact
Increased Diversion Requirements at C&D Facilities	This program will not have an impact related to population and housing.	No Impact

Table 4.12-7. Analysis of SWIRP Policies and Programs (Population and Housing) (Continued)

Initiative	Impact Analysis for Population and Housing	Significance Conclusion
Upstream Policies[4]		
Extended Producer Responsibility (EPR) for Toxics	Results in a reduction of waste generation. No impact related to population and housing.	No Impact
EPR for Difficult to Recycle Materials	Results in a reduction of waste generation. No impact related to population and housing.	No Impact
Single-use Bag Ban	Results in a reduction of waste generation. No impact related to population and housing.	No Impact
Disposal of Remaining Residual Waste[5]		
Landfill Disposal – Truck Haul, Rail Haul	Disposal of residual waste from implementation of SWIRP programs and policies above (25% residual waste in 2013 and 10% residual waste in 2020) would not result in impacts related to Population and Housing since landfill disposal would occur at existing landfill facilities.	No Impact.

(1) Depending on phasing and implementation of various proposed programs and policies, along with anticipated growth in the City, there will be a need for additional facilities to process the diverted materials. Please see Section 4.12.3 for an impact analysis of the future facilities.
(2) Refer to Chapter 2.0, Table 2.3-1 for a detailed description of the Downstream Policies and Programs.
(3) Refer to Chapter 2.0, Table 2.3-2 for a detailed description of the Mandatory Participation Programs.
(4) Refer to Chapter 2.0, Section 2.3.4 for a detailed description of the Upstream Policies.
(5) Refer to Chapter 2.0, Section 2.3.6 for a detailed description of the Disposal of Residual Waste component.

Substantial Population Growth

As presented in Table 4.12-2, nine counties and the City are anticipated to continue to increase in population over the next 20 years. SWIRP addresses the growing demand for new solid waste management practices to address the substantial population growth that is anticipated to occur in the future. The proposed project addresses the handling of solid waste for the City, which covers approximately 470 square miles and is home to approximately 3.8 million residents[2]. The programs and policies identified in SWIRP would apply to residential, commercial, industrial, and institutional generators in the City. SWIRP also identifies a variety of facilities that would need to be constructed to meet the City's recycling and solid waste infrastructure needs through 2030. SWIRP responds to the future growth that will occur in the City and represents a plan to address the waste that would be generated. The proposed policies and programs will not result in substantial population growth.

Depending on the number of programs and policies that are implemented, it is anticipated that up to 5,000 new green jobs will be created in the City (SWIRP Policy Program and Facility Plan, June 2010), including jobs in refurbishing, recycling and processing, and remanufacturing. This represents a small portion of the 1.96 million jobs that are forecasted by 2030 (Table 4.12-4). Jobs generated by implementation of SWIRP are not anticipated to result in substantial population growth within the City. Therefore, impacts would be less than significant.

Displacement of Housing and People

Proposed facilities under SWIRP are expected to be located in areas zoned for commercial, commercial manufacturing, light industrial, heavy industrial or public facilities. If a facility were sited where an existing residential use is located, resulting in the displacement of housing or people, a significant impact to population and housing would occur.

Facilities that handle solid waste are not typically sited near or adjacent to residential uses as most are located in industrial or manufacturing zones. It is unlikely that housing would be demolished to accommodate future facilities. However, implementation of the project may require acquisition of land that is privately owned and/or that has been improved with structures, including public or private residences. If, at the time of construction, acquisition is necessary, the City or local jurisdiction where the facility would be constructed will be required to adhere to applicable federal, state, and local laws regarding acquisition of property, compensation to displaced property owners or tenants, and relocation assistance and benefits for persons who may be displaced. If displacement of housing or people were to occur, implementation of mitigation measures PH-1 and PH-2 would mitigate the adverse impacts to below a level of significance.

Table 4.12-8 provides a summary of the impact analysis for proposed SWIRP facilities relative to population and housing.

[2] City of Los Angeles, Your Government at a Glance, 2006 Edition.

Table 4.12-8. Facility Impact Summary Table (Population and Housing)

Facility Type	Impact
Clean Material Recovery Facilities	Less than significant with mitigation
Composting (Aerobic)	Less than significant with mitigation
Composting (Anaerobic Digestion)	Less than significant with mitigation
Resource Recovery Centers	Less than significant with mitigation
Mixed Material Processing	Less than significant with mitigation
Alternative Technology – Advanced Thermal Recycling	Less than significant with mitigation
Alternative Technology – Biological (Anaerobic Digestion)	Less than significant with mitigation
Alternative Technology – Thermal (Plasma Arc, Gasification, Pyrolysis, and Others)	Less than significant with mitigation

4.12.4 Cumulative-Level Analysis

As discussed in Section 4.12.3, implementation of SWIRP is not expected to have an impact related to population and housing, since future facilities are expected to be proposed in areas where no existing residences are located. Residences are not anticipated to be removed and residents are not anticipated to be displaced. However, in the event that future facilities are proposed in areas that have residences, implementation of mitigation measures PH-1 and PH-2 would reduce the impact to below a level of significance. Additionally, implementation of SWIRP will not result in substantial population growth; rather, it responds to the waste management needs of the future population within the City. Thus, the project is not expected to contribute to a cumulative impact for population and housing. At the time facilities are proposed, a project-level CEQA analysis will be conducted, which will include a new cumulative impact analysis for population and housing.

4.12.5 Mitigation Measures

Displacement of People and Housing

PH-1 If future facilities result in the displacement of existing residential units or persons, appropriate compensation to property owners or relocation of displaced people shall occur.

PH-2 If future facilities result in the demolition of residential units, construction of new residential units, including units deemed "affordable" under state law would lessen the impact to population and housing to a level below significance. If acquisition of public or private residences are necessary, all applicable federal, state, and local laws regarding acquisition of property, compensation to displaced property owners or tenants, and relocation assistance and benefits for persons who may be displaced shall be adhered to or exceeded, as appropriate.

4.12.6 Conclusion

Based upon the analysis presented in Sections 4.12.3 and 4.12.4, it is unlikely, however, there may be a potential for a significant impact related to the displacement of people or housing, if future facilities are proposed in locations where existing residential units are located. This is unlikely, since the facilities are anticipated to be located in commercial, industrial or public facility zones, which typically do not support residential uses. However, in the event that people or residences are displaced or demolished, implementation of mitigation measures PH-1 and PH-2 would reduce the impact to below a level of significance.

4.13 PUBLIC SERVICES, UTILITIES, AND SERVICE SYSTEMS

This section analyzes the potential for the proposed project to have impacts related to public services and utilities. Public services and utilities covered by this category include: police protection, fire protection, schools, water, wastewater, stormwater, and solid waste. Parks and recreation are discussed in Section 4.14. This section also includes a discussion of the applicable regulatory environment, existing conditions, a project-level and cumulative-level impact analysis, and any applicable mitigation measures. The analysis area for public services and utilities covers the City of Los Angeles (City) and the area within 100 miles of the City. While the Solid Waste Integrated Resources Plan (SWIRP) emphasizes local processing and handling of discarded materials generated within the City, it may not be feasible for all facility types to be built within the City, either due to a lack of available space or potential land use conflicts. Therefore, a 100-mile study area is included in the analysis to capture any potential impact to areas outside of the City.

4.13.1 Environmental Setting

The project analysis area (City and the area within 100 miles of the City) encompasses nine counties in Southern California: Kern, Los Angeles, Orange, Riverside, San Bernardino, San Diego, San Luis Obispo, Santa Barbara, and Ventura. The 100-mile study area also includes 190 cities. Public services and utilities throughout the study area are provided by numerous public agencies and private entities working in partnership with various agencies and jurisdictions.

4.13.1.1 Regulatory Setting

Federal

Clean Water Act of 1977 Section 311 and 402, United States Code Title 33 Section 1342, Code of Federal Regulations Title 40 Parts 123-136

The federal Water Pollution Control Act (also known as the Clean Water Act [CWA]) was amended in 1972 to prohibit discharge of any pollutant into Waters of the United States unless the discharge is authorized by a National Pollutant Discharge Elimination System (NPDES) Permit (USEPA, 1972). Originally, the NPDES program focused on reducing pollutants from discharges from industrial process wastewater and municipal sewage treatment plants. In 1987, the CWA was amended to require the United States Environmental Protection Agency (USEPA) to regulate stormwater discharges through use of NPDES stormwater permits. Section 402(p) of the CWA established a framework for regulating discharges under the NPDES program.

In California, the EPA has delegated authority to issue NPDES permits to the State Water Resources Control Board (SWRCB). The project analysis area includes all or part of seven Regional Water Quality Control Boards (RWQCBs): Los Angeles, Santa Ana, San Diego, Colorado River, Lahontan Central Valley, and Central Coast.

State

Schools

Each of the state school districts is subject to the regulations of the California Education Code and the governance of the State Board of Education relative to funding, school curriculum, operations, and

facilities (including location considerations). The State Board of Education also governs the structure of the school, classroom size, and transfers for students between school districts.

Water

California Urban Water Management Planning Act

The Urban Water Management Planning Act (California Water Code Sections 10610-10656) requires that all urban water suppliers with at least 3,000 customers prepare urban water management plans and update them every five years. The act requires that urban water management plans include a description of water management tools and options used by that entity that will maximize resources and minimize the need to import water from other regions.

Senate Bill 221 and Senate Bill 610

Senate Bill (SB) 610 and SB 221 amended state law to improve the link between information on water supply availability and certain land use decisions made by cities and counties. SB 610 and SB 221 are companion measures that seek to promote more collaborative planning between local water supplies and cities and counties. Both statutes require that detailed information regarding water availability be provided to city and county decision-makers prior to approval of specific large development projects, and be included in the administrative record that serves as the evidentiary basis for an approval action by the City or County on such projects. Both measures recognize local control and decision-making regarding the availability of water for projects and the approval of projects. An industrial or commercial project that meets one of the following criteria is required to prepare a water supply assessment: occupies more than 40 acres of land, has more than 650,000 square feet of floor area, or employs more than 1,000 persons.

Energy

California Energy Commission

The California Energy Commission (CEC) is the state's primary energy policy and planning agency. The CEC's responsibilities include: forecasting future energy needs and keeping historical energy data; licensing thermal power plants 50 megawatts (MW) or larger; promoting energy efficiency by setting the state's appliance and building efficiency standards and working with local government to enforce those standards; supporting public interest energy research that advances energy science and technology through research, development, and demonstration programs; supporting renewable energy by providing market support to existing, new, and emerging renewable technologies; and providing incentives for small wind and fuel cell electricity systems; and providing incentives for solar electricity systems in new home construction.

The California Public Utilities Commission

The California Public Utilities Commission (CPUC) regulates privately-owned electric, natural gas, telecommunications, water, railroad, rail transit, and passenger transportation companies. The CPUC serves the public interest by protecting consumers and ensuring the provision of safe, reliable utility service and infrastructure at reasonable rates, with a commitment to environmental enhancement and a healthy California economy.

Title 24, California's Energy Efficiency Standards for Residential and Nonresidential Buildings

Title 24, Part 6, of the California Code of Regulations establishes California's Energy Efficiency Standards for Residential and Nonresidential Buildings. For nonresidential buildings, the standards establish minimum energy efficiency requirements related to building envelope, mechanical systems (e.g., heating/ventilation/air conditioning and water heating systems), indoor and outdoor lighting, and illuminated signs.

Solid Waste

California Integrated Waste Management Act

The California Integrated Waste Management Act of 1989 (AB 939) required cities and counties to divert 25 percent of all solid waste by 1995, and 50 percent by 2000. This act, as amended, requires every county and city in the state to prepare a Source Reduction and Recycling Element (SRRE), which identifies programs that the county or city will implement to achieve a solid waste disposal reduction goal of 50 percent by the year 2000, or as soon as possible thereafter. The act also requires each city and county to prepare a Household Hazardous Waste Element (HHWE) and Non-disposal Facility Element (NDFE), and each county to prepare a Countywide Siting Element and Summary Plan. The aggregate of all the SRREs, HHWEs, NDFEs, the Siting Element, and a Summary Plan constitutes a Countywide Integrated Waste Management Plan (IWMP).

California Solid Waste Reuse and Recycling Access Act

The California Solid Waste Reuse and Recycling Access Act of 1991 stipulates that each jurisdiction must have adopted an ordinance by September 1, 1994, requiring any development project for which a building permit application is submitted (after the effective date of this ordinance) to provide an adequate storage area for collection and removal of recyclable materials.

Local

City of Los Angeles

City of Los Angeles Infrastructure and Public Facility Element of the General Plan

The City's Infrastructure and Public Facility Element contains several objectives related to police and fire protection, school, wastewater, stormwater, water supply, energy, and solid waste. Applicable objectives include:

- Protect the public and provide adequate police services, facilities, equipment, and personnel to meet existing and future need (Objective 9.14)
- Phase the development of new fire facilities with growth (Objective 9.18)
- Work constructively with the Los Angeles Unified School District (LAUSD) to monitor and forecast school service demand based upon actual and predicted growth (Objective 9.31)
- Work constructively with LAUSD to promote the siting and construction of adequate school facilities phased with growth (Objective 9.31)
- Monitor and forecast demand based upon actual and predicted growth (Objective 9.1)

- Maintain the wastewater collection and treatment system, upgrade it to mitigate current deficiencies, and improve it to keep pace with growth as measured by the City's monitoring and forecasting efforts (Objective 9.2)
- Increase the utilization of Demand Side Management (DSM) strategies to reduce system demand and increase recycling and reclamation (Objective 9.3)
- Ensure that all properties are protected from flood hazards in accordance with applicable standards and that existing drainage systems are adequately maintained (Objective 9.3
- Pursue effective and efficient approaches to reducing stormwater runoff and protecting water quality (Objective 9.6)
- Continue to develop and implement a best management practices-based stormwater program which maintains and improves water quality (Objective 9.7)
- Monitor and forecast water demand based upon actual and predicted growth (Objective 9.8)
- Manage and expand the City's water resources, storage facilities, and water lines to accommodate projected population increases and new or expanded industries and businesses (Objective 9.9)
- Monitor and forecast the electricity power needs of Los Angeles' residents, industries, and businesses (Objective 9.26)
- Continue to ensure that all electric power customers will receive a dependable supply of electricity at competitive rates (Objective 9.27)
- Provide adequate power supply transmission and distribution facilities to accommodate existing use and projected growth (Objective 9.28)
- Provide electricity in a manner that demonstrates a commitment to environmental principals, ensures maximum customer value, and is consistent with industry standards (Objective 9.29)
- Support integrated solid waste management efforts (Objective 9.12)

Other Jurisdictions

In addition to the City, the 100-mile study area includes all or part of 190 cities and nine counties. Each of these cities and counties has adopted General Plans and Municipal Codes which may include specific policies related to public services and utilities. Depending where future facilities are located, local plans and policies would be applicable to those facilities.

4.13.1.2 Existing Conditions

Fire Protection

Fire prevention, fire protection, and emergency medical services for the City are provided by the Los Angeles Fire Department (LAFD). The LAFD operates 106 neighborhood fire stations located throughout the LAFD's approximately 470-square-mile jurisdiction (LAFD, 2010). The LAFD is responsible for fire prevention, firefighting, emergency medical care, technical rescue, hazardous materials mitigation, disaster response, public education, and community service.

Police Protection

The Los Angeles Police Department (LAPD) is responsible for providing police service to an area encompassing approximately 470 square miles with 18 community areas. The LAPD operates 18 stations within four bureaus (Central, South, Valley, and West) with two new stations proposed. Supplemental services are provided by the Los Angeles County Sheriff, the California Highway Patrol, the Federal Bureau of Investigation, and the Drug Enforcement Administration. As of December 2008, LAPD was staffed by 9,800 sworn officers (2.6 officers/ 1,000 people) and 3,030 non-sworn support personnel Citywide (LAPD, 2009).

Schools

Education within the City is provided by the LAUSD. LAUSD has jurisdiction over 885 school facilities: 520 elementary, 119 middle, 123 senior high (excludes independent charters), 18 Student/Parent Access Network (SPAN) schools, 45 continuation senior high schools, 19 special education schools, 10 community day schools, and 31 opportunity and alternative high schools. Total K-12 enrollment is 670,745 students. The LAUSD is undergoing a $20.3 billion voter-approved transformation to build new schools to reduce overcrowding and improve existing campuses. Since the program began in 2000, 74 new K-12 schools have been constructed. Thirty-four K-12 schools are currently under construction (LAUSD 2008).

Schools are funded through state tax revenues funneled through the county. Funds for the development of additional public school facilities are derived from state-mandated fees paid by projects constructed within the City.

Wastewater

The City's Department of Public Works (DPW) Bureau of Sanitation (LASAN) provides sewer conveyance infrastructure and wastewater treatment services to the City. The City operates and maintains the largest wastewater sanitary sewer system in the nation, serving a population of over four million. The City's system consists of more than 6,500 miles of sewers, 140,000 maintenance holes, and 46 pump stations. In addition, there are about 700,000 privately owned sewer laterals with total length of more than 11,000 miles. The City also provides wastewater conveyance and treatment services to 29 satellite agencies under contractual agreements but is not responsible for satellite agencies' sewer system management. The sewer system consists of three separate sanitary sewer systems: Hyperion Sanitary Sewer System, Terminal Island Water Reclamation Plant Sanitary Sewer System, and the City's Regional Sanitary Sewer System (City of Angeles, 2010)

To comply with the state waste discharge requirements, a Sewer System Management Plan (SSMP) was prepared for each of the City's sanitary sewer systems to control and mitigate all sanitary sewer overflows.

Stormwater

The primary agencies that share flood control responsibilities within the City are the DPW, the United States Army Corps of Engineers (USACE), the Los Angeles County DPW (County), and the California Department of Transportation (Caltrans). Each agency exercises jurisdiction over the flood control facilities they own and operate. The Watershed Protection Division of the City's DPW manages the stormwater program for the City.

Approximately 100 million gallons of water flow through the storm drain system on an average dry day. When it rains, the amount of water flowing through the channels can increase to 10 billion gallons (DPW, 2010). The City currently diverts approximately 6 million gallons per day (mgd) of dry weather urban runoff into the wastewater collection system for eventual treatment at the Hyperion Treatment Plant. Storm drains within the City are constructed by both the City and the Los Angeles County Flood Control District (LACFCD), and managed by the County DPW. The LACFCD constructs the major storm drains and open flood control channels, and the City constructs local interconnecting tributary drains (City of Los Angeles Capital Improvement Program).

Water Supply

The Los Angeles Department of Water and Power (LADWP), services an area of approximately 470 square miles. The City uses about 215 billion gallons of water annually, with the average City resident using 155 gallons daily (LADWP, 2010).

The City's water system has 110 tanks and reservoirs with a total capacity of 109 billion gallons and water is distributed through a network of 7,200 miles of water mains. Because of the size and range in elevation, the system is divided into 102 pressure zones with approximately 90 booster pumping stations to provide water service at higher elevations. Regulator stations control the flow that feeds the distribution system (City of Hollywood, 2010).

Demand, or the amount of water used by the City's residents and businesses, is measured in acre-feet. An acre-foot covers one acre of land, one foot deep. One acre-foot is equivalent to 325,821 gallons and is enough water to serve approximately two households per year. The LADWP 2005 Urban Water Management Plan (UWMP) indicates that Citywide water demand, based on normal weather conditions, will be about 776,000 acre-feet per year by 2030 (City of Los Angeles 2005, E-Ref 2010). The 2005 UWMP is currently being updated.

Solid Waste

The City's DPW LASAN provides solid waste management services to single-family and multi-family residential building (up to 4 units) households in the City. Private hauling companies collect other refuse, including most multi-family and all commercial and industrial waste. The City's Solid Resources program includes the collection, recycling, and disposal of solid waste, green waste, bulky items, and other special solid resources materials for residences City-wide, and management of contracted recycling programs for apartments, and commercial and industrial businesses. This includes the recycling and disposal of household hazardous waste, the development of long-term alternatives to landfill disposal, and for clean fuel programs related to solid waste.

The LASAN collects, disposes, and recycles over 1.5 million tons per year of single-family residential solid waste, collecting refuse, recyclables, yard trimmings, and bulky items (City of Los Angeles SWIRP 2013). Solid waste facilities utilized by the City include: refuse collection yards; mulching/composting facilities; permanent Solvents, Automotives, Flammables, and Electronics (SAFE) centers for household hazardous waste; regional transfer stations and landfills, material recovery facilities (MRFs), animal rendering plants, and waste-to-energy facilities.

SWIRP, the proposed project, is a long-range master plan for solid waste management in the City. The blueprint for SWIRP is RENEW L.A. RENEW L.A. establishes the vision for Zero Waste. SWIRP proposes an approach for the City to achieve a goal of 75 percent diversion by 2013 and 90 percent

diversion by 2025. These targeted diversion rates would be implemented through an enhancement of existing policies and programs, implementation of new policies and programs, making certain programs mandatory, and the development of future facilities to meet the City's recycling and solid waste infrastructure needs through 2030.

Electricity

Electricity service in the City is provided by LADWP. To ensure a reliable supply of power, the LADWP maintains a diversified energy generation mix including coal, natural gas, large hydroelectric, nuclear, and renewable power such as wind, biomass, solar and cogeneration. The LADWP draws its energy supply from in-basin power plants and several out-of-state facilities in Nevada, Utah, and the Pacific Northwest.

The LADWP 2007 Power System Integrated Resource Plan (IRP) is the energy resource planning document that provides a framework for addressing the future energy needs of the City's residents and businesses. This plan focuses on renewable power, greenhouse gas reduction, and energy efficiency. The IRP (2010) and Power Reliability Program are currently being updated (LADWP, 2010).

The LADWP supplies more than 22 million MW hours of electricity a year for the City's 1.4 million customers. The average resident uses about 5,000 kilowatt-hours of electricity per year. Business and industry consume about 70 percent of the electricity in Los Angeles, but residences constitute the largest number of customers. In addition to serving these consumers, the LADWP lights public streets and highways, powers the City's water system, and sells electricity to other utilities (LADWP, 2010).

Natural Gas

Natural gas service within the City is provided by the Southern California Gas Company (SoCalGas). SoCalGas is the nation's largest natural gas distribution utility, providing energy to 20.5 million consumers through 5.7 million meters in more than 500 communities. The company's service territory encompasses approximately 20,000 square miles of diverse terrain throughout Central and Southern California, from Visalia to the Mexican border. Natural gas is purchased on the open market and is distributed through 5.5 million gas meters. The CPUC regulates the operations of SoCalGas (SoCalGas, 2010).

Areas Outside the City

In addition to the City, the 100-mile study area includes all or part of 190 cities and nine counties. Each of these cities and counties has departments and public agencies that supply and regulate public services and utility systems. Depending where future facilities are located, local plans and policies would be applicable to those facilities.

4.13.2 Thresholds of Significance

The impact analysis for public services will use the CEQA thresholds and the *L.A. CEQA Thresholds Guide* to determine significance. For the purpose of this analysis, the project study area is defined as the City and the area within 100 miles of the City. The SWIRP emphasizes local processing and handling of the City's waste, including locating needed facilities within the City limits. However, it may not be feasible for all facility types to be built within the City, either due to lack of available space or potential

land use conflicts. Therefore, a 100-mile study area is included in the analysis to capture any potential impact to areas outside of the City. .

The following information is provided in accordance with Section 15126.2 of the *CEQA Guidelines* and the *Los Angeles CEQA Thresholds Guide* which provide thresholds for determining significant environmental impacts. Appendix G of the *CEQA Guidelines* and the *Los Angeles CEQA Thresholds Guide* suggests that a development project could have a significant impact on fire protection, police protection, schools, water/wastewater, stormwater, solid waste, and energy if the project would cause any of the following effects:

Fire Protection

- *It results in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for fire protection; and*
- *It requires the addition of a new fire station or the expansion, consolidation or relocation of an existing facility to maintain service.*

Police Protection

- *It results in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for police protection;*
- *The demand for police services anticipated at the time of project buildout compared to the expected level of service available. Consider, as applicable, scheduled improvements to LAPD services (facilities, equipment, and officers) and the project's proportional contribution to the demand; and*
- *Whether the project includes security and/or design features that would reduce the demand for police services.*

Schools

- *It results in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for schools;*
- *The demand for school services anticipated at the time of project buildout compared to the expected level of service available. Consider, as applicable, scheduled improvements to LAUSD services (facilities, equipment, and personnel) and the project's proportional contribution to the demand;*
- *Whether (and the degree to which) accommodation of the increased demand would require construction of new facilities, a major reorganization of students or classrooms, major revisions*

to the school calendar (such as year-round sessions), or other actions which would create a temporary or permanent impact on the school(s); and

- *Whether the project includes features that would reduce the demand for school services (e.g., on-site school facilities or direct support to LAUSD).*

Water/Wastewater

- *It exceeds wastewater treatment requirements of the applicable Regional Water Quality Control Board (RWQCB);*
- *It requires or results in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;*
- *It results in a determination by the wastewater treatment provider which serves or may serve the project that it does not have adequate capacity to serve the project's projected demand in addition to the provider's existing commitments; and*
- *It doesn't have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed.*

The determination of significance shall be made on a case-by-case basis, considering the following factors:

- *The total estimated water demand for the project;*
- *Whether sufficient capacity exists in the water infrastructure that would serve the project, taking into account the anticipated conditions at project buildout;*
- *The amount by which the project would cause the projected growth in population, housing or employment for the Community Plan area to be exceeded in the year of the project completion; and*
- *The degree to which scheduled water infrastructure improvements or project design features would reduce or offset service impacts.*

Stormwater

- *It requires or results in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.*

Solid Waste

- *It needs to be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs;*
- *It needs to comply with federal, state, and local statutes and regulations related to solid waste;*
- *Amount of projected waste generation, diversion, and disposal during demolition, construction, and operation of the project, considering proposed design and operational features should be planned to reduce typical waste generation rates;*

- *Need for an additional solid waste collection route, or recycling or disposal facility to adequately handle project-generated waste; and*
- *Whether the project conflicts with solid waste policies and objectives in the Source Reduction and Recycling Element (SRRE) or its updates, Framework Element or the Curbside Recycling Program, including consideration of the land use-specific waste diversion goals contained in Volume 4 of the SRRE.*

Energy

- *The extent to which the project would require new (off-site) energy supply facilities and distribution infrastructure, or capacity enhancing alterations to the existing facilities;*
- *Whether and when the needed infrastructure was anticipated by adopted plans; and*
- *The degree to which the project design and/or operations incorporate energy conservation measures, particularly those that go beyond City requirements.*

4.13.3 Project-Level Analysis

The project-level analysis includes an assessment of the proposed project's potential impacts on public services, utilities, and service systems.

SWIRP Policy and Program Analysis

Table 4.13-1 analyzes the potential impacts in light of the proposed policies and programs that are identified as part of the proposed project.

As shown in Table 4.13-1, the proposed policies and programs individually are not anticipated to have a significant impact on public services, utilities, and services systems. However, when multiple programs and policies are implemented, there may be a need for additional facilities, depending on phasing and implementation of various policies and programs, which will result in an increased demand on public services and utilities. The following analysis discusses the demands of these facilities by service type.

Disposal of residual waste in existing landfills would not result in impacts to public services, utilities or service systems since solid waste collection currently exists and trucks would continue to collect solid waste under the current system and dispose of it at local and/or remote operating landfills.

SWIRP Facility Analysis

The following discussion provides an analysis of potentially significant impacts to public services and utility providers resulting from implementation of the proposed project.

Fire Protection

Standard criteria for evaluating acceptable service levels and determining the need for expansion of existing fire stations is based primarily on the ability to meet response time goals and not exceed maximum distances between fire stations. The standards are expressed in terms of service radius (1.5 miles), equipment, and response time.

Table 4.13-1. Analysis of SWIRP Policies and Programs (Public Services, Utilities and Service Systems)

Initiative	Impact Analysis for Public Services and Utilities and Service Systems[1]	Significance Conclusion
Downstream Policies and Programs[2]		
Expand Recycling Ambassador Program	This program will not directly impact public services, utilities, and service systems.	No Impact
Adding Textiles to the Blue Bins	This policy/program will not directly impact public services, utilities, and service systems.	No Impact
Bulky Item Reuse and Refurbishment	This policy/program will not directly impact public services, utilities, and service systems.	No Impact
Expand Residential Food Scrap Program	This program will not directly impact public services, utilities, and service systems.	No Impact
Large-Scale Media/Social Marketing	This policy/program will not directly impact public services, utilities and service systems.	No Impact
Modify Residential Collection Rates	This policy/program will not directly impact public services, utilities and service systems.	No Impact
Modify Commercial Collection Rates	This policy/program will not directly impact public services, utilities, and service systems.	No Impact
Multi-Family Recycling	This policy/program will not directly impact public services, utilities, and service systems.	No Impact
Multi-Family Green Bins	This policy/program will not directly impact public services, utilities, and service systems.	No Impact
All Businesses to have Recycling Services	This policy/program will not directly impact public services, utilities, and service systems.	No Impact
Commercial Haulers to Offer Recycling Services to Customers	This policy/program will not directly impact public services, utilities, and service systems.	No Impact
Expand Commercial Technical Assistance	This policy/program will not directly impact public services, utilities and service systems.	No Impact
Expand Construction and Demolition (C&D) Technical Assistance	This policy/program will not impact public services, utilities, and service systems.	No Impact
Provide More Public Area Recycling	This policy/program will not directly impact public services, utilities, and service systems.	No Impact
C&D Ordinance	This policy/program will not impact public services, utilities, and service systems.	No Impact
Mandatory Participation Programs[3]		
Mandatory Recycling Separation	This program will not directly impact public services, utilities, and service systems.	No Impact
Mandatory Organics Separation	This program will not directly impact public services, utilities, and service systems.	No Impact
Resource Recovery Centers (RRC) at Transfer Stations and Landfills	This program will not directly impact public services, utilities, and service systems.	No Impact

Table 4.13-1. Analysis of SWIRP Policies and Programs (Public Services, Utilities and Service Systems) (Continued)

Initiative	Impact Analysis for Public Services and Utilities and Service Systems	Significance Conclusion
Recycling Ambassadors (Reinforcement)	This program will not directly impact public services, utilities, and service systems.	No Impact
Direct Technical Assistance (Reinforcement)	This program will not directly impact public services, utilities, and service systems.	No Impact
Increased Diversion Requirements at C&D Facilities	This program will not directly impact public services, utilities, and service systems.	No Impact
Upstream Policies[4]		
Extended Producer Responsibility (EPR) for Toxics	Results in a reduction of waste generation. No impact to public services, utilities and service systems.	No Impact
EPR for Difficult to Recycle Materials	Results in a reduction of waste generation. No impact to public services, utilities and service systems.	No Impact
Single-use Bag Ban	Results in a reduction of waste generation. No impact to public services, utilities and service systems.	No Impact
Disposal of Remaining Residual Waste[5]		
Landfill Disposal – Truck Haul, Rail Haul	Disposal of residual waste from implementation of SWIRP programs and policies above (25% residual waste in 2013 and 10% residual waste in 2020) would not result in impacts related to public services, utilities and service systems since landfill disposal would occur at existing landfill facilities.	No Impact

(1) Depending on phasing and implementation of various proposed programs and policies, along with anticipated growth in the City, there will be a need for additional facilities to process the diverted materials. Please see Section 4.13.3 for an impact analysis of the future facilities.
(2) Refer to Chapter 2.0, Table 2.3-1 for a detailed description of the Downstream Policies and Programs.
(3) Refer to Chapter 2.0, Table 2.3-2 for a detailed description of the Mandatory Participation Programs.
(4) Refer to Chapter 2.0, Section 2.3.4 for a detailed description of the Upstream Policies.
(5) Refer to Chapter 2.0, Section 2.3.6 for a detailed description of the Disposal of Residual Waste program.

Fire protection in transfer station and materials recovery facilities consists of a sprinkler system similar to typical industrial type buildings with combustible contents. The sprinkler systems are triggered by heat sensors. Fire protection at compost facilities would be suppressed using either earth-moving equipment or a fire hydrant hose type system. All future facilities proposed under the jurisdiction of the City of Los Angeles would be required to incorporate applicable fire protection measures included in Article 7, Chapter 5, of the City's Municipal Code. Future facilities proposed in other jurisdictions outside of the City would likely be required to incorporate similar fire protection measures into the development plans for such a facility.

The ability of a fire department to respond to potential fire calls will be dependent on the location of the new facilities in relation to a station, as well as current staffing at that station. At this time, the specific location of future facilities has not been identified; rather SWIRP notes that additional facilities would be required to meet the need for additional waste that would be diverted from landfills. Development projects within the City and other jurisdictions are required to pay development impact fees, a portion of which pays for the increased demand for fire protection services. Such fee payments would be required of future facilities that are constructed to go towards the acquisition of additional fire personnel and equipment. Payment of these fees, which would be required as part of the development of future facilities, would reduce potential impacts to fire protection services to a less than significant level.

Police Protection

Future facilities would include fencing and lighting to provide a level of safety and security at the facilities. The ability of the law enforcement entity to respond to potential law enforcement-related calls at future facilities will be dependent on the location of the new facilities in relation to the nearest police station, as well as current staffing at that station and available officer resources. At this time, the specific location of future facilities has not been identified; rather SWIRP notes that additional facilities would be required to meet the need for additional waste that would be diverted from landfills. Development projects within the City and other jurisdictions are required to pay development impact fees, a portion of which pays for the increased demand for police protection services. Such fee payments would be required of future facilities that are constructed to go towards the acquisition of additional police protection personnel and equipment. Payment of these fees, which would be required as part of the development of future facilities, would reduce potential impacts to police protection services to a less than significant level.

Schools

The proposed project does not include development that would increase the number of school age children. The project is the implementation of policies and programs to increase diversion of solid waste from landfills, as well as the construction of future facilities to process diverted materials. The construction and operation of these future processing facilities would not result in an increase in the number of school age children entering the LAUSD's school system or any school district within the project study area.

While future facilities will not increase school service needs, at the time of facility development, the developer will still be required to pay school fees, as appropriate for commercial or industrial development. The developer will be responsible for the fee rate in effect at the time the building permit is obtained. Other school districts have similar fee structures. Should the facilities be built outside the City, the developer would pay applicable fees to the appropriate school district. These fees will provide for additional educational facilities and resources. Pursuant to Government Code Sections 65995(h) and

65996(b) (SB 50), the payment of statutorily capped fee amounts provides "full and complete mitigation of the impacts of any legislative or adjudicative act… on the provision of adequate school facilities." In summary, the project will not impact schools.

Utilities and Service Systems

Table 4.13-2 provides estimated water, wastewater, and energy consumption/usage for future processing facilities that will be required to process the additional material diverted from landfills. The information provided in Table 4.13-2 is used in the impact analyses for water supply, wastewater, and energy usage.

Table 4.13-2. Estimated Water, Wastewater and Energy Usage for Future Facilities

Processing Facilities	Issue Areas		
	Water Supply/ Water Consumption (MGY)[e]	Wastewater Discharge (MGY)[e]	Energy Consumption/ Energy Producer (Mwh/yr and Gwh/yr)[f]
Clean Material Recovery Facilities (MRFs) Processing 300 tpd	1.5 MGY	0.5 MGY	Estimated to consume about 800 Mwh/yr
Composting (Large-Scale and Small-Scale) ~100 to 1,000 tpd	2 MGY (100 tpd) 20 MGY (1000 tpd)	0.5 MGY (100 tpd) 5 MGY (1,000 tpd)	Estimated to consume 20 Mwh/yr (100 tpd) 200 Mwh/yr (1,000 tpd)
Resource Recovery Centers ~1 to 10 tpd [a]	0.3 MGY	0.1 MGY	Estimated to consume about 100 Mwh/yr
Mixed Material Processing ~300 tpd	1.5 MGY	0.5 MGY	Estimated to consume about 800 Mwh/yr
Alternative Technology – Advanced Thermal Recycling ~1,200 tpd [b]	15 MGY	2 MGY	Estimated to produce about 200 Gwh/yr (net)
Alternative Technology – Biological (Anaerobic Digestion) ~350 tpd [c]	7 MGY	14 MGY	Estimated to produce about 20 Gwh/yr (net)
Alternative Technology – Thermal (Plasma Arc, Gasification, and Pyrolysis) ~250 tpd [d]	From =2 to 89 MGY	1 MGY	Estimated to produce about 50 Gwh/yr (net)

Source: HDR Engineering, Inc., 2010.
[a] Assumes approximately 15 employees 6 days/week
[b] Assumes use of an air cooled condenser (instead of cooling tower); also assume about 50 employees, 7 days/week
[c] Assumes use of high solids anaerobic process
[d] High end assumes gasification process & low end assumes claims from plasma arc process
[e] MGY = Million gallons per year
[f] Mwh/yr = Megawatts per year; Gwh/yr = Gigawatts per year; 1,000 Mwh = 1 Gwh
tpd=tons per day

Wastewater Treatment Requirements

The principal constraint associated with wastewater treatment is the construction of future processing facilities. At this time, the specific location and design of future facilities has not been identified; rather SWIRP notes that additional facilities would be required to meet the need for additional waste that would be diverted from landfills. Industrial wastewater is defined as any wastewater generated from any manufacturing, processing, institutional, commercial, or agricultural operation, or any operation that discharges other than domestic or sanitary wastewater. Industrial facilities and certain commercial facilities which plan to discharge industrial wastewater to the City's sewage collection and treatment

system are required to first obtain an industrial wastewater permit from the Industrial Waste Management Division (IWMD) of the DPW LASAN.

As shown in Table 4.13-2, domestic/sanitary wastewater discharge would increase marginally depending on the type of facility and number of employees. Depending on location within the City, the facility would connect to one of the three separate sanitary sewer systems. Operation of the City's four wastewater treatment facilities must be consistent with requirements applicable to the wastewater treatment plan prepared for each facility, the Los Angeles Region of the California RWQCB, and the City's NPDES permit. As mentioned previously, a SSMP was prepared for each of the City's sanitary sewer systems to control and mitigate all sanitary sewer overflows in order to comply with the state waste discharge requirements.
Construction and installation of new infrastructure required by future facilities must be consistent with the City's adopted wastewater system design criteria/guidelines contained within the City's Sewer Design Manual. Adherence to these guidelines would ensure that future facilities would not exceed wastewater treatment requirements of the Los Angeles RWQCB and therefore, a less than significant impact is identified.

For facilities sited outside of the City, wastewater treatment requirements would have to be determined based on the individual jurisdiction and RWQCB region of that jurisdiction. As future facilities are proposed, they would be subject to additional review pursuant to CEQA. Part of that analysis would include a review of wastewater infrastructure and demand. It is presumed that the cities and counties within the 100-mile study area have similar regulations and requirements as the City. Therefore, a less than significant impact is identified.

Water/Wastewater Facilities

The principal constraint associated with this issue area is the construction and operation of future processing facilities. Table 4.13-2 provides estimated water consumption and wastewater discharge in million gallons per year (MGY) for each type of facility. The water consumption ranges from 0.3 MGY to 89 MGY (0.31 acre feet per year to 273 acre feet per year). The Citywide water demand, based on normal weather conditions, will be about 776,000 acre feet per year by 2030 (LADWP UWMP, 2005). The City currently has capacity to serve future facilities. Wastewater discharge ranges from 0.1 MGY to 14 MGY. As mentioned above, the City would have the wastewater capacity for new processing facilities proposed within the City limit. Therefore, a less than significant impact is identified for this issue area if facilities are sited within the City.

For facilities sited outside of the City, wastewater treatment capacity and water demand would be determined based on the individual jurisdiction. However, each water purveyor is required to prepare an UWMP every five years. Water supply projections/capacity is typically determined based on population growth and is generally consistent with the City or County's general plan. If the facility is sited in an area consistent with the general plan land use designation for that jurisdiction, it is presumed that water supply would be sufficient. In addition to the UWMP and general plan assumptions, an industrial or commercial building with the equivalent size of 500 single-family homes (approximately 600,000 square feet or 1,000 employees) would be subject to the requirements of SB 610, which requires the preparation of a water supply assessment. The incorporation of design features that reduce the amount of water consumed would aid in mitigating potential future impacts to water supply. Section 4.13.5 identifies design features as mitigation for future facilities. With incorporation of mitigation, the impact would be less than significant.

It should be noted that as future facilities are proposed, they would be subject to additional review pursuant to CEQA. Part of that analysis would include a review of water and wastewater demand.

Wastewater Service

As mentioned above, industrial facilities and certain commercial facilities which plan to discharge industrial wastewater to the City's sewage collection and treatment system are required to first obtain an industrial wastewater permit from the IWMD of the DPW LASAN.

As shown in Table 4.13-2, domestic/sanitary wastewater discharge would increase marginally depending on the type of facility and number of employees. Wastewater discharge ranges from 0.1 MGY to 14 MGY. Depending on the location within the City, the facility would connect to one of three sewer systems. Operation of the City's four wastewater treatment facilities would be consistent with requirements applicable to the wastewater treatment plan, including the Los Angeles Region of the RWQCB and the City's NPDES permit. As mentioned previously, a SSMP was prepared for each of the City's sanitary sewer systems to control and mitigate all sanitary sewer overflows in order to comply with state waste discharge requirements.

Construction and installation of new infrastructure required by future facilities would be consistent with the City's adopted wastewater system design criteria/guidelines. Adherence to these guidelines would ensure that future facilities would not exceed wastewater treatment requirements of the Los Angeles Region RWQCB and therefore, a less than significant impact is identified.

Water Supply

As mentioned previously, future processing facilities would use approximately 0.31 acre-feet to 273 acre-feet of water per year. According to the LADWP 2005 UWMP, Citywide water demand based on normal weather conditions will be about 776,000 acre-feet per year by 2030. The City would have capacity to serve future processing facilities. The expansion of the solid waste processing program within the City of Los Angeles and the development of future processing facilities would not cause an increase in projected population growth or housing. New facilities would create jobs but not on a large growth-inducing scale. Design features incorporated into development plans for future facilities would reduce water consumption. These design features would include low-flow toilets and water fixtures, drought tolerant landscaping, and use of recycled water as irrigation. Mitigation measures requiring water conservation features are identified in Section 4.13-5. With incorporation of mitigation, a less than significant impact is identified.

For facilities sited outside of the City, water demand would be determined based on the individual jurisdiction. However, each water purveyor/jurisdiction is required to prepare an UWMP every five years. Water projection and capacity is typically determined based on future population growth and is consistent with the jurisdiction's general plan. If the facility is sited in an area consistent with the general plan land use designation and planning for that particular area, it is presumed that water capacity would be sufficient. In addition to the UWMP and general plan assumptions, an industrial or commercial building with the equivalent size of 500 single-family homes would be subject to SB 610, which requires the preparation of a water supply assessment. Incorporation of design features into future facility plans that would reduce the amount of water consumed would aid in mitigating potential future impacts to water supply. Section 4.13.5 identifies design features as mitigation for future facilities. With incorporation of mitigation, the impact would be less than significant.

It should be noted that as future facilities are proposed, they would be subject to additional review pursuant to CEQA. Part of that analysis would include a review of water demand and supply.

Stormwater Drainage Facilities

The Watershed Protection Division of the City's DPW manages the stormwater program for the City. The Watershed Protection Division develops and formulates pollution abatement projects to comply with the City's federal permit that is designed to eliminate pollutant discharges to the storm drain system and local waters.

Future facilities would be required to comply with all stormwater discharge requirements, as well as the City's NPDES permits. Section 4.8, Hydrology and Water Quality, provides a more detailed discussion of stormwater drainage and facilities. As identified in Section 4.8 of the Final PEIR, future project development will require careful review of all appropriate local, state, and federal regulations to properly address all hydrologic and water quality concerns. Hydrologic and water quality mitigation measures will be implemented to the maximum extent practicable, and will strive to maintain the highest level of sustainability. Future project planning will address hydrology, hydraulics, construction, stormwater quality, and permanent water quality through the preparation of all required studies. Implementation of mitigation measures HWQ-1 and HWQ-2 will assist to reduce impacts to hydrology and water quality to a level of less than significant.

Solid Waste Facilities

SWIRP addresses the handling of solid waste for the City. The programs and policies identified in SWIRP would apply to residential, commercial, industrial, and institutional generators in the City. SWIRP also identifies a variety of facilities that would need to be constructed to meet the City's recycling and solid waste infrastructure needs through 2030.

The facilities are categorized as:

- *Blue bin facilities* – Facilities capable of processing source-separated recyclable and reusable materials, including materials recovered from the LASAN blue bin program and source-separated commercial recycling. Other facilities for source separated materials were also discussed within this category, including resource recovery centers for self-hauled materials.
- *Green bin facilities* – Facilities capable of processing yard trimmings, food scraps, and other compostable materials (e.g., food-soiled paper and compostable plastics), either source-separated or sorted from other waste at a processing facility.
- *Black bin facilities* – Facilities capable of processing residual waste from residential black bins, commercial waste sources, or residual waste from processing facilities.

These facilities can be somewhat independent, but are likely to be built as part of a holistic system aimed at achieving the SWIRP objectives. In order to maximize diversion, various material processing, and alternative technology facilities were considered. The type of facilities being considered include typical processing plants, proven commercial processing technologies, and emerging processing technologies from around the world. Alternative technology facilities are designed to process residual waste directly into energy or fuel and/or recoverable by-products. Landfills are assumed to be included in each scenario, as the final disposal option to handle the residual waste that cannot be recycled, composted, or recovered for electricity or fuels.

Existing Landfill Capacity

The total daily capacity of the local landfill facilities used by City generators is nearly 80,000 tons per day (Table 4.13-3). Even with the closure of the Puente Hills Landfill in 2013, it appears there will be sufficient landfill capacity in the area for years to come.

Table 4.13-3. Existing Landfill Capacity

Disposal Facility/Landfill	Permitted Tons per Day (Average Daily Throughput)	Average Daily Throughput	Estimated Closure Date
Los Angeles County			
Puente Hills	13,200	10,200	2013
Calabasas Sanitary	3,500	1,100	2028
Scholl Canyon Sanitary	3,400	1,452	2019
Sunshine Canyon	12,100	9,000	2039
Bradley	N/A	N/A	Closed in Spring 2007
Chiquita Canyon	6,000	2,500	2019
Antelope Valley Public Landfill I	1,400	1,189	2028
Antelope Valley Public Landfill II	1,800	864	2028
Lancaster	1,700	1,503	2021
Orange County			
Olinda Alpha Sanitary	8,000	6,400	2021
Frank R. Bowerman	8,500	5,500	2053
Prima Deshecha	4,000	2,000	2067
Riverside County			
El Sobrante	10,000	7,200	2030
Ventura County			
Simi Valley	3,000	3,000	2033, Proposed 2050

Sources: CalRecycle, 2010; County of Los Angeles, 2010; County of Orange, 2010.

The proposed project would have a beneficial impact on landfill capacity through the implementation of policies and programs to increase recycling opportunities. See Section 2.4 of the Final PEIR for a complete description of these programs and policies. By increasing recycling opportunities and improving the rate of customer recycling, more materials would be diverted from landfills. Additionally, the proposed project identifies alternative technologies that could convert the non-recyclable residual waste, to energy, thus diverting more residual waste from landfills.

The proposed project and development of future facilities would have a beneficial impact on landfill capacity. The policies and programs outlined in SWIRP implement the solid waste policies and objectives in the Source Reduction and Recycling Element (SRRE) and its updates, the Solid Waste Management Policy Plan (SWMPP) Framework Element, and the Curbside Recycling Program, including consideration of the land use-specific waste diversion goals contained in Volume 4 of the SRRE. A beneficial impact regarding landfill capacity is identified.

Energy

Table 4.13-2 shows the projected energy demand from future processing facilities, as well as projected energy production from the alternative technology facilities. The Clean MRFs, large and small composting facilities, resource recovery centers, and mixed-material processing facilities are estimated to consume approximately 20 MW hours per year (Mwh/yr) to 800 Mwh/yr of energy, depending on the size and type of facility (HDR Engineering, 2013).

LADWP has a total generating capacity of about 7,000 MW to serve a peak Los Angeles demand of about 5,600 megawatts (one MW equals one million watts). Based on the anticipated energy demands of future facilities, it is expected that the City currently has the energy capacity for future facilities; however, incorporating design features that would reduce consumption of energy into future building plans would reduce the demand for power. These "sustainability features" may include the use of energy efficient lighting and machinery. Alternative energy sources would also reduce electrical consumption from LADWP. With the incorporation of energy conserving mitigation, a less than significant impact is identified. In addition to mitigation, compliance with Title 24 would reduce impacts to a less than significant level.

SWIRP identifies several types of facilities that could produce energy through alternative technology. Three categories are evaluated for their diversion potential. These facilities include advanced thermal recycling, anaerobic digestion, and thermal (plasma arc, gasification, and pyrolysis). Table 2.4-4, Potential Black Bin Processing Facilities, in Chapter 2.0 of this Final PEIR provides a brief description of these facilities. As shown in Table 4.13-2 above, these facilities have the ability to produce up to 200 Gwh (gigawatt hours)/year net of energy (200,000 Mwh/year).

Energy producing facilities would be regulated by various agencies depending on the technology to produce the energy and the maximum output. These facilities may be subject to review and regulation by the California Energy Commission, the CPUC, the South Coast Air Quality Management District (SCAQMD), and the City of Los Angeles. Future alternative energy producing facilities would be subject to additional review under CEQA.

Table 4.13-4 provides a summary of the impact analysis for proposed SWIRP facilities relative to mineral resources.

Table 4.13-4. Facility Impact Summary Table (Public Services and Utilities)

Facility Type	Impact
Clean Material Recovery Facilities	Less than significant with mitigation
Composting (Aerobic)	Less than significant with mitigation
Composting (Anaerobic Digestion)	Less than significant with mitigation
Resource Recovery Centers	Less than significant with mitigation
Mixed Material Processing	Less than significant with mitigation
Alternative Technology – Advanced Thermal Recycling	Less than significant with mitigation
Alternative Technology – Biological (Anaerobic Digestion)	Less than significant with mitigation
Alternative Technology – Thermal (Plasma Arc, Gasification, Pyrolisis, and Others)	Less than significant with mitigation

4.13.4 Cumulative-Level Analysis

Depending on the location of future facilities, as well as other projects that are proposed in the vicinity, their wastewater discharge, water consumption, energy consumption, and stormwater discharge, there could be a cumulative impact on these resources. It is dependent on where future facilities are proposed for construction. However, if mitigation measures presented in Section 4.13.5 are implemented, potential project-level impacts would be minimized and would be less likely to contribute to a cumulative impact. Upon determination of the facility location, a project-level CEQA analysis can be conducted to determine if the construction of such facilities would have a cumulative impact.

4.13.5 Mitigation Measures

The following mitigation measures are proposed to reduce potentially significant impacts to public services, utilities, and service systems to a level considered less than significant under CEQA.

Water Supply

WS-1 Future processing facilities shall incorporate water conservation design features. These features may include, but are not limited to, the following:

- Landscaping plans shall incorporate plant water-efficient, well-adapted, and/or native shrubs, trees, and grasses (i.e., drought and heat tolerant).
- Use of recycled water as landscaping irrigation to the maximum extent practicable.
- Use high-efficiency/low flow toilets and sink faucets.
- If truck washing will occur on-site, a water recycling system shall be implemented to reduce water demand.

WS-2 Development applications for future SWIRP facilities greater than 40 acres of land, having more than 650,000 square feet of floor area, or employing more than 1,000 persons shall include a water supply assessment. The water supply assessment shall be prepared by the water agency serving the facility and address: (1) document wholesale water supplies; (2) identify and quantify the existing and planned sources of water availability to the water supplier in five-year increments for the 20-year projection. For each identified supply, the assessment shall detail the quantity available and whether it is a water supply entitlement, water right, or water service contract; (3) document the project demand; (4) document dry year supplies; (5) document dry year demand; and (6) determine if projected water supply is sufficient or insufficient for the proposed facility.

Energy

ES-1 Future processing facilities shall be required to incorporate energy efficient design features. These features shall include, but are not limited to, the following:

- Energy efficient light fixtures
- Energy efficient equipment/machinery
- Alternative energy source (i.e., solar power, wind power, thermal)

4.13.6 Conclusion

Based upon the analysis presented in Sections 4.13.3 and 4.13.4, there is a potential for future facilities to have an impact on energy and water resources. It is entirely dependent on where the future facilities are sited. Mitigation measures WS-1, WS-2 and ES-1 are identified to reduce future facilities impacts to water supply and energy resources. With implementation of these mitigation measures, it is anticipated that project and cumulative level impacts would be reduced to below a level of significance.

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4.14 RECREATION

This section analyzes the potential for the proposed project to have an impact on recreation facilities or increase the demand on recreation facilities. It includes a discussion of the applicable regulatory environment, existing conditions, a project-level and cumulative-level impact analysis, and any applicable mitigation measures. The analysis area for recreation covers the City of Los Angeles (City) and the area within 100 miles of the City. While the Solid Waste Integrated Resources Plan (SWIRP) emphasizes local processing and handling of discarded materials generated within the City, it may not be feasible for all facility types to be built within the City, either due to lack of available space or potential land use conflicts. Therefore, a 100-mile study area is included in the analysis to capture any potential impact to areas outside of the City.

4.14.1 Environmental Setting

This section describes the regulatory setting and existing conditions for recreation.

4.14.1.1 Regulatory Setting

Federal

There are no federal regulations pertaining to recreation that are applicable to the project.

State

The California Parklands Act of 1980

Although a recreation element is not mandated by law to be included in a General Plan, recreation resources are to be considered in the open space element of a general plan (Government Code Section 65560). The California Parklands Act of 1980 (Public Resources Code Section 5096.141-5096.143) identifies "the public interest for the state to acquire, develop, and restore areas for recreation… and to aid local governments of the state in acquiring, developing and restoring such areas…" The California Parklands Act also identifies a need for local agencies to exercise vigilance to see that the parks, recreation areas, and recreational facilities they now have are not lost to other uses.

Quimby Act

The goal of the 1975 Quimby Act (California Government Code Section 66477) was to require developers to help mitigate the impacts of property improvements by requiring them to set aside land, donate conservation easements, or pay fees for park improvements. The Quimby Act gave authority for passage of land dedication ordinances only to cities and counties, thus requiring special districts to work with cities and/or counties to receive parkland dedication and/or in-lieu fees. The fees must be paid and land conveyed directly to the local public agencies that provide park and recreation services community-wide.

In 1982, the Quimby Act was substantially amended via Assembly Bill (AB) 1600. The amendments further defined acceptable uses of or restrictions on Quimby funds, provided acreage/population standards and formulas for determining the exaction, and indicated that the exactions must be closely tied (nexus) to a project's impacts as identified through traffic studies required by the California Environmental Quality Act (CEQA) (CCR 2010). AB 1600 requires agencies to clearly show a reasonable relationship between

the public need for the recreation facility or park land and the type of development project upon which the fee is imposed. Cities or counties with a high ratio of parkland to inhabitants can set a standard of five acres per 1,000 residents for new development. Cities or counties with a lower ratio can only require the provision of up to three acres of parkland per 1,000 residents. The calculation of a city's or county's parkland-to-population ratio is based on a comparison of the population count of the last federal census to the amount of city- or county-owned parkland.

Local

Planning efforts and activities concerning parks, recreation facilities, and open space areas in the City are governed by the open space element of the general plan; the public recreation plan of the services systems element of the general plan; and the community plans under the land use element of the general plan.

City of Los Angeles

City of Los Angeles General Plan Framework Element – Open Space and Conservation

The Framework Element contains goals, objectives, and policies for the provision, management, and conservation of the City's open space resources, addresses the outdoor recreation needs of the City's residents, and is intended to guide the amendment of the general plan's open space and conservation chapter.

There is an array of goals, objectives, and policies included within the open space and conservation chapter of the framework element that encompass both publicly- and privately-owned properties that are unimproved and used for the preservation of natural resources, managed for the production of resources, outdoor recreation, and protection of life and property due to natural hazards.

City of Los Angeles General Plan – Public Recreation Plan

The City's service systems element of the general plan includes a public recreation plan. The plan sets forth recreation standards intended to provide a basis for satisfying the needs for neighborhood and community recreational sites.

Public Recreation Plan Objectives

The objectives of the public recreation plan are as follows:

- To provide a guide for the orderly development of the City's public recreational facilities
- To provide long-range standards for use in connection with new subdivisions, intensification of existing residential development, or redevelopment of blighted residential areas as described under general local recreation standards
- To develop and locate public facilities to provide the greatest benefit to the greatest number of people at the least cost and with the least environmental impact
- To provide a guide of priorities for the acquisition and development of public recreational facilities
- To further refine and carry out the goals and objectives set forth in the concept and citywide plan for recreation

Recreation Standards

Facilities should be provided at the neighborhood, community, and regional levels. An overall provision of 10 acres of land per 1,000 persons for total recreational facilities is recommended. A minimum of 10 percent of total City land area should be public recreation or open space.

The location and allocation of acreage for neighborhood and community recreational sites should be determined on the basis of the service radius within residential areas through the City. No park site should be diminished in size or removed from any service area unless the required acreage is replaced within the district or unless the need is diminished due to population changes.

Other Jurisdictions

In addition to the City, the 100-mile study area includes all or part of 190 cities and nine counties. Each of these cities and counties has adopted General Plans and Municipal Codes which may include specific policies related to recreation. Depending where future facilities are located, local plans and policies would be applicable to those facilities.

4.14.1.2 Existing Conditions

Within the 100-mile study area of the City, there are a variety of recreational resources. Recreational areas include neighborhood parks, community parks, regional parks, state parks, and federal parks. Parks are typically classified by a combination of factors including size, number of amenities, location, ease of access, and government oversight (federal, state, county, or city).

In 2009, as part of a community-wide needs assessment of parks and recreation facilities conducted for the City's Recreation and Parks Department, an inventory of all public recreational assets and amenities owned by the City Recreation and Parks Department and Los Angeles County were identified. Current inventories and service levels are as follows:

- Playgrounds – 383 total; 1 structure per 10,205 persons
- Swimming Pools – 58 total; 1 site per 67,388 persons
- Splashpad – 9 total; 1 site per 434,280 persons
- Picnic Areas – 286 total; 1 site per 13,666 persons
- Baseball Fields/Softball Fields – 253 total; 1 field per 15,449 persons
- Rectangular Fields (football, soccer, lacrosse– 170 total; 1 field per 22,991 persons
- Basketball Courts – 212 total; 1 court per 18,436 persons
- Tennis Courts – 321 total; 1 court per 12,176 persons
- Volleyball Courts – 32 total; 1 court per 122,141 persons
- Dog Parks – 9 total; 1 site per 434,280 persons
- Skate Parks – 9 total; 1 site per 434,280 persons
- Community/Cultural Center Space (square feet) – 1,502,000 square feet; 0.38 square feet per person
- Recreation/Fitness Center Space (square feet) – 2,101,000 square feet; 0.54 square feet per person

State parks within Los Angeles County are as follows:

- Antelope Valley California Poppy Reserve (state natural reserve)
- Antelope Valley Indian Museum (state historic park)
- Arthur B. Ripley Desert Woodland (state park)
- Castaic Lake (state recreation area)
- Dockweiler (state beach)
- Hungry Valley (state vehicular recreation area)
- Kenneth Hahn (state recreation area)
- Leo Carrillo (state park)
- Los Angeles (state historic park)
- Los Encinos (state historic park)
- Malibu Creek (state park)
- Malibu Lagoon (state beach)
- Pío Pico (state historic park)
- Placerita Canyon (state park)
- Point Dume (state beach)
- Rio de Los Angeles State Park (state recreation area)
- Robert H. Meyer Memorial (state beach)
- Saddleback Butte (state park)
- Santa Monica (state beach)
- Santa Susana Pass (state historic park)
- Topanga (state park)
- Verdugo Mountains (park property)
- Watts Towers of Simon Rodia (state historic park)
- Will Rogers (state beach)
- Will Rogers (state historic park)

The 100-mile study area includes additional state park facilities, as well as federal parks under the administration of the National Parks Service (Santa Monica Mountains National Recreation Area, Channel Islands National Park, Mojave National Preserve, Joshua Tree National Park, and Cabrillo National Monument).

4.14.2 Thresholds of Significance

The impact analysis for geology and soils will use the CEQA thresholds and the *L.A. CEQA Thresholds Guide* to determine significance. For the purpose of this analysis, the project study area is defined as the City and the area within 100 miles of the City. SWIRP emphasizes local processing and handling of the City's waste, including locating needed facilities within the City limits. However, it may not be feasible for all facility types to be built within the City, either due to lack of available space or potential land use conflicts. Therefore, a 100-mile study area is included in the analysis to capture any potential impact to areas outside of the City.

The following thresholds of significance were derived from *CEQA Guidelines* Appendix G, and the *City of Los Angeles CEQA Threshold Guide*, and will be used to determine if the project would have a potential impact relative to recreational resources. The project would have a significant impact if it would:

- *Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated; or*
- *Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.*

4.14.3 Project-Level Analysis

SWIRP Policy and Program Analysis

Table 4.14-1 provides an analysis of potential impacts that could result from implementation of the policies and programs associated with SWIRP relative to recreational resources. The City's existing policies and programs, as well as new policies and programs identified through the stakeholder planning process, were analyzed to determine if a potential significant impact would occur as a result of project implementation.

As shown in Table 4.14-1, none of policies and programs associated with SWIRP would result in a recreation-related impact. Disposal of residual waste would not result in impacts to recreational facilities since the remaining residual waste would be disposed at existing landfills as is currently done.

SWIRP Facility Analysis

Potential solid waste facilities identified through the SWIRP planning process are divided into three categories: green bin facilities, blue bin facilities, and black bin facilities, as described in Chapter 2.0, Project Description.

At this time, the exact locations of the future facilities are unknown. Recreation-related impacts are not dependent upon the type of blue, green or black bin facility proposed, rather than the actual footprint or location of the facility is what drive the potential for their to be an impact to recreation. Potential impacts associated with the placement of future facilities include direct footprint-related impacts, as well as indirect impacts due to facility operations (e.g., traffic, noise or air quality emissions adjacent to park or recreational facilities). In order to determine if impacts to recreation would occur as a result of SWIRP, proposed facilities were analyzed below to determine if impacts would be likely to occur as a result of construction and/or operation of proposed facilities.

Increased Recreational Facility Use

Increased use of park and recreational facilities due to implementation of SWIRP is not likely. The types of facilities proposed as part of the project do not include a residential development component or growth-inducing aspects that would result in a substantial increase in population or a need for new park space to accommodate future growth. Therefore, no impact is identified related to increased use of recreational facilities.

Expansion of Recreational Facilities

The proposed project does not include development of new park or recreational facilities nor would the project necessitate the construction or expansion of park or recreational facilities which might result in an adverse physical effect on the environment.

Table 4.14-1. Analysis of SWIRP Policies and Programs (Recreation)

Initiative	Impact Analysis for Recreation[1]	Significance Conclusion
Downstream Policies and Programs[2]		
Expand Recycling Ambassador Program	This program will not have an impact related to recreation.	No Impact
Adding Textiles to the Blue Bins or Partner with Non-Governmental Organizations	This policy/program will not have an impact related to recreation.	No Impact
Bulky Item Reuse and Refurbishment	This policy/program will not have an impact related to recreation.	No Impact
Expand Residential Food Scrap Program	This program will not have an impact related to recreation.	No Impact
Large Scale Media/Social Marketing	This policy/program will not have an impact related to recreation.	No Impact
Modify Residential Collection Rates	This policy/program will not have an impact related to recreation.	No Impact
Modify Commercial Collection Rates	This policy/program will not have an impact related to recreation.	No Impact
Expand Multi-Family Recycling	This policy/program will not have an impact related to recreation.	No Impact
Multi-Family Green Bins	This policy/program will not have an impact related to recreation.	No Impact
All Businesses to have Recycling Services	This policy/program will not have an impact related to recreation.	No Impact
Commercial Haulers to Offer Recycling Services to Customers	This policy/program will not have an impact related to recreation.	No Impact
Expand Commercial Technical Assistance	This policy/program will not have an impact related to recreation.	No Impact
Expand Construction and Demolition (C&D) Technical Assistance	This policy/program will not have an impact related to recreation.	No Impact
Provide More Public Area Recycling	This policy/program will place recycling bins wherever trash cans are located in public areas, including City-owned park and recreation facilities to enhance recycling opportunities. This policy/program will not have an impact related to recreation.	No Impact
C&D Ordinance	This policy/program will not have an impact related to recreation.	No Impact
Mandatory Participation Programs[3]		
Mandatory Recycling Separation	This program will not have an impact related to recreation.	No Impact
Mandatory Organics Separation	This program will not have an impact related to recreation.	No Impact
Resource Recovery Centers (RRC) at Transfer Stations and Landfills	This program will not have an impact related to recreation.	No Impact
Recycling Ambassadors (Reinforcement)	This program will not have an impact related to recreation.	No Impact
Direct Technical Assistance (Reinforcement)	This program will not have an impact related to recreation.	No Impact
Increased Diversion Requirements at C&D Facilities	This program will not have an impact related to recreation.	No Impact

Table 4.14-1. Analysis of SWIRP Policies and Programs (Recreation) (Continued)

Initiative	Impact Analysis for Recreation	Significance Conclusion
Upstream Policies[4]		
Extended Producer Responsibility (EPR) for Toxics	This policy results in a reduction of waste generation. No impact related to recreation	No Impact
EPR for Difficult to Recycle Materials	This policy results in a reduction of waste generation. No impact related to recreation.	No Impact
Single-use Bag Ban	This policy results in a reduction of waste generation. No impact related to recreation.	No Impact
Disposal of Remaining Residual Waste[5]		
Landfill Disposal – Truck Haul, Rail Haul	Disposal of residual waste from implementation of SWIRP programs and policies above (25% residual waste in 2013 and 10% residual waste in 2020) would not result in impacts recreational facilities since landfill disposal would occur at existing landfill facilities.	No Impact

(1) Depending on phasing and implementation of various proposed programs and policies, along with anticipated growth in the City, there will be a need for additional facilities to process the diverted materials. Please refer to Section 4.14.3 for an impact analysis of the future facilities.
(2) Refer to Chapter 2.0, Table 2.3-1 for a detailed description of the Downstream Policies and Programs.
(3) Refer to Chapter 2.0, Table 2.3-2 for a detailed description of the Mandatory Participation Programs.
(4) Refer to Chapter 2.0, Section 2.3.4 for a detailed description of the Upstream Policies.
(5) Refer to Chapter 2.0, Section 2.3.6 for a detailed description of the Disposal of Remaining Residual Waste program.

The proposed solid waste facilities, if constructed, would not increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration or accelerated deterioration of the facility would occur. Therefore, no impact is identified for this issue area.

Impact to Existing Recreational Facilities

While not specifically addressed as a threshold, if future facilities were constructed in an area that currently supports recreation there is a potential for an impact. It is anticipated that the facilities would be constructed in areas that already support the required zoning (e.g., industrial, commercial, public facilities). However, if a facility is developed in an area that conflicts with recreation, there is a potential for an impact and mitigation would be required. Additionally, if a SWIRP facility is proposed adjacent to or near a park or recreation facility, there is a potential for indirect impacts to park and recreation amenities due to SWIRP facilities (e.g., traffic, air emissions or noise), depending on the size and location of the facility.

Table 4.14-2 provides a summary of the impact analysis for proposed SWIRP facilities relative to recreation.

Table 4.14-2. Facility Impact Summary Table (Recreation)

Facility Type	Increased Recreation Use/ Expansion of Recreation Facilities	Loss of Recreation Facilities
Clean Material Recovery Facilities	No Impact	Mitigated to below a level of significance
Composting (Aerobic)	No Impact	Mitigated to below a level of significance
Composting (Anaerobic Digestion)	No Impact	Mitigated to below a level of significance
Resource Recovery Centers	No Impact	Mitigated to below a level of significance
Mixed Material Processing	No Impact	Mitigated to below a level of significance
Alternative Technology – Advanced Thermal Recycling	No Impact	Mitigated to below a level of significance
Alternative Technology – Biological (Anaerobic Digestion)	No Impact	Mitigated to below a level of significance
Alternative Technology – Thermal (Plasma Arc, Gasification, Pyrolisis, and Others)	No Impact	Mitigated to below a level of significance

4.14.4 Cumulative-Level Analysis

Depending on the location of future facilities, as well as other projects that are proposed in the vicinity, and their potential impact to recreational facilities, there could be a cumulative impact. It is dependent upon where future facilities are proposed for construction. However, with implementation of mitigation measures REC-1, potential project-level impacts would be minimized and would be less likely to contribute to a cumulative impact. Upon determination of the facility location, a project-level CEQA analysis will be conducted to determine if the construction of such facilities would have a cumulative impact. Further, the actual footprint of disturbance for the future facilities would not be significant, in

terms of the overall land area in the project study area (City and 100-mile study area). If all the policies and programs for SWIRP were implemented, total footprint impacts would range between 133 and 163 acres.[1] Considering that there are over 16.6 million acres in the project study area (City and 100-mile study area), the actual disturbance that would be realized from the future SWIRP facilities is not significant.

4.14.5 Mitigation Measures

Existing Recreational Facilities

REC-1 If future facilities are located on a site that results in an impact to existing recreation facilities, replacement recreation facilities shall be acquired or constructed prior to demolition of existing recreational facilities. Replacement recreational facilities shall be located in the general vicinity of the demolished recreational facility.

4.14.6 Conclusion

An increased use of park and recreational facilities due to implementation of SWIRP is not anticipated. The types of facilities proposed as part of the project do not include a residential development component or growth-inducing measures that would result in a substantial increase in population or a need for new park space to accommodate future growth. The proposed project does not include development of new park or recreational facilities nor would the project necessitate the construction or expansion of park or recreational facilities which might result in an adverse physical effect on the environment.

If future facilities were constructed in an area that currently supports recreation there is a potential for an impact. Additionally, if a SWIRP facility is proposed adjacent to or near a park or recreation facility, there is a potential for indirect impacts to park and recreation amenities due to SWIRP facilities (e.g., traffic, air emissions or noise), depending on the size and location of the facility. It is anticipated that the facilities would be constructed in areas that already support the required zoning (e.g., industrial, commercial, public facilities). However, if a facility is developed in an area that conflicts with recreation, there is a potential for an impact. Implementation of mitigation measure REC-1 would reduce this potential impact to below a level of significance.

[1] If all policies and programs for SWIRP were implemented, the following facilities would be required: one large-scale composting facility or six small-scale composting facilities, three clean MRFs, one resource recovery center and five black bin processing facilities. This analysis assumes 15 acres of impact for each small-scale composting facility, 60 acres of impact for each large-scale composting facility, 7 acres of impact for each clean MRF, 2 acres for a resource recovery center and up to 10 acres for each black bin facility. Depending on whether six small-scale compost facilities or one large-scale compost facility was constructed, total footprint impacts would be 133 to 163 acres.

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4.15 TRANSPORTATION/TRAFFIC

This section analyzes the potential for the proposed project to impact transportation and traffic. It includes a discussion of the applicable regulatory environment, existing conditions, a project-level and cumulative-level impact analysis, and any applicable mitigation measures. The analysis area for transportation and traffic covers the City of Los Angeles (City) and the area within 100 miles of the City. While the Solid Waste Integrated Resources Plan (SWIRP) emphasizes local processing and handling of discarded materials generated within the City, it may not be feasible for all facility types to be built within the City, either due to lack of available space or potential land use conflicts. Therefore, a 100-mile study area is included in the analysis to capture any potential impact to areas outside of the City.

4.15.1 Environmental Setting

The SWIRP study area includes the City and a 100-mile study area. The area thus encompasses all or part of nine California counties (Kern, Los Angeles, Orange, Riverside, San Bernardino, San Diego, San Luis Obispo, Santa Barbara, and Ventura) and includes a diverse range of environmental regions. The Los Angeles Basin itself is bordered by the Santa Monica Mountains to the northwest, the San Gabriel Mountains to the north/northeast, and the Santa Ana Mountains to the south/southeast.

This section describes the regulatory setting and existing conditions for transportation and traffic.

4.15.1.1 Regulatory Setting

State, regional, and local requirements influence transportation and traffic within the project study area. This section lists and briefly describes the relevant plans, policies, and regulations that pertain to transportation and traffic.

The following regional and local regulations would apply to the proposed project.

Federal

There are no applicable federal requirements related to transportation that would apply to the project.

State

The California Department of Transportation (Caltrans) has jurisdiction over the construction and maintenance of highways and freeways within the project study area. Caltrans also coordinates several statewide transportation programs that directly impact the circulation system in the region. These include: the State Transportation Improvement Program (STIP), the Congestion and Mitigation and Air Quality Program (CMAQ), and the Traffic Congestion Relief Program (TCRP).

Regional

The Southern California Association of Governments (SCAG) requires an inter-governmental review and analysis of regional transportation policies and strategic growth initiatives included within the Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) (SCAG, 2012) and Compass Blueprint Growth Vision. This is to ensure the protection of the region's transportation system and to

accommodate growth, reduce traffic congestion, preserve open space, manage and minimize pollution, and manage resources more efficiently.

2012-2035 Regional Transportation Plan/Sustainable Communities Strategy: Towards a Sustainable Future

On April 4, 2012, the SCAG Regional Council adopted the 2012-2035 RTP/SCS: Towards a Sustainable Future. The RTP/SCS is the culmination of a multi-year effort involving stakeholders from across the SCAG Region; including Los Angeles, Orange, San Bernardino, Riverside, Ventura, and Imperial Counties. The RTP/SCS focuses on improving the balance between land use, economy, and the current and future transportation systems

The goals and policies of the 2012-2035 RTP/SCS were adopted to help guide regional transportation investments and continue to reflect the transportation policies of the region. Transportation investments in the SCAG region that receive state or federal transportation funds must be consistent with the RTP/SCS and must be included in the Regional Transportation Improvement Program (RTIP) when ready for funding. The RTP/SCS contains nine core goals to help guide regional transportation investments and continue to reflect the transportation policies of the region.

2010 Congestion Management Program for Los Angeles County

The Congestion Management Program (CMP) is intended to address the impact of local growth on the regional transportation system. The CMP was created to link the local land use decisions with their impacts on regional transportation and air quality, and to develop a partnership among transportation decision-makers on devising appropriate transportation solutions that include all modes of travel.

The County of Los Angeles CMP was developed to meet the requirements of Section 65089 of the California Government Code. As such, the CMP includes the following elements:

- A system of highways and roadways with minimum level of service performance
- A performance element including performance measures to evaluate multimodal system performance
- A travel demand element promoting alternative transportation strategies
- A program to analyze the impacts of local land use decisions on the regional transportation system, including an estimate of the costs of mitigating those impacts
- A seven-year capital improvement program of projects that benefit the CMP system
- A deficiency plan

The CMP requires designation of a system of highways and roadways, including all state highways and principal arterials. Statute also requires establishment of Level of Service (LOS) standards to measure congestion on the system. LOS standards can be set no lower than LOS E, or the current level is worse than LOS E. An LOS E or lower would have a significant impact on driver comfort level.

Based on the Highway Capacity Manual (HCM) (Transportation Research Board, 2000), the LOS for freeway segments and freeway ramps is determined by the traffic flow density. LOS A represents a freeway segment and ramps with a density less than or equal to 11 passenger cars, per mile, per lane (pc/mi/ln). LOS F represents a freeway segment or ramps with a density greater than 45 pc/mi/ln. LOS E

is considered the maximum threshold for all freeway segments and ramps. The LOS flow conditions are described in Table 4.15-1.

Table 4.15-1. Freeway and Highway Level of Service

Level of Service	Operating Speed	Delays	Flow Conditions
LOS A	70	None	Highest quality of service. Traffic flows freely with little or no restrictions on speed or maneuverability.
LOS B	70	None	Traffic is stable and flows freely. The ability to maneuver in traffic is only slightly restricted.
LOS C	67	Minimal	Few Restrictions on speed. Freedom to maneuver is restricted. Drivers must be more careful making lane changes.
LOS D	62	Minimal	Speeds decline slightly and density increases. Freedom to maneuver is noticeably limited.
LOS E	53	Significant	Vehicles are closely spaced, with little room to maneuver. Driver comfort is poor.
LOS F	<53	Considerable	Very congested traffic with traffic jams, especially in areas where vehicles have to merge.

Source: 2000 Highway Capacity Manual (Transportation Research Board, 2000); Caltrans, 2007.

Local

City of Los Angeles

City of Los Angeles Department of Transportation Strategic Plan 2009

The City of Los Angeles Department of Transportation (LADOT) identifies transportation strategies for the City, sustainable funding streams, prioritized list of transportation projects and programs, and specific steps necessary to achieve the goals and objectives set forth (City of Los Angeles, 2009).

City of Los Angeles General Plan Transportation Element. Approved July 1997, Adopted September 1999

The Transportation Element establishes a Citywide strategy to achieve long-term mobility and accessibility within the City (City of Los Angeles, 1999). Its overarching goal is to provide an adequate goal of accessibility to work opportunities and essential services, and acceptable levels of mobility for all those who live, work, travel, or move goods in the City. The following represents the key objectives of the Transportation Element:

- Expand neighborhood transportation services and programs to enhance neighborhood accessibility
- Mitigate the impacts of traffic growth, reduce congestion, and improve air quality by implementing a comprehensive program of multimodal strategies that encompass physical and operational improvements, as well as demand management
- Support development in regional centers, community centers, major economic activity areas, and along mixed-use boulevards as designated in the community plans

- Preserve the existing character of lower density residential areas and maintain pedestrian-oriented environments where appropriate
- Provide an ongoing evaluation of transportation programs to determine whether the goals and objectives of the Citywide General Plan Framework and this element are being met, or if these goals and objectives should be modified to reflect changing circumstances

City of Los Angeles General Plan, Bicycle Plan, Transportation Element, Chapter IX. Adopted March 2011

The goal, objectives, and policies which constitute the Bicycle Plan focus on the critical aspects of expanding bicycle usage. Policies set forth in the Bicycle Plan are formulated so as to be consistent with objectives and policies adopted in the Citywide General Plan Framework (2001), Los Angeles County Metropolitan Transportation Authority (LACMTA) Countywide Bicycle Policy Document (1994)[1], and the Non-motorized Transportation chapter of the Regional Mobility Element (1994) of the SCAG Regional Comprehensive Plan. The 2010 Bike Plan expanded upon the 673 miles of bikeways designated in the 1996 Plan to establish a Citywide Bikeway System of 1,633 miles of designated bikeways.

Other Jurisdictions

Other jurisdictions within the project study area, but outside the City, have their own policies and programs to address transportation (e.g., City/County Transportation Elements).

4.15.1.2 Existing Conditions

The Southern California transportation system is a complex network of roads and highways, public transit, bus and rail, freight railroads, airports, seaports, and intermodal terminals. According to SCAG, the regional transportation system is currently at capacity operations during peak periods (SCAG, 2008b).

The regional freeway and highway system is the primary means of person and freight movement for the region. This system provides for direct auto, bus, and truck access to employment, services, and goods. The network of freeways and state highways serves as the backbone of the system offering very high capacity limited-access travel, and serving as the primary heavy-duty truck route system. Southern California has almost 65,000 lane-miles of roadways, including one of the most extensive High-Occupancy Vehicle (HOV) lane systems (SCAG, 2008b).

Considering the programmatic nature of the Program Environmental Impact Report (PEIR), only freeways and highways will be discussed. Smaller streets will be addressed and analyzed on a project-level, when site-specific information is available.

The California State Highway Code (CSHC) defines a number of different types of highways:

- **State Highway** – A highway which is acquired, laid out, constructed, improved, or maintained as a State highway pursuant to constitutional or legislative authorization (CSHC Section 24). It is also defined as a way or place of whatever nature, publicly maintained, and open to the use of the public for purposes of vehicular travel. Highways may include streets.

[1] In 2006, the LACMTA Board adopted the adopted two bicycle planning documents: the Metro Bicycle Transportation Strategic Plan, and the Bicycle Transportation Account Compliance Document. These two plans supersede the previous Countywide

- **Freeway –** A highway in respect to which the owners of abutting lands have no right or easement of access to or from their abutting lands or in respect to which such owners have only limited or restricted right or easement of access. If, in the judgment of the commission or the director, the public interest would be advanced thereby, a freeway, as defined herein, may be designated a "controlled access highway." In all other respects, the "controlled access highway" shall be subject to all provisions of this code pertaining to freeways (CSHC Section 23.5).

The major freeways and highways in the project study area are presented in Table 4.15-2 and in Figure 4.15-1.

To develop the 2010 Congestion Management Program (CMP), morning and evening commute period transit trips were modeled by County of Los Angeles Transportation Authority (County of Los Angeles 2010). In general, CMP monitoring results indicate that congestion levels have remained relatively constant between 1992 and 2009. Where the County has experienced fluctuations in congestion, these have generally involved only incremental changes in level of service. This indicates that the Los Angeles County freeway system is a mature system that is not prone to radical fluctuations in congestion levels. Further, on a system-wide basis, Los Angeles County freeways are operating at approximately their designed capacity. However, at specific locations along the system, freeway segments may range from free flow, such as the northern stretch of the Antelope Valley Freeway (State Route [SR]-14) as it approaches the Kern County border, to extremely congested conditions, such as along the Santa Monica Freeway (Interstate [I]-10) west of the Harbor Freeway (SR-110), where demand significantly exceeds capacity during both morning and evening peak hours (County of Los Angeles, 2010).

Caltrans measures LOS as a function of travel speed and duration of congestion, consistent with the HCM methodology. According to the CMP, freeways that experience heavy congestion in both directions during peak periods include:

- The Santa Monica Freeway (I-10) between the East L.A. Interchange and the San Diego Freeway (I-405)
- I-405 between the South Bay area and the Sepulveda Pass
- SR-101 between the San Fernando Valley and downtown Los Angeles
- The Golden State Freeway (I-5) between the Glendale Freeway (SR-2) and the Hollywood Freeway (SR-170)
- The Santa Ana Freeway (I-5) between Lakewood Boulevard (SR-19) and the Orange County line
- Portions of SR-110 south of and through downtown Los Angeles

CMP monitoring results indicate more traditional commute patterns for other freeways. This is particularly evident in the San Gabriel Valley where the San Bernardino (I-10), Pomona (SR-60), and eastern portions of the Foothill (I-210) freeways experience heavier westbound traffic (toward downtown Los Angeles) in the morning and heavier eastbound traffic in the afternoon. Similar differences between the morning and afternoon peak hours are also evident along portions of the Orange Freeway (SR-57), the Pasadena Freeway (SR-110), and various segments of the San Diego Freeway (I-405).

Table 4.15-2. Major Freeways and Highways in the Project Area

Freeway/Highway	Freeway Description
Interstate 5 (I-5)	The main north-south freeway. It carries major volumes of truck and commuter traffic between Los Angeles, the Central Valley, San Diego, and Washington, Oregon, and Mexico.
Interstate 10 (I-10)	The main freeway running east from the Los Angeles Basin to the central and eastern United States. West of downtown Los Angeles, I-10 carries commuter traffic between Malibu/Santa Monica/West Los Angeles and the employment centers of downtown Los Angeles/Century City/Beverly Hills and the Wilshire Corridor. East of downtown, I-10 carries commuter traffic between the San Gabriel Valley and San Bernardino County to Los Angeles together with truck traffic between Los Angeles and eastern cities.
Interstate 15 (I-15)	A north-south main freeway running from the San Diego County area, through the Corona area, the El Cajon Pass and continuing through the desert.
Interstate 105 (I-105)	An east-west commuter route from the Los Angeles International Airport and ends at the San Gabriel River Freeway Interstate 605 in the City of Norwalk.
Interstate 210 (I-210)	An east-west main freeway, connecting I-5 in the northern San Fernando Valley with I-215, providing a route by which truckers may bypass the urban congestion of the central Los Angeles Basin. I-210 also serves as a commuter route for the foothill communities of the San Gabriel Mountains.
Interstate 215 (I-215)	A north-south main freeway running from Murrieta and connecting to I-15 north of San Bernardino.
Interstate 405 (I-405)	A north-south freeway supplementing I-5. It carries commuter traffic between the central San Fernando Valley, West Los Angeles, the South Bay, Long Beach, and western Orange County towards San Diego.
Interstate 605 (I-605)	A north-south freeway connecting I-210 with I-10, SR-60, I-5, SR-91, I-105, and I-405 along the eastern boundary of Los Angeles County. It carries commuter traffic to and from the major east-west highways. I-605 also serves the truck traffic of industrial communities of southeast Los Angeles County.
Interstate 710 (I-710)	Connects Long Beach Harbor with the freeway network and the industrial areas of south Los Angeles County. I-710 also acts as a commuter feeder route to I-10, SR-60, I-5, and SR-105.
State Route 2 (SR-2)	A north-south trending highway connecting Sunland area through the Angeles National Forest to Wrightwood.
State Route 14 (SR-14)	A north-south trending highway connecting I-5 in the Santa Clarita area through the Angeles National Forest to the Palmdale area.
State Route 23 (SR-23)	A north-south commuter route from Moorpark through the Santa Monica Mountains to the Pacific Coast.
State Route 55 (SR-55)	A north-south trending commuter route connecting from Newport Beach to the SR-91 east of Placentia.
State Route 57 (SR-57)	A north-south commuter route connecting the I-5 freeway from the City of Orange to SR-210.
State Route 60 (SR-60)	An east-west commuter route sustaining significant truck traffic between downtown Los Angeles and suburban communities in eastern Los Angeles and Riverside Counties.
State Route 71 (SR-71)	A north-south trending commuter route connecting SR-91 in the Corona area to the I-10 in Pomona.
State Route 73 (SR-73)	A north-south trending transportation corridor toll road connecting I-5 to I-405 through the Laguna Coast Wilderness Area.
State Route 74 (SR-74)	An east-west scenic highway connecting San Juan Capistrano to the Lake Elsinore area through the Cleveland National Forest.
State Route 78 (SR-78)	An east-west commuter route connecting Oceanside to Escondido.
State Route 90 (SR-90)	An east-west route connecting I-405 to Highway 1.

Table 4.15-2. Major Freeways and Highways in the Project Area (Continued)

Freeway/Highway	Freeway Description
State Route 91 (SR-91)	A feeder route carrying truck and commuter traffic to the industrial areas between I-110, I-710, and I-605.
State Route 99 (SR-99)	A north-south feeder route carrying truck and commuter traffic east of I-5 from Bakersfield to the north.
State Route 110 (SR-110)	A north-south commuter route carries traffic between Pasadena/Altadena/Sierra Madre and the downtown area in the northern section. South of downtown Los Angeles, SR-110 carries truck traffic between I-5 and the Los Angeles Harbor. It also carries commuter traffic to and from the Palos Verdes Peninsula and South Bay cities.
State Route 118 (SR-118)	An east-west commuter highway connecting the suburbs of Simi Valley/northwestern San Fernando Valley with I-5 and I-405.
State Route 126 (SR-126)	An east-west commuter highway from Ventura, connecting to the I-5 freeway north of Valencia.
State Route 134 (SR-134)	A commuter highway connecting SR-101 with I-210, serving the eastern San Fernando Valley/Burbank/Glendale.
State Route 170 (SR-170)	A commuter highway connecting SR-101 and I-5 serving the eastern San Fernando Valley communities.
U.S. Route 101	The State's major coastal highway. A commuter route between downtown L.A. and Hollywood area and the southern/western San Fernando Valley and continues to Ventura.

Source: City of Los Angeles, 1995; Caltrans, 2010.

According to the CMP, substantial changes for freeway segments are defined as an increase or decrease of 0.10 in demand to capacity ratio and a change in LOS. The CMP noted changes between 1992 and 2009 for both morning and afternoon rush hours. Changes on individual corridors are often mixed, with the morning improving and the afternoon worsening or the northbound worsening while the southbound is improving, resulting in generally off-setting impacts on a system-wide basis. Only a few segments both substantially improved or substantially worsened regardless of travel direction and the time of day:

- I-5 has three segments that substantially changed regardless of direction of travel and time of day. These three sections are north of SR-126 west, which improved under all conditions and the segments of I-5 south of Colorado Boulevard and I-5 at Burbank Boulevard, which both worsened under all conditions
- US-101 south of Santa Monica Boulevard worsened substantially under all peak hour conditions
- Additional freeway segments to substantially improve under all peak hour conditions include the I-10 west of Indian Hill Boulevard, SR-91 east of Alameda Street/Santa Fe Avenue, I-110 at Wilmington Boulevard south of C Street, I-405 north of Inglewood Avenue at Compton Boulevard, and I-605 north of junction SR-91, south of Alondra Boulevard

The SCAG 2008 RTP was used as a baseline analysis for the area freeway system. As shown in Table 4.15-3, the vehicle hours traveled (VHT) and vehicle miles traveled (VMT) are anticipated to increase over the next 25 years. The average speeds on the area freeways are expected to decrease from a range of 27.4 to 39.0 miles per hour (mph) in 2003 to a range of 25.0 to 31.2 mph in 2035. This would decrease average speeds by 2.4 to 13.0 mph.

Public Transit

Southern California public transit service is comprised of local and express buses, rapid bus, and urban rail that is principally centered in the core of Los Angeles County, commuter rail that spans all counties, and shuttles/circulators that feed all transportation modes and activity centers.

Buses

The Metropolitan Transit Authority (Metro) operates 2,039 peak-hour buses on 170 routes throughout Los Angeles County (County of Los Angeles Metropolitan Transportation Authority, 2012), including the Orange Line and Silver Line, which are part of the Metro system that uses buses within transitways.

Metro Rail

The Metro Rail system is made up of the Metro Red and Purple Line subway system, the Metro Blue Line, the Metro Green Line, the Metro Gold Line, and the Metro Expo line. It operates approximately 87 miles of rail, and serves 80 stations from Long Beach to downtown Los Angeles to Hollywood, Universal City, and North Hollywood in the San Fernando Valley, from downtown Los Angeles to Pasadena and East Los Angeles, from Norwalk to El Segundo, and from downtown Los Angeles to Culver City (Metropolitan Transit Authority, 2012).

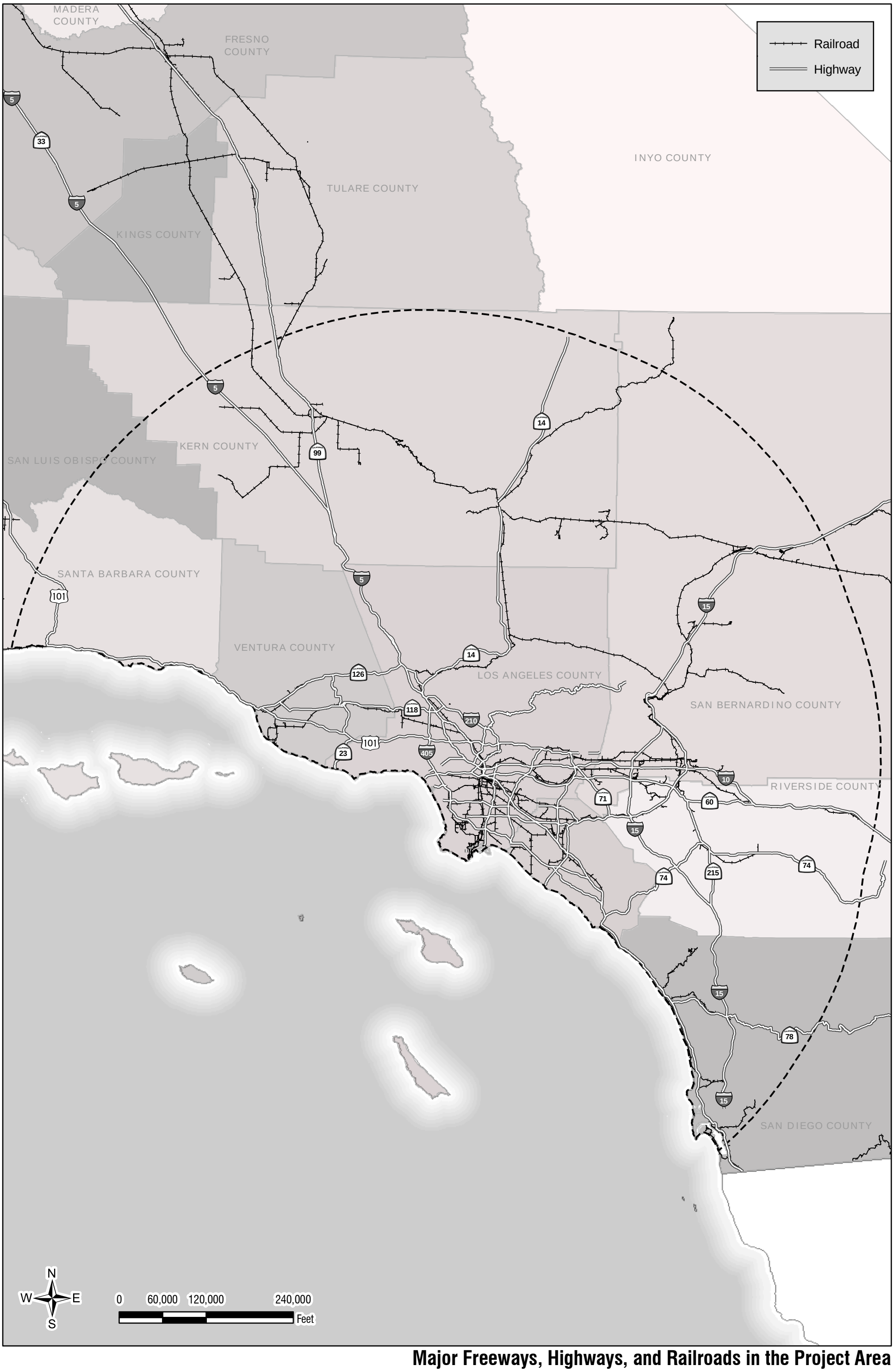
Rail transit is very close to capacity during peak hours on the Metro Blue Line, Metro Red Line, and Metro Gold Line, while the Metro Green Line generally has some capacity available. Commuter rail service is at or near capacity during peak periods as the routes approach Union Station in downtown Los Angeles, but suburb-to-suburb capacity is available on most lines.

Metrolink

In addition to the Metro Rail system, Metrolink has a commuter rail service with seven lines, covering 512 route miles and servicing 55 stations. Metrolink provides service from downtown to the Inland Empire, Orange County, San Bernardino, Riverside, Oceanside, Montalvo and Lancaster (Metrolink, 2011). Metrolink also connects with Metro Rail lines at Union Station in downtown Los Angeles, and with the San Diego Coaster and Sprinter lines at Oceanside. It also connects with Amtrak's Pacific Surfliner, Coast Starlight, Southwest Chief, and Sunset Limited trains.

Airports

The project study area contains 21 major airports. This includes international airports and commercial/private airports, as well as several military airports. Airports identified within the project study area are presented in Table 4.15-4 and on Figure 4.15-2. Los Angeles International Airport is the busiest airport in California and the third busiest in the United States in term of passengers. In 2010, Los Angeles International handled nearly 59 million passengers (Airports International Council, 2011).



Major Freeways, Highways, and Railroads in the Project Area

FIGURE 4.15-1

Table 4.15-3. SCAG Baseline Traffic Analysis and 2035 Projected for Counties within the Project Area

County	Centerline Miles	2003 VMT	Projected 2035 VMT	VMT Change	2003 VHT	Projected 2035 VHT	VHT Change	2003 Delay (Hours)	Projected 2035 Delay (Hours)	Delay Change	2003 Delay per Capita (Minutes)	Projected 2035 Delay per Capita (Minutes)	Delay Change (Minutes)	2003 Average Speed (mph)	Projected 2035 Average Speed (mph)	Change Average Speed (mph)
Los Angeles	7,470	216,375,000	264,454,000	+48,079,000	7,901,000	10,590,000	+2,689,000	2,675,000	4,217,000	+1,541,000	23.3	30.4	7.1	27.4	25.0	-2.4
Orange	2,006	70,458,000	85,287,000	+14,829,000	2,315,000	3,055,000	+740,000	687,000	1,093,000	+407,000	19.3	25.4	6.2	30.4	27.9	-2.5
Riverside	3,247	44,009,000	87,955,000	+43,946,000	1,153,000	3,497,000	+2,344,000	261,000	1,619,000	+1,358,000	13.4	40.1	26.8	38.2	25.2	-13.0
San Bernardino	5,329	54,240,000	96,252,000	+96,252,000	1,392,000	3,088,000	+1,696,000	276,000	1,093,000	+816,000	13.2	31.1	17.9	39.0	31.2	-7.8
Ventura	876	18,611,000	5,074,000	+5,074,000	535,000	803,000	+268,000	125,000	281,000	+155,000	13.3	23.4	10.1	30.5	29.5	-3.7

Source: SCAG 2008b
VMT – Vehicle miles traveled.
VHT – Vehicle hours traveled.

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Table 4.15-4. Airports Located within the Project Study Area

Airport Name	Type
San Diego	International
John Wayne Airport – Orange County	Commercial/Private
McClellan – Palomar (San Diego County)	Commercial/Private
Burbank – Glendale – Pasadena	Commercial/Private
Meadows Field (Kern County)	Commercial/Private
Hawthorne	Municipal
Inyokern	Commercial/Private
Los Angeles	International
Long Beach	Commercial/Private
Montgomery Field (San Diego County)	Commercial/Private
Miramar (San Diego County)	Military
Point Mugu (Ventura County)	Military
North Island (Coronado, San Diego County)	Military
Ontario	International
Oxnard	Commercial/Private
Palm Springs	Regional
March (Riverside County)	Military
Santa Barbara	Municipal
Santa Monica	Municipal
Palmdale	International
Van Nuys	Commercial/Private

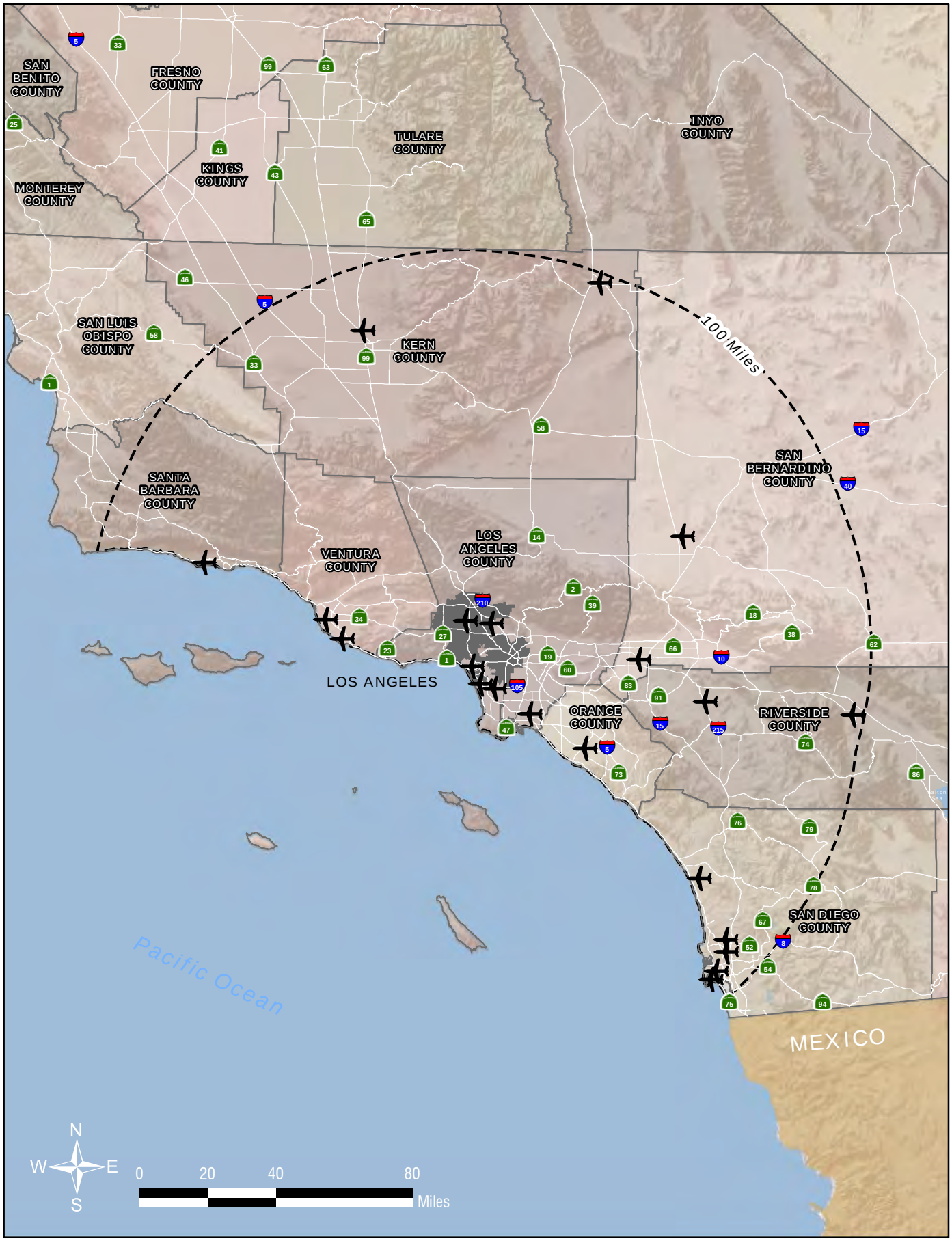
Source: ESRI, 2010.

Railway

Los Angeles is a major main line rail hub with Union Pacific (UP) operating four terminals, and Burlington Northern Santa Fe (BNSF) operating three terminals. These railroads link Southern California with other U.S. regions, Mexico, and Canada either directly or via their connections with other railroads. The two main line railroads also maintain and serve major facilities in the project study area. Intermodal facilities in Commerce, East Los Angeles, San Bernardino, and Carson near the San Pedro Bay Port serve on-dock rail yards at the Ports of Los Angeles and Long Beach. Major classification yards are located in Barstow, East Los Angeles, Commerce, Industry, and West Colton, and auto loading facilities in Ontario and San Bernardino. Key railroads within the project study area are presented in Figure 4.15-1.

Ports

There are four ports within the project study area, including the Port of Los Angeles and the Port of Long Beach, the two largest ports in the United States (Table 4.15-5).



Airports in the Project Area

FIGURE 4.15-2

Table 4.15-5. Ports within the Project Study Area

Port Name	Description
Port of Los Angeles, San Pedro Bay	The Port of Los Angeles is the number one port, by container volume and cargo value in the United States, handling 8.4 million TEUs (twenty-foot equivalent units) in calendar year 2007.The Port generates 919,000 regional jobs and $39.1 billion in annual wages and tax revenues. A proprietary department of the City of Los Angeles, the Port of Los Angeles is self-supporting and does not receive taxpayer dollars.
Port of Long Beach, San Pedro Bay	The Port of Long Beach is the second-busiest seaport in the United States. More than $100 billion worth of cargo moves through the Port of Long Beach every year. The Port of Long Beach is a public agency managed and operated by the City of Long Beach Harbor Department. The Port is governed by the Long Beach Board of Harbor Commissioners, whose five members are appointed by the mayor of Long Beach and confirmed by the Long Beach City Council.
Unified Port of San Diego, San Diego Bay	Located in Downtown San Diego, the Unified Port of San Diego oversees two maritime cargo terminals, a cruise ship terminal, 17 public parks, various wildlife reserves and environmental initiatives, a Harbor Police department and the leases of more than 600 tenant and sub-tenant businesses around San Diego Bay. The Unified Port is governed by a seven-member Board of Port Commissioners; one commissioner each is appointed by the city councils of Chula Vista, Coronado, Imperial Beach and National City, and three commissioners are appointed by the San Diego City Council.
Port Hueneme, Oxnard Harbor District	The Port Hueneme is the only deep water harbor between Los Angeles and the San Francisco Bay area and is the U.S. Port of Entry for California's central coast region. It serves International businesses and ocean carriers from the Pacific Rim and Europe. Over $7 billion in cargo value moves through the Port of Hueneme each year.

Sources: Port of Los Angeles, 2010; Port of Long Beach, 2010; Unified Port of San Diego, 2010; and Port of Hueneme, 2010.

Non-motorized Transportation Network

The City has approximately 378 miles of bikeways, including 64 miles of bicycle paths, 186 miles of bicycle lanes, and 124 miles of bicycle routes (City of Los Angeles, 2010). The recently adopted 2010 Bicycle Plan will expand upon the 673 miles of bikeways designated in the 1996 Plan to establish a Citywide Bikeway System of 1,680 miles of designated bikeways, spread through a system of backbone routes, neighborhood networks, and a green network that takes advantage of shared use paths through parks and along river channels.

Pedestrian access at and near public transit in most major commercial areas and many residential areas is facilitated by sidewalks, pedestrian malls, and jogging, pedestrian trails, and paths.

4.15.2 Thresholds of Significance

This Program Environmental Impact Report (PEIR) utilizes California Environmental Quality Act (CEQA) thresholds of significance and *City of Los Angeles CEQA Thresholds Guide* to determine if potential impacts to transportation/traffic would occur. Analysis is undertaken on a program level. For the purpose of this analysis, the area for the project is defined as the City and the area within 100 miles of the City. SWIRP does emphasize local processing and handling of discarded materials generated in the City; however, it may not be feasible for all facility types to be built within the City either due to lack of available space or potential land use conflicts. Therefore, a 100-mile study area is included in the analysis to capture any potential impact to areas outside of the City.

The following information is provided in accordance with Section 15126.2 of the *CEQA Guidelines*. Appendix G of the *CEQA Guidelines* suggests that a development project could have a significant impact related to transportation and traffic if the project would cause any of the following effects:

- Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (e.g., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)
- Exceed, either individually or cumulatively, a LOS standard established by the County Congestion Management Agency for designated roads or highways
- Substantially increase hazards due to design features (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)
- Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)
- Result in inadequate emergency access
- Result in inadequate parking capacity

4.15.3 Project-Level Analysis

SWIRP Programs and Policies

Table 4.15-6 provides an analysis of potential impacts that could result from implementation of the policies and programs associated with SWIRP relative to transportation and traffic. The City's existing policies and programs, as well as new policies and programs identified through the stakeholder planning process, were analyzed to determine if a potential significant impact would occur as a result of project implementation. As shown in Table 4.15-6, many of the policies and programs associated with SWIRP would not result in any additional traffic generation. The others may result in additional truck trips to pick up blue and green bins in areas that were not previously receiving recycling service. At this time, the number of additional trucks and their ultimate destination for the increased blue and green bin pick ups is unknown, thus a policy-specific traffic analysis cannot be conducted. LASAN and private haulers routinely conduct audits of their truck routes to ensure the most efficient routing. This helps minimize any traffic impacts related to an increase in truck trips. Therefore, impacts from these policies and programs are expected to be less than significant.

Disposal of residual waste would not result in transportation or traffic impacts since trucks already pick up municipal solid waste and transport it to landfills. Therefore, additional truck trips are not anticipated and the number of truck trips could decrease due to reduced tons disposed in landfills.

Table 4.15-6. Analysis of SWIRP Policies and Programs (Transportation and Traffic)

Initiative	Impact Analysis for Transportation/Traffic[1]	Significance Conclusion
Downstream Policies and Programs[2]		
Expand Residential Recycling Ambassador Program	Implementation of this program is expected to result in additional materials placed in blue and green bins and less material in black bins. Additional truck trips are not expected, since trucks already pick up the three bins. The change will be the quantity of material in each bin. Since additional trucks are not anticipated, no impact is identified.	No Impact
Adding Textiles to the Blue Bins or Partner with Non-Governmental Organizations	Implementation of this program is expected to result in additional materials placed in blue bins and less material in black bins. Additional truck trips are not expected, since trucks already pick up the blue bins. The change will be the quantity of material in each bin. Since additional trucks are not anticipated, no impact is identified.	No Impact
Bulky Item Reuse and Refurbishment	Under this policy/program bulky materials would be collected by crews for use by non-profits. Currently, bulky items picked up are taken to the landfill. This program/policy would not result in an increase in truck trips; rather the destination of the materials would change. Therefore, no traffic impacts are identified.	No Impact
Expand Residential Food Scrap Program	Implementation of this program is expected to result in additional materials placed in green bins and less material in black bins. Additional truck trips are not expected, since trucks already pick up the green bins. The change will be the quantity of material in each bin. Since additional trucks are not anticipated, no impact is identified.	No Impact
Large-Scale Media/Social Marketing	Implementation of this program is expected to result in additional materials placed in blue and green bins and less material in black bins. Additional truck trips are not expected, since trucks already pick up the three bins. The change will be the quantity of material in each bin. Since additional trucks are not anticipated, no impacts are identified.	No Impact
Modify Residential Collection Rates	Implementation of this program is expected to result in additional materials placed in blue and green bins and less material in black bins. Additional truck trips are not expected, since trucks already pick up the three bins. The change will be the quantity of material in each bin. Since additional trucks are not anticipated, no traffic impact is identified.	No Impact
Modify Commercial Collection Rates	Implementation of this program is expected to result in additional materials placed in blue and green bins and less material in black bins. At this time, the number of trucks and their ultimate destination for the increased blue bin and green bin materials is unknown, thus a policy-specific traffic analysis cannot be conducted. LASAN and private haulers routinely conduct audits of their truck routes to ensure the most efficient routing. This helps minimize any traffic impacts related to an increase in truck trips. Therefore, impacts are expected to be less than significant.	Less than Significant

Table 4.15-6. Analysis of SWIRP Policies and Programs (Transportation and Traffic) (Continued)

Initiative	Impact Analysis for Transportation/Traffic	Significance Conclusion
Expand Multi-Family Recycling	Implementation of the policy/program will result in additional blue bin pick up as the program expands recycling for multi-family units. Assembly Bill 341 (AB 341) requires all multi-family residences with five units and above to recycle. The number of trucks and their ultimate destination for the increased blue bin materials is unknown, thus a policy-specific traffic analysis cannot be conducted. LASAN and private haulers routinely conduct audits of their truck routes to ensure the most efficient routing. This helps minimize any traffic impacts related to an increase in truck trips. Therefore, impacts are expected to be less than significant.	Less than Significant.
Multi-Family Green Bins	Implementation of the policy/program will result in additional green bin pick up as the program requires organics recycling for multi-family units. At this time, the number of trucks and their ultimate destination for the increased green bin materials is unknown, thus a policy-specific traffic analysis cannot be conducted. LASAN and private haulers routinely conduct audits of their truck routes to ensure the most efficient routing. This helps minimize any traffic impacts related to an increase in truck trips. Therefore, impacts are expected to be less than significant.	Less than Significant
All Businesses to have Recycling Services	Implementation of the policy/program will result in additional blue bin pick up as the program requires recycling for all businesses. At this time, the number of trucks and their ultimate destination for the increased blue bin materials is unknown, thus a policy-specific traffic analysis cannot be conducted. LASAN and private haulers routinely conduct audits of their truck routes to ensure the most efficient routing. This helps minimize any traffic impacts related to an increase in truck trips. Therefore, impacts are expected to be less than significant.	Less than Significant
Commercial Haulers to Offer Recycling Services to Customers	Implementation of the policy/program will result in additional blue bin pick up as the program requires commercial haulers to offer recycling service. At this time, the number of trucks and their ultimate destination for the increased blue bin materials is unknown, thus a policy-specific traffic analysis cannot be conducted. LASAN and private haulers routinely conduct audits of their truck routes to ensure the most efficient routing. This helps minimize any traffic impacts related to an increase in truck trips. Therefore, impacts are expected to be less than significant.	Less than Significant
Expand Commercial Technical Assistance	Implementation of this program is expected to result in additional materials placed in blue and green bins and less material in black bins. At this time, the number of trucks and their ultimate destination for the increased green bin materials is unknown, thus a policy-specific traffic analysis cannot be conducted. LASAN and private haulers routinely conduct audits of their truck routes to ensure the most efficient routing. This helps minimize any traffic impacts related to an increase in truck trips. Therefore, impacts are expected to be less than significant.	Less than Significant
Expand Construction and Demolition (C&D) Technical Assistance	Expanding C&D technical assistance would enhance the processing of C&D materials and reduce the amount of materials going to landfills. It represents a shift in truck trips and would not result in an increase in truck trips. Therefore, no impact is identified.	No Impact

Table 4.15-6. Analysis of SWIRP Policies and Programs (Transportation and Traffic) (Continued)

Initiative	Impact Analysis for Transportation/Traffic	Significance Conclusion
Provide More Public Area Recycling	Providing more public recycling areas would result in additional collection of recycling materials and additional blue bins. However, it is expected that they would be picked up at the same time that non-recyclable waste is collected by maintenance or park crews. Therefore, there would not be a net increase in trips and no traffic impacts are identified.	No Impact
C&D Ordinance	Implementing a C&D Ordinance would make materials separation at C&D processing facilities mandatory. It would result in a shift in truck trips from landfills to facilities. Therefore, no impacts are identified.	No Impact
Mandatory Participation Programs[3]		
Mandatory Recycling Separation	Implementation of this program is expected to result in additional materials placed in blue bins and less material in black bins. Additional truck trips are not expected, since trucks already pick up the blue bins. The change will be the quantity of material in each bin. It is assumed that voluntary commercial recycling would already be underway. Since additional trucks are not anticipated, no traffic impacts are identified.	No Impact
Mandatory Organics Separation	Implementation of this program is expected to result in additional materials placed in green bins and less material in black bins. Additional truck trips are not expected, since trucks already pick up the green bins. The change will be the quantity of material in each bin. It is assumed that voluntary organics separation would already be underway. Since additional trucks are not anticipated, no traffic impacts are identified.	No Impact
Resource Recovery Centers (RRC) at Transfer Stations and Landfills	The addition of resource recovery centers at landfills and transfer stations would divert recycled materials from disposal. Additional truck trips are not anticipated.	No Impact
Residential Recycling Ambassadors (Reinforcement)	Implementation of this program is expected to result in additional materials placed in blue and green bins and less material in black bins. Additional truck trips are not expected, since trucks already pick up the three bins. The change will be the quantity of material in each bin. It is assumed that voluntary recycling would already be underway. Since additional trucks are not anticipated, no impact is identified.	No Impact
Direct Commercial Technical Assistance (Reinforcement)	Implementation of this program is expected to result in additional materials placed in blue and green bins and less material in black bins. Additional truck trips are not expected, since trucks already pick up all materials at each site. The change will be the quantity of material in each bin. It is assumed that voluntary commercial recycling would already be underway. Since additional trucks are not anticipated, no impacts are identified.	No Impact
Increased Diversion Requirements at C&D Facilities	Increasing diversion requirements at C&D facilities would result in less materials going to landfills, which could represent a shift in truck trips from landfills to facilities. Therefore, no impact is identified.	No Impact

Table 4.15-6. Analysis of SWIRP Policies and Programs (Transportation and Traffic) (Continued)

Initiative	Impact Analysis for Transportation/Traffic	Significance Conclusion
Upstream Policies[4]		
Extended Producer Responsibility (EPR) for Toxics	This policy is anticipated to reduce waste generation, specifically black bin materials. This could result in a reduction of trips to pick up black bin materials. Therefore, no impact is identified.	No Impact
EPR for Difficult to Recycle Materials	Implementation of this program is expected to result in additional materials placed in blue bins and less material in black bins, since more materials would be recyclable. Additional truck trips are not expected, since trucks already pick up the blue bins. The change will be the quantity of material in each bin. Since additional trucks are not anticipated, no impacts are identified.	No Impact
Single-use Bag Ban	This policy is anticipated to reduce waste generation, specifically black bin materials. This could result in a reduction of trips to pick up black bin materials. However, there could be a corresponding increase in blue bin recycling for paper bags. Additional trips are not expected, since blue bin pick up would already be occurring. Therefore, no impact is identified.	No Impact
Disposal of Remaining Residual Waste[5]		
Landfill Disposal – Truck Haul, Rail Haul	Disposal of residual waste would not result in transportation or traffic impacts since trucks already pick up solid waste and transport it to landfills. Therefore, additional truck trips are not anticipated. Rail haul may also occur to transport residual waste to remote landfill locations; however, this would be minimal and infrequent.	No Impact

(1) Depending on phasing and implementation of various proposed programs and policies, along with anticipated growth in the City, there will be a need for additional facilities to process the diverted materials. Please refer to Section 4.15.3 for an impact analysis of the future facilities.
(2) Refer to Chapter 2.0, Table 2.3-1 for a detailed description of the Downstream Policies and Programs.
(3) Refer to Chapter 2.0, Table 2.3-2 for a detailed description of the Mandatory Participation Programs.
(4) Refer to Chapter 2.0, Section 2.3.4 for a detailed description of the Upstream Policies.
(5) Refer to Chapter 2.0, Section 2.3.6 for a detailed description of the Disposal of Remaining Residual Waste program.

Rail haul may also occur to transport residual waste to remote landfill locations; however, this would be minimal and infrequent. For example, at maximum capacity, the Puente Hills intermodal facility is designed to handle up to two trains per day, or approximately 8,000 tons per day of residual waste.[2] At 90 percent diversion, citywide disposal of residual waste would be approximately 3,000 tons per day in 2030. If all residual waste was transported to remote landfills via rail haul, this would be less than one train per day. Rail capacity is estimated to be 300 to 400 trains per day.[3] Therefore, no freight railroad impacts are anticipated. Should the City consider participating in a waste-by-rail disposal alternative for residual waste, a project-specific environmental review may need to be undertaken.

SWIRP Facilities

The potential traffic impacts associated with the implementation of the SWIRP proposed project are primarily associated with the construction and operation of the future facilities that would be required to process the additional materials that would be diverted from the landfill. To accommodate the increase in materials diverted from the landfill and processing of the discarded materials, SWIRP identifies the need for additional processing facilities, including one large or six small composting facilities, three materials recovery facilities, one resource recovery center, and five black bin facilities.

Anticipated Facility Trip Generation

Table 4.15-7 provides a trip generation summary for each of the proposed facility types. Trip generation per facility ranges from 200 to 756 average daily trips (ADT), depending on the type of facility. Trip generation assumptions consider the amount of material each facility would process per day and the size of the trucks bringing the material. The trip generation assumes both the trips associated with incoming material, as well as the trips associated with outgoing material, once it has been processed. A passenger car equivalent (PCE) was also applied to each collection truck. Each truck was considered to have a PCE of two vehicles. Assuming a mix of black bin facilities and technologies would be used totaling 1,792 ADT. If all of the proposed facilities were constructed, SWIRP could generate approximately 4,110 ADT. It is important to note that not all of the 4,110 trips would be considered "new" trips. Some of these trips may carry materials that would have otherwise been destined for landfills.

Substantial Traffic Increase

The potential for the project to result in a substantial traffic increase is dependent upon the location of a specific facility as well as the operational characteristics of the roadways and intersections that would handle traffic to and from the facilities. Specific locations for the future materials processing facilities have not been identified at this time. SWIRP does seek to locate the facilities within the City and within the different wastesheds of the City. However, it may be possible that some of the facilities could be located outside the City.

As noted in Table 4.15-7, facilities could generate between 200 and 756 ADT. Due to the uncertainty of where the facilities would be located and the operational characteristics of the adjacent roadways and intersections, it is possible that a 756 ADT increase could represent an increase that would be significant,

[2] Sanitation Districts of Los Angeles Waste by Rail Project, http://www.lacsd.org/solidwaste/wbr/default.asp (accessed October 1, 2013). Each rail car carries approximately 100 tons. Therefore, each train would have approximately 40 rail cars.

[3] *I-15 Corridor System Master Plan Freight: Railroads*, June 2011, http://www.i15alliance.org/pdfs/tech_memos/freight_goods_movement/I-15CSMP_Freight_Railroad_FINAL.pdf (accessed October 1, 2013).

if a specific intersection or roadway was already operating under seriously degraded conditions. Therefore, a potentially significant impact is identified.

Exceed an LOS Standard Established by the County Congestion Management Agency

According to the CMP (County of Los Angeles, 2010), the LOS for the freeway system in the County of Los Angeles is currently experiencing a LOS of E for the majority of the system. In addition, SCAG is predicting that in the next 25 years, the VHT and VMT are expected to increase with the average speeds expected to decrease. Considering the mature roadway system located in the County of Los Angeles, the undetermined location of the proposed facilities, the current level of service of the area freeways, and the projected increases in VHT and VMT over the next 25 years, the project has the potential to add additional trips that will further burden the freeway network. Depending on the location of the future facilities and that location's relation to impacted roadways, there is a potential for future facilities to result in an exceedance of LOS standards established by the County Congestion Management Agency. Therefore, impacts are considered potentially significant.

Air Traffic Patterns

Implementation of the proposed project would not result in a change in air traffic patterns. It would not result in an increase in air travel, nor change the location of travel so as to result in a substantial safety risk. The proposed project is the implementation of programs and policies to increase solid waste diversion from landfills, and does not have the potential to impact air traffic patterns. Therefore, no impact is identified for this issue area.

Design Hazards

The future facility locations are currently undetermined. Design principles used to integrate solid waste facilities within the community and neighborhood regarding traffic is anticipated to be given consideration. The site location, off-site routes, and ingress and egress plans will be chosen to work with the existing traffic patterns and limit the potential traffic burdens. Although the facilities may be located outside of the City limits, it is unlikely they will be located in an area that causes hazards due to incompatible uses. Additionally, proper site design to avoid hazards due to sharp curves or dangerous intersections will be incorporated into the project design. Therefore, impacts are considered less than significant.

Emergency Access

As future designs are proposed for the facilities, emergency access would be considered. The jurisdiction processing the permit to construct the facility would review the site plan and improvements to ensure that there is adequate emergency access. Additionally, should construction of any of these facilities result in any kind of temporary road closure, a traffic control plan would be developed to identify appropriate lane closures/routing and detours. This information would also be provided to local emergency providers to ensure adequate access and travel for emergency vehicles is maintained. Therefore, emergency access impacts during both the construction and operation phase for future facilities is considered less than significant.

Table 4.15-7. SWIRP Facility Trip Generation Analysis Table

Facility Type	Typical Facility Size Range	Facility Size Assumption for the PEIR	Number of Facilities Recommended in SWIRP	Process Assumptions for the PEIR – ***Incoming Material*** (tons per day)	Typical l Truck Capacity for Facility Type – ***Incoming Material*** (tons)[1]	Process Assumptions for the PEIR – ***Outgoing Material*** (tons per day)[2]	Typical l Truck Capacity for Facility Type– ***Outgoing Material*** (tons)[3]	Trucks per Day Incoming Material/ Outgoing Material	Truck Trips per Day[4]	Truck Offset[5] Passenger Car Equivalent	Employees	Employee Trips per day	Total Trips per Day per Facility	Number of Facilities Recommended in SWIRP	Total Trips
Composting Facilities	60 acres for large scale facility 15 acres – small scale	30 acres	1 large or 6 small. This analysis assumed two 30-acre composing facilities.	600 tpd	7 tons	300 tpd	18 ton	86/17	206	412	14	28	440	1 large or 6 small. This traffic generation table assumes two 30-acre composting facilities.	880
Material Recovery Facilities	5 to 10 acres	7 acres	3	300 tpd	7 tons	300 tpd	16 ton	43/19	124	248	40	80	328	3	984
Resource Recovery Center	2 acres	2 acres	1	100 tpd	1 to 7 tons	100 tpd	16 ton	14 to 100/6	212	424	15	30	454	1	454
Mixed Material Processing (MMP)	5 to 7 acres	6 acres	SWIRP recommends 5 black bin facilities total, but does not recommend a specific type of technology.	300 tpd	7 tons	300 tpd	18 ton	43/17	120	240	50	100	340	SWIRP recommends 5 black bin facilities total, but does not recommend a specific type of technology. For this analysis, it is assumed that a mix of facilities/technologies would be used.[6]	1,792
Alternative Technology (Advanced Thermal Recycling)	5 to 15 acres	10 acres		1,200 tpd	7 tons	120 tpd	20 ton	172/6	356	712	22	44	756		
Alternative Technology (Biological)	5 to 10 acres	7 acres		350 tpd	7 tons	105 tpd	20 ton	50/5	110	220	14	28	248		
Alternative Technology (Thermal)	2 to 7 acres	5 acres		250 tpd	7 tons	50 tpd	20 ton	36/3	78	156	22	44	200		
Total ADT of All Facilities															4,110[7]

(1) An industry average of 7 tons per collection truck is used for this analysis.
(2) Outgoing material may be less than incoming due to material reduction during processing. This analysis assumes the following reductions: Composting facility – 50% volume reduction; Alternative Technology (Advanced Thermal Recycling) – 90% volume reduction; Alternative Technology (Biological) – 70% volume reduction; and Alternative Technology (Thermal) – 80% volume reduction. No reductions were assumed for the other facility types.
(3) A 16-ton per transfer vehicle was assumed for Material Recovery Facilities and Resource Recovery Centers, as those materials are bulkier and therefore, less dense (e.g., cans, bottles, paper, reusables). An 18-ton transfer vehicle assumption was used for mixed material processing as outgoing loads would include some recyclables and some compostables and residuals, which have a higher density. A 20-ton transfer vehicle was assumed for alternative technology facilities as those materials include ash, vitrified ash, digestate, and residuals, which have a higher density.
(4) Calculated by adding the daily incoming and outgoing trucks and multiplying by 2.
(5) Each truck is considered to have a passenger car equivalent of two vehicles.
(6) A mix of the following black bin facilities was assumed for this analysis: one mixed materials processing facility, one alternative technology (advanced thermal recycling facilities), two alternative technology (biological) facility and one alternative technology (thermal) facility. Trips from these mix of facilities total 1,792 per day.
(7) Not all of the 4,110 trips would be considered “new” trips. Some of these trips may carry materials that would have otherwise been destined for landfills.

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Alternative Transportation

Depending on the location of future facilities, they may be located adjacent to transit stops, bike routes, and pedestrian paths. The jurisdiction processing the permit to construct the facility would review the site plan and improvements to ensure there is adequate access to any existing alternative transportation options. Additionally, should construction of any of these facilities result in any kind of temporary road closures that could impact bus, pedestrian, or bicycle routes, a traffic control plan would be developed. Signage to inform alternative transportation users are typically part of such a control plan. Therefore, impacts related to alternative transportation during both the construction and operation phase for future facilities is considered less than significant.

Parking Capacity

Parking requirements would be considered on a project-by-project basis depending on the requirements of the jurisdiction that is approving the future facility. Per mitigation measure TR-2, future facilities would adhere to adopted parking requirements for the type of use proposed, including adequate parking for employees, customers, and any collection vehicles that are stored on-site. This will reduce impacts to below a level of significance. Therefore, impacts are less than significant.

Summary

Table 4.15-8 provides a summary of transportation/traffic impacts, per facility type. As shown in Table 4.15-8, construction and operational impact will be potentially significant, even with the incorporation of mitigation.

Table 4.15-8. Summary of Traffic Impacts by Facility Type

Facility Type	Impact with Mitigation
Clean Material Recovery Facilities	Potentially Significant
Composting (Aerobic)	Potentially Significant
Composting (Anaerobic)	Potentially Significant
Resource Recovery Centers	Potentially Significant
Mixed Material Processing	Potentially Significant
Alternative Technology – Advanced Thermal Recycling	Potentially Significant
Alternative Technology – Biological (Anaerobic Digestion)	Potentially Significant
Alternative Technology – Thermal (Plasma Arc, Gasification, Pyrolysis, and Others)	Potentially Significant

4.15.4 Cumulative-Level Analysis

Cumulative traffic analysis is a function of the impact of the proposed project, as well as the impact of other projects that are proposed in the vicinity. Due to the uncertainty of where future facilities will be located, it cannot be determined, conclusively, if the project will result in a significant cumulative impact. Given the fact that there are many roadways and intersections in the project study area that operate at an unacceptable LOS, it is possible that future facilities could contribute to a potentially significant cumulative impact. Upon determination of the facility location, a project-level CEQA analysis will be required to determine if construction of the facilities will have a cumulative impact. However, until that project-level analysis is conducted, cumulative impacts are determined to be potentially significant.

4.15.5 Mitigation Measures

TR-1 Prior to the approval of any future facility, a project-level traffic impact report shall be prepared by a qualified traffic consultant. The report shall be prepared to the standard of the local jurisdiction that would be providing approvals for the project. The report shall include existing traffic information, thresholds of significance, construction and operation-related trip generation and a project and cumulative-level analysis. The traffic report shall identify mitigation measures to reduce project- and cumulative-level impacts to the maximum extent practicable. Such mitigation measures could include roadway and intersection improvements, payment of traffic impact fees, timing of collection truck schedules to avoid peak hours, encouraging carpool, van pool, or alternative transportation for employees through the use of incentives.

TR-2 Future facilities shall adhere to minimum adopted parking requirements for the type of use proposed, including adequate parking for employees, customers, and any collection vehicles that are stored on-site.

4.15.6 Conclusion

Project-level and cumulative-level impacts due to the increase in truck trips and impacts to area freeway LOS are considered a potentially significant impact. Implementation of mitigation measures TR-1 will require a traffic report and identification of mitigation once a future project site is identified. However, since the specific location of future facilities are not known and the conditions of the roadway network adjacent to the future sites cannot be determined at this time, it cannot be conclusively stated that all potential traffic impact would be reduced to below a level of significance. Thus impacts are considered potentially significant and unavoidable.

In order to minimize potential parking-related impacts at future facilities, mitigation measure TR-2, which requires the provision of adequate parking per adopted parking requirements of the jurisdiction where facilities would be constructed, will reduce potential parking-related impacts to below a level of significance.

5.0 PROJECT ALTERNATIVES

The identification and analysis of alternatives is a fundamental concept under the California Environmental Quality Act (CEQA). This is evident in that the role of alternatives in a Final Program Environmental Impact Report (Final PEIR) is set forth clearly and forthrightly within the CEQA Statutes. Specifically, CEQA Section 21002.1(a) states:

> *"The purpose of an environmental impact report is to identify the significant effects on the environment of a project, to identify alternatives to the project, and to indicate the manner in which those significant effects can be mitigated or avoided."*

The *CEQA Guidelines* require a Final PEIR to "describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives" (*CEQA Guidelines* Section 15126.6(a)). The *CEQA Guidelines* direct that selection of alternatives focus on those alternatives capable of eliminating any significant environmental effects of the project or of reducing them to a less than significant level, even if these alternatives would impede to some degree the attainment of project objectives, or would be more costly. In cases where a project is not expected to result in significant impacts after implementation of recommended mitigation, review of project alternatives is still appropriate.

The range of alternatives required within a Final PEIR is governed by the "rule of reason" which requires a Final PEIR to include only those alternatives necessary to permit a reasoned choice. The discussion of alternatives need not be exhaustive. Furthermore, a Final PEIR need not consider an alternative whose implementation is remote and speculative or whose effects cannot be reasonably ascertained.

Pursuant to *CEQA Guidelines*, one of the criteria for defining project alternatives is the potential to attain the project objectives. The objectives of the Solid Waste Integrated Resources Plan (SWIRP) represent City of Los Angeles (City) policies and the guiding principles identified during the stakeholder process[1] and are as follows:

- Achieve a 75 percent landfill diversion rate for solid waste by 2013
- Achieve a 90 percent landfill diversion rate for solid waste by 2025
- Protect public health and the environment
- Make the City a leader in implementing Zero Waste practices
- Promote manufacturer and consumer responsibility
- Provide incentives for reducing, reusing, and recycling
- Increase recycling by providing convenient opportunities for residents, businesses, and institutions to participate
- Find diversion solutions that are both economically efficient and environmentally preferable

[1] The SWIRP stakeholder process included 42 regional workshops and three City-wide conferences during Phase 1. Phase 2 included 21 regional workshops and one citywide conference. Additionally, the City held 109 key constituent meetings, 27 house meetings, and 75 business meetings.

- Promote education and conduct outreach to decrease wasteful consumption and to increase recycling
- Invest in new, safe technologies for energy and resource recovery
- Provide solutions that are equitable and do not unfairly reward or penalize one community over another

Five alternatives are evaluated in this Final PEIR. One of the alternatives represents the "No Project" alternative. That is, SWIRP would not be implemented and solid waste would be handled at local landfills (Section 5.1). Four additional alternatives are analyzed which represent differing levels of implementation of the SWIRP goals, programs and policies. These are presented as Scenarios 1, 2, 3 and 4 in SWIRP and are discussed below in Sections 5.2 through 5.5[2]. An alternative site for the SWIRP project is not presented, since SWIRP is a citywide program. Each of the project alternatives is analyzed for its potential to result in environmental impacts and also compared to the proposed project. Table 5.0-1 provides a brief comparison of the components of each alternative and the proposed project.

Summary of the Proposed Project (Full Implementation of SWIRP)

This section provides a summary of the proposed project (full implementation of SWIRP) to provide a basis of comparison between the proposed alternatives and the proposed project. Please refer to Chapter 2.0 for a complete description of the proposed project.

The proposed project (full implementation of SWIRP) is a long-range master plan for solid waste management in the City. SWIRP proposes targeted diversion rates that would be implemented through an expansion of existing policies and programs, implementation of new policies and programs, making certain policies and programs mandatory, adding upstream policies, and the development of future facilities to meet the City's recycling and solid waste infrastructure needs through 2030. The programs and policies identified in SWIRP would apply to residential, commercial, industrial, and institutional generators in the City. SWIRP facilities could be located within the City, but could also be located outside the City. Therefore, the project study area used to determine potentially significant impacts to the environment includes the City and the area within 100 miles of the City. The proposed project includes a variety of programs and policies, as well as new processing facilities and disposal of remaining residual waste at local or remote landfills. Each of these components is described briefly, below.

Expansion of Existing Residential and Commercial Programs

The City has many successful programs in place for managing residential and commercial solid waste and diverting waste from landfills. Under SWIRP, these programs will be expanded, as appropriate, to further improve solid waste management and increase landfill diversion.

[2] SWIRP Scenario 1 achieves the City's goal of 90 percent landfill diversion through the use of black bin technologies. New programs and polices are not implemented. SWIRP Scenario 2 is the implementation of new downstream policies and programs (refer to Chapter 2.0, Table 2.3-1). SWIRP Scenario 3 is implementation of the new downstream policies and programs identified in Scenario 2, plus the addition of mandatory participation programs (refer to Chapter 2.0, Table 2.3-2). SWIRP Scenario 4 is the implementation of the new downstream policies and programs identified in Scenario 2, with the addition of upstream policies (refer to Chapter 2.0, Section 2.3.4). The proposed project is SWIRP Scenario 5, which implements all of the SWIRP components: new downstream programs and policies, mandatory participation programs and upstream policies.

Table 5.0-1. Comparison of Facility and Policy/Program Components (Proposed Project and Alternatives)

Alternative	Anticipated City-Wide Diversion	Number of Facilities Needed[1]					Population Growth	Policies and Programs			
		RRCs	Blue Bin	Green Bin[2]	Black Bin	Total		Expansion	Downstream	Mandatory Participation	Upstream
Proposed Project (Full Implementation of SWIRP)[3]	94 to 98%[4]	1	3	1 large or 6 small	5	10-15	Assumed	Fully Implemented	Fully Implemented	Fully Implemented	Fully Implemented
Alternative 1 (No Project/Landfill Alternative)	72%[5]	0	0	0	0	0	Assumed	Implemented Where Practicable	Not Implemented/ Does Not Meet Project Objectives	Not Implemented/ Does Not Meet Project Objectives	Not Implemented/ Does Not Meet Project Objectives
Alternative 2 (SWIRP Scenario 1/ No New Programs)	91 to 98%[4]	0	0	0	12	12	Assumed	Implemented Where Practicable	Not Implemented/ Does Not Meet Project Objectives	Not Implemented/ Does Not Meet Project Objectives	Not Implemented/ Does Not Meet Project Objectives
Alternative 3 (SWIRP Scenario 2/ New Downstream Programs)	93 to 98%[4]	0	2	1 small	8	11	Assumed	Fully Implemented	Fully Implemented	Not Implemented/ Does Not Meet Project Objectives	Not Implemented/ Does Not Meet Project Objectives
Alternative 4 (SWIRP Scenario 3/ Downstream plus Mandatory)	94 to 98%[4]	1	4	1 large or 6 small	5	11-16	Assumed	Fully Implemented	Fully Implemented	Fully Implemented	Not Implemented/ Does Not Meet Project Objectives
Alternative 5 (SWIRP Scenario 4/ Downstream plus Upstream)	93 to 98%[4]	0	2	1 small	8	11	Assumed	Fully Implemented	Fully Implemented	Not Implemented/ Does Not Meet Project Objectives	Fully Implemented

(1) *SWIRP Phase 2 Policy, Program, and Facility Plan* (Table 33), in Appendix A. Throughput capacity for each facility type: Resource Recovery Center (RRCs) 10 to 200 tons per day (tpd) (PEIR assumes 5 tpd) and Blue Bin/Clean MRF 50 to 600 tpd (PEIR assumes 300 tpd), Green Bin 100 to 1,000 tpd (PEIR assumes 600 tpd), Black Bin 250 to 1,200 tpd (PEIR assumes 500 tpd).
(2) Composting facility footprints range from about 15 acres for a small facility to 60 acres for a large facility.
(3) Full Implementation of SWIRP includes expansion of existing programs, new downstream policies and programs, mandatory policies and programs, and upstream policies and programs.
(4) Anticipated diversion rates would vary based upon the black bin technology selected for this alternative, thus a range is provided (*SWIRP Phase 2 Policy, Program, and Facility Plan* (Table 27), in Appendix A).
(5) The City reached 72% diversion in 2010, the base year for SWIRP.

Downstream Policies and Programs

SWIRP recommends a number of new and/or expanded downstream policies and programs that will need to be implemented to achieve the City's goals. Downstream policies and programs address materials after they are generated. They address collection, processing, diversion, and disposal. The City has identified additional downstream programs that will be needed to achieve the City's goals, including: adding textiles to the blue bin[3] program or partnering with non-governmental organizations, adding food scraps to the green bin[4] program, modifying collection rates to provide incentives, and requiring multi-family and commercial generators to have recycling collection services. Chapter 2.0, Table 2.3-1 provides more details of each of these downstream policies and programs.

Mandatory Participation Programs

SWIRP recommends a number of mandatory participation programs that will need to be implemented to achieve the City's goals. This approach represents a major shift from voluntary to mandatory participation in recycling collection programs, and is intended to motivate all waste generators (residential and commercial) within the City to separate recyclable materials from the waste they generate at their homes or businesses, and place it in the appropriate blue bin, green bin or other appropriate recycling collection container on a regular basis for collection. Recommended mandatory participation programs include: mandatory recycling separation, mandatory organics separation, requiring resource recovery centers at transfer stations and landfills, enforcement and education (i.e., through recycling ambassadors), increased direct technical assistance, and increased diversion requirements at construction and demolition (C&D) facilities. Chapter 2.0, Table 2.3-2 provides additional detail on the mandatory participation programs.

Upstream Policies

"Upstream" is a way of describing policies prior to the point of generation. Upstream policies would affect design of the product or package prior to manufacturing. Extended Producer Responsibility (EPR) is a strategy for encouraging manufacturers to take responsibility for the end-of-life of their products. Chapter 2.0, Section 2.3.4 provides a description of the upstream policies.

Processing Facilities

An essential component of SWIRP is the identification and development of future facilities to meet the City's recycling and solid waste infrastructure needs through 2030. The SWIRP policies and programs have the potential to divert nearly 1.5 million tons more per year over the 2010 baseline levels for commercial and residential generators. The City will require additional blue bin and green bin infrastructure capacity for both residential and commercial generators to meet this need. If all SWIRP policies and programs are implemented, the following number of facilities will be required: one large-scale composting facility or six small-scale composting facilities, three clean material recovery facilities and one resources recovery center. No additional C&D facilities would be needed, as there is adequate capacity at existing facilities (*SWIRP Phase 2 Policy, Program, and Facility Plan*, Section 4.5, included in Appendix A).

[3] "Blue bin materials" are source-separated recyclable materials that have been separated from municipal solid waste for recycling, including recyclable materials from residential, commercial, and institutional sources.

[4] "Green bin materials" are source-separated organic materials that have been separated from municipal solid waste for composting and mulching, including yard trimmings, food scraps, and compostable paper from residential, commercial, and institutional sources.

Black bin processing facilities include, but are not limited to, automated mixed-material processing facilities, anaerobic digestion, advanced thermal recycling (second generation waste-to-energy), and thermal technologies, such as gasification, plasma arc gasification, pyrolysis, and others.[5] Five black bin facilities, with a combined processing capacity of 2,500 tons per day (tpd) are anticipated to be needed. The specific technologies have not been identified at this time.

Disposal of Remaining Residual Waste at Local or Remote Landfills

After implementing various policies, programs, and constructing as needed facilities to achieve the goals of SWIRP, there will be a need to transport and dispose residual waste to landfills. Local and remote landfills are categorized as follows:

- **Local Landfill, Truck Haul –** Landfills located within the local region that can accept residual waste transported from the City. This residual waste can either be direct-hauled to the landfill by refuse collection trucks, or trans-loaded to transfer trucks at local transfer stations.
- **Remote Landfills, Truck Haul** – Landfills located outside the local region that can accept residual waste from the City. This residual waste is transported by transfer trucks from local transfer stations to remote landfills.
- **Remote Landfill, Rail Haul –** Landfills located outside the local region that can accept residual waste from the City. This residual waste is transported by rail. Rail haul infrastructure may include, but is not limited to the construction of new and/or expansion of facilities such as rail transfer stations, intermodal facilities, rail yards, rail tracks and spurs, loading docks, rail right of way contracts, and other associated infrastructure.

The following sections (5.1 through 5.5) describe each of the proposed alternatives.

5.1 ALTERNATIVE 1 (NO PROJECT/LANDFILL ALTERNATIVE)

Under Alternative 1 (No Project/Landfill Alternative), SWIRP would not be implemented, and residual waste would still be disposed at local landfills. The City would continue its existing programs and expand existing programs to accommodate growth, where practicable. Black bin materials would continue to be direct-hauled or transferred and then hauled to the Sunshine Canyon Landfill,[6] or other local or remote landfills that accept residual waste from the City. No black bin processing facilities would be developed for residual waste. This alternative would continue with landfilling, which would result in ongoing landfill-related impacts, including Greenhouse Gas (GHG) emissions, landfill truck traffic and associated truck noise, and water quality impacts. This alternative would also result in less recycling, which could have impacts on forestry and mineral resources. The potential for creating new green jobs would also be reduced, thereby impacting the population.

[5] Black bin materials are source separated residual waste from residential, commercial, and institutional sources, and residual waste that remains after recycling and composting that includes contaminated materials from blue bin and green bin processing facilities.

[6] Note that the City's disposal contract with the Sunshine Canyon Landfill will expire in 2021. The landfill closure date is anticipated to be 2037.

Similar to the proposed project, specific locations for these future facilities have not been identified. Table 5.1-1 presents a comparison of facility needs under this alternative and Table 5.1-2 provides a comparison of the policy and program implementation.

Table 5.1-1. Comparison of Facility Needs
Alternative 1 (No Project/Landfill Alternative) and Proposed Project (SWIRP)

Facility Type	Alternative 1	Proposed Project
RRCs	0	1
Blue Bin	0	3
Green Bin	0	1 large or 6 small
Black Bin	0	5
Total	0	10-15

Table 5.1-2. Comparison of Policy and Program Implementation
Alternative 1 (No Project/Landfill Alternative) and Proposed Project (SWIRP)

Policy/Program Type	Alternative 1	Proposed Project
Expansion of Existing Residential/Commercial Programs	Implemented where practicable	Fully implemented
Downstream	Not implemented	Fully implemented
Mandatory Participation	Not implemented	Fully implemented
Upstream	Not implemented	Fully implemented

Comparison of Alternative 1 (No Project/ Landfill Alternative) to the Proposed Project (SWIRP)

This section describes the potential impacts of Alternative 1, by environmental issue area and compares the conclusions to that of the proposed project.

Aesthetics and Visual Resources

Aesthetic impacts under Alternative 1 would be similar to the proposed project and would relate to the future facilities that would be constructed to handle the increased waste generation associated with population growth. Aesthetics and visual resource impacts will be dependent on where future facilities and infrastructure would be located, but could result in impacts to visual resources related to obstruction of views and shading, lighting, glare and nighttime illumination. On a facility-by-facility basis, this is similar to the potential impacts identified for the proposed project; however, under this alternative, no new facilities would be constructed (compared to up to 15 facilities under the proposed project). Implementation of mitigation measures VR-1 through VR-7 (refer to Chapter 4.0, Section 4.1.5) would reduce the potential aesthetic and visual resources impacts for this alternative to below a level of significance.

Agriculture and Forestry Resources

Agriculture and forestry resources impacts under Alternative 1 would relate to the future facilities that would need to be constructed to handle the increased waste generation associated with population growth. Agriculture and forestry resources impacts will be dependent on where future facilities and infrastructure would be located. Potential impacts to agriculture and forestry resources includes conversion of mapped

farmland or forestland, conflict with agriculture, forest or timberland zoning, and conflict with a Williamson Act contract. This is similar to the potential impacts identified for the proposed project; however, under this alternative, no new facilities would be constructed (compared to up to 15 facilities under the proposed project). Implementation of mitigation measures AG/FOR-1 through AG/FOR-4 (refer to Chapter 4.0, Section 4.2.5) would reduce the potential agriculture and forestry resource impacts associated with facility siting to below a level of significance.

Since Alternative 1 would only realize limited expansion of programs and policies to increase landfill diversion, recycling and composting is not likely to be maximized. Thus, the benefit of increased compost material for agricultural operations would not be realized. Additionally, the benefit of increased paper recycling and C&D materials (lumber/wood) reuse may not be realized, thus more trees are likely to be required to be cut for materials. This represents a greater potential impact to agriculture and forestry resources compared to the proposed project.

Air Quality

Air quality impacts under Alternative 1 include construction and operational emissions associated with future facilities, as well as GHG emissions from ongoing landfilling activities. On a facility-by-facility basis, construction emissions are likely to be similar to what was identified for the proposed project and include significant and unmitigated reactive organic gas (ROG) impacts related to construction and operations of material recovery facilities (MRFs), which is a type of blue bin facility that could be developed under this alternative. However, overall construction emissions would be less, since no new facilities would be constructed under this alternative (compared to up to 15 facilities under the proposed project). Facility operational emissions would be less than the proposed project and vehicular emissions associated with facility operations would also be less than the proposed project, as fewer facilities will be constructed. Truck-related emissions related to landfilling activities would be higher under this alternative, as would GHG emissions from ongoing landfilling activities.

Route collection trucks would be required to adhere to SCAQMD Rule 1193 (Clean On-Road Residential and Commercial Refuse Collection Vehicles), which requires solid waste collection fleet operators to acquire alternative-fuel refuse collection vehicles when procuring or leasing these vehicles. Implementation of mitigation measures AQ-1 through AQ-21 (refer to Chapter 4.0, Section 4.3.5) would reduce some of the construction and facility-related operational emissions. However, similar to the proposed project, impacts are expected to remain significant and unmitigated, pending further site-specific analysis.

Biological Resources

Biological resources impacts under this alternative relate to the future facilities that would be constructed to handle the increased waste generation associated with population growth. Biological resources impacts will be dependent on where future facilities and infrastructure would be located. Potential biological resources impacts relate to the loss of habitat, and potential impact to sensitive species and wildlife corridors. On a facility-by-facility basis, this is similar to the potential impact identified for the proposed project; however, under this alternative, no new facilities would be constructed (compared to up to 15 facilities under the proposed project). Implementation of mitigation measures BIO-1 through BIO-3 (refer to Chapter 4.0, Section 4.4.5) would reduce the potential biological resources impacts associated with facility siting to below a level of significance.

Cultural Resources

Cultural resources impacts under Alternative 1 relate to the future facilities that would be constructed to handle the increased waste generation associated with population growth. Cultural resources impacts will be dependent on where future facilities and infrastructure would be located. Potential impacts are associated with disturbance of archaeological, paleontological and historic resources, and human remains. On a facility-by-facility basis, this is similar to the potential impacts identified for the proposed project; however, under this alternative, no new facilities would be constructed (compared to up to 15 facilities under the proposed project). Implementation of mitigation measures CR-1 through CR-4 (refer to Chapter 4.0, Section 4.5.5) would reduce the potential cultural resources impacts associated with facility siting to below a level of significance.

Geology and Soils

Potential geology and soil impacts under Alternative 1 would relate to the future facilities that would be constructed to handle the increased waste generation associated with population growth. Impacts related to geology and soils will be dependent on where future facilities and infrastructure would be located. Potential impacts relate to earthquake faults, seismic hazards, groundshaking, ground failure/liquefaction, landslides and unstable or expansive soils. On a facility-by-facility basis, this is similar to the potential impacts identified for the proposed project; however, under this alternative, no new facilities would be constructed (compared to up to 15 facilities under the proposed project). Implementation of mitigation measures GS-1 through GS-4 (refer to Chapter 4.0, Section 4.6.5) would reduce the potential impacts related to geology and soils associated with facility siting to below a level of significance.

Hazards and Hazardous Materials

Hazards and Hazardous materials impacts under Alternative 1 would relate to the future facilities that would be constructed to handle the increased waste generation associated with population growth. Impacts related to hazards and hazardous materials will be dependent on where future facilities and infrastructure would be located. Potential hazards and hazardous materials impacts relate to hazardous emissions from future facilities, airports, sites that could be listed in hazardous materials permitting databases, and human health hazards. On a facility-by-facility basis, this is similar to the potential impacts identified for the proposed project; however, under this alternative, no new facilities would be constructed (compared to up 15 facilities under the proposed project). Implementation of mitigation measures HAZ-1 through HAZ-7 (refer to Chapter 4.0, Section 4.7.5) would reduce the potential impacts related to hazards and hazardous materials associated with facility siting to below a level of significance.

Hydrology and Water Quality

Hydrology and water quality impacts under Alternative 1 would relate to the future facilities that would be constructed to handle the increased waste generation associated with population growth. Potential impacts are related to hydrologic resources, water quality, stormwater management, and floodplains. On a facility-by-facility basis, this is similar to the potential impacts identified for the proposed project; however, under this alternative, no new facilities would be constructed (compared to up to 15 facilities under the proposed project). Implementation of mitigation measures HWQ-1 through HWQ-9 (refer to Chapter 4.0, Section 4.8.5) would reduce the potential impacts related to hydrology and water quality associated with facility siting to below a level of significance. However, on-going landfilling activities have the potential for landfill leachate to impact surface and groundwater quality.

Land Use and Planning

Land use and planning impacts under Alternative 1 would relate to the future facilities that would be constructed to handle the increased waste generation associated with population growth. Potential impacts are related to conflicts with applicable land use plans, disruption of established communities or placing facilities near incompatible land uses. On a facility-by-facility basis, this is similar to the potential impacts identified for the proposed project; however, under this alternative, no new facilities would be constructed (compared to up to 15 facilities under the proposed project). Implementation of mitigation measures LU-1 through LU-4 (refer to Chapter 4.0, Section 4.9.5) would reduce the potential impacts related to land use and planning associated with facility siting to below a level of significance.

Mineral Resources

Mineral resources impacts under this alternative would relate to the future facilities that would be constructed to handle the increased waste generation associated with population growth. Impacts related to mineral resources will be dependent on where future facilities and infrastructure would be located. Potential impacts relate to the siting of facilities in mineral resource zones, in areas mapped as locally important mineral resources or in a location that directly or indirectly impacts active oil, gas or geothermal operations. On a facility-by-facility basis, this is similar to the potential impacts identified for the proposed project; however, under this alternative, no new facilities would be constructed (compared to up to 15 facilities under the proposed project). Implementation of mitigation measures MR-1 through MR-4 (refer to Chapter 4.0, Section 4.10.5) would reduce the potential impacts to mineral resources associated with facility siting to below a level of significance.

Since Alternative 1 would only realize limited expansion of programs and policies to increase landfill diversion, metal recycling and C&D material diversion is not likely to be maximized. Thus the benefit of increased metals and plastics recycling may increase, but may not be realized to its maximum potential; therefore, new resources would need to be mined and more fossil fuels used compared to the proposed project. This is more impactive than the proposed project.

Noise

Noise impacts under Alternative 1 include construction and operational noise from future facilities that would be constructed to handle the increased waste generation associated with population growth. On a facility-by-facility basis, construction, operational and vehicular noise is likely to be similar to what was identified for the proposed project. However, overall noise generation from facilities would be less, since no new facilities would be constructed, operated or generate vehicular trips (compared to up to 15 facilities under the proposed project). Mitigation measures N-1 through N-10 (refer to Chapter 4.0, Section 4.11.5) identified for the proposed project would be applicable to this alternative and are expected to reduce the impacts to below a level of significance. Compared to the proposed project, this alternative would have ongoing noise associated with landfill truck trips and operations.

Population and Housing

Potential population and housing impacts under Alternative 1 would relate to the future facilities that would be constructed to handle the increased waste generation associated with population growth. Impacts related to population and housing will be dependent on where future facilities and infrastructure would be located and relate to the potential to displace people or housing. On a facility-by-facility basis, these potential impacts are similar to the potential impacts identified for the proposed project; however, under this alternative, no new facilities would be constructed (compared to up to 15 facilities under

the proposed project). Implementation of mitigation measures PH-1 and PH-2 (refer to Chapter 4.0, Section 4.12.5) would reduce the potential impacts related to population and housing associated with facility siting to below a level of significance. Green job generation under this alternative would be substantially less than under the proposed project.

Public Services/Utilities and Service Systems

Potential public services, utilities and service systems impacts under Alternative 1 would relate to the future facilities that would be constructed to handle the increased waste generation associated with population growth. Impacts relate to water supply and energy. On a facility-by-facility basis, these potential impacts are similar to the potential impacts identified for the proposed project; however, under this alternative, no new facilities would be constructed (compared to up to 15 facilities under the proposed project). Implementation of mitigation measures WS-1, WS-2 and ES-1 (refer to Chapter 4.0, Section 4.13.5) would reduce the potential public services, utilities and service system impacts to below a level of significance.

Recreation

Potential recreation impacts under Alternative 1 would relate to the future facilities that would be constructed to handle the increased waste generation associated with population growth. Impacts related to recreation will be dependent on where future facilities and infrastructure would be located and relate to construction of future facilities on sites that are identified for recreation or conflict with existing recreational amenities. On a facility-by-facility basis, these potential impacts are similar to the potential impacts identified for the proposed project; however, under this alternative, no new facilities would be constructed (compared to up to 15 facilities under the proposed project). Implementation of mitigation measure REC-1 (refer to Chapter 4.0, Section 4.14.5) would reduce the potential recreation-related impacts associated with facility siting to below a level of significance.

Transportation/Traffic

Traffic generation under Alternative 1 relates to construction and operational vehicular trips associated with future facilities. Additionally, this alternative would have ongoing landfill-related truck traffic. On a facility-by-facility basis, construction-related vehicle trips are likely to be similar to what was identified for the proposed project. However, overall construction-related traffic would be less, since no new facilities would be constructed (compared to up to 15 facilities under the proposed project). Vehicular and truck trips associated with facility operations are expected to be less than the proposed project since there will be fewer facilities under this alternative. However, truck trips related to ongoing landfilling activities would be higher under this alternative. Implementation of mitigation measures TR-1 and TR-2 (refer to Chapter 4.0, Section 4.15.5) would reduce some of the traffic impacts. However, similar to the proposed project, impacts are expected to remain significant and unmitigated. This is due to the uncertainty of where the facilities will be located, and the roadway conditions in the vicinity of the facility.

Summary

Compared to the proposed project, on a facility-by-facility basis, Alternative 1 would result in fewer impacts for the issue areas of aesthetics/visual resources, agriculture resources, biological resources, cultural resources, geology/soils, hazards and hazardous material, hydrology/water quality, land use and planning, mineral resources, population and housing, public services, and utilities and service systems and recreation. This is because these potential impacts are related to future facilities and no new facilities are

proposed under this alternative compared to the proposed project (up to 15 facilities). Impacts related to air quality/GHG emissions, noise and traffic related to facility construction and operation would be reduced under this alternative, since no new facilities would be constructed. However, this alternative would continue with landfilling, which results in ongoing landfill-related impacts, including GHG emissions, landfill truck traffic and associated truck noise, and water quality. Table 5.1-3 summarizes how this alternative would or would not meet the objectives identified for the proposed project.

Table 5.1-3. Ability to Meet Project Objectives
Alternative 1 (No Project/Landfill Alternative)

Project Objective	Meet Project Objective?	Ability for Alternative 1 to Meet the Project Objective
Achieve a 75 percent landfill diversion rate for solid waste by 2013.	No	This alternative would not meet this project objective.
Achieve a 90 percent landfill diversion rate for solid waste by 2025.	No	This alternative would not meet this project objective, since it would not implement new policies and programs to expedite the rate at which the City diverts materials from landfills.
Protect public health and the environment.	Partially	The City would adhere to ongoing regulations and requirements related to public health and safety. Typical environmental impacts associated with landfills (e.g., GHG emissions, water quality, truck haul emissions) would not be minimized under this alternative, since landfilling activities would still be ongoing.
Make the City a leader in implementing Zero Waste practices.	No	This alternative does not meet this project objective.
Promote manufacturer and consumer responsibility.	No	This alternative would not include EPR programs, nor would it maximize opportunities for consumer responsibility. Therefore, it does not meet the project objective.
Provide incentives for reducing, reusing, and recycling.	No	This alternative would not include mandatory participation programs, which provide incentives for reducing, reusing and recycling. Therefore, this alternative does not meet this project objective.
Increase recycling by providing convenient opportunities for residents, businesses, and institutions to participate.	Partially	Existing programs to increase recycling would occur under this alternative; however, new programs that would further increase landfill diversion would not be implemented. Therefore, this alternative does not fully meet this project objective.
Find solutions that are both economically efficient and environmentally preferable.	No	New programs to reduce waste and increase recycling would not occur under this alternative, therefore, the economic and environmental benefits, including the creation of new green jobs and reduction of GHG emissions, would not occur.
Promote education and conduct outreach to decrease wasteful consumption and to increase recycling.	Partially	Public education under existing programs would be ongoing, and are likely to be expanded. However, new programs and policies, such as the large-scale social media campaigns, are not likely to be realized under this alternative.
Invest in new, safe technologies.	No	Local landfilling does not meet the objective of investing in new, safe technologies.
Provide solutions that are equitable and do not unfairly reward or penalize one community over another.	No	Local landfilling does not meet the objective of providing a solution that is equitable.

5.2 ALTERNATIVE 2 (SWIRP SCENARIO 1/EXPANSION OF EXISTING POLICIES AND PROGRAMS – NO NEW POLICIES OR PROGRAMS)

Under Alternative 2 (SWIRP Scenario 1/Expansion of Existing Policies and Programs − No New Programs), SWIRP would not be implemented. Existing programs and policies aimed at increased landfill diversion would continue to be expanded, where practicable, but new upstream and downstream policies and programs would not be implemented. Under this alternative, all residual waste will be processed at 12 black bin facilities that would need to be built in order to reach the high diversion goals set by the City. While this alternative has potentially fewer environmental impacts than the proposed project, based on total number of new facility needs (12 compared to up to 15), this alternative does not increase source reduction, recycling, and composting diversion. This alternative does not meet all the project's goals and objectives. Similar to the proposed project, specific locations for these future facilities have not been identified. Table 5.2-1 presents a comparison of facility needs under this alternative and Table 5.2-2 provides a comparison of the policy and program implementation.

Table 5.2-1. Comparison of Facility Needs
Alternative 2 (SWIRP Scenario 1/No New Programs) and Proposed Project (SWIRP)

Facility Type	Alternative 2	Proposed Project
RRCs	0	1
Blue Bin	0	3
Green Bin	0	1 large or 6 small
Black Bin	12	5
Total	12	10-15

Table 5.2-2. Comparison of Policy and Program Implementation
Alternative 2 (SWIRP Scenario 1/No New Programs) and Proposed Project (SWIRP)

Policy/Program Type	Alternative 2	Proposed Project
Expansion of Existing Residential/Commercial Programs	Implemented where practicable	Fully implemented
Downstream	Not implemented	Fully implemented
Mandatory Participation	Not implemented	Fully implemented
Upstream	Not implemented	Fully implemented

Comparison of Alternative 2 (SWIRP Scenario 1/No New Programs) to the Proposed Project (SWIRP)

This section describes the potential impacts of Alternative 2, by environmental issue area and compares the conclusions to that of the proposed project.

Aesthetics and Visual Resources

Aesthetic impacts under Alternative 2 would be similar to the proposed project and would relate to the future facilities that would be constructed to handle black bin processing and the increased waste generation associated with population growth. Under Alternative 2, up to 12 new facilities would be required. Aesthetics and visual resource impacts will be dependent on where future facilities and infrastructure would be located, but could result in impacts to visual resources related to obstruction of views and shading, lighting, glare and nighttime illumination. On a facility-by-facility basis, this is similar to the potential impacts identified for the proposed project. However, fewer facilities would be proposed under this alternative (12 compared to up to 15 that would be needed under the proposed project). Implementation of mitigation measures VR-1 through VR-7 (refer to Chapter 4.0, Section 4.1.5) would reduce the potential aesthetic and visual resources impacts for this alternative to below a level of significance.

Agriculture and Forestry Resources

Agriculture and forestry resources impacts under Alternative 2 would relate to the future facilities that would need to be constructed to handle black bin processing and the increased waste generation associated with population growth. Under Alternative 2, up to 12 new facilities would be required. Agriculture and forestry resources impacts will be dependent on where future facilities and infrastructure would be located. Potential impacts to agriculture and forestry resources includes conversion of mapped farmland or forestland, conflict with agriculture, forest or timberland zoning, and conflict with the Williamson Act contract. On a facility-by-facility basis, this is similar to the potential impacts identified for the proposed project. However, fewer facilities would be proposed under this alternative (12 compared to up to 15 that would be needed under the proposed project). Implementation of mitigation measures AG/FOR-1 through AG/FOR-4 (refer to Chapter 4.0, Section 4.2.5) would reduce the potential agriculture and forestry resource impacts associated with facility siting to below a level of significance.

Since Alternative 2 would not maximize expansion of programs and policies to increase recycling and composting, diversion is not likely to be maximized. Thus, the benefit of increased compost material for agricultural operations would not be realized. Additionally, the benefit of increased paper recycling and C&D materials (lumber/wood) reuse may not be realized, thus more trees are likely to be required to be cut for materials. This represents a greater potential impact to agriculture and forestry resources compared to the proposed project.

Air Quality

Air quality impacts under Alternative 2 include construction and operational emissions associated with future facilities. Under Alternative 2, up to 12 new facilities would be required. Construction emissions are likely to be similar to what was identified for the proposed project. Operational emissions are also anticipated to be similar to the proposed project. Vehicular emissions associated with facility operations are expected to be similar to the proposed project. On a facility-by-facility basis, this is similar to the potential impacts identified for the proposed project. However, fewer facilities would be proposed under this alternative (12 compared to up to 15 that would be needed under the proposed project). Trips to landfills would be minimized. Route collection trucks would be required to adhere to SCAQMD Rule 1193 (Clean On-Road Residential and Commercial Refuse Collection Vehicles), which requires solid waste collection fleet operators to acquire alternative-fuel refuse collection vehicles when procuring or leasing these vehicles. Implementation of mitigation measures AQ-1 through AQ-21 (refer to Chapter 4.0, Section 4.3.5) would reduce some of the construction and operational emissions. However, similar to

the proposed project, impacts are determined to be significant and unmitigated, pending further site-specific analysis.

With regard to GHGs, Alternative 2 would not realize the GHG reductions that would occur under the proposed project. Based upon calculations using the U.S. EPA Waste Reduction Model (WARM model), up to 1.4 million metric tons of carbon dioxide equivalent GHG emissions would be avoided if Alternative 2 (SWIRP Scenario 1/No New Programs) is implemented. The proposed project (full implementation of SWIRP) is expected to result in a reduction of 2.6 million metric tons of carbon dioxide equivalent GHG emissions. This represents a difference of 1.2 million metric tons of carbon dioxide equivalent GHG emissions.

Biological Resources

Biological resources impacts under this alternative relate to the future facilities that would be constructed to handle black bin processing and the increased waste generation associated with population growth. Under Alternative 2, up to 12 new facilities would be required. Biological resources impacts will be dependent on where future facilities and infrastructure would be located. Potential biological resource impacts relate to the loss of habitat, and potential impact to sensitive species and wildlife corridors. On a facility-by-facility basis, this is similar to the potential impacts identified for the proposed project. However, fewer facilities would be proposed under this alternative (12 compared to up to 15 that would be needed under the proposed project). Implementation of mitigation measures BIO-1 through BIO-3 (refer to Chapter 4.0, Section 4.4.5) would reduce the potential biological resource impacts associated with facility siting to below a level of significance.

Cultural Resources

Cultural resources impacts under Alternative 2 would relate to the future facilities that would be constructed to handle black bin processing and the increased waste generation associated with population growth. Under Alternative 2, up to 12 new facilities would be required. Cultural resources impacts will be dependent on where future facilities and infrastructure would be located. Potential impacts are associated with disturbance of archaeological, paleontological and historic resources, and human remains. On a facility-by-facility basis, this is similar to the potential impacts identified for the proposed project. However, fewer facilities would be proposed under this alternative (12 compared to up to 15 that would be needed under the proposed project). Implementation of mitigation measures CR-1 through CR-4 (refer to Chapter 4.0, Section 4.5.5) would reduce the potential cultural resources impacts associated with facility siting to below a level of significance.

Geology and Soils

Potential geology and soil impacts under Alternative 2 would relate to the future facilities that would be constructed to handle black bin processing and the increased waste generation associated with population growth. Under Alternative 2, up to 12 new facilities would be required. Impacts related to geology and soils will be dependent on where future facilities and infrastructure would be located. Potential impacts relate to earthquake faults, seismic hazards, groundshaking, ground failure/liquefaction, landslides and unstable or expansive soils. On a facility-by-facility basis, this is similar to the potential impacts identified for the proposed project. However, fewer facilities would be proposed under this alternative (12 compared to up to 15 that would be needed under the proposed project). Implementation of mitigation measures GS-1 through GS-4 (refer to Chapter 4.0, Section 4.6.5) would reduce the potential impacts related to geology and soils associated with facility siting to below a level of significance.

Hazards and Hazardous Materials

Hazards and Hazardous materials impacts under Alternative 2 would relate to the future facilities that would be constructed to handle black bin processing and the increased waste generation associated with population growth. Under Alternative 2, up to 12 new facilities would be required. Impacts related to hazards and hazardous materials will be dependent on where future facilities and infrastructure would be located. Potential hazards and hazardous materials impacts relate to hazardous emissions from future facilities, airports, sites that could be listed in hazardous materials permitting databases, and human health hazards. On a facility-by-facility basis, this is similar to the potential impacts identified for the proposed project. However, fewer facilities would be proposed under this alternative (12 compared to up to 15 that would be needed under the proposed project). Implementation of mitigation measures HAZ-1 through HAZ-7 (refer to Chapter 4.0, Section 4.7.5) would reduce the potential impacts related to hazards and hazardous materials associated with facility siting to below a level of significance.

Hydrology and Water Quality

Hydrology and water quality impacts under Alternative 2 would relate to the future facilities that would be constructed to handle black bin processing and the increased waste generation associated with population growth. Under Alternative 2, up to 12 new facilities would be required. Impacts related to hydrology and water quality will be dependent on where future facilities and infrastructure would be located. Potential impacts are related to hydrologic resources, water quality, stormwater management, and floodplains. On a facility-by-facility basis, this is similar to the potential impacts identified for the proposed project. However, fewer facilities would be proposed under this alternative (12 compared to up to 15 that would be needed under the proposed project). Implementation of mitigation measures HWQ-1 through HWQ-9 (refer to Chapter 4.0, Section 4.8.5) would reduce the potential impacts related to hydrology and water quality associated with facility siting to below a level of significance. Water quality benefits associated with reduced landfilling would be realized under this alternative.

Land Use and Planning

Potential land use and planning impacts under Alternative 2 would relate to the future facilities that would be constructed to handle black bin processing and the increased waste generation associated with population growth. Under the Alternative 2, up to 12 new facilities would be required. Impacts related to land use and planning will be dependent on where future facilities and infrastructure would be located. Potential impacts are related to conflicts with applicable land use plans, disruption of established communities or placing facilities near incompatible land uses. On a facility-by-facility basis, this is similar to the potential impacts identified for the proposed project. However, fewer facilities would be proposed under this alternative (12 compared to up to 15 that would be needed under the proposed project). Implementation of mitigation measures LU-1 through LU-4 (refer to Chapter 4.0, Section 4.9.5) would reduce the potential impacts related to land use and planning associated with facility siting to below a level of significance.

Mineral Resources

Mineral resources impacts under this alternative would relate to the future facilities that would be constructed to handle black bin processing and the increased waste generation associated with population growth. Under Alternative 2, up to 12 new facilities would be required. Impacts related to mineral resources will be dependent on where future facilities and infrastructure would be located. Potential impacts relate to the siting of facilities in mineral resource zones, in areas mapped as locally important

mineral resources or in a location that directly or indirectly impacts active oil, gas or geothermal operations. On a facility-by-facility basis, this is similar to the potential impacts identified for the proposed project. However, fewer facilities would be proposed under this alternative (12 compared to up to 15 that would be needed under the proposed project). Implementation of mitigation measures MR-1 through MR-4 (refer to Chapter 4.0, Section 4.10.5) would reduce the potential impacts to mineral resources associated with facility siting to below a level of significance.

Since Alternative 2 would not maximize expansion of programs and policies to increase recycling and C&D material diversion is not likely to be maximized. Thus, the benefit of increased metals and plastics recycling may not be realized and new resources would need to be mined and more fossil fuels used. This is more impactive than the proposed project.

Noise

Noise impacts under Alternative 2 include construction and operational noise from future facilities. Under Alternative 2, up to 12 new facilities would be required. On a facility-by-facility basis, construction noise is likely to be similar to what was identified for the proposed project. Similarly, on a facility-by-facility basis, operational-related noise is anticipated to be similar to the proposed project, and will be dependent upon where the future facilities are sited, as well as vehicular noise associated with facility operations However, fewer facilities would be proposed under this alternative (12 compared to up 15 that would be needed under the proposed project).

Mitigation measures N-1 through N-10 (refer to Chapter 4.0, Section 4.11.5) identified for the proposed project would be applicable to this alternative and are expected to reduce the impacts to below a level of significance.

Population and Housing

Potential population and housing impacts under this alternative would relate to the future facilities that would be constructed to handle black bin processing and the increased waste generation associated with population growth. Under Alternative 2, up to 12 new facilities would be required. Impacts related to population and housing will be dependent on where future facilities and infrastructure would be located and relate to the potential to displace people or housing. On a facility-by-facility basis, this is similar to the potential impacts identified for the proposed project. However, fewer facilities would be proposed under this alternative (12 compared to up to 15 that would be needed under the proposed project). These potential impacts are similar to the potential impacts identified for the proposed project. Implementation of mitigation measures PH-1 and PH-2 (refer to Chapter 4.0, Section 4.12.5) would reduce the potential impacts related to population and housing associated with facility siting to below a level of significance. Under this alternative, 4,300 fewer new green jobs would be realized (refer to *SWIRP Phase 2 Policy, Program, and Facility Plan*, Table 10).

Public Services, Utilities and Service Systems

Potential public services, utilities and service systems impacts under this alternative would relate to the future facilities that would be constructed to handle black bin processing and the increased waste generation associated with population growth. Under Alternative 2, up to 12 new facilities would be required. Impacts relate to water supply and energy. On a facility-by-facility basis, this is similar to the potential impacts identified for the proposed project. However, fewer facilities would be proposed under this alternative (12 compared to up to 15 that would be needed under the proposed project).

Implementation of mitigation measures WS-1, WS-2, and ES-1 (refer to Chapter 4.0, Section 4.13.5) would reduce the potential public services, utilities and service system impacts to below a level of significance.

Recreation

Potential recreation impacts under this alternative would relate to the future facilities that would be constructed to handle black bin processing and the increased waste generation associated with population growth. Under Alternative 2, up to 12 new facilities would be required. Impacts related to recreation will be dependent on where future facilities and infrastructure would be located and relate to construction of future facilities on sites that are identified for recreation or conflict with existing recreational amenities. On a facility-by-facility basis, this is similar to the potential impacts identified for the proposed project. However, fewer facilities would be proposed under this alternative (12 compared to up to 15 that would be needed under the proposed project). Implementation of mitigation measure REC-1 (refer to Chapter 4.0, Section 4.14.5) would reduce the potential recreation-related impacts associated with facility siting to below a level of significance.

Transportation/Traffic

Traffic generation under Alternative 2 relates to construction and operational trips associated with future facilities. Under Alternative 2, up to 12 new facilities would be required. On a facility-by-facility basis, construction-related vehicle trips are likely to be the same as what was identified for the project; however, fewer facilities would be proposed under this alternative (12 compared to up to 15 that would be needed under the proposed project). Vehicular and truck trips associated with facility operations are expected to be similar to the proposed project. Implementation of mitigation measures TR-1 and TR-2 (refer to Chapter 4.0, Section 4.15.5) would reduce some of the traffic impacts. However, similar to the proposed project, impacts are anticipated to remain significant and unmitigated. This is due to the uncertainty of where the facilities will be located, and the roadway conditions in the vicinity of the facility. These issues would be analyzed in a site-specific CEQA review at the time a future facility is proposed.

Summary

Compared to the proposed project, Alternative 2 has a similar level of impact for the issue areas of aesthetics/visual resources, agriculture resources, biological resources, cultural resources, geology/soils, hazards and hazardous material, hydrology/water quality, land use and planning, mineral resources, population and housing and public services, utilities and service systems, and recreation on a facility-by-facility basis. However, fewer facilities would be proposed under this alternative (12 compared to up to 15 that would be needed under the proposed project). Impacts related to noise and traffic are expected to be similar under this alternative. The type of air quality and GHG impacts would be similar to the proposed project and would be more impactive, but less than on-going landfilling. Table 5.2-3 summarizes how this alternative would or would not meet the objectives identified for the proposed project.

Table 5.2-3. Ability to Meet Project Objectives
Alternative 2 (SWIRP Scenario 1/No New Programs)

Project Objective	Meet Project Objective?	Ability for Alternative 2 to Meet the Project Objective
Achieve a 75 percent landfill diversion rate for solid waste by 2013.	Yes	This alternative would meet this project objective.
Achieve a 90 percent landfill diversion rate for solid waste by 2025.	Yes	This alternative would meet this project objective.
Protect public health and the environment.	Yes	The City would adhere to ongoing regulations and requirements related to public health and safety. Typical environmental impacts associated with landfills (e.g., GHG emissions, water quality, truck haul emissions) would be minimized under this alternative, since landfilling activities would decrease in favor of black bin processing.
Make the City a leader in implementing Zero Waste practices.	No	This alternative does not meet this project objective, as it does not maximize waste reduction, recycling and composting.
Promote manufacturer and consumer responsibility.	No	This alternative would not include EPR programs, nor would it maximize opportunities for consumer responsibility. Therefore, it does not meet the project objective.
Provide incentives for reducing, reusing, and recycling.	No	This alternative would not include mandatory participation programs, which provide incentives for reducing, reusing and recycling. Therefore, this alternative does not meet the project objective.
Increase recycling by providing convenient opportunities for residents, businesses, and institutions to participate.	Partially	Existing programs to increase recycling would occur under this alternative; however, new programs that would further increase landfill diversion would not be implemented. Therefore, this alternative does not fully meet this project objective.
Find solutions that are both economically efficient and environmentally preferable.	Partially	New programs to reduce waste and increase recycling would not occur under this alternative, therefore, the economic and environmental benefits, including the creation of new green jobs and reduction of GHG emissions, would not occur.
Promote education and conduct outreach to decrease wasteful consumption and to increase recycling.	No	Public education under existing programs would be ongoing, and are likely to be expanded. However, new programs and policies, such as the large-scale social media campaigns, are not likely to be realized under this alternative.
Invest in new, safe technologies.	Yes	Expanding the use of black bin processing in lieu of landfilling will provide for the investment in new, safe technologies.
Provide solutions that are equitable and do not unfairly reward or penalize one community over another.	Partially	Expanding the use of black bin processing in lieu of landfilling can provide solutions that are equitable.

5.3 ALTERNATIVE 3 (SWIRP SCENARIO 2/EXPANSION OF EXISTING POLICES AND PROGRAMS PLUS NEW DOWNSTREAM POLICIES AND PROGRAMS)

Under Alternative 3 (SWIRP Scenario 2/Expansion of Existing Policies and Programs plus New Downstream Programs), only a portion of SWIRP would be implemented, specifically, the new downstream policies and programs. No new mandatory programs or upstream policies would be implemented. This alternative would increase recycling diversion through the construction and operation of two additional blue bin facilities, one small composting facility and the remaining waste will be processed at eight black bin facilities that would need to be built in order to reach the high diversion goals set by the City. This alternative has fewer environmental impacts than the proposed project based on total number of new facility needs (11 compared to up to 15); however, this alternative only partially achieves the project's recycling and composting diversion goals. This alternative does not meet all the project's goals and objectives.

Similar to the proposed project, specific locations for these future facilities have not been identified. Table 5.3-1 presents a comparison of facility needs under this alternative and Table 5.3-2 provides a comparison of the policy and program implementation.

Table 5.3-1. Comparison of Facility Needs
Alternative 3 (SWIRP Scenario 2/New Downstream Programs) and Proposed Project (SWIRP)

Facility Type	Alternative 3	Proposed Project
RRCs	0	1
Blue Bin	2	3
Green Bin	1 small	1 large or 6 small
Black Bin	8	5
Total	11	10-15

Table 5.3-2. Comparison of Policy and Program Implementation
Alternative 3 (SWIRP Scenario 2/New Downstream Programs) and Proposed Project (SWIRP)

Policy/Program Type	Alternative 3	Proposed Project
Expansion of Existing Residential/Commercial Programs	Fully implemented	Fully implemented
Downstream	Fully implemented	Fully implemented
Mandatory Participation	Not implemented	Fully implemented
Upstream	Not implemented	Fully implemented

Comparison of Alternative 3 (SWIRP Scenario 2/New Downstream Programs) to the Proposed Project (SWIRP)

This section describes the potential impacts of Alternative 3 by environmental issue area and compares the conclusions to that of the proposed project.

Aesthetics and Visual Resources

Aesthetic impacts under Alternative 3 would be similar to the proposed project and would relate to the future facilities that would be constructed to handle the increased waste generation associated with population growth and increased diversion from adding downstream policies and programs. Under Alternative 3, up to 11 new facilities would be required. Aesthetics and visual resource impacts will be dependent on where future facilities and infrastructure would be located, but could result in impacts to visual resources related to obstruction of views and shading, lighting, glare and nighttime illumination. On a facility-by-facility basis, this is similar to the potential impacts identified for the proposed project. However, fewer facilities would be proposed under this alternative (11 compared to up to 15 that would be needed under the proposed project). Implementation of mitigation measures VR-1 through VR-7 (refer to Chapter 4.0, Section 4.1.5) would reduce the potential aesthetic and visual resources impacts for this alternative to below a level of significance.

Agriculture and Forestry Resources

Agriculture and forestry resources impacts under Alternative 3 would relate to the future facilities that would need to be constructed to handle the increased waste generation associated with population growth and increased diversion from adding new downstream policies and programs. Under Alternative 3, up to 11 new facilities would be required. Agriculture and forestry resources impacts will be dependent on where future facilities and infrastructure would be located. Potential impacts to agriculture and forestry resources includes conversion of mapped farmland or forestland, conflict with agriculture, forest or timberland zoning, and conflict with the Williamson Act contract. On a facility-by-facility basis, this is similar to the potential impacts identified for the proposed project. However, fewer facilities would be proposed under this alternative (11 compared to up to 15 that would be needed under the proposed project). Implementation of mitigation measures AG/FOR-1 through AG/FOR-4 (refer to Chapter 4.0, Section 4.2.5) would reduce the potential agriculture and forestry resource impacts associated with facility siting to below a level of significance.

Air Quality

Air quality impacts under Alternative 3 include construction and operational emissions associated with future facilities. Under Alternative 3, up to 11 new facilities would be required. Construction emissions are likely to be similar to what was identified for the proposed project, although fewer facilities would be needed. Operational emissions, including vehicular emissions, are anticipated to be similar to what was identified for the proposed project. Route collection trucks would be required to adhere to SCAQMD Rule 1193 (Clean On-Road Residential and Commercial Refuse Collection Vehicles), which requires solid waste collection fleet operators to acquire alternative-fuel refuse collection vehicles when procuring or leasing these vehicles. Implementation of mitigation measures AQ-1 through AQ-21 (refer to Chapter 4.0, Section 4.3.5) would reduce some of the construction and operational emissions. However, similar to the proposed project, impacts are determined to be significant and unmitigated, pending further site-specific analysis.

With regard to GHGs, Alternative 3 would not realize the maximum amount of GHG reductions that would occur under the proposed project. Based upon calculations using the U.S. EPA WARM model, up to 1.4 million metric tons of carbon dioxide equivalent GHG emissions would be avoided if this alternative is implemented. The proposed project is expected to result in a reduction of 2.6 million metric tons of carbon dioxide equivalent GHG emissions. This represents a difference of 1.2 million metric tons of carbon dioxide equivalent GHG emissions.

Biological Resources

Biological resources impacts under this alternative relate to the future facilities that would be constructed to handle the increased waste generation associated with population growth and increased diversion from adding new downstream policies and programs. Under Alternative 3, up to 11 new facilities would be required. Biological resources impacts will be dependent on where future facilities and infrastructure would be located. Potential biological resource impacts relate to the loss of habitat, and potential impact to sensitive species and wildlife corridors. On a facility-by-facility basis, this is similar to the potential impacts identified for the proposed project. However, fewer facilities would be proposed under this alternative (11 compared to up to 15 that would be needed under the proposed project). Implementation of mitigation measures BIO-1 through BIO-3 (refer to Chapter 4.0, Section 4.4.5) would reduce the potential biological resource impacts associated with facility siting to below a level of significance.

Cultural Resources

Cultural resources impacts under Alternative 3 relate to the future facilities that would be constructed to handle the increased waste generation associated with population growth and increased diversion from adding new downstream policies and programs. Under Alternative 3, up to 11 new facilities would be required. Cultural resources impacts will be dependent on where future facilities and infrastructure would be located. Potential impacts are associated with disturbance of archaeological, paleontological and historic resources, and human remains. On a facility-by-facility basis, this is similar to the potential impacts identified for the proposed project. However, fewer facilities would be proposed under this alternative (11 compared to up to 15 that would be needed under the proposed project). Implementation of mitigation measures CR-1 through CR-4 (refer to Chapter 4.0, Section 4.5.5) would reduce the potential cultural resources impacts associated with facility siting to below a level of significance.

Geology and Soils

Potential geology and soil impacts under Alternative 3 would relate to the future facilities that would be constructed to handle the increased waste generation associated with population growth and increased diversion from adding new downstream policies and programs. Under Alternative 3, up to 11 new facilities would be required. Impacts related to geology and soils will be dependent on where future facilities and infrastructure would be located. Potential impacts relate to earthquake faults, seismic hazards, groundshaking, ground failure/liquefaction, landslides and unstable or expansive soils. On a facility-by-facility basis, this is similar to the potential impacts identified for the proposed project. However, fewer facilities would be proposed under this alternative (11 compared to up to 15 that would be needed under the proposed project). Implementation of mitigation measures GS-1 through GS-4 (refer to Chapter 4.0, Section 4.6.5) would reduce the potential impacts related to geology and soils associated with facility siting to below a level of significance.

Hazards and Hazardous Materials

Hazards and hazardous materials impacts under Alternative 3 would relate to the future facilities that would be constructed to handle the increased waste generation associated with population growth and increased diversion from adding new downstream policies and programs. Under Alternative 3, up to 11 new facilities would be required. Impacts related to hazards and hazardous materials will be dependent on where future facilities and infrastructure would be located. Potential hazards and hazardous materials impacts relate to hazardous emissions from future facilities, airports, sites that could be listed in hazardous materials permitting databases, and human health hazards. On a facility-by-facility basis, this is similar to the potential impacts identified for the proposed project. However, fewer facilities would be proposed under this alternative (11 compared to up to 15 that would be needed under the proposed project). Implementation of mitigation measures HAZ-1 through HAZ-7 (refer to Chapter 4.0, Section 4.7.5) would reduce the potential impacts related to hazards and hazardous materials associated with facility siting to below a level of significance.

Hydrology and Water Quality

Hydrology and water quality impacts under Alternative 3 would relate to the future facilities that would be constructed to handle the increased waste generation associated with population growth and increased diversion from adding new downstream policies and programs. Under Alternative 3, up to 11 new facilities would be required. Impacts related to hydrology and water quality will be dependent on where future facilities and infrastructure would be located. Potential impacts are related to hydrologic resources, water quality, stormwater management, and floodplains. On a facility-by-facility basis, this is similar to the potential impacts identified for the proposed project. However, fewer facilities would be proposed under this alternative (11 compared to up to 15 that would be needed under the proposed project). Implementation of mitigation measures HWQ-1 through HWQ-9 (refer to Chapter 4.0, Section 4.8.5) would reduce the potential impacts related to hydrology and water quality associated with facility siting to below a level of significance. Water quality benefits associated with reduced landfilling would be realized under this alternative.

Land Use and Planning

Potential land use and planning impacts under Alternative 3, would relate to the future facilities that would be constructed to handle the increased waste generation associated with population growth and increased diversion from adding new downstream policies and programs. Under Alternative 3, up to 11 new facilities would be required. Impacts related to land use and planning will be dependent on where future facilities and infrastructure would be located. Potential impacts are related to conflicts with applicable land use plans, disruption of established communities or placing facilities near incompatible land uses. On a facility-by-facility basis, this is similar to the potential impacts identified for the proposed project. However, fewer facilities would be proposed under this alternative (11 compared to up to 15 that would be needed under the proposed project). Implementation of mitigation measures LU-1 through LU-4 (refer to Chapter 4.0, Section 4.9.5) would reduce the potential impacts related to land use and planning associated with facility siting to below a level of significance.

Mineral Resources

Mineral resources impacts under this alternative would relate to the future facilities that would be constructed to handle the increased waste generation associated with population growth and increased diversion from adding new downstream policies and programs. Under Alternative 3, up to 11 new facilities would be required. Impacts related to mineral resources will be dependent on where future facilities and infrastructure would be located. Potential impacts relate to the siting of facilities in mineral resource zones, in areas mapped as locally important mineral resources or in a location that directly or indirectly impacts active oil, gas or geothermal operations. On a facility-by-facility basis, this is similar to the potential impacts identified for the proposed project. However, fewer facilities would be proposed under this alternative (11 compared to up to 15 that would be needed under the proposed project). Implementation of mitigation measures MR-1 through MR-4 (refer to Chapter 4.0, Section 4.10.5) would reduce the potential impacts to mineral resources associated with facility siting to below a level of significance.

Noise

Noise impacts under Alternative 3 include construction and operational noise from future facilities. Under Alternative 3, up to 11 new facilities would be required. Construction noise is likely to be similar to what was identified for the proposed project. On a facility-by-facility basis, operational-related noise, including vehicular emission, is anticipated to be similar to the proposed project, but will be dependent upon where the future facilities are sited. However, fewer facilities would be proposed under this alternative (11 compared to up to 15 that would be needed under the proposed project). Mitigation measures N-1 through N-10 (refer to Chapter 4.0, Section 4.11.5) identified for the proposed project would be applicable to this alternative and are expected to reduce the impacts to below a level of significance.

Population and Housing

Potential population and housing impacts under this alternative would relate to the future facilities that would be constructed to handle the increased waste generation associated with population growth and increased diversion from adding new downstream policies and programs. Under Alternative 3, up to 11 new facilities would be required. Impacts related to population and housing will be dependent on where future facilities and infrastructure would be located and relate to the potential to displace people or housing. On a facility-by-facility basis, this is similar to the potential impacts identified for the proposed project. However, fewer facilities would be proposed under this alternative (11 compared to up to 15 that would be needed under the proposed project). Implementation of mitigation measures PH-1 and PH-2 (refer to Chapter 4.0, Section 4.12.5) would reduce the potential impacts related to population and housing associated with facility siting to below a level of significance.

Green job generation under this alternative would be less than under the proposed project. Based upon analysis from the Institute for Self Reliance, it is estimated that up to 2,000 green jobs could be created with implementation of this Alternative 3 (*SWIRP Phase 2 Policy, Program, and Facility Plan*, Table 10). This is 2,300 fewer than that anticipated with implementation of the proposed project.

Public Services, Utilities and Service Systems

Potential public services, utilities and service systems impacts under this alternative would relate to the future facilities that would be constructed to handle the increased waste generation associated with population growth and increased diversion from adding new downstream policies and programs. Under Alternative 3, up to 11 new facilities would be required. Impacts relate to water supply and energy. On a

facility-by-facility basis, this is similar to the potential impacts identified for the proposed project. However, fewer facilities would be proposed under this alternative (11 compared to up to 15 that would be needed under the proposed project). Implementation of mitigation measures WS-1, WS-2, and ES-1 (refer to Chapter 4.0, Section 4.13.5) would reduce the potential public services, utilities and service system impacts to below a level of significance.

Recreation

Potential recreation impacts under this alternative would relate to the future facilities that would be constructed to handle the increased waste generation associated with population growth and increased diversion from adding new downstream policies and programs. Under Alternative 3, up to 11 new facilities would be required. Impacts related to recreation will be dependent on where future facilities and infrastructure would be located and relate to construction of future facilities on sites that are identified for recreation or conflict with existing recreational amenities. On a facility-by-facility basis, this is similar to the potential impacts identified for the proposed project. However, fewer facilities would be proposed under this alternative (11 compared to up to 15 that would be needed under the proposed project). Implementation of mitigation measure REC-1 (refer to Chapter 4.0, Section 4.14.5) would reduce the potential recreation-related impacts associated with facility siting to below a level of significance.

Transportation/Traffic

Traffic generation under Alternative 3 relates to construction and operational trips associated with future facilities. Under Alternative 3, up to 11 new facilities would be required. On a facility-by-facility basis, construction-related vehicle trips are likely to be the same as what was identified for the project; however, fewer facilities would be proposed under this alternative (11 compared to up to 15 that would be needed under the proposed project). Vehicular and truck trips associated with facility operations are expected to be similar to the proposed project. Implementation of mitigation measures TR-1 and TR-2 (refer to Chapter 4.0, Section 4.15.5) would reduce some of the traffic impacts. However, similar to the proposed project, impacts are determined to be significant and unmitigated. This is due to the uncertainty of where the facilities will be located, and the roadway conditions in the vicinity of the facility. These issues would be analyzed in a site-specific CEQA review at the time a future facility is proposed.

Summary

Compared to the proposed project, Alternative 3 would have a similar level of impact for the issue areas of aesthetics/visual resources, agriculture resources, biological resources, cultural resources, geology/soils, hazards and hazardous material, hydrology/water quality, land use and planning, mineral resources, population and housing, public services utilities and service systems, and recreation on a facility-by-facility basis. However, fewer facilities would be proposed under this alternative (11 compared to up to 15 that would be needed under the proposed project). This alternative would decrease landfilling, which results in a reduction of landfill-related impacts, including GHG emissions, landfill truck traffic and water quality. Table 5.3-3 summarizes how this alternative would or would not meet the objectives identified for the proposed project.

Table 5.3-3. Ability to Meet Project Objectives
Alternative 3 (SWIRP Scenario 2/New Downstream Programs)

Project Objective	Meet Project Objective?	Ability for Alternative 3 to Meet the Project Objective
Achieve a 75 percent landfill diversion rate for solid waste by 2013.	Yes	This alternative would meet this project objective.
Achieve a 90 percent landfill diversion rate for solid waste by 2025.	Yes	This alternative would meet this project objective.
Protect public health and the environment.	Yes	The City would adhere to ongoing regulations and requirements related to public health and safety. Typical environmental impacts associated with landfills (e.g., GHG emissions, water quality, truck haul emissions) would be minimized under this alternative, since landfilling would decrease under this alternative due to the implementation of programs to increase diversion.
Make the City a leader in implementing Zero Waste practices.	Partially	This alternative would implement a portion of SWIRP and would get the City closer to Zero Waste than it is today. However, this alternative would not implement mandatory policies and upstream policies and therefore would not maximize waste reduction, recycling and composting.
Promote manufacturer and consumer responsibility.	No	This alternative would not include EPR programs, nor would it maximize opportunities for consumer responsibility. Therefore, it does not meet the project objective.
Provide incentives for reducing, reusing, and recycling.	No	This alternative would not include mandatory participation programs, which provide incentives for reducing, reusing and recycling. Therefore, this alternative does not meet this project objective.
Increase recycling by providing convenient opportunities for residents, businesses, and institutions to participate.	Yes	This alternative includes programs and policies that would meet this project objective.
Find solutions that are both economically efficient and environmentally preferable.	Partially	New programs to reduce waste and increase recycling would not be maximized under this alternative, therefore, the economic and environmental benefits, including the creation of new green jobs, would not be as great as the proposed project.
Promote education and conduct outreach to decrease wasteful consumption and to increase recycling.	Yes	Public education under existing programs would be ongoing, and are likely to be expanded. Additionally, this alternative would include new programs and policies, such as the large-scale social media campaigns. This alternative meets this objective.
Invest in new, safe technologies.	Yes	This alternative would consider safe, new technologies (alternative technologies) for handling residual waste.
Provide solutions that are equitable and do not unfairly reward or penalize one community over another.	Yes	This alternative would implement a portion of SWIRP, which includes the goal of handling solid waste in an equitable manner. This alternative meets this project objective.

5.4 ALTERNATIVE 4 (SWIRP SCENARIO 3/COMPONENTS OF SWIRP SCENARIO 2, PLUS IMPLEMENTATION OF MANDATORY PARTICIPATION POLICIES AND PROGRAMS)

Under Alternative 4 (SWIRP Scenario 3/Components of SWIRP Scenario 2, plus Implementation of Mandatory Participation Policies and Programs), a portion of SWIRP would be implemented, specifically, the new downstream policies and programs identified under Alternative 3 (SWIRP Scenario 2) plus the addition of mandatory participation programs. No new upstream policies would be implemented.

Under Alternative 4, a majority of the City's materials will be diverted to four additional blue bin facilities, up to six additional green bin facilities, one resource recovery center, and the remaining residual waste will be processed at five black bin facilities. This alternative has potentially one more facility than the proposed project, and construction and operational impacts will be similar; however, this alternative does not implement upstream policies, therefore source reduction is not achieved. This alternative comes closest to meeting the project's goals and objectives. Chapter 2.0, Table 2.3-2 provides additional detail on the mandatory participation programs that would be included under Alternative 4.

Similar to the proposed project, specific locations for these future facilities have not been identified. Table 5.4-1 presents a comparison of facility needs under this alternative and Table 5.4-2 provides a comparison of the policy and program implementation.

Table 5.4-1. Comparison of Facility Needs
Alternative 4 (SWIRP Scenario 3/Downstream plus Mandatory) and Proposed Project (SWIRP)

Facility Type	Alternative 4	Proposed Project
RRCs	1	1
Blue Bin	4	3
Green Bin	1 large or 6 small	1 large or 6 small
Black Bin	5	5
Total	11-16	10-15

Table 5.4-2. Comparison of Policy and Program Implementation
Alternative 4 (SWIRP Scenario 3/Downstream plus Mandatory) and Proposed Project (SWIRP)

Policy/Program Type	Alternative 4	Proposed Project
Expansion of Existing Residential/Commercial Programs	Fully implemented	Fully implemented
Downstream	Fully implemented	Fully implemented
Mandatory Participation	Fully implemented	Fully implemented
Upstream	Not implemented	Fully implemented

Comparison of Alternative 4 (SWIRP Scenario 3/Downstream plus Mandatory) to the Proposed Project (SWIRP)

This section describes the potential impacts of Alternative 4 by environmental issue area and compares the conclusions to that of the proposed project.

Aesthetics and Visual Resources

Aesthetic impacts under Alternative 4 would be similar to the proposed project and would relate to the future facilities that would be constructed to handle the increased waste generation associated with population growth and the addition of downstream programs and policies and mandatory participation programs. Under Alternative 4, up to 16 new facilities would be required, which is one more the proposed project (full implementation of SWIRP). Aesthetics and visual resource impacts will be dependent on where future facilities and infrastructure would be located, but could result in impacts to visual resources related to obstruction of views and shading, lighting, glare and nighttime illumination. On a facility-by-facility basis, this is similar to the potential impacts identified for the proposed project. Implementation of mitigation measures VR-1 through VR-7 (refer to Chapter 4.0, Section 4.1.5) would reduce the potential aesthetic and visual resources impacts for this alternative to below a level of significance.

Agriculture and Forestry Resources

Agriculture and forestry resources impacts under Alternative 4 would relate to the future facilities that would need to be constructed to handle the increased waste generation associated with population growth and the addition of downstream programs and policies and mandatory participation programs. Under Alternative 4, up to up to 16 new facilities would be required, which is one more than the proposed project. Agriculture and forestry resources impacts will be dependent on where future facilities and infrastructure would be located. Potential impacts to agriculture and forestry resources includes conversion of mapped farmland or forestland, conflict with agriculture, forest or timberland zoning, and conflict with a Williamson Act contract. On a facility-by-facility basis, this is similar to the potential impacts identified for the proposed project. Implementation of mitigation measures AG/FOR-1 through AG/FOR-4 (refer to Chapter 4.0, Section 4.2.5) would reduce the potential agriculture and forestry resource impacts associated with facility siting to below a level of significance.

Air Quality

Air quality impacts under Alternative 4 include construction and operational emissions associated with future facilities. Under Alternative 4, up to 16 new facilities would be required, which is one more than the proposed project. Construction emissions are expected to be similar to what was identified for the proposed project. Similarly, operational emissions are anticipated to be similar to the proposed project, and vehicular emissions associated with facility operations are also expected to be similar to the proposed project. Route collection trucks would be required to adhere to SCAQMD Rule 1193 (Clean On-Road Residential and Commercial Refuse Collection Vehicles), which requires solid waste collection fleet operators to acquire alternative-fuel refuse collection vehicles when procuring or leasing these vehicles. Implementation of mitigation measures AQ-1 through AQ-21 (refer to Chapter 4.0, Section 4.3.5) would reduce some of the construction and operational emissions. However, similar to the proposed project, impacts are determined to be significant and unmitigated, pending further site-specific analysis.

With regard to GHGs, Alternative 4 would not realize the maximum amount of GHG reductions that would occur under the proposed project. Based upon calculations using the U.S. EPA WARM model, up to 2.4 million metric tons of carbon dioxide equivalent GHG emissions would be avoided if this alternative is implemented. The proposed project is expected to result in a reduction of 2.6 million metric tons of carbon dioxide equivalent GHG emissions. This represents a difference of 0.2 million metric tons of carbon dioxide equivalent GHG emissions.

Biological Resources

Biological resources impacts under this alternative relate to the future facilities that would be constructed to handle the increased waste generation associated with population growth and the addition of downstream programs and policies and mandatory participation programs. Under Alternative 4, up to 16 new facilities would be required, which is one more than the proposed project. Biological resources impacts will be dependent on where future facilities and infrastructure would be located. Potential biological resource impacts relate to the loss of habitat, and potential impact to sensitive species and wildlife corridors. On a facility-by-facility basis, this is similar to the potential impact identified for the proposed project. Implementation of mitigation measures BIO-1 through BIO-3 (refer to Chapter 4.0, Section 4.4.5) would reduce the potential biological resource impacts associated with facility siting to below a level of significance.

Cultural Resources

Cultural resources impacts under Alternative 4 relate to the future facilities that would be constructed to handle the increased waste generation associated with population growth and the addition of downstream programs and policies and mandatory participation programs. Under Alternative 4, 16 new facilities would be required, which is one more than the proposed project. Cultural resources impacts will be dependent on where future facilities and infrastructure would be located. Potential impacts are associated with disturbance of archaeological, paleontological and historic resources, and human remains. On a facility-by-facility basis, this is similar to the potential impacts identified for the proposed project. Implementation of mitigation measures CR-1 through CR-4 (refer to Chapter 4.0, Section 4.5.5) would reduce the potential cultural resources impacts associated with facility siting to below a level of significance.

Geology and Soils

Potential geology and soil impacts under Alternative 4 would relate to the future facilities that would be constructed to handle the increased waste generation associated with population growth and the addition of downstream programs and policies and mandatory participation programs. Under Alternative 4, up to 16 new facilities would be required, which is one more than the proposed project. Impacts related to geology and soils will be dependent on where future facilities and infrastructure would be located. Potential impacts relate to earthquake faults, seismic hazards, groundshaking, ground failure/liquefaction, landslides, and unstable or expansive soils. On a facility-by-facility basis, this is similar to the potential impacts identified for the proposed project. Implementation of mitigation measures GS-1 through GS-4 (refer to Chapter 4.0, Section 4.6.5) would reduce the potential impacts related to geology and soils associated with facility siting to below a level of significance.

Hazards and Hazardous Materials

Hazards and Hazardous materials impacts under Alternative 4 would relate to the future facilities that would be constructed to handle the increased waste generation associated with population growth and the addition of downstream programs and policies and mandatory participation programs. Under Alternative 4, up to 16 new facilities would be required, which is one more than the proposed project. Impacts related to hazards and hazardous materials will be dependent on where future facilities and infrastructure would be located. Potential hazards and hazardous materials impacts relate to hazardous emissions from future facilities, airports, sites that could be listed in hazardous materials permitting databases, and human health hazards. On a facility-by-facility basis, this is similar to the potential impact identified for the proposed project. Implementation of mitigation measures HAZ-1 through HAZ-7 (refer to Chapter 4.0, Section 4.7.5) would reduce the potential impacts related to hazards and hazardous materials associated with facility siting to below a level of significance.

Hydrology and Water Quality

Hydrology and water quality impacts under Alternative 4 would relate to the future facilities that would be constructed to handle the increased waste generation associated with population growth and the addition of downstream programs and policies and mandatory participation programs. Under Alternative 4, up to 16 new facilities would be required, which is one more than the proposed project. Impacts related to hydrology and water quality will be dependent on where future facilities and infrastructure would be located. Potential impacts are related to hydrologic resources, water quality, stormwater management, and floodplains. On a facility-by-facility basis, this is similar to the potential impacts identified for the proposed project. Implementation of mitigation measures HWQ-1 through HWQ-9 (refer to Chapter 4.0, Section 4.8.5) would reduce the potential impacts related to hydrology and water quality associated with facility siting to below a level of significance.

Land Use and Planning

Potential land use and planning impacts under Alternative 4, would relate to the future facilities that would be constructed to handle the increased waste generation associated with population growth and the addition of downstream programs and policies and mandatory participation programs. Under Alternative 4, up to 16 new facilities would be required, which is one more than the proposed project. Impacts related to land use and planning will be dependent on where future facilities and infrastructure would be located. Potential impacts are related to conflicts with applicable land use plans, disruption of established communities or placing facilities near incompatible land uses. On a facility-by-facility basis, this is similar to the potential impact identified for the proposed project. Implementation of mitigation measures LU-1 through LU-4 (refer to Chapter 4.0, Section 4.9.5) would reduce the potential impacts related to land use and planning associated with facility siting to below a level of significance.

Mineral Resources

Mineral resources impacts under this alternative would relate to the future facilities that would be constructed to handle the increased waste generation associated with population growth and the addition of downstream programs and policies and mandatory participation programs. Under Alternative 4, up to 16 new facilities would be required, which is one more than the proposed project. Impacts related to mineral resources will be dependent on where future facilities and infrastructure would be located. Potential impacts relate to the siting of facilities in mineral resource zones, in areas mapped as locally

important mineral resources or in a location that directly or indirectly impacts active oil, gas or geothermal operations. On a facility-by-facility basis, this is similar to the potential impacts identified for the proposed project. Implementation of mitigation measures MR-1 through MR-4 (refer to Chapter 4.0, Section 4.10.5) would reduce the potential impacts to mineral resources associated with facility siting to below a level of significance.

Noise

Noise impacts under Alternative 4 include construction and operational noise from future facilities. Under Alternative 4, up to 16 new facilities would be required, one more than the proposed project. Construction noise is expected to be similar to the proposed project. Operational-related noise, including vehicular noise, is anticipated to be similar to the proposed project. Mitigation measures N-1 through N-10 (refer to Chapter 4.0, Section 4.11.5) identified for the proposed project would be applicable to this alternative and are expected to reduce the impacts to below a level of significance.

Population and Housing

Potential population and housing impacts under this alternative would relate to the future facilities that would be constructed to handle the increased waste generation associated with population growth and the addition of downstream programs and policies and mandatory participation programs. Under Alternative 4, up to 16 new facilities would be required, which is one more than the proposed project. Impacts related to population and housing will be dependent on where future facilities and infrastructure would be located, and relate to the potential to displace people or housing. On a facility-by-facility basis, this is similar to the potential impact identified for the proposed project. Implementation of mitigation measures PH-1 and PH-2 (refer to Chapter 4.0, Section 4.12.5) would reduce the potential impacts related to population and housing associated with facility siting to below a level of significance.

Green job generation under this alternative would be slightly less than under the proposed project. Based upon an analysis from the Institute for Self Reliance, it is estimated that up to 3,600 green jobs could be created with implementation of this alternative (*SWIRP Phase 2 Policy, Program, and Facility Plan*, Table 10). This is 700 fewer than the green jobs estimated to be created with implementation of the proposed project.

Public Services, Utilities and Service Systems

Potential public services, utilities and service systems impacts under this alternative would relate to the future facilities that would be constructed to handle the increased waste generation associated with population growth and the addition of downstream programs and policies and mandatory participation programs. Under Alternative 4, up to 16 new facilities would be required, which is one more than the proposed project. Impacts relate to water supply and energy. On a facility-by-facility basis, this is similar to the potential impacts identified for the proposed project. Implementation of mitigation measures WS-1, WS-2, and ES-1 (refer to Chapter 4.0, Section 4.13.5) would reduce the potential public services, utilities and service system impacts to below a level of significance.

Recreation

Potential recreation impacts under this alternative would relate to the future facilities that would be constructed to handle the increased waste generation associated with population growth and the addition of downstream programs and policies and mandatory participation programs. Under Alternative 4, up to 16 new facilities would be required, which is one more than the proposed project. Impacts related to recreation will be dependent on where future facilities and infrastructure would be located and relate to construction of future facilities on sites that are identified for recreation or conflict with existing recreational amenities. On a facility-by-facility basis, this is similar to the potential impacts identified for the proposed project. Implementation of mitigation measure REC-1 (refer to Chapter 4.0, Section 4.14.5) would reduce the potential recreation-related impacts associated with facility siting to below a level of significance.

Transportation/Traffic

Traffic generation under Alternative 4 relates to construction and operational trips associated with future facilities. Under Alternative 4, up to 16 new facilities would be required, which is one more than the proposed project. Construction- and operational-related vehicle trips would be similar to the proposed project. Implementation of mitigation measures TR-1 and TR-2 (refer to Chapter 4.0, Section 4.15.5) would reduce some of the traffic impacts. However, similar to the proposed project, impacts are determined to be significant and unmitigated. This is due to the uncertainty of where the facilities will be located, and the roadway conditions in the vicinity of the facility. These issues would be analyzed in a site-specific CEQA review at the time a future facility is proposed.

Summary

Compared to the proposed project, Alternative 4 has a similar level of impact for the issue areas of aesthetics/visual resources, agriculture resources, biological resources, cultural resources, geology/soils, hazards and hazardous material, hydrology/water quality, land use and planning, mineral resources population and housing, public services, utilities and service systems and recreation. On a facility-by-facility basis, air quality/GHG emission, noise and traffic generation are expected to be similar to the project. This alternative would decrease landfilling, which results in a reduction of landfill-related impacts, including: GHG emissions, landfill truck traffic (and associated noise and air quality emissions) and water quality. Table 5.4-3 summarizes how this alternative would or would not meet the objectives identified for the proposed project.

Table 5.4-3. Ability to Meet Project Objectives
Alternative 4 (SWIRP Scenario 3/Downstream plus Mandatory)

Project Objective	Meet Project Objective?	Ability for Alternative 4 to Meet the Project Objective
Achieve a 75 percent landfill diversion rate for solid waste by 2013.	Yes	This alternative would meet this project objective.
Achieve a 90 percent landfill diversion rate for solid waste by 2025.	Yes	This alternative would meet this project objective.
Protect public health and the environment.	Yes	The City would adhere to ongoing regulations and requirements related to public health and safety. Typical environmental impacts associated with landfills (e.g., GHG emissions, water quality, truck haul emissions) would be minimized under this alternative, since landfilling would decrease under this alternative due to the implementation of programs to increase diversion.
Make the City a leader in implementing Zero Waste practices.	Partially	This alternative would implement a portion of SWIRP and would get the City closer to Zero Waste than it is today. However, this alternative would not implement upstream programs and therefore would not maximize waste reduction.
Promote manufacturer and consumer responsibility.	No	This alternative would not include EPR programs, nor would it maximize opportunities for consumer responsibility. Therefore, it does not meet this project objective.
Provide incentives for reducing, reusing, and recycling.	Yes	This alternative would include implementation of mandatory participation programs, which provide incentives for reducing, reusing and recycling. Therefore, this alternative meets this project objective.
Increase recycling by providing convenient opportunities for residents, businesses, and institutions to participate.	Yes	This alternative includes programs and policies that would meet this project objective.
Find solutions that are both economically efficient and environmentally preferable.	Partially	New programs to reduce waste and increase recycling would not be maximized under this alternative, therefore, the economic and environmental benefits, including the creation of new green jobs, would not be as great as the proposed project.
Promote education and conduct outreach to decrease wasteful consumption and to increase recycling.	Yes	Public education under existing programs would be ongoing, and are likely to be expanded. Additionally, this alternative would include new programs and policies, such as the large-scale social media campaigns. This alternative meets this objective.
Invest in new, safe technologies.	Yes	This alternative would consider safe, new technologies (alternative technologies) for handling residual waste.
Provide solutions that are equitable and do not unfairly reward or penalize one community over another.	Yes	This alternative would implement a portion of SWIRP, which includes the goal of handling solid waste in an equitable manner. This alternative meets this project objective.

5.5 ALTERNATIVE 5 (SWIRP SCENARIO 4/COMPONENTS OF SWIRP SCENARIO 2, PLUS IMPLEMENTATION OF UPSTREAM POLICIES AND PROGRAMS)

Under Alternative 5 (SWIRP Scenario 4/Components of SWIRP Scenario 2, plus Implementation of Upstream Policies and Programs), a portion of SWIRP would be implemented, specifically, the new downstream policies and programs identified under Alternative 3 plus the addition of upstream policies and programs. No new mandatory polices would be implemented. This alternative would require the construction of up to eleven additional facilities: two blue bin facilities, one small composting facility, and eight black bin facilities that would need to be built in order to reach the high diversion goals set by the City. This alternative has fewer environmental impacts than the proposed project based on the total number of facilities needed (11 compared to up to 15); however, recycling and composting diversion is not fully achieved. This alternative will only partially meet the project's goals and objectives.

Similar to the proposed project, specific locations for these future facilities have not been identified. Table 5.5-1 presents a comparison of facility needs under this alternative and Table 5.5-2 provides a comparison of the policy and program implementation.

Table 5.5-1. Comparison of Facility Needs
Alternative 5 (SWIRP Scenario 4/Downstream plus Upstream) and Proposed Project (SWIRP)

Facility Type	Alternative 5	Proposed Project
RRCs	0	1
Blue Bin	2	3
Green Bin	1 small	1 large or 6 small
Black Bin	8	5
Total	11	10-15

Table 5.5-2. Comparison of Policy and Program Implementation
Alternative 5 (SWIRP Scenario 4/Downstream plus Upstream) and Proposed Project (SWIRP)

Policy/Program Type	Alternative 5	Proposed Project
Expansion of Existing Residential/Commercial Programs	Fully implemented	Fully implemented
Downstream	Fully implemented	Fully implemented
Mandatory Participation	Not implemented	Fully implemented
Upstream	Fully implemented	Fully implemented

Comparison of Alternative 5 (SWIRP Scenario 4/Downstream plus Upstream) to the Proposed Project (SWIRP)

This section describes the potential impacts of Alternative 5 by environmental issue area and compares the conclusions to that of the proposed project.

Aesthetics and Visual Resources

Aesthetics and visual resources impacts under Alternative 5 would be similar to the proposed project and would relate to the future facilities that would be constructed to handle the increased waste generation associated with population growth and implementation of both downstream and upstream policies and programs. Under Alternative 5, up to 11 new facilities would be required. Aesthetics and visual resource impacts will be dependent on where future facilities and infrastructure would be located, but could result in impacts to visual resources related to obstruction of views and shading, lighting, glare and nighttime illumination. On a facility-by-facility basis, this is similar to the potential impacts identified for the proposed project. However, fewer facilities would be proposed under this alternative (11 compared to up to 15 that would be needed under the proposed project). Implementation of mitigation measures VR-1 through VR-7 (refer to Chapter 4.0, Section 4.1.5) would reduce the potential aesthetic and visual resources impacts for this alternative to below a level of significance.

Agriculture and Forestry Resources

Agriculture and forestry resources impacts under Alternative 5 would relate to the future facilities that would need to be constructed to handle the increased waste generation associated with population growth and implementation of both downstream and upstream policies and programs. Under Alternative 5, up to 11 new facilities would be required. Agriculture and forestry resources impacts will be dependent on where future facilities and infrastructure would be located. Potential impacts to agriculture and forestry resources includes conversion of mapped farmland or forestland, conflict with agriculture, forest or timberland zoning, and conflict with a Williamson Act contract. On a facility-by-facility basis, this is similar to the potential impacts identified for the proposed project. However, fewer facilities would be proposed under this alternative (11 compared to up to 15 that would be needed under the proposed project). Implementation of mitigation measures AG/FOR-1 through AG/FOR-4 (refer to Chapter 4.0, Section 4.2.5) would reduce the potential agriculture and forestry resource impacts associated with facility siting to below a level of significance.

Air Quality

Air quality impacts under Alternative 5 include construction and operational emissions associated with future facilities. Under Alternative 5, up to 11 new facilities would be required. On a facility-by-facility basis, construction emissions are likely to be similar to what was identified for the proposed project. Similarly, on a facility-by-facility basis, operational emissions, including vehicular emissions, are anticipated to be similar to the proposed project. Route collection trucks would be required to adhere to SCAQMD Rule 1193 (Clean On-Road Residential and Commercial Refuse Collection Vehicles), which requires solid waste collection fleet operators to acquire alternative-fuel refuse collection vehicles when procuring or leasing these vehicles. However, fewer facilities would be proposed under this alternative (11 compared to up to 15 that would be needed under the proposed project). Implementation of mitigation measures AQ-1 through AQ-21 (refer to Chapter 4.0, Section 4.3.5) would reduce some of the construction and operational emissions. However, similar to the proposed project, impacts are determined to be significant and unmitigated, pending further site-specific analysis.

With regard to GHGs, Alternative 5 would not realize the maximum amount of GHG reductions that would occur under the proposed project. Based upon calculations using the U.S. EPA WARM model, up to 1.5 million metric tons of carbon dioxide equivalent GHG emissions would be avoided if this alternative is implemented. The proposed project is expected to result in a reduction of 2.6 million metric tons of carbon dioxide equivalent GHG emissions. This represents a difference of 1.1 million metric tons of carbon dioxide equivalent GHG emissions.

Biological Resources

Biological resources impacts under this alternative relate to the future facilities that would be constructed to handle the increased waste generation associated with population growth and implementation of both downstream and upstream policies and programs. Under Alternative 5, up to 11 new facilities would be required. Biological resources impacts will be dependent on where future facilities and infrastructure would be located. Potential biological resource impacts relate to the loss of habitat, and potential impact to sensitive species and wildlife corridors. On a facility-by-facility basis, this is similar to the potential impacts identified for the proposed project. However, fewer facilities would be proposed under this alternative (11 compared to up to 15 that would be needed under the proposed project). Implementation of mitigation measures BIO-1 through BIO-3 (refer to Chapter 4.0, Section 4.4.5) would reduce the potential biological resource impacts associated with facility siting to below a level of significance.

Cultural Resources

Cultural resources impacts under Alternative 5 relate to the future facilities that would be constructed to handle the increased waste generation associated with population growth and implementation of both downstream and upstream policies and programs. Under Alternative 5, up to 11 new facilities would be required. Cultural resources impacts will be dependent on where future facilities and infrastructure would be located. Potential impacts are associated with disturbance of archaeological, paleontological and historic resources, and human remains. On a facility-by-facility basis, this is similar to the potential impacts identified for the proposed project. However, fewer facilities would be proposed under this alternative (11 compared to up to 15 that would be needed under the proposed project). Implementation of mitigation measures CR-1 through CR-4 (refer to Chapter 4.0, Section 4.5.5) would reduce the potential cultural resources impacts associated with facility siting to below a level of significance.

Geology and Soils

Potential geology and soil impacts under Alternative 5 would relate to the future facilities that would be constructed to handle the increased waste generation associated with population growth and implementation of both downstream and upstream policies and programs. Under Alternative 5, up to 11 new facilities would be required. Impacts related to geology and soils will be dependent on where future facilities and infrastructure would be located. Potential impacts relate to earthquake faults, seismic hazards, groundshaking, ground failure/liquefaction, landslides, and unstable or expansive soils. On a facility-by-facility basis, this is similar to the potential impacts identified for the proposed project. However, fewer facilities would be proposed under this alternative (11 compared to up to 15 that would be needed under the proposed project). Implementation of mitigation measures GS-1 through GS-4 (refer to Chapter 4.0, Section 4.6.5) would reduce the potential impacts related to geology and soils associated with facility siting to below a level of significance.

Hazards and Hazardous Materials

Hazards and Hazardous materials impacts under Alternative 5 would relate to the future facilities that would be constructed to handle the increased waste generation associated with population growth and implementation of both downstream and upstream policies and programs. Under Alternative 5, up to 11 new facilities would be required. Impacts related to hazards and hazardous materials will be dependent on where future facilities and infrastructure would be located. Potential hazards and hazardous materials impacts relate to hazardous emissions, airports, sites that could be listed in hazardous materials permitting databases, and human health hazards. On a facility-by-facility basis, this is similar to the potential impacts identified for the proposed project. However, fewer facilities would be proposed under this alternative (11 compared to up to 15 that would be needed under the proposed project). Implementation of mitigation measures HAZ-1 through HAZ-7 (refer to Chapter 4.0, Section 4.7.5) would reduce the potential impacts related to hazards and hazardous materials associated with facility siting to below a level of significance.

Hydrology and Water Quality

Hydrology and water quality impacts under Alternative 5 would relate to the future facilities that would be constructed to handle the increased waste generation associated with population growth and implementation of both downstream and upstream policies and programs. Under Alternative 5, up to 11 new facilities would be required. Impacts related to hydrology and water quality will be dependent on where future facilities and infrastructure would be located. Potential impacts are related to hydrologic resources, water quality, stormwater management, and floodplains. On a facility-by-facility basis, this is similar to the potential impacts identified for the proposed project. However, fewer facilities would be proposed under this alternative (11 compared to up to 15 that would be needed under the proposed project). Implementation of mitigation measures HWQ-1 through HWQ-9 (refer to Chapter 4.0, Section 4.8.5) would reduce the potential impacts related to hydrology and water quality associated with facility siting to below a level of significance.

Land Use and Planning

Potential land use and planning impacts under Alternative 5, would relate to the future facilities that would be constructed to handle the increased waste generation associated with population growth and implementation of both downstream and upstream policies and programs. Under Alternative 5, up to 11 new facilities would be required. Impacts related to land use and planning will be dependent on where future facilities and infrastructure would be located. Potential impacts are related to conflicts with applicable land use plans, disruption of established communities or placing facilities near incompatible land uses. On a facility-by-facility basis, this is similar to the potential impacts identified for the proposed project. However, fewer facilities would be proposed under this alternative (11 compared to up to 15 that would be needed under the proposed project). Implementation of mitigation measures LU-1 through LU-4 (refer to Chapter 4.0, Section 4.9.5) would reduce the potential impacts related to land use and planning associated with facility siting to below a level of significance.

Mineral Resources

Mineral resources impacts under this alternative would relate to the future facilities that would be constructed to handle the increased waste generation associated with population growth and implementation of both downstream and upstream policies and programs. Under Alternative 5, up to 11 new facilities would be required. Impacts related to mineral resources will be dependent on where future

facilities and infrastructure would be located. Potential impacts relate to the siting of facilities in mineral resource zones, in areas mapped as locally important mineral resources or in a location that directly or indirectly impacts active oil, gas or geothermal operations. On a facility-by-facility basis, this is similar to the potential impacts identified for the proposed project. However, fewer facilities would be proposed under this alternative (11 compared to up to 15 that would be needed under the proposed project). Implementation of mitigation measures MR-1 through MR-4 (refer to Chapter 4.0, Section 4.10.5) would reduce the potential impacts to mineral resources associated with facility siting to below a level of significance.

Noise

Noise impacts under Alternative 5 include construction and operational noise from future facilities. Under Alternative 5, up to 11 new facilities would be required. Construction noise is likely to be similar to what was identified for the proposed project. Operational-related, including vehicular/truck noise, is anticipated to be similar to the proposed project, but will be dependent upon where the future facilities are sited. On a facility-by-facility basis, this is similar to the potential impacts identified for the proposed project. However, fewer facilities would be proposed under this alternative (11 compared to up to 15 that would be needed under the proposed project). Mitigation measures N-1 through N-10 (refer to Chapter 4.0, Section 4.11.5) identified for the proposed project would be applicable to this alternative and are expected to reduce the impacts to below a level of significance.

Population and Housing

Potential population and housing impacts under this alternative would relate to the future facilities that would be constructed to handle the increased waste generation associated with population growth and implementation of both downstream and upstream policies and programs. Under Alternative 5, up to 11 new facilities would be required. Impacts related to population and housing will be dependent on where future facilities and infrastructure would be located and relate to the potential to displace people or housing. On a facility-by-facility basis, this is similar to the potential impacts identified for the proposed project. However, fewer facilities would be proposed under this alternative (11 compared to up to 15 that would be needed under the proposed project).Implementation of mitigation measures PH-1 and PH-2 (refer to Chapter 4.0, Section 4.12.5) would reduce the potential impacts related to population and housing associated with facility siting to below a level of significance.

Green job generation under this alternative would be less than under the proposed project. Based upon analysis from the Institute for Self Reliance, it is estimated that up to 2,700 green jobs could be created with implementation of this alternative (*SWIRP Phase 2 Policy, Program, and Facility Plan*, Table 10). This is 1,600 fewer than the green jobs estimated to be created with implementation of the proposed project

Public Services, Utilities and Service Systems

Potential public services, utilities and service systems impacts under this alternative would relate to the future facilities that would be constructed to handle the increased waste generation associated with population growth and implementation of both downstream and upstream policies and programs. Under Alternative 5, up to 11 new facilities would be required. Impacts relate to water supply and energy, due to increased demand from future facilities. On a facility-by-facility basis, this is similar to the potential impacts identified for the proposed project. However, fewer facilities would be proposed under this

alternative (11 compared to up to 15 that would be needed under the proposed project). Implementation of mitigation measures WS-1, WS-2, and ES-1 (refer to Chapter 4.0, Section 4.13.5) would reduce the potential public services, utilities and service system impacts to below a level of significance.

Recreation

Potential recreation impacts under this alternative would relate to the future facilities that would be constructed to handle the increased waste generation associated with population growth and implementation of both downstream and upstream policies and programs. Under Alternative 5, up to 11 new facilities would be required. Impacts related to recreation will be dependent on where future facilities and infrastructure would be located and relate to construction of future facilities on sites that are identified for recreation or conflict with existing recreational amenities. On a facility-by-facility basis, this is similar to the potential impacts identified for the proposed project. However, fewer facilities would be proposed under this alternative (11 compared to up to 15 that would be needed under the proposed project).Implementation of mitigation measure REC-1 (refer to Chapter 4.0, Section 4.14.5) would reduce the potential recreation-related impacts associated with facility siting to below a level of significance.

Transportation/Traffic

Traffic generation under Alternative 5 relates to construction and operational trips associated with future facilities. Under Alternative 5, up to 11 new facilities would be required. On a facility-by-facility basis, construction-related vehicle trips are likely to be similar to what was identified for the proposed project. However, fewer facilities would be proposed under this alternative (11 compared to up to 15 that would be needed under the proposed project). Similarly, vehicular and truck trips associated with facility operations are also expected to be similar to the proposed project, but fewer facilities would be required under this alternative. Implementation of mitigation measures TR-1 and TR-2 (refer to Chapter 4.0, Section 4.15.5) would reduce some of the traffic impacts. However, similar to the proposed project, impacts are determined to be significant and unmitigated. This is due to the uncertainty of where the facilities will be located, and the roadway conditions in the vicinity of the facility. These issues would be analyzed in a site-specific CEQA review at the time a future facility is proposed.

Summary

Alternative 5 is expected to have a similar level of impact for the following issue areas: aesthetics/visual resources, agriculture resources, biological resources, cultural resources, geology/soils, hazards and hazardous material, hydrology/water quality, land use and planning, mineral resources, population and housing, public services, utilities and service systems and recreation. On a facility-by-facility basis, air quality/GHG emissions, noise, and traffic generation are expected to be similar to the project; however, a fewer number of facilities would be required (11 under this alternative compared to up to 15 for the proposed project). This alternative would decrease landfilling, which results in a reduction of landfill-related impacts, including GHG emissions, landfill truck traffic, and water quality. Table 5.5-3 summarizes how this alternative would or would not meet the objectives identified for the proposed project.

Table 5.5-3. Ability to Meet Project Objectives
(Alternative 5 SWIRP Scenario 4/Downstream plus Upstream)

Project Objective	Meet Project Objective?	Ability for Alternative 5 to Meet the Project Objective
Achieve a 75 percent landfill diversion rate for solid waste by 2013.	Yes	This alternative would meet this project objective.
Achieve a 90 percent landfill diversion rate for solid waste by 2025.	Yes	This alternative would meet this project objective.
Protect public health and the environment.	Yes	The City would adhere to ongoing regulations and requirements related to public health and safety. Typical environmental impacts associated with landfills (e.g., GHG emissions, water quality, truck haul emissions) would be minimized under this alternative, since landfilling would decrease under this alternative due to the implementation of programs to increase diversion.
Make the City a leader in implementing Zero Waste practices.	Partially	This alternative would implement a portion of SWIRP and would get the City closer to Zero Waste than it is today. However, this alternative would not implement mandatory programs and therefore would not maximize recycling and composting.
Promote manufacturer and consumer responsibility.	Yes	This alternative would include EPR programs and would maximize opportunities for consumer responsibility. Therefore, this alternative meets this project objective.
Provide incentives for reducing, reusing, and recycling.	No	This alternative would not implement mandatory participation programs, which provide incentives for reducing, reusing and recycling. Therefore, this alternative does not meet this project objective.
Increase recycling by providing convenient opportunities for residents, businesses, and institutions to participate.	Yes	This alternative includes programs and policies that would meet this project objective.
Find solutions that are both economically efficient and environmentally preferable.	Partially	New programs to reduce waste and increase recycling would not be maximized under this alternative, therefore, the economic and environmental benefits, including the creation of new green jobs, would not be as great as the proposed project.
Promote education and conduct outreach to decrease wasteful consumption and to increase recycling.	Yes	Public education under existing programs would be ongoing, and are likely to be expanded. Additionally, this alternative would include new programs and policies, such as the large-scale social media campaigns. This alternative meets this objective.
Invest in new, safe technologies.	Yes	This alternative would consider safe, new technologies (alternative technologies) for handling residual waste.
Provide solutions that are equitable and do not unfairly reward or penalize one community over another.	Yes	This alternative would implement a portion of SWIRP, which includes the goal of handling solid waste in an equitable manner. This alternative meets this project objective.

5.6 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

Table 5.6-1 provides a qualitative comparison of the impacts for each alternative compared to the proposed project. The environmentally superior alternative is the one that would result in the least amount of environmental impacts. Environmental impacts for the project relate to the number and type of facilities, as well as the ongoing environmental impact that would occur if landfilling was continued as the preferred method of dealing with residual waste.

The analysis of the alternatives found that Alternative 4 (SWIRP Scenario 3/Components of SWIRP Scenario 2, plus Implementation of Mandatory Participation Policies and Programs) is able to substantially increase landfill diversion through maximizing reuse, recycling and composting programs in the City by 2025, and meet most of the project goals and objectives.

The other alternatives under SWIRP (Alternatives 2, 3 and 5), do not fully maximize increased reuse, recycling, and composting programs, and rely more on black bin processing of residual waste. These alternatives do not meet many of the goals and objectives defined by the project.

The "No Project Alternative" (Landfill Alternative) fails to meet most of the project goals and objectives. Additionally, landfilling has environmental impacts, including greater greenhouse gas emissions and truck emissions compared to the proposed project, particularly affecting the areas surrounding the landfills. Therefore, compared to the alternatives analyzed, Alternative 4 is the environmentally superior alternative because it is most likely to result in substantial reuse, recycling and composting (up to 85% diversion) prior to black bin processing.

It should be noted that the proposed project (full implementation of SWIRP) substantially achieves all the project objectives, including implementation of upstream policies and programs (up to 86% diversion) prior to black bin processing, and has similar environmental impacts to Alternative 4. None of the alternatives considered are environmentally superior to the proposed project because they do not meet all the project goals and objectives.

Table 5.6-1. Comparison of Alternative Impacts to Proposed Project

Environmental Issue Area	Proposed Project (Full Implementation of SWIRP)	Alternative 1 No Project/Landfill Alternative (refer to Section 5.1)	Alternative 2 SWIRP Scenario 1/No New Programs (refer to Section 5.2)	Alternative 3 SWIRP Scenario 2/New Downstream Programs (refer to Section 5.3)	Alternative 4 SWIRP Scenario 3/ Downstream plus Mandatory (refer to Section 5.4)	Alternative 5 SWIRP Scenario 4/ Downstream plus Upstream (refer to Section 5.5)
Aesthetics and Visual Resources	Mitigated to below a level of significance	Potential impacts similar to the proposed project on a facility-by-facility basis Mitigation would reduce the impact to below a level of significance Overall, fewer facilities are proposed compared to the proposed project	Potential impacts similar to the proposed project on a facility-by-facility basis Mitigation would reduce the impact to below a level of significance Overall, fewer facilities are proposed compared to the proposed project	Potential impacts similar to the proposed project on a facility-by-facility basis Mitigation would reduce the impact to below a level of significance Overall, fewer facilities are proposed compared to the proposed project	Potential impacts similar to the proposed project on a facility-by-facility basis Mitigation would reduce the impact to below a level of significance	Potential impacts similar to the proposed project on a facility-by-facility basis Mitigation would reduce the impact to below a level of significance Overall, fewer facilities are proposed compared to the proposed project
Agriculture and Forestry Resources	Mitigated to below a level of significance	Potential impacts similar to the proposed project on a facility-by-facility basis Mitigation would reduce the impact to below a level of significance Overall, fewer facilities are proposed compared to the proposed project Paper and C&D recycling would not be maximized under this alternative, thus, recycling of paper and lumber would be less than under the proposed project	Potential impacts similar to the proposed project on a facility-by-facility basis Mitigation would reduce the impact to below a level of significance Overall, fewer facilities are proposed compared to the proposed project Paper and C&D recycling would not be maximized under this alternative, thus, recycling of paper and lumber would be less than under the proposed project	Potential impacts similar to the proposed project on a facility-by-facility basis Mitigation would reduce the impact to below a level of significance Overall, fewer facilities are proposed compared to the proposed project Paper and C&D recycling would not be maximized under this alternative, thus, recycling of paper and lumber would be slightly less than under the proposed project	Potential impacts similar to the proposed project on a facility-by-facility basis Mitigation would reduce the impact to below a level of significance	Potential impacts similar to the proposed project on a facility-by-facility basis Mitigation would reduce the impact to below a level of significance Overall, fewer facilities are proposed compared to the proposed project Paper and C&D recycling would not be maximized under this alternative, thus, recycling of paper and lumber would be slightly less than under the proposed project
Air Quality	Potentially unmitigated impact at this PEIR level of evaluation depending on future site-specific analysis	Construction and operational emissions for the new blue and green bin facilities would be similar to the proposed project on a facility-by-facility basis Potentially unmitigated impact at this PEIR level of evaluation Overall, fewer facilities are proposed compared to the proposed project Truck emissions related to the additional facilities would be minimized through the use of clean fuels Fewer air quality impacts associated with truck traffic Benefits of reduced landfilling, and corresponding benefits related to GHG emissions and truck haul emissions to landfills would not be realized under this alternative GHG emissions and truck haul emissions would be higher than the proposed project	Construction and operational-related emissions for facilities similar to the proposed project on a facility-by-facility basis Potentially unmitigated impact at this PEIR level of evaluation Overall fewer facilities are proposed compared to the proposed project Truck emissions related to the additional facilities would be minimized through the use of clean fuels Mitigation would reduce some emissions, but impacts would remain significant and unmitigated GHG emissions would be higher than the proposed project because landfill diversion would not be maximized	Construction and operational-related emissions for facilities similar to the proposed project on a facility-by-facility basis Potentially unmitigated impact at this PEIR level of evaluation Overall fewer facilities are proposed compared to the proposed project Truck emissions related to the additional facilities would be minimized through the use of clean fuels Mitigation would reduce some emissions, but impacts would remain significant and unmitigated GHG emissions would be higher than the proposed project because landfill diversion would not be maximized	Construction and operational-related emissions for facilities similar to the proposed project on a facility-by-facility basis Potentially unmitigated impact at this PEIR level of evaluation Mitigation would reduce some emissions, but impacts would remain significant and unmitigated Truck emissions related to the additional facilities would be minimized through the use of clean fuels GHG emissions would be higher than the proposed project because landfill diversion would not be maximized	Construction and operational-related emissions for facilities similar to the proposed project on a facility-by-facility basis Potentially unmitigated impact at this PEIR level of evaluation Overall, fewer facilities are proposed compared to the proposed project Mitigation would reduce some emissions, but impacts would remain significant and unmitigated Truck emissions related to the additional facilities would be minimized through the use of clean fuels GHG emissions would be higher than the proposed project because landfill diversion would not be maximized

Table 5.6-1. Comparison of Alternative Impacts to Proposed Project (Continued)

Environmental Issue Area	Proposed Project (Full Implementation of SWIRP)	Alternative 1 No Project/Landfill Alternative (refer to Section 5.1)	Alternative 2 SWIRP Scenario 1/No New Programs (refer to Section 5.2)	Alternative 3 SWIRP Scenario 2/New Downstream Programs (refer to Section 5.3)	Alternative 4 SWIRP Scenario 3/Downstream plus Mandatory (refer to Section 5.4)	Alternative 5 SWIRP Scenario 4/Downstream plus Upstream (refer to Section 5.5)
Biological Resources	Mitigated to below a level of significance	Potential impacts similar to the proposed project on a facility-by-facility basis Mitigation would reduce the impact to below a level of significance Overall, fewer facilities are proposed compared to the proposed project	Potential impacts similar to the proposed project on a facility-by-facility basis Mitigation would reduce the impact to below a level of significance Overall, fewer facilities are proposed compared to the proposed project	Potential impacts similar to the proposed project on a facility-by-facility basis Mitigation would reduce the impact to below a level of significance Overall, fewer facilities are proposed compared to the proposed project	Potential impacts similar to the proposed project on a facility-by-facility basis Mitigation would reduce the impact to below a level of significance.	Potential impacts similar to the proposed project on a facility-by-facility basis Mitigation would reduce the impact to below a level of significance. Overall, fewer facilities are proposed compared to the proposed project
Cultural Resources	Mitigated to below a level of significance	Potential impacts similar to the proposed project on a facility-by-facility basis Mitigation would reduce the impact to below a level of significance Overall, fewer facilities are proposed compared to the proposed project	Potential impacts similar to the proposed project on a facility-by-facility basis Mitigation would reduce the impact to below a level of significance Overall, fewer facilities are proposed compared to the proposed project	Potential impacts similar to the proposed project on a facility-by-facility basis Mitigation would reduce the impact to below a level of significance Overall, fewer facilities are proposed compared to the proposed project	Potential impacts similar to the proposed project on a facility-by-facility basis Mitigation would reduce the impact to below a level of significance	Potential impacts similar to the proposed project on a facility-by-facility basis Mitigation would reduce the impact to below a level of significance. Overall, fewer facilities are proposed compared to the proposed project
Geology and Soils	Mitigated to below a level of significance	Potential impacts similar to the proposed project on a facility-by-facility basis Mitigation would reduce the impact to below a level of significance Overall, fewer facilities are proposed compared to the proposed project	Potential impacts similar to the proposed project on a facility-by-facility basis Mitigation would reduce the impact to below a level of significance Overall, fewer facilities are proposed compared to the proposed project	Potential impacts similar to the proposed project on a facility-by-facility basis Mitigation would reduce the impact to below a level of significance Overall, fewer facilities are proposed compared to the proposed project	Potential impacts similar to the proposed project on a facility-by-facility basis Mitigation would reduce the impact to below a level of significance	Potential impacts similar to the proposed project on a facility-by-facility basis Mitigation would reduce the impact to below a level of significance Overall, fewer facilities are proposed compared to the proposed project
Hazards and Hazardous Materials	Mitigated to below a level of significance	Potential impacts similar to the proposed project on a facility-by-facility basis Mitigation would reduce the impact to below a level of significance Overall, fewer facilities are proposed compared to the proposed project	Potential impacts similar to the proposed project on a facility-by-facility basis Mitigation would reduce the impact to below a level of significance Overall, fewer facilities are proposed compared to the proposed project	Potential impacts similar to the proposed project on a facility-by-facility basis Mitigation would reduce the impact to below a level of significance Overall, fewer facilities are proposed compared to the proposed project	Potential impacts similar to the proposed project on a facility-by-facility basis Mitigation would reduce the impact to below a level of significance	Potential impacts similar to the proposed project on a facility-by-facility basis Mitigation would reduce the impact to below a level of significance Overall, fewer facilities are proposed compared to the proposed project
Hydrology and Water Quality	Mitigated to below a level of significance	Potential impacts similar to the proposed project on a facility-by-facility basis Mitigation would reduce the impact to below a level of significance Overall, fewer facilities are proposed compared to the proposed project More impactful due to ongoing landfilling activities and the potential for landfill leachate to impact surface and groundwater quality	Potential impacts similar to the proposed project on a facility-by-facility basis Mitigation would reduce the impact to below a level of significance. Overall, fewer facilities are proposed compared to the proposed project Water quality benefits of decreased landfilling would be realized	Potential impacts similar to the proposed project on a facility-by-facility basis Mitigation would reduce the impact to below a level of significance Overall, fewer facilities are proposed compared to the proposed project Water quality benefits of decreased landfilling would be realized	Potential impacts similar to the proposed project on a facility-by-facility basis Mitigation would reduce the impact to below a level of significance Water quality benefits of decreased landfilling would be realized	Potential impacts similar to the proposed project on a facility-by-facility basis Mitigation would reduce the impact to below a level of significance Overall, fewer facilities are proposed compared to the proposed project Water quality benefits of decreased landfilling would be realized
Land Use and Planning	Mitigated to below a level of significance	Potential impacts similar to the proposed project on a facility-by-facility basis Mitigation would reduce the impact to below a level of significance Overall, fewer facilities are proposed compared to the proposed project	Potential impacts similar to the proposed project on a facility-by-facility basis Mitigation would reduce the impact to below a level of significance Overall, fewer facilities are proposed compared to the proposed project	Potential impacts similar to the proposed project on a facility-by-facility basis Mitigation would reduce the impact to below a level of significance Overall, fewer facilities are proposed compared to the proposed project	Potential impacts similar to the proposed project on a facility-by-facility basis Mitigation would reduce the impact to below a level of significance	Potential impacts similar to the proposed project on a facility-by-facility basis Mitigation would reduce the impact to below a level of significance Overall, fewer facilities are proposed compared to the proposed project

Table 5.6-1. Comparison of Alternative Impacts to Proposed Project (Continued)

Environmental Issue Area	Proposed Project (Full Implementation of SWIRP)	Alternative 1 No Project/Landfill Alternative (refer to Section 5.1)	Alternative 2 SWIRP Scenario 1/No New Programs (refer to Section 5.2)	Alternative 3 SWIRP Scenario 2/New Downstream Programs (refer to Section 5.3)	Alternative 4 SWIRP Scenario 3/Downstream plus Mandatory (refer to Section 5.4)	Alternative 5 SWIRP Scenario 4/Downstream plus Upstream (refer to Section 5.5)
Mineral Resources	Mitigated to below a level of significance	Potential impacts similar to the proposed project on a facility-by-facility basis Mitigation would reduce the impact to below a level of significance Overall, fewer facilities are proposed compared to the proposed project Metal and C&D recycling would not be maximized under this alternative	Potential impacts similar to the proposed project on a facility-by-facility basis Mitigation would reduce the impact to below a level of significance Overall, fewer facilities are proposed compared to the proposed project Metal and C&D recycling would not be maximized under this alternative	Potential impacts similar to the proposed project on a facility-by-facility basis Mitigation would reduce the impact to below a level of significance Overall, fewer facilities are proposed compared to the proposed project Metal and C&D recycling would not be maximized under this alternative	Potential impacts similar to the proposed project on a facility-by-facility basis Mitigation would reduce the impact to below a level of significance	Potential impacts similar to the proposed project on a facility-by-facility basis Mitigation would reduce the impact to below a level of significance Overall, fewer facilities are proposed compared to the proposed project Metal and C&D recycling would not be maximized under this alternative
Noise	Mitigated to below a level of significance	Potential impacts similar to the proposed project on a facility-by-facility basis Mitigation would reduce the impact to below a level of significance Overall, fewer facilities are proposed compared to the proposed project Construction and operational noise related to the facilities would be similar to the proposed project on a facility-by-facility basis Ongoing truck-related noise associated with landfilling would continue to occur	Potential impacts similar to the proposed project on a facility-by-facility basis Mitigation would reduce the impact to below a level of significance Overall, fewer facilities are proposed compared to the proposed project Construction and operational noise related to the facilities would be similar to the proposed project on a facility-by-facility basis	Potential impacts similar to the proposed project on a facility-by-facility basis Mitigation would reduce the impact to below a level of significance Overall, fewer facilities are proposed compared to the proposed project Construction and operational noise related to the facilities would be similar to the proposed project on a facility-by-facility basis	Potential impacts similar to the proposed project on a facility-by-facility basis Mitigation would reduce the impact to below a level of significance Construction and operational noise related to the facilities would be similar to the proposed project on a facility-by-facility basis	Potential impacts similar to the proposed project on a facility-by-facility basis Mitigation would reduce the impact to below a level of significance Overall, fewer facilities are proposed compared to the proposed project Construction and operational noise related to the facilities would be similar to the proposed project on a facility-by-facility basis
Population and Housing	Mitigated to below a level of significance	Potential impacts similar to the proposed project on a facility-by-facility basis Mitigation would reduce the impact to below a level of significance Overall, fewer facilities are proposed compared to the proposed project Green job generation would be less than the proposed project	Potential impacts similar as proposed project on a facility-by-facility basis Mitigation would reduce the impact to below a level of significance Overall, fewer facilities are proposed compared to the proposed project Green job generation would be less than the proposed project	Potential impacts similar to the proposed project on a facility-by-facility basis Mitigation would reduce the impact to below a level of significance Overall, fewer facilities are proposed compared to the proposed project Green job generation would be less than the proposed project	Potential impacts similar to the proposed project on a facility-by-facility basis Mitigation would reduce the impact to below a level of significance Green job generation would be less than the proposed project	Potential impacts similar to the proposed project on a facility-by-facility basis Mitigation would reduce the impact to below a level of significance Overall, fewer facilities are proposed compared to the proposed project Green job generation would be less than the proposed project
Public Services, Utilities and Service Systems	Mitigated to below a level of significance	Potential impacts similar to the proposed project on a facility-by-facility basis Mitigation would reduce the impact to below a level of significance Overall, fewer facilities are proposed compared to the proposed project	Potential impacts similar to the proposed project on a facility-by-facility basis Mitigation would reduce the impact to below a level of significance Overall, fewer facilities are proposed compared to the proposed project	Potential impacts similar to the proposed project on a facility-by-facility basis Mitigation would reduce the impact to below a level of significance Overall, fewer facilities are proposed compared to the proposed project	Potential impacts similar to the proposed project on a facility-by-facility basis Mitigation would reduce the impact to below a level of significance	Potential impacts similar to the proposed project on a facility-by-facility basis Mitigation would reduce the impact to below a level of significance Overall, fewer facilities are proposed compared to the proposed project
Recreation	Mitigated to below a level of significance	Potential impacts similar to the proposed project on a facility-by-facility basis Mitigation would reduce the impact to below a level of significance Overall, fewer facilities are proposed compared to the proposed project	Potential impacts similar to the proposed project on a facility-by-facility basis Mitigation would reduce the impact to below a level of significance Overall, fewer facilities are proposed compared to the proposed project	Potential impacts similar to the proposed project on a facility-by-facility basis Mitigation would reduce the impact to below a level of significance Overall, fewer facilities are proposed compared to the proposed project	Potential impacts similar to the proposed project on a facility-by-facility basis Mitigation would reduce the impact to below a level of significance	Potential impacts similar to the proposed project on a facility-by-facility basis Mitigation would reduce the impact to below a level of significance Overall, fewer facilities are proposed compared to the proposed project

Table 5.6-1. Comparison of Alternative Impacts to Proposed Project (Continued)

Environmental Issue Area	Proposed Project (Full Implementation of SWIRP)	Alternative 1 No Project/Landfill Alternative (refer to Section 5.1)	Alternative 2 SWIRP Scenario 1/No New Programs (refer to Section 5.2)	Alternative 3 SWIRP Scenario 2/New Downstream Programs (refer to Section 5.3)	Alternative 4 SWIRP Scenario 3/Downstream plus Mandatory (refer to Section 5.4)	Alternative 5 SWIRP Scenario 4/Downstream plus Upstream (refer to Section 5.5)
Transportation and Traffic	Potentially unmitigated impact at this PEIR level of evaluation depending on future site-specific analysis	Construction and operational impacts would be similar to the proposed project on a facility-by-facility basis Overall, fewer facilities are proposed compared to the proposed project Mitigation would reduce some of the potential traffic impacts Due to the uncertainty of where facilities would be located, it cannot be concluded that impacts would be reduced to below a level of significance Truck trips due to ongoing landfilling would be more impactful than the proposed project	Construction-related trips for facilities similar to the proposed project on a facility-by-facility basis Operational impacts would be similar to the proposed project on a facility-by-facility basis Overall, fewer facilities are proposed compared to the proposed project Mitigation would reduce some of the potential traffic impacts Due to the uncertainty of where facilities would be located, it cannot be concluded that impacts would be reduced to below a level of significance	Construction-related trips for facilities similar to the proposed project on a facility-by-facility basis Operational impacts would be similar to the proposed project on a facility-by-facility basis Overall, fewer facilities are proposed compared to the proposed project Mitigation would reduce some of the potential traffic impacts Due to the uncertainty of where facilities would be located, it cannot be concluded that impacts would be reduced to below a level of significance	Construction-related trips for facilities similar to the proposed project on a facility-by-facility basis Operational impacts would be similar to the proposed project on a facility-by-facility basis Mitigation would reduce some of the potential traffic impacts Due to the uncertainty of where facilities would be located, it cannot be concluded that impacts would be reduced to below a level of significance	Construction-related trips for facilities similar to the proposed project on a facility-by-facility basis Operational impacts would be similar to the proposed project on a facility-by-facility basis Overall, fewer facilities are proposed compared to the proposed project Mitigation would reduce some of the potential traffic impacts Due to the uncertainty of where facilities would be located, it cannot be concluded that impacts would be reduced to below a level of significance

6.0 GROWTH-INDUCING IMPACTS

Section 15126.2(d) of the *California Environmental Quality Act (CEQA) Guidelines* requires that an Environmental Impact Report (EIR) "discuss the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment." A project would be considered to have a direct impact on growth should it require the construction of new housing. A project would be considered to have an indirect impact on growth if it would involve a substantial construction effort with short or long-term employment requirements such as the building of a new commercial complex. A project may also be considered growth-inducing if it removed an obstacle to additional growth development, such as the creation of a new utilities or service facilities which would create an excess of resources that could eventually be filled by new development.

The elimination of either physical or regulatory obstacles to population growth is considered to be a growth-inducing impact. A physical obstacle to population growth typically involves the lack of public service infrastructure. The extension of public service infrastructure including roadways, water mains, and sewer lines into areas not currently provided with these services is expected to support new development. Similarly, the elimination of or change to a regulatory obstacle, including existing growth and development policies, can result in new population growth.

The proposed project addresses the handling of solid waste for the City of Los Angeles (City), which covers approximately 470 square miles and is home to approximately 3.8 million residents. The programs and policies identified in the Solid Waste Integrated Resources Plan (SWIRP) would apply to residential, commercial, industrial, and institutional generators in the City. SWIRP also identifies a variety of facilities that would need to be constructed to meet the City's recycling and solid waste infrastructure needs through 2030. SWIRP does not include the extension of public service infrastructure or changes to regulatory policies that would result in an increase in population growth over time. Therefore, no growth inducing impacts are associated with the project.

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7.0 CUMULATIVE IMPACT ANALYSIS

The *California Environmental Quality Act (CEQA) Guidelines* define cumulative effects as "two or more individual effects that, when considered together, are considerable or which compound or increase other environmental impacts." The *CEQA Guidelines* further state that the individual effects can be the various changes related to a single project or the changes involved in a number of other closely related past, present, and reasonably foreseeable probable future projects (Section 15355).

The majority of the physical environmental change associated with the project relates to the potential for future facilities to impact the physical environment. The potential for the project to contribute to a cumulative impact is dependent upon where future facilities are located and also when they would be proposed and/or constructed. Given that the project study area is the City of Los Angeles (City) and the area within 100 miles of the City, it is not feasible to list all closely-related past, present and foreseeable probable future projects. Cumulative impacts are discussed in relative terms, taking into consideration the project-level impacts of the project as well as what other contributors could add to a potentially significant cumulative impact.

This chapter summarizes the cumulative impact analysis presented in Chapter 4.0, Sections 4.1 through 4.15 of the document.

Aesthetics

Depending on the location of future facilities as well as other projects that are proposed in the vicinity, and their relationship to the change in visual resources, there could be a cumulative impact on these resources. It depends on where future facilities are proposed for construction. However, if mitigation measures VR-1 through VR-7 are implemented, potential project-level impacts would be minimized and would be less likely to contribute to a cumulative impact. Upon determination of the facility location, a project-level CEQA analysis can be conducted to determine if the construction of such facilities would have a cumulative impact.

Agriculture Resources

Depending on the location of future facilities, as well as other projects that are proposed in the vicinity, there may be a cumulative impact to agriculture or forestry resources. Upon determination of the facility location, a project-level CEQA analysis can be conducted to determine if the construction of such facilities would have a cumulative impact. The future cumulative analysis will utilize a list of project and/or use projections to determine the project-level impacts to agriculture and forestry within the City and the area within 100 miles of the City. If mitigation measures AG/FOR-1 through AG/FOR-4 are implemented, potential project-level impacts would be minimized and would be less likely to contribute to a cumulative impact.

Air Quality and Greenhouse Gases

On a project-level basis, the project has the potential to result in significant and unmitigated air quality impacts related to operational emissions, including the release of criteria air pollutants including ozone precursors of nitrogen oxide (NO_x) and reactive organic gases (ROG), as well as greenhouse gas (GHG) emissions.

The South Coast Air Quality Management District's (SCAQMD) approach for assessing cumulative operational impacts is based on the SCAQMD's Air Quality Management Plan (AQMP) forecasts of attainment of Ambient Air Quality Standards (AAQS) in accordance with the requirements of the Federal and State Clean Air Act. This forecast also takes into account the Southern California Association of Government's (SCAG's) forecasted future regional growth. As such, the analysis of cumulative impacts focuses on determining whether the Solid Waste Integrated Resources Plan (SWIRP) policies, programs, and facilities are consistent with forecasted future regional growth. If a project is consistent with the regional population, housing and employment growth assumptions upon which the SCAQMD's AQMP is based, then future development would not impede the attainment of AAQS and a significant cumulative air quality impact would not occur.

NO_x emissions associated with vehicular trips would cause exceedances over the SCAQMD threshold. Additionally, future stationary source emissions from the facilities would further contribute to exceedences to the SCAQMD thresholds. The incremental GHG emissions from the future facilities would have a cumulative contribution to global climate change, though it should be recognized that landfill GHG emissions would decrease as landfill diversion is increased. Implementation of mitigation measures AQ-1 through AQ-21 would reduce the construction and operational emissions associated with future facilities, however, the mitigation may not reduce all operational-related impacts to below a level of significance; and these emissions may contribute to a cumulative impact could remain. Therefore, a potentially significant and unmitigated cumulative impact is identified.

Biological Resources

Depending on the locations of proposed new facilities necessary to support the project, as well as other projects that are proposed in the overall project study area, there may be a cumulative impact to biological resources. Assuming the implementation of Mitigation Measure BIO-1, the required habitat assessment would determine if potential impacts to biological resources could occur due to project implementation. If potential impacts could occur, then mitigation measure BIO-2 requires that the impacts are evaluated and mitigation measures are set forth pursuant to CEQA, to ensure that impacts would be less than significant. Lastly, mitigation measure BIO-3 requires compliance with all applicable federal, state, regional, and local laws and regulations. Therefore, project implementation conducted in compliance with mitigation measures BIO-1, BIO-2, and BIO-3 would ensure that implementation of the facilities set forth in the SWIRP would result in less than significant direct impacts.

Full buildout of all SWIRP facilities would require a relatively minimal extent of acres of impact anticipated (i.e., between 133 and 163 acres[1]), which would likely be developed within the largely urbanized City of Los Angeles, and/or dispersed throughout the 100-mile study area. Given that all SWIRP projects would be required to avoid and/or mitigate for all direct impacts, and it can be presumed that other future development projects within the 100-mile study area would also be subject to the same regulatory requirements that mandate avoidance and/or minimization of impacts, potential impacts from project implementation would not be considered cumulatively considerable and no additional mitigation is required.

[1] If all policies and programs for SWIRP were implemented, the following facilities would be required: one large-scale composting facility or six small-scale composting facilities, three clean material recovery facilities (MRFs), one resource recovery center and five black bin processing facilities. This analysis assumes 15 acres of impact for each small-scale composting facility, 60 acres of impact for each large-scale composting facility, 7 acres of impact for each clean MRF, 2 acres for a resource recovery center and up to 10 acres for each black bin facility. Depending on whether six small-scale compost facilities or one large-scale compost facility was constructed, total footprint impacts would be 133 to 163 acres.

Cultural Resources

Direct impacts to cultural resources are generally site specific. As defined in Section 15130 of the *CEQA Guidelines*, a cumulative impact consists of an impact that is created as a result of the incremental effects of a proposed project together with the effects of other projects, causing related impacts. Although a project, in conjunction with the effects of past projects, other current projects, and probable future projects, could potentially result in the disturbance of prehistoric archaeological resource sites, paleontological resources, and human remains throughout the region, the City requires the mitigation of impacts to these resources (i.e., CR-1 through CR-3). Therefore, despite the site-specific nature of the resources, the mitigation identified would reduce the potential for cumulative impacts. As a result, anticipated development on a project site would not contribute to a significant cumulative impact.

Future SWIRP projects that would require earth-disturbing activities, in combination with other cumulative projects resulting from growth and development in the study area, have the potential to result in significant cumulative impacts to archaeological resources. Implementation of CR-1 would require a Phase I study, and possibly a Phase II study, to adequately evaluate and provide for the preservation or recovery of significant resources. Additionally, other projects in the study area are subject to similar requirements. Assuming implementation of CR-1 and compliance with applicable laws and regulations, the project would not result in cumulatively significant impacts to archaeological resources.

Developments that would disturb native soils or where no previous development has occurred have the potential to disturb or destroy unknown paleontological resources. The extent or significance of these resources cannot be determined until discovery during surveys and evaluation or excavation of native soils. Mitigation on a case-by-case basis would reduce impacts. Implementation of CR-2 would prevent significant adverse impacts on paleontological resources in the City and surrounding areas and would avoid its cumulative contribution to the loss of paleontological resources in the region. Compliance with CR-3 related to the disposition of human remains discovered during excavation or grading would prevent significant adverse impacts. Cumulative impacts on human remains would be less than significant.

Future SWIRP projects that would require earth-disturbing activities or alterations to existing infrastructure (including objects, buildings, or structures) in combination with other cumulative projects resulting from growth and development in the study area, have the potential to result in significant cumulative impacts to historical resources. Implementation of CR-4 would require an historic resources inventory to evaluate and provide for the preservation or recovery of significant resources. Additionally, other projects in the study area are subject to similar requirements. The implementation of CR-4 and compliance with applicable laws and regulations may eliminate and/or decrease significant impacts. However, the project could still result in significant cumulative impacts to historical resources because whereas local regulations provide for the mitigation of impacts, they do not explicitly prohibit the demolition or alteration of historical resources.

Geology and Soils

Geology and soils impacts are very site-specific and are generally mitigated on a project-by-project basis and, thus, do not typically contribute to a cumulative impact. Additionally, if mitigation measures GS-1 through GS-4 are implemented, potential project-level impacts would be minimized and would be less likely to contribute to a cumulative impact. Upon determination of the facility location, a project-level CEQA analysis can be conducted to determine if the construction of such facilities would have a cumulative impact. The future cumulative analysis will utilize a list of project and/or use projections to determine the project-level impacts to geology and soils within the City and surrounding areas.

Hazards and Hazardous Materials

Depending on the location of future facilities, as well as other projects that are proposed in the vicinity, there may be a cumulative impact from the transportation, use, storage, recycling and disposal of hazardous wastes that may be generated during implementation of the proposed project. Upon determination of the facility location, a project-level CEQA analysis can be conducted to determine if the construction of such facilities would have a cumulative impact. The future cumulative analysis will utilize a list of project and/or use projections to determine the project-level impacts from the transportation, use, storage, recycling and disposal of hazardous wastes within the City and the 100-mile study area. If mitigation measures HAZ-1 through HAZ-7 are implemented, potential project-level impacts would be minimized and would be less likely to contribute to a cumulative impact.

Hydrology and Water Quality

Implementation of the SWIRP policies and programs will require the construction and operation of several facilities throughout the City and potentially within the 100-mile study area of the City. Future facilities will be required to investigate, quantify, and mitigate the hydrologic and water quality impacts from individual facilities, in addition to analyzing watershed impacts.

From a hydrologic standpoint, project development will need to review master drainage plans in the vicinity of the project, and those continuing downstream to the ultimate discharge of the drainage. Generally, urban areas will have a drainage master plan which identifies the project site conditions assumed during design of master drainage plans. A number of natural drainages within the project area may also have current geomorphologic studies which would more clearly identify potential impacts to the overall system. All project development will address any deviations from these master plans and studies.

Each of the seven Regional Water Quality Control Boards (RWQCBs) have completed Basin Plans which identify water quality standards and control measures for surface and ground waters in the specific regions. Basin plans also identify beneficial uses for water bodies and identify water quality improvement objectives, waste discharge prohibitions, and other implementation measures to protect surface water and groundwater. Any Total Maximum Daily Load (TMDL) requirements are also identified.

Development of future facilities will review and implement the applicable Basin Plan directives. Additionally, the review of basin-wide or jurisdiction-wide master plans will allow individual project facility development to evaluate larger scale impacts to the region. There may also be some opportunity to construct mitigation measures which would complement individual facility Best Management Practices (BMPs). This could be completed by creating a series of BMPs which when combined would improve overall performance of project water quality features. If mitigation measures HWQ-1 through HWQ-9 are implemented, potential project-level impacts would be minimized and would be less likely to contribute to a cumulative impact.

Land Use and Planning

Land use impacts tend to be localized and site-dependent. Plan consistency would be determined on a facility-by-facility basis and would also take into consideration the existing and proposed development (other cumulative projects) in the vicinity of a proposed facility.

The ability for the project and the future facilities to contribute to a cumulative land use impacts will be dependent upon the siting of the future facilities, what the applicable General Plan and Zoning is for the site, and what the surrounding uses are. Additionally, other projects proposed or under construction in the vicinity of the future facilities would be considered. Due to the long-range planning nature of SWIRP, and the phased development of facilities, coupled with the uncertainty of their location within the City and project study area, it makes it difficult to provide a specific cumulative analysis.

The project-level mitigation identified for the project, LU-1 through LU-4, is designed to minimize the potential for land use impacts at the project-level and would also reduce the potential for the project to contribute a cumulative impact.

Mineral Resources

Depending on the location of future facilities, as well as other projects that are proposed in the vicinity, and their relationship to valuable mineral resources sites, there could be a cumulative impact on mineral resources. It is primarily dependent upon where future facilities are proposed for construction. However, if mitigation measures MR-1 through MR-4 are implemented, potential project-level impacts would be minimized and would be less likely to contribute to a cumulative impact. Upon determination of the facility location, a project-level CEQA analysis can be conducted to determine if the construction of such facilities would have a cumulative impact. Further, the actual footprint of disturbance for the future facilities would not be significant, in terms of the overall land area in the project study area (City and 100-mile study area). If all the policies and programs for SWIRP were implemented, total footprint impacts would range between 133 and 163 acres. Considering that there are over 16.6 million acres in the project study area, the actual disturbance that would be realized from the future SWIRP facilities is not considered significant.

Noise

Depending on the location of future facilities, as well as other projects that are proposed in the vicinity, there may be a cumulative noise impact. Upon determination of the facility locations, a project-level CEQA analysis will be conducted to determine if the operation of such facilities would have a cumulative noise impact. The future cumulative analysis will utilize the traffic circulation analysis and noise levels of stationary sources to determine the project-level impacts surrounding the project site. If a cumulative impact is identified, implementation of mitigation measures N-1 through N-10 would reduce potential impacts to below a level of significance by reducing the facility's contribution to a cumulative noise impact.

Population and Housing

Implementation of SWIRP is not expected to have an impact related to population and housing, since future facilities are expected to be proposed in areas where no existing residences are located. Residences are not anticipated to be removed and residents are not anticipated to be displaced. However, in the event that future facilities are proposed in areas that have residences, implementation of mitigation measures PH-1 and PH-2 would reduce the impact to below a level of significance. Additionally, implementation of SWIRP will not result in substantial population growth; rather, it responds to the waste management needs of the future population within the City. Thus, the project is not expected to contribute to a cumulative impact for population and housing. At the time facilities are proposed, a project-level CEQA analysis will be conducted, which will include a new cumulative impact analysis for population and housing.

Public Services, Utilities, and Service Systems

Depending on the location of future facilities, as well as other projects that are proposed in the vicinity, related to their wastewater discharge, water consumption, energy consumption, and stormwater discharge, there could be a cumulative impact on these resources. It is dependent on where future facilities are proposed for construction. However, if mitigation measures WS-1, WS-2, and ES-1 are implemented, potential project-level impacts would be minimized and would be less likely to contribute to a cumulative impact. Upon determination of the facility location, a project-level CEQA analysis will be conducted to determine if the construction of such facilities would have a cumulative impact.

Recreation

Depending on the location of future facilities, as well as other projects that are proposed in the vicinity, and their potential impact to recreational facilities, there could be a cumulative impact. It is dependent upon where future facilities are proposed for construction. However, with implementation of mitigation measure REC-1, potential project-level impacts would be minimized and would be less likely to contribute to a cumulative impact. Upon determination of the facility location, a project-level CEQA analysis will be conducted to determine if the construction of such facilities would have a cumulative impact. Further, the actual footprint of disturbance for the future facilities would not be significant, in terms of the overall land area in the project study area (City and 100-mile study area). If all the policies and programs for SWIRP were implemented, total footprint impacts would range between 133 and 163 acres. Considering that there are over 16.6 million acres in the project study area, the actual disturbance that would be realized from the future SWIRP facilities is not significant.

Transportation and Traffic

Cumulative traffic analysis is a function of the impact of the proposed project, as well as the impact of other projects that are proposed in the vicinity. Due to the uncertainty of where future facilities will be located, it cannot be determined, conclusively, if the project will result in a significant cumulative impact. Given the fact that there are many roadways and intersections in the project study area that operate at an unacceptable level of service, it is possible that future facilities could contribute to a potentially significant cumulative impact. However, if mitigation measures TR-1 and TR-2 are implemented, potential project-level impacts would be minimized and would be less likely to contribute to a cumulative impact. Upon determination of the facility location, a project-level CEQA analysis will be required to determine if construction of the facilities will have a cumulative impact. However, until that project-level analysis is conducted, cumulative impacts are determined to be potentially significant.

8.0 UNAVOIDABLE ADVERSE IMPACTS/SIGNIFICANT ENVIRONMENTAL CHANGE

8.1 UNAVOIDABLE ADVERSE IMPACTS

In accordance with *California Environmental Quality Act (CEQA) Guidelines Section 15126(b)*, Environmental Impact Reports (EIRs) must include a discussion of significant environmental effects that cannot be avoided if the proposed project is implemented. The impact analysis, as detailed in Chapter 4.0 of this Final Program EIR (Final PEIR), concludes that the following impacts would remain significant, even after the incorporation of mitigation for the proposed project. For a list of impacts that are mitigated to below a level of significance, please see Chapter 1.0, Table 1.7-1.

8.1.1 Air Quality

Based upon the analysis presented in Chapter 4.0, Section 4.3, it was determined that operational-related air quality emissions have the potential to be significant and unmitigated. Nitrogen oxide (NO_x) emissions from trucks associated with construction or operation of the alternative technology - advanced thermal recycling facilities will exceed the South Coast Air Quality Management District (SCAQMD) thresholds. Additionally, due to the uncertainty of the levels of stationary source emissions at the future facilities, there is a potential for a significant and unmitigated impact. Cumulative impacts of criteria air pollutants are also significant and unavoidable. Mitigation measures AQ-1 through AQ-21 have been provided to reduce emissions with project construction and operation. Mitigation measures AQ-1 through AQ-13 address construction-related emissions and include the use of low Volatile Organic Compounds (VOC) paints, limiting hours of operation, fuel types, and similar measures to minimize construction related emissions. Mitigation measures AQ-14 to AQ-21 address facility-related emissions, including vehicular and stationary source emissions. These measures require emission reducing strategies be incorporated into the future facilities. However, significant and unmitigated air quality impacts will still remain. These impacts are associated with stationary source emissions at future facilities. Future site-specific CEQA analysis will need to be performed to determine actual facility-specific air quality impacts.

8.1.2 Transportation/Traffic

Based upon the analysis presented in Chapter 4.0, Section 4.15, there are project-level and cumulative-level impacts due to truck trips associated with future facilities. While the majority of these trips would be the rerouting of already occurring trips (trips would go to the future facilities instead of a landfill), due to the uncertainty of where future facilities would be located, these trips are considered a potentially significant impact. Implementation of mitigation measure TR-1 will require a facility-specific traffic report and identification of mitigation once a future project site is identified. However, since the specific locations of future facilities are not known and the conditions of the roadway network adjacent to the future sites cannot be determined at this time, it cannot be conclusively stated that all traffic impacts would be reduced to below a level of significance. Thus, impacts are considered potentially significant and unmitigable.

8.2 SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES

In accordance with *California Environmental Quality Act (CEQA) Guidelines Section 15126.2(c)*, an EIR must identify any significant irreversible environmental changes that would be caused by the proposed project being analyzed. Irreversible environmental changes may include current or future commitments to the use of non-renewable resources or secondary growth-inducing impacts that commit future generations

to similar uses. Growth inducing impacts of the project area are discussed in Section 6.0 of this Final PEIR.

Construction and operation of future facilities will contribute to the incremental depletion of resources, including renewable and non-renewable resources. Resources such as lumber used in building construction, are generally considered renewable resources, and would be replenished over the lifetime of the project. Non-renewable resources, such as natural gas, petroleum products, steel, copper and other materials are typically considered to be in finite supply and would not be replenished over the lifetime of the project.

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APPENDIX A

SOLID WASTE INTEGRATED RESOURCES PLAN

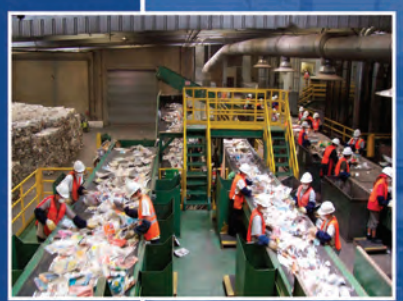
OCTOBER 2013

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City of Los Angeles

SOLID WASTE INTEGRATED RESOURCES PLAN - A ZERO WASTE MASTER PLAN







October 2013

COUNTING DOWN TO ZERO WASTE PLAN
Solid Waste Integrated Resources Plan

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Volume I Solid Waste Integrated Resources Plan

Phase I Forming the Zero Waste Guiding Principles

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City of Los Angeles

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Phase 1 Forming the Zero Waste Guiding Principles

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Phase 1 Forming the Zero Waste Guiding Principles

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List of Acronyms, Abbreviations, and Definitions

AB 32	Assembly Bill 32, The Global Warming Solutions Act of 2006
AB 341	Assembly Bill 341, Established the statewide goal of 75 percent by 2020 and mandatory commercial recycling by July 2012 (chaptered October 6, 2011)
AB 939	Assembly Bill 939, The California Integrated Waste Management Act of 1989 Public Resources Code, Section 40000 et seq.
Advanced Thermal Recycling	Advanced Thermal Recycling (ATR) is a second generation advancement of waste-to-energy technology in which municipal solid waste (MSW) is converted, in an oxygen rich environment, to a hot exhaust gas composed primarily of carbon dioxide and water vapor. The inorganic material is converted to bottom ash, for beneficial use, and fly ash which requires disposal. The hot exhaust gas can be used to generate heat or steam to in turn produce electricity. ATR is equipped with advanced pollution control technologies that include both Selective Catalytic Reduction (SCR) and Selective Non-Catalytic Reduction (SNCR) systems that effectively diminish air emissions to a greater extent than its predecessors. ATR technology has been commonly applied in Europe to produce energy from MSW. Currently, no facility of its type exists in the United States.
Alternative Technology[1]	"Alternative Technology" is a term that refers to specific technologies for treating residual solid waste, such as: thermal, biological, chemical, and physical technologies. Some examples of thermal technology include plasma arc gasification, pyrolysis, and Advanced Thermal Recycling. Some examples of biological technologies include anaerobic digestion and aerobic composting. Examples of physical technologies include autoclaving and advanced materials recovery systems.
Black Bin Materials	"Black bin materials" are discarded materials that are handled or controlled by the City directly or through permits, including discarded materials from residential, commercial, and institutional sources.

[1] *Evaluation of Alternative Solid Waste Processing Technologies*, URS Corporation, September 2005. http://www.alternativetechnology.lacity.org/PDF/final_report.pdf (accessed October 1, 2013).

List of Acronyms, Abbreviations, and Definitions (continued)

Blue Bin Materials	"Blue bin materials" are source-separated recyclable materials that have been separated from residual waste for recycling, including recyclable materials from residential, commercial, and institutional sources.
Bottle Bill	California Beverage Container Recycling and Litter Reduction Act
CA	California
CAA	The Clean Air Act of 1976
Cal/EPA	California Environmental Protection Agency
CalRecycle	California Department of Resources Recycling and Recovery
CARB	California Air Resources Board
C&D	Construction and demolition debris
CEQA	California Environmental Quality Act
CERCLA	The Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CHaRM	Center for Hard to Recycle Materials
City	City of Los Angeles
Conversion Technology[2]	"Conversion Technology" is a term that refers to specific solid waste processing technologies including, but not limited to, non-combustion thermal technologies, such as gasification and pyrolysis; chemical technologies such as acid hydrolysis or distillation; and biological technologies such as anaerobic digestion. For the purposes of this report, Conversion Technology is a subset of Alternative Technology consisting of technologies that do not employ direct combustion of the feedstock.
CNG	Compressed Natural Gas
DOC	Department of Conservation
DPW	Department of Public Works
DTSC	Department of Toxic Substances Control
EIR	Environmental Impact Report
EPA	Environmental Protection Agency

[2] California Environmental Protection Agency, New and Emerging Conversion Technologies Report to the Legislature, June 2007. http://www.calrecycle.ca.gov/publications/Documents/Organics%5C44205016.pdf (accessed October 1, 2013).

List of Acronyms, Abbreviations, and Definitions (continued)

EPR	Extended Producer Responsibility
EPS	Expanded Polystyrene Foam (typically used in take-out containers and coffee cups and also known as Styrofoam™)
GHG	Greenhouse Gas
Green Bin Materials	"Green bin materials" are source-separated organic materials that have been separated from residual waste for composting, anaerobic digestion, and mulching, including yard trimmings, food scraps, and compostable paper from residential, commercial, and institutional sectors.
HHW	Household Hazardous Waste
LANCER	Los Angeles City Energy Recovery
LASAN	City of Los Angeles Bureau of Sanitation
LAUSD	Los Angeles Unified School District
LEA	Local Enforcement Agency
MRF	Materials Recovery Facility
Multi-family complex	"Multi-family complex" or "Multi-family dwelling" is a building, structure, unit, or location designed for residential occupancy, exclusive of "Single-family residences." These are typically apartments, townhomes, and condominiums. Multi-family residences consisting primarily of three (3) and four (4) units are serviced by LASAN. Multi-family dwellings with five (5) units or more are primarily serviced by private sector commercial haulers. Some multi-family dwellings of five (5) units or more that have continually received City service have been "grandfathered" into public collection and will continue to receive residential curbside collection services from LASAN.
PAYT	Pay-As-You-Throw
PSD	Prevention of Significant Deterioration
RENEW LA	Recovering Energy, Natural Resources, and Economic Benefit from Waste for Los Angeles
Residential curbside	"Residential curbside" customers include generators in single-family residences and some multi-family residences, primarily with four units or less, serviced by LASAN.

List of Acronyms, Abbreviations, and Definitions (continued)

Residual waste	"Residual waste" or "residual solid waste" refers primarily to the discarded materials that remain after reducing, reusing, recycling, and composting; or after processing the materials through a mixed materials processing facility. This material can be further converted into energy or fuel through an Alternative Technology facility or disposed as solid waste in a landfill.
RCRA	The Resource Conservation and Recovery Act of 1976
RMDZ	Recycling Market Development Zone
RPS	Renewable Portfolio Standard
S.A.F.E.	Solvents, Automotive, Flammables, and Electronics
SARA	The Superfund Amendments and Reauthorization Act of 1986
SCAQMD	South Coast Air Quality Management District
Single-family	"Single-family residence" or "Single-family home" is a building designed for residential occupancy, and containing one or two dwelling units (duplexes).[3] Single-family residences and duplexes are serviced by LASAN.
Solid waste	"Solid waste" has the meaning set forth the California Public Resources Code Section 40194 and includes all discarded materials (residential, commercial, industrial, and institutional).
SRCRD	Solid Resources Citywide Recycling Division
State	State of California
SWIRP	*Solid Waste Integrated Resources Plan*
UNLV	University of Nevada, Las Vegas
U.S. (or US)	United States
Wasteshed	"Wasteshed" refers to geographic area within the City of Los Angeles consisting of a residential solid waste collection district. The City is divided into six wastesheds: East Valley, West Valley, South Los Angeles, North Central, West Los Angeles, and Harbor.

[3] Los Angeles Municipal Code, Chapter VI Public Works and Property, Article 6.1, Section 66.40.
[4] California Public Resources Code, http://law.justia.com/california/codes/prc/40100-40201.html. (accessed October 1, 2013).

List of Acronyms, Abbreviations, and Definitions (continued)

Waste-to-energy	"Waste-to-energy" is the process of combusting material in a chamber to produce heat. The heat flows through a boiler to produce steam to generate electricity. The system is equipped with pollution-control systems to reduce air emissions.
Zero Waste	"Zero Waste" maximizing diversion from landfills and reducing waste at the source, with the ultimate goal of striving for more-sustainable solid waste management practices.[5]

[5] The internationally peer-reviewed definition of "Zero Waste" was developed by the Zero Waste International Alliance, http://zwia.org/standards/zw-definition/ (accessed October 1, 2013).

Executive Summary

The City of Los Angeles (City) is part of a worldwide movement to re-evaluate attitudes toward consumption, disposal, product stewardship, and infrastructure to reduce waste and promote sustainability. The City has been a leader in protecting its natural environment and the health and safety of its residents. The City's Bureau of Sanitation (LASAN) has been responsible for the safe and efficient management of solid waste generated within the City since 1890.

On June 28, 2005, the City Council approved the adoption of a Zero Waste goal. Upon this approval, the City Council directed LASAN to expand existing programs and create new programs, as necessary, to accomplish this goal using the *Recovering Energy, Natural Resources, and Economic Benefit from Waste for Los Angeles (RENEW LA) Plan* as a guiding document.

The *RENEW LA Plan*, adopted in February 2006, provided a blueprint for Zero Waste; it identified 12 goals to set the City on the path to Zero Waste. The goal of Zero Waste as defined by the *RENEW LA Plan* is to reduce, reuse, recycle, or convert the resources currently going to disposal so as to achieve an overall diversion rate of 90 percent or more by the year 2025.

In 2006, the City committed to the following goals:

- Achieve 70 percent diversion by 2013, which has since been accelerated to 75 percent by 2013
- Site an Alternative Technology facility in the City
- Convert the LASAN collection truck fleet to clean-burning fuel
- Implement a stakeholder-driven *Solid Waste Integrated Resources Plan* (SWIRP)

In April 2007, LASAN began an intense stakeholder-driven process to develop SWIRP, the long-range Zero Waste master plan. During the first phase, which was completed in May 2008, a total of 256 public outreach meetings were conducted (109 key constituent meetings, 27 grassroots house meetings, 75 business interviews, 42 regional workshops in the six wastesheds throughout the City, and three citywide conferences). Over 3,000 stakeholders have been engaged in the development of the *Zero Waste Plan*.

During the year-long planning process, stakeholders gathered in regional workshops and citywide conferences to establish the vision and goals for achieving Zero Waste. The City conducted six workshops in each of the six wastesheds and a workshop in a downtown citywide location (42 workshops total) as well as three citywide conferences.

In May 2008, the SWIRP stakeholders identified the road to Zero Waste by developing the following 12 guiding principles:

1. **Education to decrease consumption** – Stakeholders felt that the City should instill a "zero waste culture" in Los Angeles. A key strategy for increasing awareness among the next generation of Angelenos was the stakeholder recommendation to partner with Los Angeles Unified School District to develop a Zero Waste curriculum and increase recycling in the schools.

2. **City leadership as a model for Zero Waste practices** – Stakeholders agreed that the City should "walk its talk" by demonstrating leadership in recycling at all City facilities and parks and by modeling Zero Waste behaviors such as phasing out expanded polystyrene foam takeout containers.
3. **Education to increase recycling** – Stakeholders asserted that the City should put more emphasis on educating residents and businesses about existing City programs and should encourage them to make recycling and Zero Waste "second nature."
4. **City leadership to increase recycling** – Stakeholders want the City to use its stature in Sacramento to lobby for State legislation on initiatives that are best implemented at the state level, such as producer responsibility and packaging legislation.
5. **Manufacturer responsibility** – Stakeholders supported initiatives to encourage or require producers of products and packaging to take responsibility for the "end of life" management of those products and packaging.
6. **Consumer responsibility** – Stakeholders believed that consumers, including residents and businesses, need to be part of the solution and should be required to participate in recycling and composting programs.
7. **Convenience** – Stakeholders felt that recycling programs should be convenient and that it should be as easy to recycle as it is to waste. A key strategy for increasing convenience is to provide recycling receptacles wherever there are waste receptacles.
8. **Incentives** – Stakeholders suggested that the City provide more incentives for recycling and composting, such as "pay-as-you-throw" rate structures.
9. **New, safe technology** – Stakeholders supported the development of new technology for managing the City's waste. However, stakeholders emphasized that the technology would need to be demonstrated to be safe and should not impact already burdened communities.
10. **Protect public health and the environment** – Stakeholders strongly believed that protecting public health and the environment should be at the forefront of all decision-making. When embarking on any new idea or plan, the City should carefully consider the long-term consequences and impacts.
11. **Equity** – Throughout the planning process, stakeholders supported the concept of equity—shared responsibility for taking care of our waste problems. Stakeholders felt that all areas of the City should share in the burden and benefits of new facilities and that new developments should pay their fair share of the system-wide costs. All generators should have access to recycling and composting programs, and sensitive environmental areas and communities should not be burdened with waste impacts. Green jobs created by new programs and facilities should support the local communities, including disadvantaged youth and recently incarcerated residents who need help transitioning back into the community.

12. **Economic efficiency** – Stakeholders felt that the City must invest carefully in new programs and facilities, but costs should not outweigh other considerations. The City should also consider the long-term economic benefits of reducing waste and creating a more-sustainable society. The City should find solutions that are both economically efficient and environmentally preferable and should promote economic sustainability through investment in green jobs and economic development.

During Phase 1, the stakeholder process identified the steps the City needs to take to become a leader in Zero Waste. Stakeholders provided the City with their vision for a sustainable City, in which the City demonstrates its leadership in recycling and Zero Waste; all residents and businesses fully participate in the City's recycling and composting programs; and all future generations learn and share in the goals and values of Zero Waste. Stakeholders identified and discussed the policies, programs, and facilities that will be needed to implement this vision, which was addressed in Phase 2 of the SWIRP planning process and documented in the *Policy, Program, and Facility Plan*.

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Section 1 Introduction

The City of Los Angeles (City) Bureau of Sanitation (LASAN) initiated a stakeholder-driven planning process in the spring of 2007 to develop the City's *Solid Waste Integrated Resources Plan* (SWIRP), a long-range master plan for solid waste management in the City. The process brought together residents, businesses, and organizations with the goal of developing a comprehensive plan. This report provides the background and planning context for the plan; it also describes the process that led to the development of the 12 guiding principles.

1.1 Background

The City entered into the planning process for SWIRP during a dynamic period in solid waste management planning:

- **Regulatory Environment** – Having achieved 50 percent diversion from landfills in California, the State legislature, regulatory agencies, and communities throughout California are setting their sights on higher diversion goals.
- **Embracing Zero Waste** – Faced with limited landfill capacity, dwindling natural resources, and concerns about environmental impacts, communities around the world have embraced the concept of Zero Waste.
- **Global Environment** – The potential impacts of climate change have driven local, state, and federal governments to adopt strategies for reducing greenhouse gas emissions.

This section provides an overview of Zero Waste from a global perspective and describes the City's history, key policy issues, and regulatory climate that have driven the development of this plan.

1.1.1 A Global Perspective

1.1.1.1 Vision of a World without Waste

> "Zero Waste should become second nature as part of the culture of the family, education system, and community."
>
> *Jay Goldberg, North Central Regional Working Group*
> *SWIRP Goals and Objectives Workshop, September 2007*

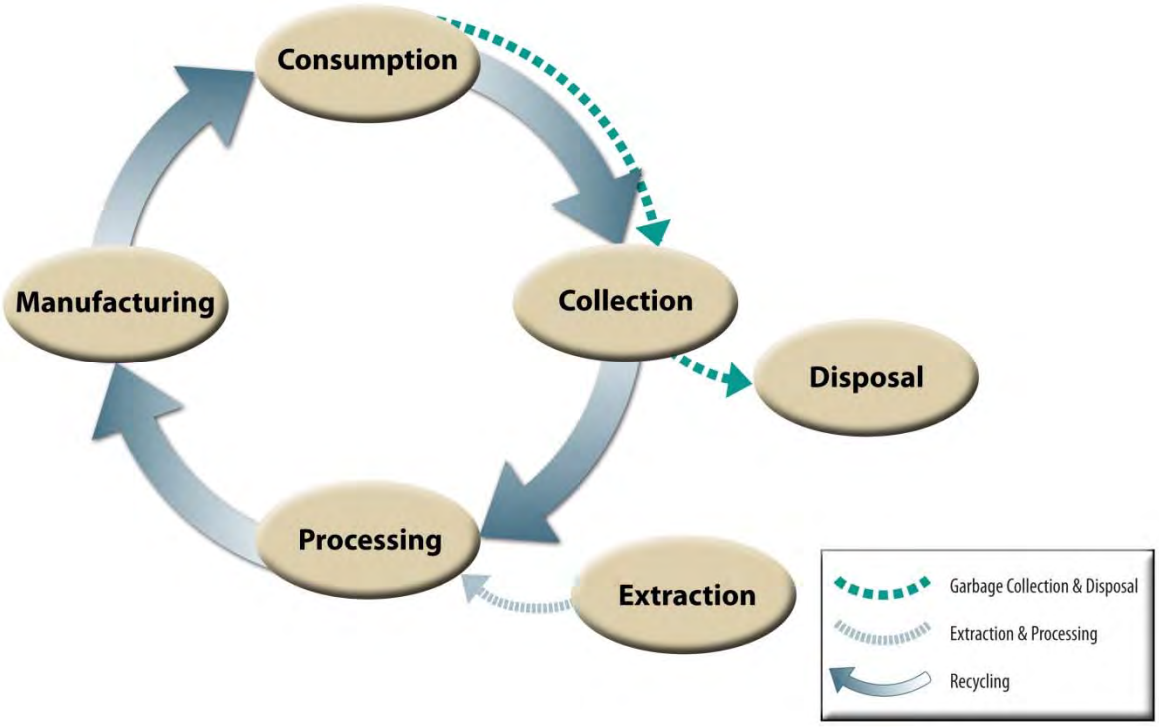
Stakeholders in the City embraced the concept of Zero Waste, where the practice of extraction, consumption, and disposal are shifted from a linear process to a closed loop system where discarded materials become resources. This "Zero Waste Loop" is illustrated in Figure 1. Zero Waste is not a literal goal that achieves "100 percent recycling," since there could continue to be some materials that cannot be recycled and cannot be redesigned. However, the vision of Zero Waste is to strive for sustainability by actively maintaining existing programs and seeking new opportunities for diversion. This vision is shared by the City's leadership and by stakeholders in the City.

1.1.1.2 What is Zero Waste?

As defined by the GrassRoots Recycling Network,[6] Zero Waste is a design principle that goes beyond recycling and focuses on reducing waste primarily, then reusing and recycling products, and composting the remaining organics. Zero Waste works to redesign the system to mimic natural systems in which all materials are a resource for another benefit or use. As illustrated in Figure 1, Zero Waste systems strive to eliminate waste by reducing consumption and getting products and packaging redesigned for repair and reuse and then recycled back to the marketplace or composted back into soil.

In this report, the term "Zero Waste" means maximizing diversion from landfills and reducing waste at the source, with the ultimate goal of striving for more-sustainable solid waste management practices.

Figure 1: The Zero Waste Loop



[6] GrassRoots Recycling Network, http://www.grrn.org/zerowaste/zerowaste_faq.html (accessed October 1, 2013).

1.1.1.3 Zero Waste around the World

> "Zero Waste begins when we realize that there is no 'away' into which we can throw what we call our waste. This center is a visible demonstration of the economic and aesthetic potential of what we discard."
>
> *G. Ananthpadmanabhan, Executive Director, Greenpeace India*[7]

The City is part of a worldwide movement that began in the mid-1990s as communities recognized that waste was not inevitable and cities could plan for a future that went beyond "end of pipe" strategies, a future in which waste is regarded as a resource rather than a discarded material. Several countries around the world have embraced the Zero Waste vision. The following examples are of Zero Waste communities from around the world.

Canberra, Australia. In 1996, Canberra, the capital city of Australia, became the first government to adopt a "Zero Waste" strategy after a year-long community outreach process that engaged special interest groups, local governments, and professional organizations. The "No Waste by 2010" plan set a goal of 95 percent diversion through residential curbside recycling, construction and demolition (C&D) debris diversion, anaerobic digestion and composting of organic materials, and regulation of non-recyclable packaging. Canberra achieved 75 percent diversion in 2009. The government is working on a new strategy to take the "no waste" principle beyond 2010.[8]



New Zealand. Since 1999, 51 out of the 71 local governments in New Zealand have adopted a Zero Waste policy, with most aiming for Zero Waste by 2015. This policy included a commitment to full and open community participation and ownership of a Zero Waste strategy involving community, council, and business sector partnerships. In September 2008, New Zealand passed the "Waste Minimisation Act," which contains two main provisions: the waste levy provision assesses $10 per ton on landfilled waste, and the product stewardship provision allows the government to require the private sector to divert priority products through waste reduction and recycling.[9] Community groups and grassroots enterprises play a large role in waste reduction initiatives in New Zealand. These waste reduction initiatives help create green jobs and generate income for local communities.

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[7] October 22, 2003, at an event advocating for extended producer responsibility in Kovalam, Kerala, India.
[8] ABC News, "The ACT Government's aim of 'No Waste by 2010' will not be met as Canberra's waste level continues to climb." March 1, 2010. http://www.abc.net.au/news/video/2010/02/26/2831779.htm (accessed October 1, 2013).
[9] Zero Waste New Zealand, Waste Minimisation Act, http://www.zerowaste.co.nz/whats-nz-doing/waste-minimisation-act/ (accessed October 1, 2013).

Kamikatsu, Japan. In 2003, the village of Kamikatsu set a goal of Zero Waste by 2020. The village's two thousand residents separate materials in 34 categories for reuse, recycling, and composting. Ninety-eight percent of the population uses home composters, and reusable and recyclable items are taken to the village's Zero Waste centers. As a result, the village's recycling rate has increased from 55 percent to 80 percent.[10]



Zero Waste Center in Kamikatsu, Japan

Kovalam, Kerala, India. Kovalam is a small fishing village on the coast of the Arabian Sea near Kerala's capital city, Thiruvananthapuram. Kovalam became a tourist destination in the 1990s, and with the tourists came trash. Kovalam built resource recovery parks for reusable, recyclable, and repairable materials; developed biogas to energy plants to divert biodegradable materials; and trained local community-based manufacturers to provide alternatives to non-recyclable products through local enterprises, creating 160 jobs between 2002 and 2005.[11]

Canada. Fifteen local governments in Canada have established a goal of Zero Waste. Industry-led product stewardship is the focus of the province of British Columbia, where producers and consumers of products are responsible for end-of-life product management, rather than taxpayers or local government. The Recycling Regulation, enacted on October 7, 2004, under the authority of the Environmental Management Act, currently includes product categories for electronics, tires, beverage containers, used oil, oil filters and oil containers, paint, pharmaceuticals, and residuals (flammable liquids, solvents,

[10] The Guardian, "Climate change: How quest for Zero Waste community means sorting the rubbish 34 ways," August 4, 2008, http://www.guardian.co.uk/environment/2008/aug/05/recycling.japan (accessed October 1, 2013).

[11] International POPs Elimination Project, "Case study of Zero Waste Kovalam: A progressive waste management programme with a focus on the best available technology options and material substitution," April 2005, http://www.ipen.org/ipepweb1/library/ipep_pdf_reports/7ind%20zero%20waste%20kovalam.pdf (accessed October 1, 2013).

pesticides, and gasoline). The regulation makes the producer (manufacturer, distributor, or importer) responsible for the lifecycle management of their products, including financing the collection and recycling of discarded products.[12]

1.1.1.4 Zero Waste in California

Several communities in California have adopted Zero Waste strategies to manage their community's waste and resources. Since 2000, the following communities across California have adopted Zero Waste as a goal:[13]

- Alameda
- Berkeley
- Burbank
- Capitola
- Del Norte County
- El Cajon
- Fairfax
- Fresno
- Glendale
- Los Angeles
- Marin County
- Mountain View
- Novato
- Oakland
- Ocean Beach
- Oceanside
- Pasadena
- Palo Alto
- San Bernardino County Zero Waste Communities
- San Diego County (Citizens Advisory Committee only)
- San Francisco
- San Jose
- San Juan Capistrano
- San Luis Obispo County
- Santa Cruz County
- Santa Monica
- Scotts Valley
- Sonoma County (Local Task Force, citizens committee only)
- Sunnyvale
- Watsonville

1.1.1.5 New Technology

A strategy for maximizing diversion from landfills is the development of new technology for processing residual waste—the waste that is left over after reducing, reusing, recycling, and composting. The terms often used to label these new technologies are "Conversion Technology" and "Alternative Technology."

"Conversion Technology" is the term used by CalRecycle to describe new and emerging non-combustion thermal, chemical, and biological technologies. "Alternative Technology" is the term used by the City to refer to both new and emerging technologies and proven commercial scale technologies, including those that use combustion, such as advance thermal recycling.

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[12] British Columbia Ministry of Environment: "Product Stewardship in B.C.," http://www.env.gov.bc.ca/epd/recycling/history/history.htm (accessed October 1, 2013)
[13] Zero Waste International Alliance: http://zwia.org/news/zero-waste-communities/ (accessed October 1 2013, 2013)

Since 2003, the City has investigated options for diverting waste through Alternative Technologies such as: thermal, biological, chemical, and physical technologies for treating waste. Examples of thermal technology include plasma arc gasification, pyrolysis, and advanced thermal recycling. Examples of biological technologies include anaerobic digestion and aerobic composting. Examples of physical technologies include autoclaving and advanced materials recovery systems. These technologies are all methods to process discarded materials as alternatives to landfilling them in order to generate energy (both electrical and thermal) and recover useful by-product materials.

The City has evaluated vendor proposals for commercial-scale technologies (200 to 1,000 tons per day) and emerging technologies (up to 200 tons per day). The City is currently undergoing a citywide siting study to potentially locate an Alternative Technology facility.

Alternative Technology facilities are used to manage solid waste in the United States (U.S.), Europe, Israel, Asia, and Canada. However, in the U.S., the only technology that has been implemented on a commercial scale is waste-to-energy. There have been pilot demonstrations of other new and emerging technologies in the U.S., but the absence of larger-scale commercial facilities in this country has been an obstacle in demonstrating the capabilities of these technologies for processing residual solid waste.

Public-sector interest in conversion technologies has increased in the U.S. in recent years, based on the desire to enhance recycling and the beneficial use of waste, reduce dependence on landfills and imported fossil fuels, and reduce greenhouse gas emissions. In addition to the City of Los Angeles, investigations and initiatives have been conducted or are underway in the following cities:

- Los Angeles County, California
- Salinas Valley Solid Waste Authority, California
- Santa Barbara (City and County), California
- San José, California
- New York, New York
- St. Lucie County, Florida
- Taunton, Massachusetts

Conversion technologies are still emerging as methods to process residual waste. Gasification is used at the commercial scale for coal, and plasma arc technology is used at the commercial scale to treat hazardous and radioactive wastes. Anaerobic digestion is used at the commercial scale for homogenous food processing waste and manures. However, each of these technologies has limited experience with mixed waste feedstocks.

Barriers to implementing Alternative Technology facilities (inclusive of conversion technologies) include regulatory requirements, potential facility impacts, funding, and siting concerns. The City's objective in evaluating new technology is to identify safe and proven methods for diverting residual solid waste from landfilling that are environmentally sound, energy-efficient, and socially and economically acceptable.

1.1.2 The City's History of Managing Waste

The Bureau of Sanitation (LASAN) has been managing solid waste since 1890 and collecting solid waste from residential curbside customers since 1943. Since that time, the City's waste-handling trends have evolved from the very early days when residents and businesses typically burned or buried waste in their back yards to state-of-the art programs and facilities focusing on maximizing diversion from disposal. Table 1 provides a timeline of waste management milestones achieved in the City of Los Angeles.

Table 1: City of Los Angeles Waste Management Timeline

City of Los Angeles Waste Management Timeline	
1890	First solid waste incinerator constructed in the City
1943	Residential collection provided by LASAN, including separate collection of organics and recyclables
1957	Backyard incineration banned in response to concerns about air quality
1961	Sam Yorty elected mayor on a platform of ending source-separated collection
1960s	Bishops Canyon, Branford, and Gaffey Street landfills close
1974	Sheldon-Arleta Landfill closes
1979	City Council directs LASAN to evaluate alternatives to reduce the City's reliance on landfill disposal
1985	Toyon Canyon Landfill closes and LASAN initiates pilot recycling program to collect plastic, paper, glass, tin, and aluminum
1987	Los Angeles City Energy Recovery (LANCER) project terminated due to public concern about environmental impacts and lack of public input
1989	*Citywide Recycling Implementation Plan* and Long-Haul Study developed; *Solid Waste Management Plan* initiated
1989	California legislature passes California Integrated Waste Management Act of 1989 (AB 939),[14] which mandates that cities and counties achieve 25 percent diversion by 1995 and 50 percent by 2000
1990	LASAN begins implementation of yellow bin curbside recycling, green bin yard trimmings collection, and holiday tree recycling program; LASAN implements automated collection for residential curbside solid waste, introducing the "black bin"
1992	City develops AB 939 Source Reduction and Recycling Element

[14] The California Integrated Waste Management Act of 1989 (AB 939) Public Resources Code, Section 40000 et seq. This California legislation is commonly referred to as AB 939, and references to it often imply the State-mandated diversion requirements associated with the Act.

City of Los Angeles Waste Management Timeline (continued)	
1993	*Solid Waste Management Plan* completed; LASAN implements horse manure diversion program; LASAN implements automated collection for residential curbside yard trimmings, introducing the "green bin"
1995	LASAN implements tire recycling program, and curbside collection program expands citywide
1996	Lopez Canyon Landfill closes
1997	LASAN implements automated collection for residential curbside recycling, introducing the "blue bin"
2000	City develops *Solid Resources Infrastructure Strategy Facilities Plan*, LASAN implements electronic waste recycling program, and LASAN begins conversion of collection trucks to Liquefied Natural Gas (LNG) fuel to reduce emissions; City achieves 58.8 percent diversion
2001	City develops Waste Characterization and Quantification Study and Year 2000 AB 939 Report
2003	LASAN initiates research on Alternative Technologies
2004	LASAN implements multi-family pilot recycling program
2005	City Council approves a goal of Zero Waste, Councilmember Greig Smith issues report titled "Recovering Energy, National Resources, and Economic Benefit from Waste for Los Angeles" (*RENEW LA*), and LASAN publishes report on Evaluation of Alternative Solid Waste Processing Technologies
2006	City Council adopts *RENEW LA* as a blueprint for Zero Waste
2007	*Solid Waste Integrated Resources Plan* initiated, citywide multi-family recycling program available to all buildings, and LASAN increases materials accepted in the curbside recycling program
2008	City Council bans expanded polystyrene foam containers at City facilities, LASAN implements residential food scraps pilot collection program, and stakeholders sign on to the SWIRP guiding principles
2009	LASAN drafts *Policy, Program, and Facility Plan* based on stakeholder input
2011	City adopts a mandatory C&D recycling ordinance; City achieves 76.4 percent diversion
2012	Assembly Bill 341 is implemented requiring large commercial generators and multi-family complexes to recycle
2013	City Council approves single-use bag ban beginning January 1, 2014, and approves commercial and multi-family franchise initiative and implementation plan

Sources: *City of Los Angeles Solid Waste Planning Background Studies Summary Report, January 2006; City of Los Angeles Year 2000 AB 939 Report, August 2001; Solid Resources Infrastructure Strategy Facilities Plan, November 2000;* LASAN program data.

1.1.2.1 City Programs

The City operates the largest municipal waste management fleet in the country, collecting recyclables, yard trimmings, and residual waste from 750,000 residential curbside customers in the City. The City's collection fee structure uses a Pay-As-You-Throw (PAYT) system for residential curbside collection, based on the number of black bins.

The City currently collects the following materials in the blue bin for recycling:

- Mixed clean paper, including newspapers, magazines, and telephone directories
- Cardboard boxes and chipboard
- Cartons (aseptic packaging) including fruit juice boxes, milk cartons, and soup cartons
- Aluminum foil
- Aluminum, tin, steel, and bi-metal cans
- Empty paint and aerosol cans (with caps removed)
- Wire hangers and small scrap metal items
- Glass bottles and jars including soda, sauce, and other food jars
- All clean plastics labeled 1 to 7
- Plastic and film bags, including clean grocery and dry cleaner bags
- All clean expanded polystyrene foam (e.g., Styrofoam™)
- Miscellaneous plastics including plastic coat hangers, non-electronic toys, and laundry baskets

The City currently collects the following materials in the green bin for mulching and composting:

- Grass
- Leaves
- Weeds (dirt removed)
- Tree branches
- Clean wood (free of nails, paint, or other treatment)

The City implemented a residential food scraps pilot program in September 2008 for 8,700 households in the South Los Angeles and North Central wastesheds. During the pilot, the City collected the following additional materials for diversion as part of the green bin service:

- Food scraps, including fruits, vegetables, grains, meat, and bones
- Compostable paper, including napkins, paper towels, food-contaminated paper, and cardboard, such as takeout containers and pizza boxes

The City also provides special residential collection services including bulky item collection, appliance and electronics recycling, and horse manure collection. In addition, the City operates seven centers for Solvents, Automotive, Flammables, and Electronics (S.A.F.E. Centers) and provides mobile collection events for used oil and electronic waste (e-waste).

Private-sector haulers, regulated by LASAN, provide solid waste collection for the City's multi-family complexes (with more than four units), commercial buildings, and industrial facilities. LASAN provides technical assistance to all private businesses to help them reduce the quantity of solid waste.

The City's Solid Resources Citywide Recycling Division (SRCRD) has implemented a Los Angeles Unified School District (LAUSD) recycling program. The program provides educational outreach as well as recycling services with 90-gallon curbside blue bins to all schools. The interactive presentations are targeted to 3rd-, 4th-, and 5th-grade students, and they include topics such as the three Rs (reduce, reuse, and recycle) and overviews of the City's landfills and waste stream. Blue bin recycling collection services are provided to all schools within the City in the LAUSD. As of 2013, all schools are participating in the LAUSD recycling program. SRCRD provides 650 school presentations to approximately 20,000 students each year, which is now augmented by the contracted hauler for the school district. Overall, the program has educated over 120,000 students to date.

Additional programs managed by LASAN include:

- Restaurant food scraps recycling program, which encourages local restaurants to divert food scraps and other compostable organics generated in the kitchens from disposal. Participating restaurants are given a specially marked "Food Waste Only" bin, which a private hauler collects up to six times per week. The restaurant maintains its existing solid waste hauler for trash pick-up.
- Multi-family blue bin recycling that is available to all buildings at no charge through the City's contracted collectors.
- Technical assistance to businesses to develop office and commercial recycling programs.
- Directing the flow of C&D waste through Building and Safety project permit requirements in order to ensure that these materials go to processing facilities for maximum recovery.
- Recycling Market Development Zone (RMDZ) program, a State-funded program implemented by the City to provide funding and technical assistance to recycling and reuse businesses operating within the City.

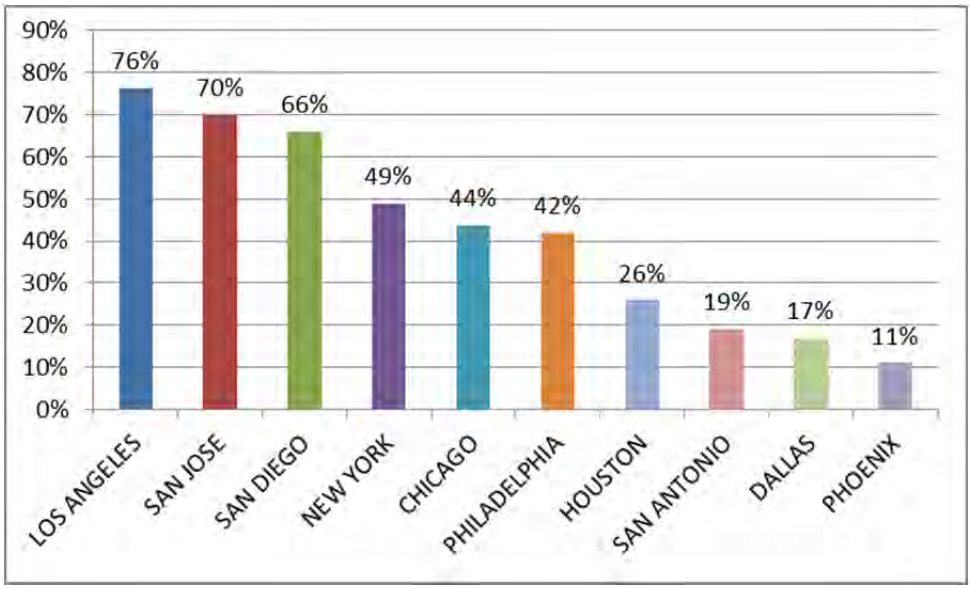
The City continues to review its options to increase diversion from the commercial and multi-family waste streams through initiatives such as:

- Leveraging the exclusive commercial and multi-family franchise to provide commercial customers with more-convenient and uniform recycling and organics collection service.[15]

Having one franchise hauler within each service district in order to minimize the number of haulers and associated traffic impacts and increase collection efficiency. The City is a leader in recycling and diverted 76.4 percent of materials from disposal in 2011. As listed in Figure 2, among the ten largest cities in the country, Los Angeles has the highest recycling rate.

[15] April 24, 2013, the City Council approved LASAN's Exclusive (one hauler per franchise area) Franchise Implementation Plan for commercial and multi-family solid waste collection and recycling in the City. The Council Action on Exclusive Franchises is available through the City of Los Angeles Council File 10-1797-81.

Figure 2: Big City Leader



Source for City of Los Angeles: Zero Waste Progress Report, March 2013
Source for other cities: Waste & Recycling News, Municipal Recycling Survey 2011, February 21, 2011

1.1.3 City Policy Drivers

The City has embarked on an exciting and challenging new era in solid waste management, envisioning a world without waste where materials are returned to the economic mainstream for reuse, recycling, and composting and residual materials are used as resources to create clean, renewable energy. The City articulated this vision in the context of the *GREEN LA Plan*.

1.1.3.1 GREEN LA Plan

In May 2007, the City unveiled *GREEN LA*, an Action Plan to make the City of Los Angeles the greenest city in the nation and the national leader to fight global warming. The 50+ initiatives of the plan include diverting 70 percent of the City's waste by 2013.

The City established additional directives for solid waste management, including:

- Implement a stakeholder-driven *Solid Waste Integrated Resources Plan*
- Convert the LASAN collection fleet to clean fuel
- Shift from reliance on waste disposal to a greater focus on resource recovery
- Establish an operating Alternative Technology facility

1.1.3.2 *RENEW LA Plan*, Blueprint for the Future Solid Waste Management System

Former Councilmember Greig Smith introduced the *RENEW LA (Recovering Energy, Natural Resources, and Economic Benefit from Waste for Los Angeles) Plan,* which was adopted by the City Council in February 2006. This 20-year plan is the blueprint that guides the City in reducing the use of landfills by maximizing recycling and reuse and by converting much of the solid waste that currently would go to landfills into clean energy and valuable raw materials and by-products (including gypsum and hydrochloric acid). Many of the plan components have been implemented.

RENEW LA calls for the following actions:

- Establish *RENEW LA* oversight committee
- Adopt *RENEW LA* Blueprint and Zero Waste Policy
- Modify zoning code to allow conversion technologies by right in M2 (light industrial) and M3 (heavy industrial) zones with conditions
- Establish site areas for conversion technology in each of the collection districts
- Site and develop the first and second conversion technology facilities
- Establish a fund from Sunshine Canyon host fees for development of facilities that reduce landfilling
- Implement recycling in 50 percent of the commercial sector
- Mandate a time-certain reduction in the City's solid waste disposed at Sunshine Canyon
- Expand multi-family recycling to 50 percent of the City
- Establish City tax breaks for Zero Waste and new re-manufacturing companies
- Establish a green energy producer bonus from the Department of Water and Power
- Add residential food waste to the green bin program

1.1.3.3 Zero Waste and the *Solid Waste Integrated Resources Plan*

The City has chosen Zero Waste as its master plan for addressing solid waste management for the next generation, and LASAN continues to develop programs and policies that will be included in SWIRP.

Achieving Zero Waste will require radical changes in areas of manufacturing and packaging, consumer habits, product disposal, and, finally, our thinking about what it means to "take away the garbage." The materials we generate and discard from our homes and workplaces can no longer be thought of as waste, but rather as materials that can be reduced, reused, recycled, composted, and ultimately converted back to resources or energy.

The City has a long history of implementing new strategies and programs for managing its solid waste system to meet new challenges over time. The shift of emphasis from waste disposal to waste diversion has been influenced by a growing public concern for the environment, resistance to siting landfills in urban areas, and diminishing availability of land for new landfills. The response to these factors has been a greater regulatory role of federal, state, and local governments to implement integrated waste

management practices that emphasize source reduction, reuse, recycling, and composting options to dramatically reduce the amount of waste remaining for disposal.

The City has taken these historical trends further and, under the strong leadership of its elected officials, has collected stakeholder input in developing the policies, programs, and infrastructure that will be needed to maximize diversion on the path toward Zero Waste.

1.2 Solid Waste Regulations

1.2.1 Planning Context

Since the 1960s, federal, state, and city governments have developed a regulatory framework to ensure that solid and hazardous wastes are managed in an environmentally sound manner. Multiple agencies at each governmental level have responsibility for regulating each component of the solid waste management system including collection, processing, and final disposal. Regulation is generally used to set basic standards for waste transportation, handling, and disposal to ensure consistency and to protect public health and the environment. Education and voluntary programs are used to increase recycling, waste reduction, and composting rates and to promote producer responsibility (through voluntary takeback programs).

1.2.1.1 Role of the Federal Government in Regulating Solid Waste

The federal government sets basic requirements to ensure consistency among states and regulations to protect public health and the environment. The U.S. Environmental Protection Agency (U.S. EPA) is responsible for hazardous and non-hazardous solid waste management through the Office for Solid Waste and Emergency Response. The Resource Conservation and Recovery Act of 1976 (RCRA) established landfill construction, management, and closure guidelines. This act also regulates hazardous waste management facilities that treat, store, or dispose of hazardous waste. The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), known as Superfund, was enacted by Congress to address abandoned hazardous waste sites in the U.S. CERCLA has subsequently been amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA). The Office of Air and Radiation regulates the solid waste–related air emissions, enforcing the Clean Air Act of 1976 (CAA) and subsequent amendments.

1.2.1.2 Role of the State Government in Regulating Solid Waste

AB 939 was the first recycling legislation in the country to mandate recycling diversion goals. California has successfully used AB 939 to motivate cities and counties to reduce reliance on landfill disposal and increase waste diversion through recycling, composting, and source reduction. The California Natural Resources Agency's Department of Resources Recycling and Recovery (CalRecycle) administers the California Beverage Container Recycling and Litter Reduction Act (Bottle Bill), which was enacted in 1986. California has historically been more proactive than any other state or the federal government in

establishing the regulatory structure to promote Zero Waste. California is also likely to continue in this direction in the future as it works toward a statewide goal of 75 percent diversion by 2020.

The California Environmental Protection Agency (Cal/EPA) and the California Natural Resources Agency both regulate hazardous and non-hazardous solid waste management within the State. Within the California Natural Resources Agency, CalRecycle manages non-hazardous waste collection, processing, recycling, and disposal. CalRecycle is responsible for monitoring cities and counties to ensure that they are implementing adequate source reduction, recycling, composting, and other diversion methods to meet the AB 939 waste-diversion mandates. The Department of Toxic Substances Control (DTSC) focuses on preventing humans and ecosystems from being exposed to hazardous chemicals and keeping them out of the waste stream.

The California Air Resources Board (CARB) is responsible for maintaining healthy air quality, including developing the regulations to enforce the Global Warming Solutions Act (AB 32), enacted in 2006. With the passage of AB 32, California became a national leader in legislation to reduce greenhouse gas emissions. This act makes a commitment to reduce the State's emissions to 1990 levels by 2020,[16] which is a reduction of approximately 25 percent from the expected emissions in the absence of regulation.

The local Air Quality Management Districts throughout the State are responsible for ensuring that ambient air quality standards are attained and maintained in their respective air basins. The City is located within the South Coast Air Quality Management District (SCAQMD), which regulates local air quality. All new construction within the SCAQMD, including solid waste processing and disposal facilities, must undergo a New Source Review in compliance with federal, state, and SCAQMD regulations.

1.2.1.3 The City's Role in Regulating Solid Waste

Approximately 450 permitted private waste haulers, including construction-related contractors, provide waste-hauling services in the City. Under the current waste-hauler permit system, multi-family dwellings (primarily those over five units), commercial customers, and industrial customers are allowed to select and negotiate waste disposal and/or recycling contracts with any of the City's permitted private waste haulers.

In 2012, the City Council indicated its intention to move from the current private hauler permit system to a franchise system for the collection of discarded materials from both multi-family and commercial properties not collected by the City. The franchise system is intended to help the City reach its Zero Waste goals, and will contain elements such as maximum disposal amounts per zone, aggressive diversion programs (including outreach and education), clean fuel requirements, and worker health and safety requirements, to be administered by LASAN.

In November 2012, the City Council directed LASAN to begin the environmental review process pursuant to the California Environmental Quality Act (CEQA) for the commercial and multi-family private hauler franchise initiative adopted by Council, to return with an implementation plan for the

[16] Assembly Bill 32, available at http://www.arb.ca.gov/cc/docs/ab32text.pdf (accessed, October 1, 2013)

franchise system, and requested the City Attorney to draft required ordinances for the project (Council File number 10-1797). On April 24, 2013, the City Council approved LASAN's Implementation Plan, adopted the 10 goals of the franchise program, and directed LASAN to proceed with the development of a Request For Proposals. The City Council is expected to consider the commercial and multi-family private hauler franchise ordinance and associated environmental documentation in early 2014.

The Planning Department oversees land use development and zoning requirements and establishes and allows solid waste and recycling facilities to be sited in specific zones. In August 2010, the City Council approved an amendment to the Zoning Ordinance to allow Alternative Technology facilities in heavy industrial (M3), commercial and light industrial (M2), and public facility (PF) zones within the City.

The Building and Safety Department is the Local Enforcement Agency (LEA) designated by CalRecycle for permitting, inspecting, and enforcing regulations at permitted solid waste disposal sites, solid waste transformation facilities, transfer and processing stations, materials recovery facilities, and composting facilities. LEA also inspects and enforces litter, odor, and nuisance compliance at solid waste landfills.

1.2.2 Current Legislative and Regulatory Climate

1.2.2.1 Mandatory Commercial Recycling (AB 341)

On July 1, 2012, the mandatory commercial recycling regulation was implemented statewide. The regulation, AB 341, requires all businesses that generate more than 4 cubic yards of solid waste per week and multi-family complexes with five or more units to arrange for recycling services. To comply with AB 341, commercial businesses and multi-family complexes that meet the criteria must implement recycling services through one or more of the following methods:

- Self-haul recyclable materials to a recycling center
- Subscribe to recycling services through a private hauler
- Arrange for the pickup of recyclable materials
- Subscribe to recycling services that can include mixed-waste processing that yields diversion results comparable to source separation

AB 341 also established a statewide goal of 75 percent source reduction, recycling, and composting by 2020. CalRecycle must report to the legislature by January 2014 on methods for achieving a 75 percent recycling rate.

1.2.2.2 Greenhouse Gas Emissions Reductions

The waste sector in the U.S. emitted approximately 100 million metric tons of carbon dioxide equivalent emissions in 2012, which represents the sixth-largest generator in the industry sector.[17] The waste sector includes solid waste landfills, industrial waste landfills, and facilities that operate combustors or

[17] United States Environmental Protection Agency, "Greenhouse Gas Reporting Program 2012: Reported Data," http://www.epa.gov/ghgreporting/ghgdata/reported/index.html (accessed October 1, 2013).

incinerators for the disposal of non-hazardous solid waste. Landfills are the third-largest source of generated methane emissions in the U.S. and contributed approximately 17.5 percent of the total U.S. emissions of generated methane in 2011.[18]

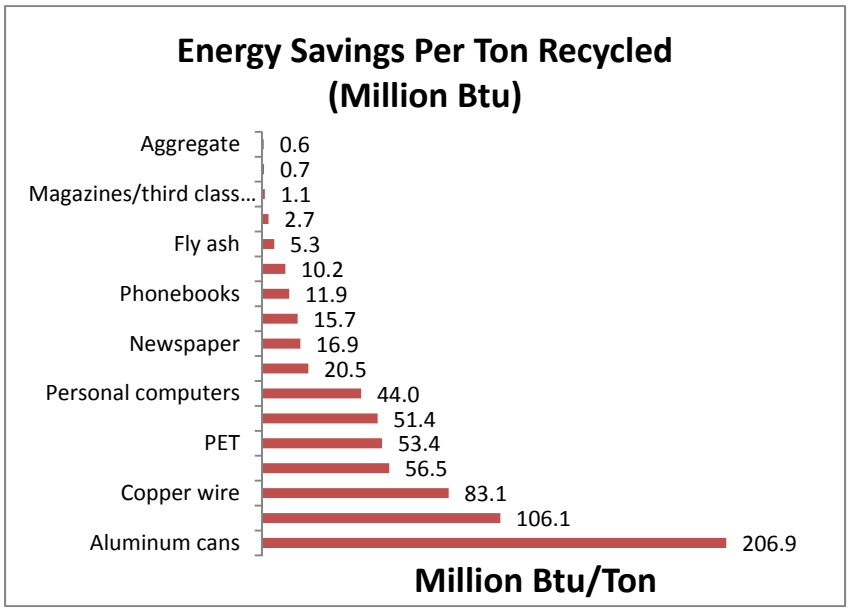
On January 2, 2011, greenhouse gas (GHG) emissions from the highest-generating sources were addressed in the Prevention of Significant Deterioration (PSD) and Title V Operating Permit Programs. In a phased approach to permit GHGs, U.S. EPA's GHG Tailoring Rule established the initial emission permitting thresholds (in Steps 1 and 2). On June 29, 2012, U.S. EPA issued a final rule (Step 3) to maintain the GHG permitting thresholds established previously in Steps 1 and 2.[19]

While there are currently no City-imposed regulations on climate change, the *GREEN LA Plan* established a goal of reducing GHG emissions to 35 percent below 1990 levels by 2030.[20] What currently appear to be relatively aggressive local policies might likely settle in as mandatory pieces of larger national goals as federal regulation evolves over the next 5 years. These local initiatives are important, since they will continue to have drastic effects on day-to-day activities at the local level. However, in the future, nationally set goals will likely determine overall emission reductions.

Landfills are one of the largest sources of methane, a powerful GHG that is 21 times more potent than carbon dioxide.[21] As described in the *GREEN LA Plan*, the City can significantly reduce its GHG emissions levels through waste reduction and recycling. Recycling can reduce GHG both by reducing methane generation at landfills and by saving energy through recycling. Figure 3 lists the energy savings per ton of each material recycled.

[18] United States Environmental Protection Agency, Landfill Methane Outreach Program, http://www.epa.gov/lmop/basic-info/index.html (accessed October 1, 2013).
[19] United States Environmental Protection Agency, "Clean Air Act Permitting for Greenhouse Gases," http://www.epa.gov/nsr/ghgpermitting.html (accessed October 1, 2013).
[20] GREEN LA website, http://environmentla.org/pdf/GreenLA_CAP_2007.pdf (accessed October 1, 2013).
[21] United States Environmental Protection Agency, "Greenhouse Gas Emissions," http://www.epa.gov/methane/scientific.html (accessed October 1, 2013).

Figure 3: Energy Savings by Material Type



Source: Anne Choate and Henry Ferland, *Waste Management and Energy Savings: Benefits by the Numbers* (Washington, D.C., U.S. EPA, September 4, 2005), p. 2.

1.2.2.3 Alternative Technologies

The City Council has made a commitment to end urban landfilling and directed LASAN to look at alternatives to landfilling for post-source separated solid waste. After an extensive review of new Alternative Technologies for processing solid waste, the City initiated a procurement process for both emerging technologies and commercially proven technologies. The City evaluated proposals for the implementation and siting of Alternative Technology facilities that are environmentally, technically, and economically feasible for the City.

Alternative Technologies are categorized by LASAN into three groups: thermal, biological/chemical, and physical. These technology groups are further subdivided into about twenty viable technologies, including but not limited to pyrolysis, gasification, advanced thermal recycling, anaerobic and aerobic digestion. These Alternative Technologies provide methods to process solid waste as an alternative to landfilling.

In 2005, the City conducted an evaluation of Alternative Technologies to assess the environmental, technical, and economic feasibilities. The results of the evaluation are documented in the City's report, "Evaluation of Alternative Solid Waste Processing Technologies."[22] Advances in technology, best available emissions control systems, and ash management practices make Alternative Technologies a viable option to landfilling. Additionally, these technologies allow for the reduction of fossil fuel usage,

[22] *Evaluation of Alternative Solid Waste Processing Technologies, City of Los Angeles, September 2005,* http://www.alternativetechnology.lacity.org/PDF/final_report.pdf. (accessed October 1, 2013).

recovery of energy and recyclable material, the reduction in greenhouse gases compared to landfilling, and the creation of green jobs.

The following sections describe the recent history and current regulatory and legislative climate for different types of Alternative Technologies.

1.2.2.4 Waste-to-Energy

Waste-to-energy is the process of combusting material in a chamber to produce heat. The heat flows through a boiler to produce steam to generate electricity. The system is equipped with pollution-control systems to reduce air emissions.

The public's concern about pollutants in the air emissions and siting led to community opposition to the development of waste-to-energy facilities, including the LANCER project planned for the City of Los Angeles.

By 1989, of 34 major waste-to-energy facilities proposed in California, only the following three were built:

- Stanislaus Resource Recovery Facility in Stanislaus County
- Commerce Refuse-to-Energy Facility in the City of Commerce
- Southeast Resource Recovery Facility in Long Beach

In 1989, AB 939 included in its definition of "transformation" the three existing waste-to-energy facilities and allowed jurisdictions to receive diversion credit of up to 10 percent of the 50 percent diversion requirement through transformation.[23]

Under the Public Utilities Code, "A facility that directly combusts solid waste to produce electricity is eligible for the [Renewable Portfolio Standard] RPS only if it is located in Stanislaus County and was operational before September 26, 1996."[24] Due to this legislation, only energy produced from the Stanislaus Resource Recovery Facility qualifies as "renewable energy" under the RPS.

State legislation has been introduced to allow facilities that convert solid waste into energy or chemicals to count as a renewable electricity generation facility under the State's RPS and allows local governments to count solid waste that is converted into energy toward their recycling diversion goals.[25] However, to date, no legislation has been passed.

Currently, there are 86 waste-to-energy facilities operating in 25 states throughout the U.S. However, there have been no new facilities built in the U.S. since 1995, but some plants have expanded to handle additional waste and create more energy and some new facilities are currently under construction.[26]

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[23] California Public Resources Code Section 41780.
[24] Public Utilities Code, Section 399.12, Subdivision (e)(2).
[25] Assembly Bill 222 introduced by Assembly Members Anthony Adams and Fiona Ma. This bill failed passage in 2010, but may be reintroduced in a future legislative session.
[26] United States Environmental Protection Agency, Energy Recovery from Waste, http://www.epa.gov/waste/nonhaz/municipal/wte/ (accessed October 1, 2013)

1.2.2.5 Advanced Thermal Recycling

Advanced Thermal Recycling (ATR) is a second generation advancement of waste-to-energy technology in which municipal solid waste (MSW) is converted, in an oxygen rich environment, to a hot exhaust gas composed primarily of carbon dioxide and water vapor. The inorganic material is converted to bottom ash, for beneficial use, and fly ash which requires disposal. The hot exhaust gas can be used to generate heat or steam to in turn produce electricity. ATR is equipped with advanced pollution control technologies that include both Selective Catalytic Reduction (SCR) and Selective Non-Catalytic Reduction (SNCR) systems that effectively diminish air emissions to a greater extent than its predecessors. ATR technology has been commonly applied in Europe to produce energy from MSW. Currently, no facility of its type exists in the United States.

1.2.2.6 Biomass-to-Energy

Biomass electricity is drawn from combusting organic matter. Under State law, "biomass conversion" is defined as the controlled combustion, when separated from other solid waste and used for producing electricity or heat, of agricultural crop residues; bark, lawn, yard, and garden clippings; leaves, silviculture residue; tree and brush pruning; wood, wood chips, and wood waste; or non-recyclable pulp or non-recyclable paper.[27] According to the California Energy Commission, there are 27 biomass-to-energy facilities in the State that process forestry and agricultural by-products and urban wood waste.

Under State law, jurisdictions can count up to 10 percent of their 50 percent diversion goal through biomass conversion.[28] Energy produced from biomass is considered renewable energy under the State's RPS.

1.2.2.7 Anaerobic Digestion

Anaerobic digestion is a biological process in which microorganisms break down biodegradable materials (for example, food and paper) in an oxygen-deficient system, creating a biogas (consisting mostly of methane and carbon dioxide) that can be used to generate electricity or be converted into a transportation fuel.

According to the California Energy Commission, there are 22 animal waste or food waste digesters in operation in the State that process manures and food manufacturing residues. The technology is also used for the treatment of wastewater at wastewater treatment plants.

Under State regulations, anaerobic digestion is regulated like composting, and jurisdictions can receive credit for diverting materials through anaerobic digestion.[29]

Energy produced from anaerobic digestion is considered renewable energy under the State's RPS.

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[27] California Public Resources Code, Section 40106.
[28] California Public Resources Code Section 41783.1.
[29] CalRecycle, "Permitting Compostable Material Handling Operations and Facilities," May 5, 2010, http://www.calrecycle.ca.gov/SWFacilities/Permitting/facilitytype/compost (accessed October 1, 2013)

1.2.2.8 Other Thermal Technologies (including Pyrolysis, Gasification, and Plasma Arc Gasification)

There are other thermal treatment technologies that are used outside the U.S. for processing residual solid waste, including pyrolysis, gasification, and plasma arc gasification. These technologies and other Alternative Technologies for processing residual solid waste are described in the City's report "Evaluation of Alternative Solid Waste Processing Technologies."[30]

Pyrolysis, gasification, and plasma arc gasification are all technologies used to treat waste producing a synthesis gas ("syngas") that can be used to produce electricity or can be converted into a transportation fuel. Pyrolysis is the thermal degradation of organic carbon-based materials through the use of an indirect, external source of heat in the absence or almost complete absence of free oxygen. Gasification is the thermal conversion of organic carbon-based materials that involves the partial oxidation through the use of an indirect, external source of heat, high pressure, and in a limited supply of air/oxygen (less than stoichiometric, or less than is needed for complete combustion). Plasma arc technology uses an electrical discharge to heat gas, typically air, oxygen, nitrogen, hydrogen, or argon, or combinations of these gases. The heated gas, or plasma, can then be used for welding, cutting, melting, or treating waste materials. These technologies are sometimes referred to as "conversion technologies." Under State law, "municipal solid waste conversion" means "a technology that uses a noncombustion thermal process to convert solid waste to a clean-burning fuel for the purpose of generating electricity."[31]

These technologies may be included under the definition of renewable energy under the RPS, but only if the facility meets the following specific environmental standards:[32]

1) The technology must not use air or oxygen in the conversion process.
2) The technology produces no discharge of air contaminants.
3) The technology produces no discharges to surface water or groundwater.
4) The technology produces no hazardous waste.
5) To the extent feasible, the technology removes all recyclable materials from the solid waste.

Under State law, "pyrolysis" is considered "transformation," and jurisdictions may count up to 10 percent of their 50 percent diversion goal through transformation. "Gasification" is specifically not included in the definition of "transformation."[33]

State legislation has been introduced to allow facilities that convert solid waste into energy or chemicals to count as a renewable electricity generation facility under the State's RPS and allows local governments to count solid waste that is converted into energy toward their recycling diversion goals. However, currently, no legislation has been passed.

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[30] Evaluation of Alternative Solid Waste Processing Technologies, City of Los Angeles, September 2005. http://www.alternativetechnology.lacity.org/PDF/final_report.pdf (accessed October 1, 2013).
[31] California Public Resources Code, Section 25741, Subdivision (b)(3)
[32] California Energy Commission, Renewables Portfolio Standard Eligibility, Commission Guidebook, January 2008.
[33] California Public Resources, Code Section 40201.

1.2.2.9 Siting Alternative Technology Facilities

Siting new Alternative Technology facilities in California is potentially controversial. According to the California Energy Commission, some of the major issues associated with siting Alternative Technology facilities include the following:[34]

- Ability to meet air quality requirements
- Possible classification of the ash as a hazardous material
- Disposal of ash and other by-products
- Possible conflict with adjacent land uses
- Disturbances to biological resources
- Use of large amounts of water for cooling purposes (if wet cooling towers are used)
- Changes to visual quality due to power plant structures and traffic patterns
- Transportation impacts from numerous truck trips from the residual solid waste source to the facility (note that collection and transportation would already be occurring, so the facility would cause a change in traffic patterns only)
- Likely public opposition because of uncertainties over health, safety, odor, and traffic impacts (since it is most economical for the facility to be located near urban centers where the waste is generated)
- Possible conflict between using residual solid waste for electricity generation and programs and goals for waste reduction and recycling
- Possible leaks of hazardous materials that could require the site to be cleaned up after the facility closes

All of these issues can potentially be addressed or mitigated through appropriate design and management.

1.2.2.10 Air Emissions

Some types of Alternative Technology facilities use residual solid waste as a primary feedstock for the production of energy or fuel. All facilities that combust waste, biogas, or syngas create air emissions, such as:

- Nitrogen oxides (NO_x)
- Sulfur oxides (SO_x)
- Particulate matter (PM_{10})
- Toxic chemicals (dioxins, furans)
- Volatile organic compounds (VOCs)
- Carbon dioxide (CO_2)
- Carbon monoxide (CO)

[34] California Energy Commission, Municipal Solid Waste Power Plants, http://www.energy.ca.gov/biomass/msw.html (accessed October 1, 2013).

SCAQMD requires that any Alternative Technology facility must include best available pollution control technology to reduce air pollutants to permissible levels. Thus, any new facility sited by the City would need to meet stringent emission controls and other mitigations identified by SCAQMD.

In October 2011, CARB approved regulations for the first nationwide GHG cap-and-trade program under the California Global Warming Solutions Act of 2006 (AB 32). AB 32 serves as one of the strategies California has used to reduce the GHG emissions that cause climate change. Some Alternative Technology facilities will be regulated under the cap-and-trade program, implemented in 2012, based on GHG emissions in 2013.[35]

1.2.2.11 Extended Producer Responsibility

The City is a member of the California Product Stewardship Council, whose mission is to shift California's product waste management system from one focused on government-funded and ratepayer-financed waste diversion to one that relies on producer responsibility in order to reduce public costs and drive improvements in product design that promote environmental sustainability. One of the initiatives of the Council is to implement producer responsibility at the state level.

Producer responsibility is a category included in CalRecycle's Strategic Directives,[36] which states the following directive: "producers assume the responsibility for the safe stewardship of their materials in order to promote environmental sustainability." Specifically, CalRecycle will pursue these initiatives:

- Use CalRecycle's existing authority to foster "cradle-to-cradle" producer responsibility.
- Seek statutory authority to implement the Extended Producer Responsibility Framework adopted by the Board in January 2008.
- Develop and maintain relationships with stakeholders, including the public and other interested parties that result in producer-financed and producer-managed systems for discarded products.

On September 19, 2007, CalRecycle adopted an overall framework for an Extended Producer Responsibility (EPR) System in California. Many of the concepts that are part of this framework have been included in State legislation that has been introduced and that would authorize CalRecycle to implement a statewide product stewardship program and select products that would be regulated under that program. The goal of the legislation is to improve product design, encourage reuse and recycling, address excessive packaging, provide convenient collection alternatives for consumers, provide incentives for producers to reduce the lifecycle impacts of products and packaging, and reduce the use of toxics in products.

[35] California Air Resources Board, "Cap-and-Trade Program," http://www.arb.ca.gov/cc/capandtrade/capandtrade.htm (accessed October 1, 2013).
[36] CalRecycle, "SD-5: Producer Responsibility," August 24, 2009, http://www.calrecycle.ca.gov/AboutUs/StrategicPlan/2009/SD05.htm (accessed October 1, 2013)

1.2.2.12 Other Legislative Trends

Every year, numerous bills are introduced into the State legislature addressing recycling and solid waste management. Key topics of interest to State legislators over the course of recent legislative sessions include:

- Reducing the impacts of single-use plastic bags and plastic litter in the marine environment
- Producer responsibility for specific hazardous or difficult-to-recycle materials including pharmaceuticals, mattresses, compact fluorescent light bulbs, batteries, and sharps (hypodermic needles and lancets)
- Requiring commercial generators (such as restaurants and grocery stores) to divert food scraps
- Regulating "chemicals of concern" such as Bisphenol A (BPA), Phthalates
- Adopting "green chemistry," to minimize and eliminate the use of harmful chemicals

Section 2 Phase 1 Stakeholder-Driven Planning Process

The SWIRP stakeholder-driven planning process commenced in the spring of 2007. During Phase 1 (April 2007 through May 2008), stakeholders from across Los Angeles came together to formulate the City's goals to provide sustainability, resource conservation, source reduction and recycling, renewable energy, maximum materials recovery, and environmental protection for solid waste management planning through 2030. This section documents Phase 1 of SWIRP and the process that the City's stakeholders went through to reach consensus.

2.1 City's Vision for a Stakeholder-Driven Planning Process

The City has undertaken a community-based approach to planning for a sustainable city of the future and making that vision a reality through a two-phase process.

Phase 1 Goals:

- Educate stakeholders about the opportunities for sustainable resource management now and throughout the next 20 years.
- Create a consensus-based process to ensure that all voices are heard and everyone has the opportunity to participate.
- Establish community-based goals and objectives that reflect the needs, concerns, and vision of the community as a whole.
- Identify the policies, programs, and facilities that will be needed to achieve these goals.

Phase 2 Goals:

- Continue to engage stakeholders in the community-based planning process to ensure that the stakeholders are committed to realizing the Phase 1 goals in the Phase 2 plan.
- Inform the City's stakeholders about the costs, risks, and benefits of the options.
- Ensure that these options are both feasible and practical and that our choices are cost-effective and environmentally sound.
- Fully analyze the City's waste stream and waste projections through the planning period.
- Clearly describe and conceptually design each system component of the integrated resources management plan, including the policies, programs, and facilities identified in Phase 1, and ensure that they will work together to achieve the City's goals in an integrated resources system.
- Estimate and evaluate the costs of the system components and prepare a funding and financing plan.
- Conduct an environmental review of the integrated resources system.

- Identify all of the implementation tasks, policy changes, decision points, and schedule for implementing the strategic vision identified in Phase 1.

2.2 Phase 1 Stakeholder Engagement

The first year of SWIRP was critical. It was during this phase that stakeholder input and participation were most needed for further development of specific elements and approaches for the overall 6-year SWIRP effort. Early activities included stakeholder collaboration with LASAN to develop both guiding principles and a strategic, feasible vision to define the Zero Waste infrastructure, programs, policies, regulations, incentives, new "green collar" jobs, technological innovation, and financial strategies necessary to accomplish the City's goal of becoming the most efficient and effective Zero Waste city in the nation.

2.2.1 Who Should Be a Stakeholder?

In the City of Los Angeles, everyone is a stakeholder. Everyone in the City—residents, businesses, institutions, schools, visitors, and City departments—contributes to the City's solid waste problems and is critical to implementing the solutions. LASAN conducted an extensive outreach process during the spring and summer of 2007 to identify the stakeholders who would commit to working with the City to develop SWIRP. To ensure that the planning process was as inclusive as possible, the City conducted extensive stakeholder outreach that included:

- **Key Constituent Interviews** – 109 interviews with community leaders, environmental groups, business organizations, unions, government partners, and industry representatives.
- **Business Outreach** – 75 interviews with business owners and managers of businesses including Fortune 500 companies and small "mom-and-pop" operations.
- **House Meetings** – 27 grassroots meetings in living rooms across the City designed to include people who might not typically participate in formal community meetings.
- **Regional Workshops** – 6 evening workshops held in each of the City's 6 collection districts or "wastesheds," and a citywide meeting held downtown during the daytime (42 meetings total).
- **Citywide Conferences** – 3 citywide conferences held throughout the year where stakeholders could come together from the regional working groups to talk about citywide issues.

Table 2 provides the schedule for the SWIRP Phase 1 planning process.

Table 2: Phase I Schedule for May 2007 through May 2008

May	June	July	August	Sep	Oct 20th
Key constituent meetings House meetings	Key constituent meetings Business interviews House meetings	Findings Analysis Key constituent meetings Business interviews House meetings	Workshop Series 1 Forming the Foundation	Workshop Series 2 Goals and Objectives	1st Citywide Conference Sign-on for Zero Waste LA
Nov	**Dec**	**Feb 2nd**	**Feb**	**March**	**May 3rd**
Workshop Series 3 Policy and Program Options	Workshop Series 4 Facility Options	2nd Citywide Conference Policy, Program and Facility Options	Workshop Series 5 Evaluation	Workshop Series 6 Recommend-ations	3rd Citywide Conference Sign-off on Guiding Principles

2.2.2 Outreach Process

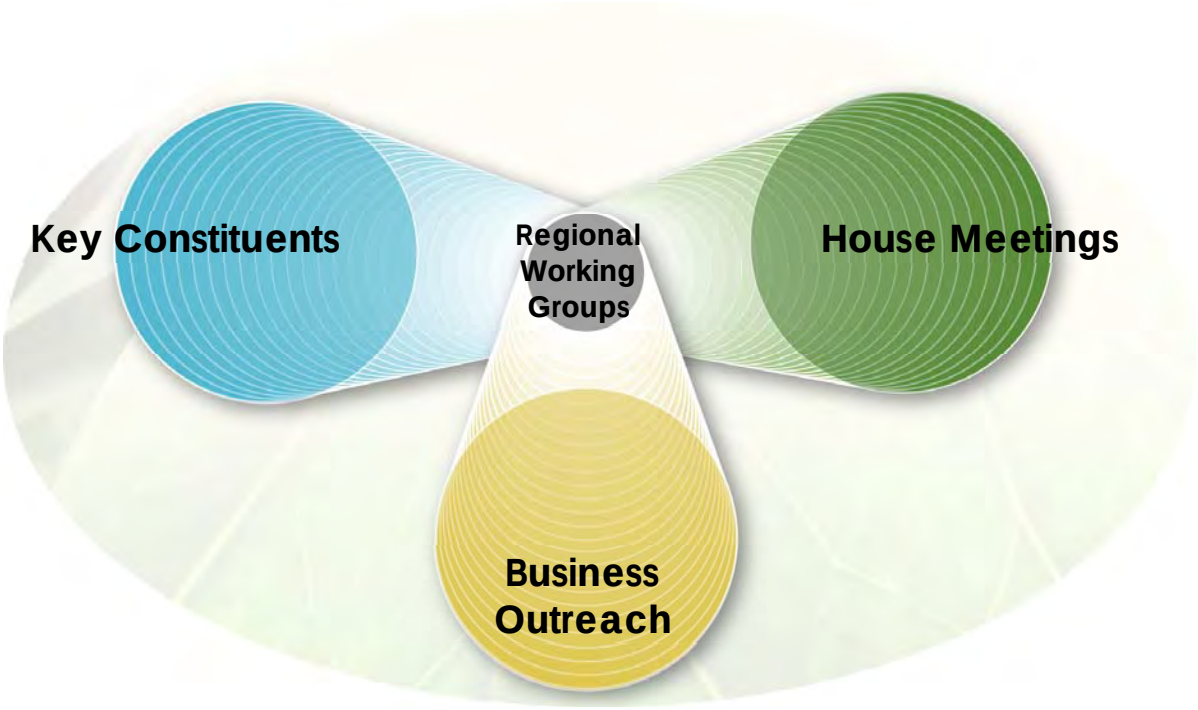
The early outreach process was developed to identify issues of concern to the City's stakeholders and to encourage their participation in the planning process. As shown in Figure 4, stakeholders were identified through the key constituent interviews, house meetings, and business meetings and were invited to participate in the regional workshops and citywide conferences. The results from the early outreach process are summarized in Section 2.3.

LASAN also participated in community events throughout the City to inform event participants about the SWIRP planning process and to identify potential SWIRP stakeholders. LASAN also introduced SWIRP at special meetings and to community groups, including, but not limited to, the following:

- Crenshaw High School Career Fair
- Granada Hills Neighborhood Council
- Korean Festival
- Los Angeles Disposal Association
- Los Angeles Environmental Youth Conference
- Los Angeles Neighborhood Initiative
- Pacoima Fair
- Korean Festival

- San Pedro Lions Club
- San Pedro Neighborhood Council
- University of California Student Government
- West Los Angeles Public Library

Figure 4: Forming the Regional Working Groups



2.2.3 Outreach Tools

2.2.3.1 Multimedia Program

The City developed a multimedia outreach program to maximize participation in the Phase 1 planning process. This program included an up-to-date website, the development of outreach partners for channels of communication, e-mail alerts and direct mailings, a media relations strategy, newsletters, and direct phone calls. The City used this comprehensive outreach strategy to reach as many community members as possible and keep them updated throughout the entire year.

2.2.3.2 Website

Throughout the process, the City maintained an up-to-date website with information about the overall SWIRP process, a schedule of upcoming meetings, and summaries of meetings completed, including documentation of stakeholder feedback. The website, www.zerowaste.lacity.org, also includes a brief overview of the history leading up to the SWIRP process, fact sheets about the City's solid waste system, a list of Frequently Asked Questions (and the answers), links to other Zero Waste–related websites, and copies of SWIRP newsletters.

2.2.3.3 Newsletters

The City prepared three newsletters, one released after each citywide conference, to update stakeholders on the status of the planning process. The newsletters included a summary of events, stakeholder feedback, results from the workshops and conferences, and information about what SWIRP stakeholders were doing in their local communities to promote Zero Waste. Each newsletter began with a letter from a City official describing the planning process and encouraging participation. The newsletters are available from the City's website at www.zerowaste.lacity.org.

2.2.3.4 Media Relations Strategy

The City implemented a media relations plan that emphasized media (press releases and advertisements) in community and ethnic newspapers to encourage participation in the workshops. This media relations drive began in July 2007 and continued throughout Phase 1. The City held an initial press conference at the first regional workshop in the Granada Hills area of Los Angeles and conducted two media briefings prior to the second and third citywide conferences. The City also prepared press releases and press advisories and contacted the editorial boards of technical publications to solicit their interest in the SWIRP planning process.

2.2.3.5 E-mails and Mailing

At the beginning of the project, a database of over 60,000 names and addresses was used to distribute meeting announcements and invitations to become a SWIRP stakeholder. This database was compiled by combining the mailing and e-mailing lists of the Los Angeles River Revitalization Project, the Proposition O workshops, the wastewater *Integrated Resources Plan*, several community and public projects, seniors, and low-income residents of the City. The first distribution began in July 2007. Throughout the process, the SWIRP database was edited to include community members who identified themselves as SWIRP stakeholders. The database was edited in order to reduce excess mail and also to e-mail those who were not able to participate in the SWIRP planning process but wanted to remain informed. The City distributed print and e-mailed invitations to the SWIRP database (of approximately 2,500 SWIRP stakeholders) 3 weeks prior to each meeting.

2.2.3.6 Survey Monkey

To ensure that the Phase 2 planning process was tailored to the needs of the SWIRP stakeholders, the City issued an electronic questionnaire through SurveyMonkey.com after the third citywide conference.

Input was sought on workshop and conference content, venues and facility arrangements, the outreach and registration process, and an overall rating of the planning process. LASAN received very constructive and practical critiques, such as "find ways to make more voices heard" and "do something about the parking problems at the convention center" and, most frequently, "improve LASAN outreach and education." Stakeholders made it clear that the City needs to provide more education and outreach to inform residents about the City's recycling programs. These comments were used in planning the Phase 2 outreach process to develop the style and content of the meetings and to identify appropriate venues for the workshops and conferences. LASAN also received approval from the stakeholders for reaching out to the community to include everyone in planning for the future. Survey respondents gave the SWIRP planning process an overall rating of "excellent."

2.2.3.7 Facilities Tours

During Phase 1 of the planning process, LASAN began to engage SWIRP stakeholders in a conversation about the infrastructure and facilities that will be needed over the next 20 years. In November 2007 and January 2008, stakeholders took a "behind the scenes" look at the types of facilities that are currently used by the City for recycling and disposal. Over 60 stakeholders participated in the tours, and many expressed their appreciation at getting to see the facilities first-hand. Facilities that were toured include the following:



SWIRP stakeholders view the C&D processing area at Downtown Diversion

- **Athens Materials Recovery Facility** – a facility that processes mixed municipal solid waste and separates recyclables from waste.
- **City of Los Angeles East Valley Solid Resources Complex** – the facility that houses the City's liquefied natural gas fueling station, container management warehouse, and truck yard.
- **Downtown Diversion** – a C&D debris processing facility.
- **E-Recycling of California** – an electronic waste de-manufacturing and recycling facility that processes some of the City's electronic waste.
- **Construction & Demolition Recycling, Inc. (formerly Interior Removal Specialists)** – an interior demolition company that reuses, recycles, and donates material generated from commercial remodeling projects.
- **Lopez Canyon Environmental Center** – a mulching operation owned and operated by the City that processes some of the City's yard trimmings.
- **Southeast Resource Recovery Facility** – a waste-to-energy facility in Long Beach that receives about 100 tons of waste per day from City generators.

- **Sun Valley Paper Stock** – a facility that separates and processes some of the mixed recyclables from the City's curbside program.
- **Sunshine Canyon Landfill** – a landfill owned and operated by BFI/Republic Services, Inc., that receives about 5,000 tons of waste per day from City generators.

The tours helped the stakeholders get first-hand knowledge of the types of facilities that will be needed in the future. The stakeholders were impressed with the efficiency and effectiveness of the facilities and appreciated the hospitality of the facility operators.

In June and July 2008, a City delegation, including former Councilmember Greig Smith, toured state-of-the-art facilities in Europe, Japan and Canada to identify new emerging technologies and commercial-scale technologies for processing residual waste. Some of the facilities that were toured include the following:

- ArrowBio Anaerobic Digestion Facility, Tel Aviv, Israel
- Eco Park 2 – Valorga Anaerobic Digestion Facility, Barcelona, Spain
- CMT Waste-to-Energy and Anaerobic Digestion Plant (under construction), Marseille, France
- Kawasaki Steel Facility - Thermoselect Gasification System, Chiba, Japan
- Müllverwertung Rugenberger Damm Waste-to-Energy Plant, Hamburg, Germany
- Nagareyama Facility – Ebara Gasification System, Tokyo, Japan



City delegation at CMT Plant (under construction) in Marseille, France

- NDAVER Keppel Seghers Waste-to-Energy Plant, Antwerp, Belgium
- Plasco Trail Road Plasma Arc Gasification Facility, Ottawa, Canada
- Tokyo Waterfront Recycle Power Plant (TRP) – Ebara Gasification System, Tokyo, Japan
- TREA Breisgau - Waste-to-Energy Plant, Freiberg, Germany
- Valdemingomez Complex Material Recovery Facility, Las Dehesas Site Madrid, Spain

2.3 Early Outreach

The early outreach process was designed to solicit input from community leaders, residents, and businesses across the City and to engage potential stakeholders in participating in the regional workshops. The interview process helped the City determine the public's perception of solid waste and explore the public's vision for a cleaner, greener Los Angeles.

The purpose of the stakeholder interviews and meetings was to hear first-hand the leading issues and concerns related to solid waste and to solicit recommendations for both motivating greater public participation and ultimately changing waste disposal behavior.

2.3.1 Key Constituents

This section summarizes the input received from key constituents throughout the City. Key constituents are members of the community, including elected officials, government agencies, unions, major employers, and public interest groups, who are currently engaged in City issues. LASAN conducted 109 one-on-one interviews with key constituents during the Phase 1 planning process. The City is especially grateful to the community leaders, businesspeople, and concerned citizens who gave so generously of their time to participate in the interviews. The depth of content that was gained from these interviews was insightful, since it brought to light many new ideas that will be valuable for the City to explore. The candor and enthusiasm expressed by those interviewed provided a significant opportunity to consolidate far-reaching and creative ideas into an effective and inspirational plan that can be implemented in the years ahead to achieve Zero Waste in Los Angeles.

2.3.1.1 Community Organizations

A number of individuals representing community-based organizations, nonprofits, faith-based entities, and spiritual congregations were interviewed. Diverse and far-reaching ideas were expressed during these interviews. Recurring themes included the need to combine messages of recycling with sustainable communities; prioritizing environmental protection as something everyone can and should do; recognizing that people will need to be taught or exposed to source reduction measures; and the strong sentiment that collateral materials and messages should be available and disseminated in many languages.

Equity and environmental justice issues were discussed as a part of any solution that includes facility development. As a result of these discussions, the community recognizes that, as innovative Zero Waste methods come to fruition, there should be opportunities for new green sector jobs in their communities. Many expressed their belief that strict enforcement measures where waste sources can be more easily tracked, such as in businesses and residential households, should be implemented to further encourage behavior modification.



Korean Cultural Center representatives signing on for a Zero Waste LA

2.3.1.2 Environmental Organizations

The City has long been a leader in supporting environmental initiatives aimed at improving air quality, protecting our coastline and park spaces, providing comprehensive recycling, and diligently expanding our natural resources. As a result, there is a broad range of influential stakeholders with extensive experience in the challenges of motivating greater civic participation and inspiring comprehensive sustainable behavior.

Key and recurring messages included combining personal environmental stewardship with a fundamental responsibility to share the earth's resources wisely. There was great enthusiasm for the emerging green industries and "green-collar" jobs that are expected to evolve from more focused and comprehensive green living. There was also a desire to streamline the messages from all of the City's programs about benefitting the environment into one simple message. People will better relate to that simple message and see the many programs as a unified effort to make our City a better place.

2.3.1.3 Business Organizations

The directors and managers of business organizations, including Chambers of Commerce, support a Zero Waste concept with more convenient commercial recycling programs. They generally do not support banning products—certainly not before acceptable alternatives are in place. Business representatives noted policies, regulations, and laws that seemed at odds with the goal of working toward Zero Waste. For example:

- Since residential recycling is free but there is a charge for commercial recycling, people at many businesses take the business's recyclables to their blue bin at home to recycle or to sell at a buyback recycling center.

- There is confusion about the legality of removing cardboard and other recyclables from a business's dumpster or dumpster area. Is this officially considered "scavenging" and therefore illegal? Or is this considered "waste hauling" and therefore legal?
- As food scraps are diverted for composting, what are the health laws that affect the frequency of pick-up, location of storage, and other issues? Restaurant employees and others who handle food don't want to comply with one regulation only to inadvertently not comply with another.
- Is tap water actually clean enough to drink? Recyclable plastic water bottles are recycled in the best case and end up in the trash in the worst case. Why not eliminate that waste stream altogether?
- The 311 information number is not accessible to cell phones, and one business had to change a setting in its land lines to be able to access 311.
- There can be confusion about zoning laws for businesses of different types that want to locate near each other (for example, food establishments in industrial zones) so that one business can use the waste of the other as feedstock for its product. Do zoning laws allow a mushroom farm to locate next to a framing company and use that company's sawdust waste to grow mushrooms?

Business organizations know the current laws and proposed legislation. They quickly see where there are potential conflicts among regulations as well as challenges for their businesses. They are interested in costs and economics, but, in our interviews, they placed much more emphasis and interest in being prepared for the future. To some of these organizations, being prepared recognizes that the low-cost landfill option is quickly disappearing in Los Angeles. To others, the costs and benefits of recycling and diversion (and resale) were already being realized. They understand that SWIRP is one of the key means for having the infrastructure, policies, and services in place that enable their constituents and businesses to keep up with the times.

2.3.1.4 Private-Sector Haulers and Recycler

People working in the industry bring a wealth of experience and information to SWIRP. They are on the front lines, know every aspect of solid waste management, and have thought about the future.

Compared to leaders of community and environmental organizations, owners and managers of hauling companies, landfills, and recycling companies tend to focus on the details rather than the vision. They are well aware that the solid waste world is changing and are already thinking about how to design and site needed facilities, the cost of services, and how the "nuts and bolts" of their profession need to react to this changing environment.

They are concerned about the practical questions such as how to do their work in a changing environment. People working in the industry are also very concerned about the amount of contamination in recycling bins. They strongly support education to increase recycling and decrease contamination. They are interested in costs, but, like business organizations, they are also very interested in having the systems and programs in place for them to do their jobs.

2.3.1.5 Government Partners

The outreach effort to government partners—primarily representatives from other local cities and counties—provided good feedback. There's a great sense from these meetings that "we're all in this together," and that there is a political will behind building partnerships between jurisdictions in order for us to achieve Zero Waste as a region. While region-wide collaboration is encouraged, all believe that cities must address their own waste problems without negatively impacting other communities. Not surprisingly, there is recognition that the current "low-cost" tipping fees (disposal fees at landfills) do not encourage a commitment to recycling.

Further, although many community and environmental groups are supportive of Zero Waste, they are simultaneously skeptical that it is feasible. Government partners, by contrast, are optimistic that this is actually achievable, even by 2020. Government partners cited several factors, including the availability of technologies and programs, the strength of political will in the region to achieve Zero Waste, and the progress of current efforts to increase recycling and reduce urban landfilling. There is also support for improving front-end waste separation as well as using Alternative Technologies. Most of the government partners interviewed prefer voluntary compliance programs and are opposed to using refuse surcharges to fund City services.

2.3.2 House Meetings

In order to ensure a higher level of participation from local residents, LASAN implemented a grassroots house meeting campaign throughout the City. The purpose of the house meetings was to bring together local residents who are not usually involved in other stakeholder groups to participate in the planning process for SWIRP. The house meetings allowed the City to tap into a whole new set of people and ideas and served as a tool to gauge the "average person's" view of solid waste.

As part of Phase 1, the City held 27 house meetings throughout Los Angeles, bringing over 445 interested neighbors together in informal settings to learn about SWIRP and to begin discussions about how best to motivate and sustain greater public participation in recycling programs. At each house meeting, participants expressed concerns on a broad range of issues regarding solid waste and recycling.

House meeting participants had many ideas for incentives and fees on the issue of recycling. Many felt that the current trash pick-up fees were excessive for the service received. Residents felt that there should be penalties for placing the wrong items in each bin. Residents also felt that there should be zero tolerance for littering and that this should be more carefully regulated. Additionally, residents in neighborhoods with landfills felt that the trash fees should be reinvested in their communities. Many of the residents would like LASAN to regulate and assess fees on private recycling centers and to regulate scavengers more closely to prohibit people from removing recyclables from blue bins.

House meeting participants believed that creating an aggressive educational campaign using radio, television, and schools to educate communities and students about recycling and reducing waste would be the most effective method of marketing the City's recycling programs. Residents requested that the City develop a more easily accessible website with more detailed information about recycling and bulky item pick-up. Residents also expressed concerns about illegal dumping. Residents felt that, if there is more information and more accessible recycling programs in place (for both residential and business generators), not only will more people participate, but illegal dumping will not be as much of an issue.



SWIRP stakeholders attending a house meeting at a neighbor's home

Environmental issues were a key component of house meeting participant feedback. Most of the residents wanted all City collection vehicles to run on clean fuels and appreciated hearing that the City has converted 50 percent of its fleet to clean fuel. Additionally, residents recommended two other ideas to reduce waste: first, to create a program to encourage the use of natural and biodegradable items for residents and businesses, and second, to require grocery stores in the City to use only biodegradable bags.

House meeting participants suggested creating incentive programs for businesses, apartment buildings, and community organizations to increase participation. These programs might include contests within communities or business districts, citywide recycling contests, or fee waivers for reaching a certain level of recycling. Residents also recommended that all multi-family dwellings be equipped with blue recycling bins and were thrilled with the City's new recycling program for multi-family buildings. Residents recommended that, with all of the construction going on throughout the City, the Department of Building and Safety should enforce recycling during construction projects.[37]

Special item recycling was another major subject that was discussed at the house meetings. Recommendations included working more closely with hospitals to recycle pharmaceutical items and to educate pharmaceutical companies on how they can recycle more, create more S.A.F.E. Centers throughout the City, and have more hazardous materials collection sites and home pick-ups. Comments from the stakeholders included concerns about illegal dumping and bulky item pick-up response time.

Finally, residents also had many suggestions and comments about business-related recycling. House meeting participants suggested either making business recycling mandatory in the City or creating an

[37] The mandatory C&D ordinance was adopted by the City Council on December 17, 2010. All mixed C&D waste generated within City limits must be taken to City certified C&D waste processors. http://san.lacity.org/solid_resources/recycling/c&d.htm (accessed October 1, 2013).

incentive program for businesses to recycle. Also, participants recommended creating a more comprehensive business recycling program.

2.3.3 Business Interviews

LASAN conducted direct outreach to the business sector in order to obtain input and participation from local "average businesses" not represented by business associations or other organized groups. LASAN conducted 75 interviews and dialogues with businesses in order to:

- Identify business concerns and issues
- Identify best practices
- Use these best practices to guide recommendations
- Construct and communicate the business case for the plan
- Identify business representatives to participate in the regional working groups

Most workers spend at least 8 hours a day in their places of employment. Unlike at home, the waste stream is noticeably different, and collection methods vary from employer to employer. Recognizing these differences in the content of the waste stream and the inconsistencies in the private sector's separation and collection mechanisms, LASAN believed that it was important to speak with the owners, managers, or employees responsible for initiating and/or overseeing and implementing effective recycling programs for their respective businesses and organizations.

Many businesses expressed an interest in receiving standard guidelines and technical assistance for providing employees with information about recycling and to assist them with the proper disposal of waste generated on site. While most businesses seemed eager to separate recyclables in their workplace, others were concerned about allocating extra time and labor costs to these activities and about the amount of space required for extra bins and storage.

In general, the business managers interviewed were enthusiastic about implementing recycling mechanisms and expressed a willingness to think about more effective ways to increase their recycling activities and raise awareness among their employees.

Managers, like most others, were especially interested in convenient solid resource management methods that were not overly burdensome or costly. Many embraced general themes that promote good business practices and proactive recycling objectives. Managers also expressed a strong desire to hear about proven successes. They believe that there are many business recycling success stories out there that would motivate others and inspire them to do a better job.

Businesses with creative and successful programs were proud and quite enthusiastic to describe their successes to the City. For example, one local grocery store has a very extensive recycling program that includes repurposing fresh produce for house-made juice and bakery items, donating unsellable food to homeless shelters, diverting deli grease and cardboard boxes, in-house recycling of cans and bottles, and encouraging reuse through sale of canvas and mesh bags. For their efforts they have been recognized as a

"green business," and the conservation mindset has been established for both their employees and their customers.

2.3.4 Results and Conclusions from the Early Outreach Process

The early outreach process assisted the City in developing the stakeholder participatory decision-making process designed to reach all potential stakeholders. The one-on-one meetings with community organizations, environmental and business groups, private-sector haulers, and government partners provided guidance to the planning process and specific visions and goals for SWIRP. Stakeholders participating in the regional workshops benefited from this guidance and reviewed and responded to the goals outlined by their fellow community members. The goals identified in the early outreach meetings, listed below in Table 3, were discussed by the stakeholders during the first workshop and conference series and were used by the stakeholders as a foundation for the development of the stakeholder-driven guiding principles developed in Phase 1 of the SWIRP planning process.

Table 3: Stakeholder Input on Goals in the Early Outreach Meetings

Community Organizations

- Zero Waste is the major guiding principle. Everything stems from here.
- Focus on protecting the environment. Everything else, such as protecting neighborhoods, eliminating greenhouse gases, and creating green jobs, should follow.
- Zero Waste is not truly achievable but is a goal to aim for.
- Los Angeles' *Zero Waste Plan* will create more jobs. These jobs will encourage people to work in the wasteshed in which they live.
- Value cleanliness and prioritize family and home.
- Communities will be clean. Rich, poor, or in between, people highly value the quality of life in their neighborhoods.
- Los Angeles will be a Zero Waste city and will have waste-to-energy projects, but we will make sure that equity—environmental justice—is maintained so that the wealthy and poor communities share the burdens and the benefits.
- Equity is of utmost importance, that it is not a City of "haves" and "have-nots." Los Angeles should be a city where diversity is valued.
- SWIRP plans will be developed from the local (individual wasteshed) perspective of waste management.
- Develop green jobs and hire young people. Create pride in the community.
- Value resources; conserve water; educate people to conserve natural resources and recycle more.
- Good management of solid resources will produce opportunities for cost reduction, safer neighborhoods, and good health.
- People will recycle and become green as a way of improving the world for children.
- Twenty years from now, Los Angeles will have blue skies, more public transportation, and less traffic.
- All recyclable products will be recycled.
- Companies will become green and act as role models for their employees.
- Corporate buildings will recycle.
- Los Angeles will combine education and enforcement to get people to do their part to recycle, reduce waste, stop scavenging, and keep neighborhoods and waterways clean.
- Waste reduction will start with manufacturers. They will produce things that don't have to be replaced frequently. Upgrades—rather than replacement—will be easier.
- Manufacturers will design, manufacture, and sell environmentally friendly products.
- Landfills will take only inert materials.
- Poorly handled trash affects future generations. Value children's health and future.
- Los Angeles will be a more-sustainable city, and recycling will be extended to multi-family housing and the commercial sector.
- Recreational areas will not be converted to industrial-use areas.

- We will reduce our dependence on landfills.
- Commercial recycling will be mandated.
- People will be educated about the impacts of excessive trash and encouraged to compost. Los Angeles will seek new uses of by-products to reduce and offset collection costs.
- Los Angeles will encourage the establishment of small, local processing centers and will convert 80 to 90 percent of trash into energy or reuse.
- All yard trimmings will be processed and reused locally.
- Everything from processing to end uses will be managed locally as much as possible.
- Power generation will come from waste products that have no alternative uses.
- Clean-burning incinerators will be used for waste-to-energy systems.
- Packaging will be reduced at the source.
- Government services will be paperless.
- Businesses and homes will be paperless too.
- Certain areas of the City that have had more than their fair share of trash- or recycling-rated facilities will not be sites for future solids-handling facilities. Sun Valley, Granada Hills, and the LANCER site were mentioned specifically, but there are more communities that feel this way.
- Solid resources decisions will prioritize fairness and equity.
- Good plans will be backed up with strong enforcement.
- Recycling will be maximized and the amount of refuse that goes to Alternative Technology will be minimized, unless that technology is environmentally safe.
- All landfills will harness methane for energy.
- We need to invest in future technologies, even if they are expensive today.
- We will revamp our current trash collection mentality and get away from the landfill mentality.
- Cities and county agencies will work together to make implementation of good ideas easy and sensible.
- Housing will be affordable.
- Trash will be reduced to minimal amounts. Inerts will be shipped out of the urban area by rail.
- Residents will take for granted (automatically think) that very few materials belong in the black bins.
- Integrated planning will take into account all environmental and sustainability issues. All City sustainable and environmental issues should be integrated and not separated from each other. This includes City projects and programs.

Environmental Organizations

- Protect the environment and individual health. All SWIRP guiding principles stem from here.
- Los Angeles will be a leader in sustainability.
- We will look at the total picture regarding waste and pollution and will not be shortsighted. We will not take one problem—like waste—and convert it into another problem—like air pollution.
- Remove the politics of trash and focus on "leave the earth better than how you found it by conserving natural resources."
- SWIRP will reduce waste and address the toxic stream source.
- The 20-year plan will focus on the big picture, not just costs.
- People will feel personal responsibility for their actions. They will realize that they are part of the earth's environment and feel guilty when they don't do the right thing.
- Markets will be created for materials that cannot currently be recycled.
- Waste will be managed locally.
- Jobs will be created locally.
- Resource Recovery Parks will be the #1 priority.
- For every job at a landfill, you could create 75 new jobs at a Resource Recovery Park.
- Garbage will be treated as an economic concept. It is made up of resources with value to create energy or be reused in other ways.
- Los Angeles will establish a bureaucracy that supports local solutions. This might involve establishing a nonprofit structure to support emerging micro-businesses.
- Mayor Villaraigosa's *Carbon Plan* will help guide SWIRP goals and guiding principles. Find common ground.
- Responsibility for waste management will shift from focusing on consumers to everyone involved, including the producers, distributors, jurisdiction, and consumers.
- We will develop the concept of "sufficiency." People will recapture their autonomy.
- We will look at the total lifecycle of products—cradle to cradle.
- Solutions will integrate big-picture issues such as reducing the need for air conditioning, pumping water, etc.
- Los Angeles will be litter-free; will have more green space; and will have smart planning and development that includes energy efficiency, environmentally responsible waste management, and water-wise use.
- Recyclable products will be reused/recycled/composted before they are used for energy.
- People will buy "recycled."
- Fewer trucks with trash or recyclables will be on Los Angeles' streets.
- There will be more green jobs and more emphasis on sustainability.
- SWIRP will focus on waste reduction, not just recycling or Alternative Technology.
- More recycling will allow us to use less virgin materials and save natural resources.
- SWIRP will consider the 2 percent solution for achieving 70 percent and higher diversion rates. Big "magic bullets" are not the solution. Pursue achievable and incremental wins. Small, decentralized solutions will avoid some of the community impacts and environmental justice issues that work against successfully moving recycling rates upward.

Business Organizations

- The restaurant industry will be green in 10 years.
- Food packaging will be safe, environmentally responsible, and cost effective.
- We will provide more education about what can be recycled.
- Cities and counties will pool public education dollars to do more, high-level advertising campaigns together.
- We will pursue alternative energy at lower costs. We will place solar panels on government buildings. City and government will be a model for the public by using more alternative energy sources.
- We will design for the environment.
- Building owners will provide recycling and renewable energy options for tenants.
- City's *Climate Change Action Plan* will reduce greenhouse gases by 35 percent by 2030.
- Cost-effective and convenient food waste composting will be available.
- Urban landfills will continue to be used until they fill because that is the cheapest and best option available to Los Angeles. At the same time, develop options, such as Alternative Technology facilities, to deal with the closure of filled urban landfills.

Private Haulers and Recyclers

- We will have a holistic approach: preservation of resources, reduction of pollution, saving the environment, being cost effective.
- Zero Waste is not the only answer. Remember, the most important thing to the homeowner and business is that they don't want stuff sitting at the curb.
- The aesthetics of a green city will include trees, open spaces, parks, and an open and welcoming approach to green building and sustainable design.
- The City will drive the infrastructure by streamlining siting and permitting and providing incentives for organics and food waste recyclers.
- Conversion technology will be pursued with vigor.
- Use a material recovery facility (MRF) First. All collected solids will be "MRFed" before they go to a landfill or conversion technology facility.
- Los Angeles will recognize and support the efforts of the private sector, ensuring future capacity by expanding MRFs and transfer stations to include both new materials and increased volume.
- We will explore methods to share cost savings or revenue with neighborhoods that host facilities or show superior diversion.
- We will have more drop-off centers to service residents.
- Regional collaborations will be pursued.

Private Haulers and Recyclers

- Trusting and believing comes from action. People will see results from their feedback.
- We will create local jobs that promote a cleaner and more-sustainable environment.
- Green jobs will be created in accounting and design (measuring greenhouse gases, measuring carbon credits, designing non-polluting facilities).
- Los Angeles development standards will go beyond what we have now for MRFs and transfer stations. The new ecological footprint will have to be quieter, cleaner, more physically attractive, and buffered from neighborhoods. The City will have to pay more to meet these standards.
- We will develop a blue ribbon advisory group to advise City leadership on SWIRP.
- We will create trade incentives to encourage manufacturing in urban areas subject to industrial closed-loop economy standards because low emissions and water recirculation will cost more.
- Organics generated in Los Angeles will be used by composting and electricity.
- We will have a visible, meaningful recognition program for companies that aggressively recycle. To reach Zero Waste, all recycling initiatives will be mandatory.
- Recycling will be mandatory for both residential and commercial.[38]
- Recycling will not be mandatory.
- We will support conversion technology, but not at the expense of recycling.
- Local governments will follow their own policies. Even though the California Integrated Waste Management Board holds local governments responsible for meeting AB 939, these requirements were only recently implemented by State facilities. This did not send the appropriate message.
- We will have a conversion technology strategy as developed by *RENEW LA*.
- We will develop a responsible climate action plan, including moving away from large, centralized facilities to more decentralized wasteshed-based infrastructure.
- Waste haulers and recyclers will be part of the solution.
- Recycling programs and facilities will promote environmental protection and will benefit the economy.
- We will focus on the value of recycling as related to reduction of greenhouse gases.

[38] Note that some input from stakeholders was contradictory. For example, some private haulers and recyclers felt that mandatory recycling was desirable and some felt that it was undesirable. As a result of this input a phased approach to mandatory recycling was discussed during Phase 2 of SWIRP.

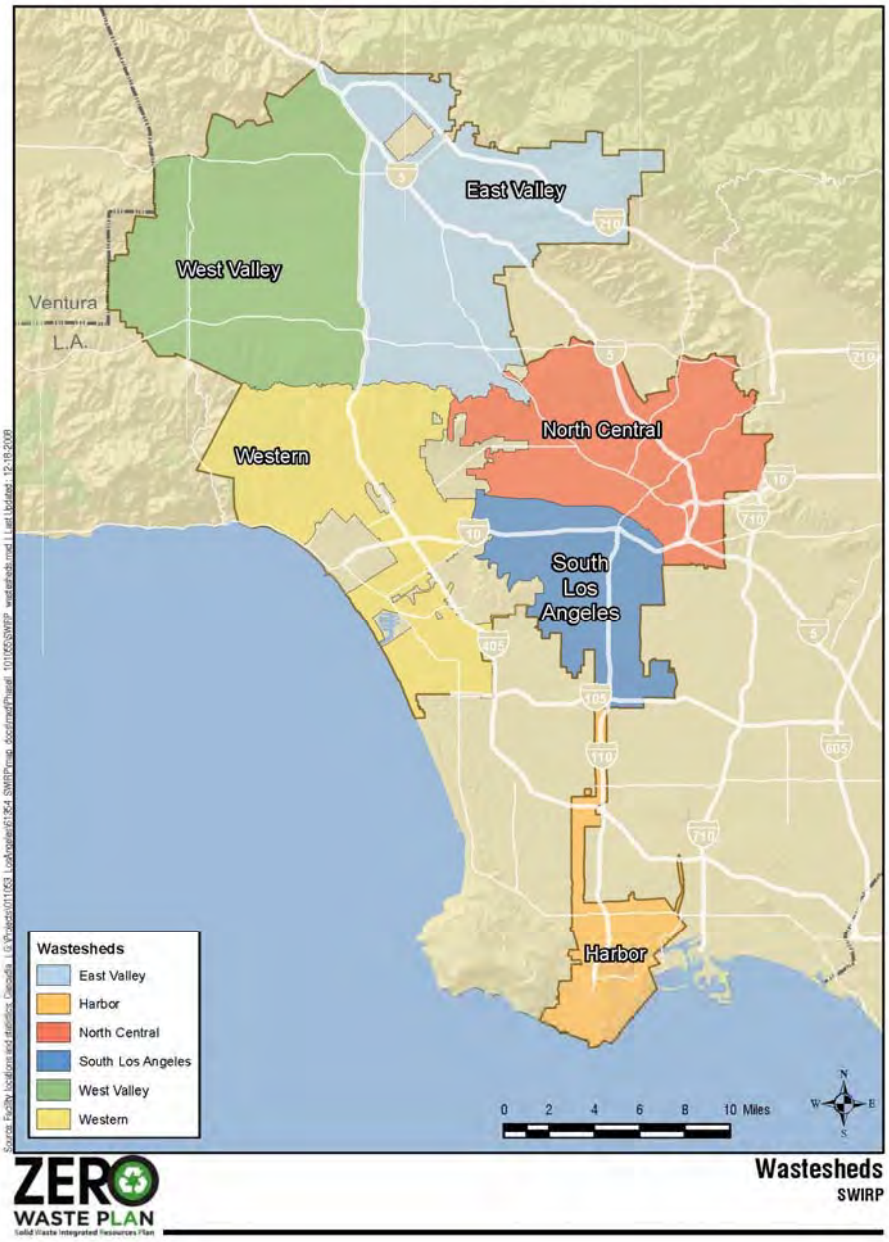
Government Partners

- We will have a regional approach and will form partnerships between cities to achieve Zero Waste.
- Cities will take care of their own solid waste problems without negatively impacting other communities.
- We will achieve Zero Waste by 2020.
- We will have the political will to create a different paradigm.
- The proven simple technologies used in Europe that offer fully assembled turnkey systems will be pursued with vigor.
- Front-end separation of wastes will be maximized so that what is left can be handled with Alternative Technology that produces clean energy and reduces greenhouse gas emissions.
- Conversion technology is the answer to the region's problems.

2.4 Wasteshed Regional Working Groups

The City organized the SWIRP planning process around the City's six collection districts or "wastesheds," which are East Valley, West Valley, Western, North Central, South Los Angeles, and Harbor. The regional working groups were formed in these wastesheds, and participants were drawn from contacts made during the early outreach meetings and from the local neighborhoods, community groups, churches, and local businesses. The basic boundaries of the wastesheds are illustrated in Figure 5.

Figure 5: Los Angeles Collection Districts or "Wastesheds"



2.4.1 Waste Generation in the City and Waste Disposal by Wasteshed

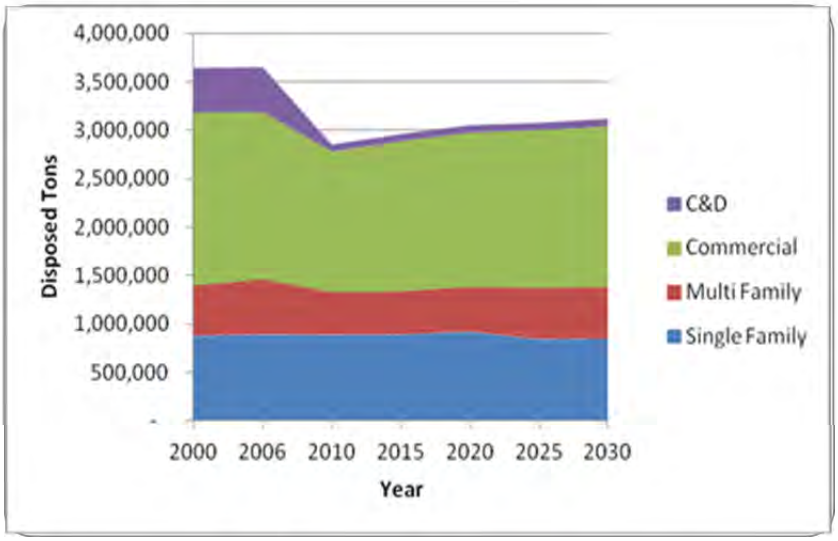
2.4.1.1 Waste Generator Sectors

Waste is generated by residents, businesses, institutions, public venues, and City departments and at C&D sites within the City. For planning purposes, the City tracks disposal tons by generator type:

- Residential curbside (residents in detached homes and some multi-family residences, primarily with four units or less, serviced by LASAN)
- Multi-family complexes (residents in apartments, condominiums, and townhouses of more than four units, primarily serviced by private sector commercial haulers)
- Commercial businesses (small and large businesses, institutional and industrial generators, and public venues, all of which generate waste that is collected by a permitted private waste-hauling company)
- C&D sites

Figure 6 shows the projected waste disposal by generator sector through 2030. Projections help to target materials for new diversion programs. Residential disposal projections are based on expected population growth with a constant per-capita disposal rate.[39] Commercial disposal projections are based on expected increases in employees within each industry.[40]

Figure 6: Projected Waste Disposal by Generator Sector



Source: City of Los Angeles Generation Projection Model – January 2013

[39] Based on Southern California Association of Governments (SCAG) population projections through 2030.
[40] Based on SCAG employment projections for the following seven categories: Manufacturing, Transportation/Communication/Utilities, Wholesale, Retail, Financial/Insurance/Real Estate, Services, and Government. The employment category that includes construction was specifically excluded.

2.4.1.2 Documenting Tons by Generator Sector

LASAN provides collection services to residential curbside customers from the six wastesheds within the City. Disposal tonnage information is generated from scale tickets issued as the collection vehicles arrive at transfer stations or landfills to empty their loads. Each disposal facility in California must provide the State with data on the tonnages received as well as the jurisdiction from which the waste was generated. The total tons of waste disposed annually from all jurisdictions in the State is documented in a database (the Disposal Reporting System) maintained by CalRecycle.

Waste collected by permitted waste haulers serving commercial customers and multi-family complexes (with five units or more) is documented based on citywide data from the CalRecycle Disposal Reporting System and allocated to the City's six wastesheds based on the numbers and types of commercial businesses and multi-family residential generators within each wasteshed.

Tonnage information for separate collection of yard trimmings, recyclables, C&D materials, and other materials diverted from landfill disposal are also tracked as loads are delivered to MRFs, compost facilities, C&D facilities, or designated areas at transfer stations and landfills where the materials are handled for recovery. Facility operators use scale house transaction records to implement their tracking systems, but they may also use other methods such as volume-to-weight conversions based on the observed volume of the load delivered.

Waste "generation" is the sum of tons diverted plus tons disposed and is used to determine the City's rate of waste diversion, as shown in the equation below.

Waste Generation = Disposal + Diversion

2.4.1.3 Tons Generated, Disposed, and Diverted in the City

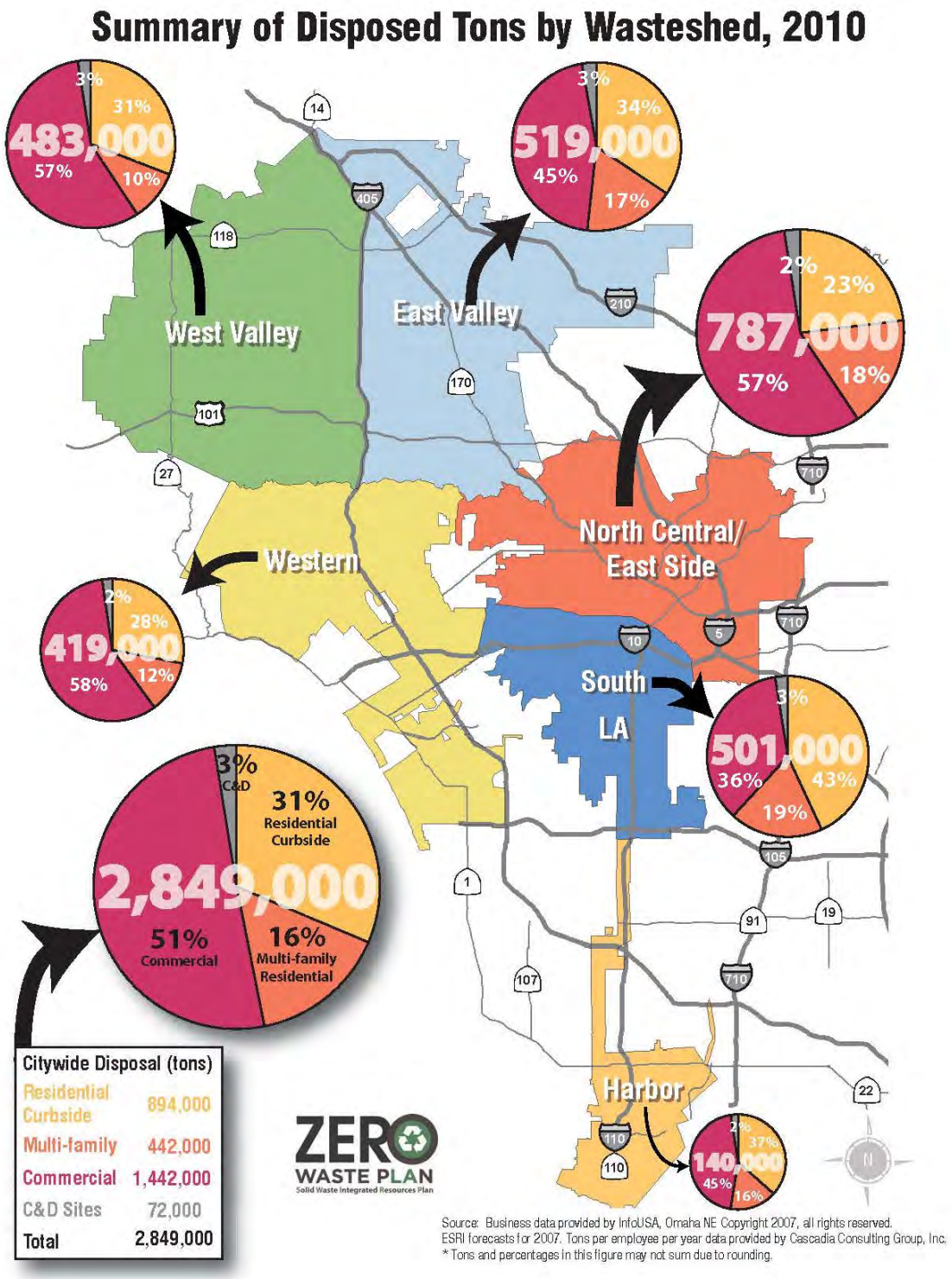
Residents and businesses in the City generated a total of 10 million tons of materials in 2010. The tons disposed and diverted by the residential curbside substream are based on LASAN records. Estimates for the disposed waste from multi-family, commercial, and C&D site substreams were developed based on total 2010 tonnage figures from the *CalRecycle Disposal Reporting System* and on commercial per employee and multi-family per household disposal rates calculated in the *City of Los Angeles Waste Characterization and Quantification Study Year 2000*, July 2002. Of that amount, 7.2 million tons (or 72 percent)[41] were diverted from disposal:

- C&D materials – 2.2 million tons
- Recyclables – 2.6 million tons
- Organics – 0.8 million ton
- Reuse and reduction – 1.6 million tons

The remaining 2.8 million tons were disposed in landfills. Figure 7 shows the waste disposed by generator sector within each of the City's six wastesheds in 2010.

[41] The City reached 72 percent in 2010, the base year for SWIRP. By 2011, the City achieved 76.4 percent diversion (Zero Waste Progress Report, March 2013).

Figure 7: Summary of Disposed Tons by Wasteshed in 2010



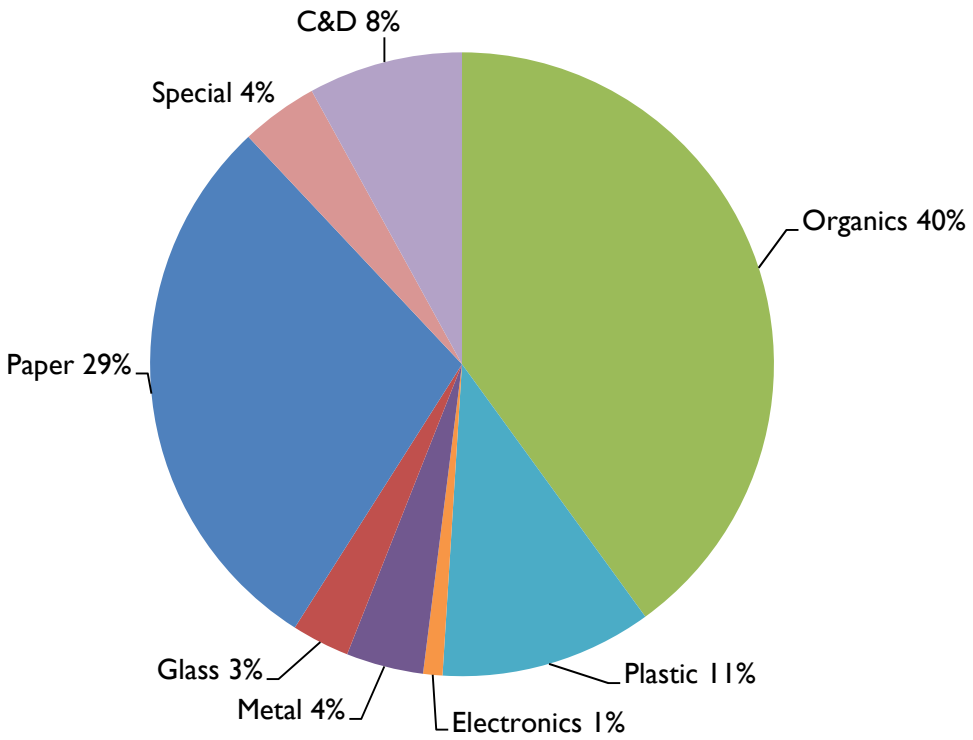
Note: Sources for tonnage data are documented in *Volume II Solid Waste Integrated Waste Management Plan, Phase 2 Policy, Program, and Facility Plan,* and *Appendix B Material Flow Model and Generation Projections* and summarized in Table 3, page B-12.

2.4.1.4 Composition of Disposed Waste

Most of the waste disposed in landfills by generators in the City includes materials that can be recycled or composted. Figure 8 shows the composition of disposed waste in the City.

- **Organics** include compostable materials, such as yard trimmings, food scraps, and compostable paper contaminated with food scraps.
- **C&D** includes asphalt roofing and paving materials, concrete, gypsum board, rocks, and soils.
- **Special** waste includes materials that require special handling, household hazardous waste, ash, biosolids, tires, and bulky items.
- **Paper**, **Glass**, **Metal**, and **Plastics** include the standard commodity types.
- **Electronics** include computers, monitors, televisions, and other electronic equipment.

Figure 8: City of Los Angeles Waste Characterization (Citywide)[42]



[42] *City of Los Angeles Waste Characterization and Quantification Study Year 2000*. Supplemental information from *CalRecycle Self-Haul Waste Characterization Study, 2003*.

2.4.2 Regional Working Group Planning Process

Members of the regional working groups representing the six wastesheds were recruited from the City's 90 Neighborhood Councils and nominated by City Council members. Members were also referred by key constituents and through the business interviews and house meetings. Each of the six wastesheds of the City is the equivalent of a medium-sized city. By focusing the planning process in each of the wastesheds, LASAN sought to involve local residents and businesses in planning for the programs and facilities that will be needed locally. Having workshops in each wasteshed allowed LASAN staff to come to the stakeholders rather than expecting the stakeholders to come to LASAN. This grassroots effort was designed to produce the broadest perspective and best opportunity for getting true community participation.

2.4.2.1 The Role of Regional Working Groups

The six regional working groups took on the major tasks of the Phase 1 planning effort. Over the course of the 1-year planning period, the regional working groups met six times to focus on specific subject areas based on the workshop topics described below. The results from these workshops were brought together in three citywide conferences.

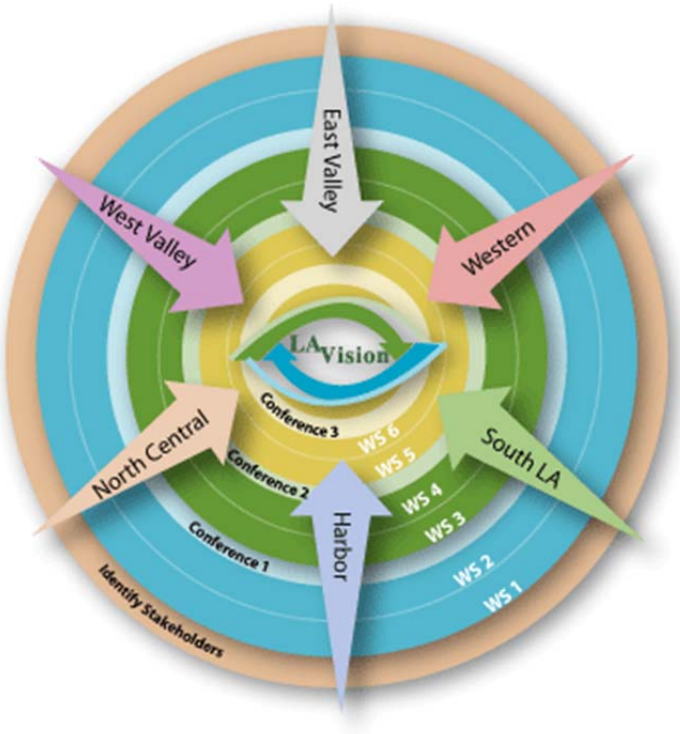
2.4.2.2 Workshop Topics

- **Workshop 1 Forming the Foundation, August 2007** – Stakeholders set the stage for SWIRP and identified the constraints and opportunities for achieving Zero Waste.
- **Workshop 2 Goals and Objectives, September 2007** – Stakeholders reviewed existing City goals and polices and the goals and objectives established in other Zero Waste communities. Stakeholders identified the goals for SWIRP (including education, manufacturer responsibility, consumer responsibility, City leadership, and culture change).
- **Citywide Conference 1 Goals and Objectives, October 2007** – Stakeholders discussed the goals and objectives identified in the regional workshops and established the top goals for SWIRP.
- **Workshop 3 Policy and Program Options, November 2007** – Stakeholders discussed and ranked 40 different policy and program options identified through the stakeholder process.
- **Workshop 4 Facility Options, December 2007** – Stakeholders took a "virtual" facilities tour (viewing slides of local facilities and examples from around the world) and discussed community-scale facility options (repair and reuse businesses, used building materials yards, Resource Recovery Centers) and regional-scale facility options (MRFs, composting facilities, C&D facilities, Alternative Technology facilities).
- **Citywide Conference 2 Policy, Program, and Facility Options, February 2008** – Stakeholders reviewed policy, program, and facility options using a system dynamics decision tool to illustrate different leverage points that the City can undertake to achieve different results (in diversion, greenhouse gas emissions reduction, relative costs, and relative ease of implementation).

- **Workshop 5 Evaluation, February 2008** – Stakeholders evaluated the policy, program, and facility leverage points discussed in the citywide conference and began to identify emerging guiding principles for SWIRP.
- **Workshop 6 Guiding Principles, March 2008** – Stakeholders refined the guiding principles and applied them to the City's policy discussion for reducing plastic litter in the environment. Stakeholder feedback was provided to the City Council in its consideration of the plastics policy adopted in July 2008.
- **Citywide Conference 3 Guiding Principles, May 2008** – Stakeholder panelists shared their Zero Waste journeys, and stakeholders signed off on the guiding principles.

Figure 9 illustrates how the stakeholder outreach, workshops, and citywide conferences led the identification of the guiding principles.

Figure 9: Regional Working Group Process



Workshops and conferences were scheduled so that each series of two sequential regional workshops led into one citywide conference. This sequence was repeated three times so that there were three series of workshops and three citywide conferences in the first year.

Each workshop built the foundation for the citywide conferences. The first series of workshops focused on setting the goals and objectives for the SWIRP process. Community members at the first citywide conferences evaluated the goals and objectives developed in the workshops and developed preliminary metrics. The second series of workshops focused on developing policy, program, and facility options. The final series of workshops focused on evaluating the policy options and developing recommendations and guiding principles for the development of the *Policy, Program, and Facility Plan* in Phase 2 of SWIRP.

2.5 Conference Series 1 Developing the Vision

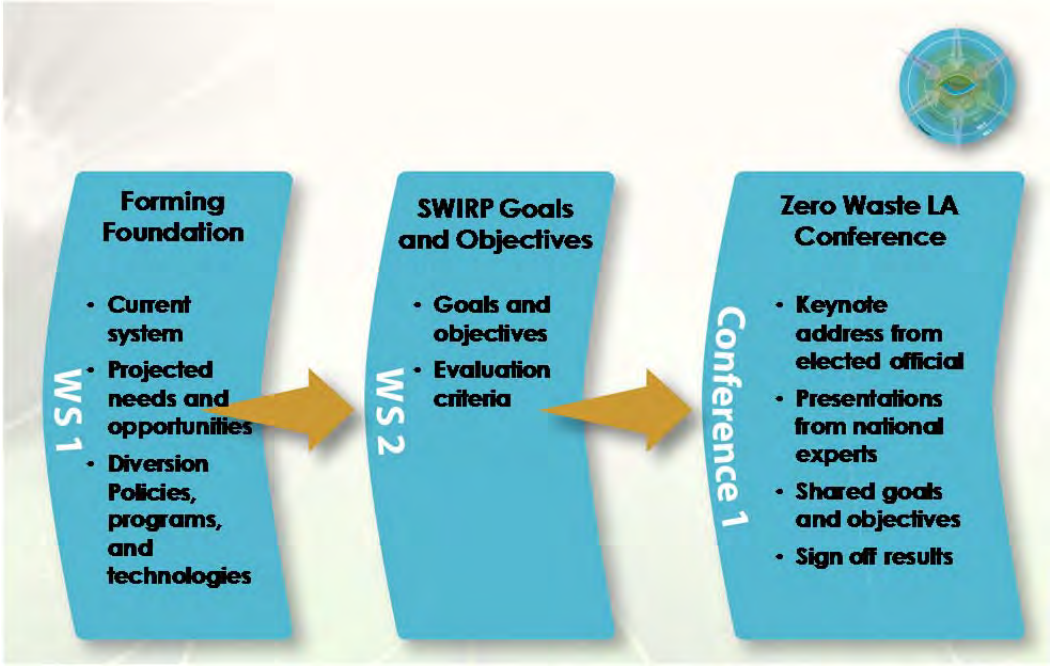
The first conference series focused on providing a foundation for the stakeholders on the City's solid waste system and developing the stakeholder vision for SWIRP.

Figure 10 illustrates the workshop process leading up to the first citywide conference.

2.5.1 Workshop 1 – Forming the Foundation

The focus of workshop series 1 in August 2007 was to introduce the Zero Waste planning process and discuss opportunities and constraints for achieving Zero Waste. LASAN also provided the stakeholders with an introduction to the City's solid waste system.

Figure 10: Conference Series 1 Developing the Vision



At the first of the workshops, the West Valley workshop in the Granada Hills area of Los Angeles, Former District 12 Councilmember Greig Smith welcomed stakeholders to the Zero Waste planning process and introduced them to *RENEW LA*, the City's blueprint for Zero Waste. Councilmember Smith also was the first person to sign the SWIRP Zero Waste banner and then invited all of the stakeholders present to "sign on for a Zero Waste LA." This banner was brought to each of the workshops and citywide conferences for stakeholders to sign.



Councilmember Greig Smith kicks off the first workshop in August 2007

City staff described the planning context for SWIRP and the current and planned LASAN recycling programs:[43]

- Residential curbside recycling
- Multi-family residential recycling
- Residential yard trimming collection and processing
- Griffith Park Composting Facility
- Mulch/compost giveaway sites
- Bulky item collection for residential curbside and multi-family generators
- S.A.F.E. (Solvents, Automotive, Flammables, and Electronics)
- Christmas tree recycling
- Backyard composting
- Restaurant food scraps recycling
- C&D recycling
- LAUSD Blue Bin Recycling Program
- Ambassador Program
- Residential food scraps pilot
- Commercial and office recycling
- Potential incentives and/or requirements for private-sector haulers



The City's Residential Collection Program

[43] Presentations are posted on the City's website at www.zerowaste.lacity.org (accessed October 1, 2013).

The City also introduced the concept of Zero Waste:

- Take a whole-systems approach
- Recognize that waste is not inevitable
- Discarded materials are potentially valuable resources
- Go beyond "end of the pipe" strategies
- Maximize recycling and composting
- Reduce consumption
- Design waste out of the system
- Ensure the highest and best use of products and packaging at the end of their useful lives
- Reuse products and packaging, retaining their original form and function
- Recycle or compost materials that are not reduced or reused
- Expand, attract, and support green businesses and "green collar" jobs
- Reserve sufficient land for Zero Waste infrastructure
- Buy green goods and services

After hearing the presentation, the stakeholders split up into small groups to discuss the opportunities and constraints in the City for achieving Zero Waste.

Opportunities identified by the stakeholders in conference series 1 included:

- Provide incentives to businesses to encourage recycling
- Reduce packaging
- Integrate mulch program in school gardens
- Increase media advertising
- Increase opportunities for local recycling businesses
- Provide more recycling bins in City parks and facilities
- Ban expanded polystyrene (EPS) foam take-out containers and/or plastic bags

Constraints identified by the stakeholders included:

- Contamination, participation, logistics
- Lack of education about existing recycling programs and Zero Waste
- A growing population
- Not enough incentives
- Illegal dumping
- Lack of enforcement
- Language barriers

The full list of stakeholder ideas generated at workshop series 1 is listed on the City's website at www.zerowaste.lacity.org. All of the ideas discussed during the first workshop series formed the foundation for the goals, policies, and program ideas codified in later workshops.

2.5.2 Workshop 2 – Goals and Objectives

During workshop series 2 in September 2007, stakeholders identified the goals and objectives for the planning process, which included the following.

2.5.2.1 Education

- Create a mass media education campaign targeting the general population focusing on the three "Rs" with specific examples on behavior changes
- Create a mandatory curriculum for the K–12 school system that interweaves environmental education into all aspects of coursework

2.5.2.2 Manufacturer Responsibility

- Phase out all non-recyclables and non-compostable items from the City
- Produce products with less toxic materials
- Penalize non-compliant vendors
- Hold businesses/industry accountable for their product/packaging

2.5.2.3 Consumer Responsibility

- Reduce packaging and increase consumer responsibility
- Mandatory recycling for businesses (by City or private haulers)
- Pay-As-You-Throw Strategy
- Uniform rules for the residential and business sector
- Reduce contamination so the materials can be recycled
- Change behaviors not just as individuals but as a collective group

2.5.2.4 City Leadership

- The City of Los Angeles should serve as a model in practicing reduce, reuse, and recycling
- Equitable distribution in siting facilities
- Facilities sized and scaled for each community
- Recycling bins at all public venues
- Reduce traffic impacts in residential neighborhoods
- Open additional convenient S.A.F.E. Centers
- The City of Los Angeles should revise its purchasing practices and purchase only from "green" vendors
- Recycling solutions need to be convenient and doable

2.5.2.5 Changing the Culture

- Refocus local production, local recycling, local manufacturing
- Recycling must not become a political issue
- Zero Waste should become second nature as part of the culture of the family, education system, and community
- Create political will to continue and implement the *Zero Waste Plan*

2.5.3 Citywide Conference 1 – Vision, Goals and Objectives

Over 300 stakeholders attended the City's first citywide conference in October 2007. The conference opened with presentations[44] from Zero Waste experts. Nancy Sutley, former Deputy Mayor of Energy and Environment, outlined the progress the City is making toward a green Los Angeles. Gary Petersen from the California Integrated Waste Management Board gave a presentation, "There is No Away," which chronicled the history of recycling in Los Angeles and the options for using the resources that are currently being landfilled. American Public Media's Tess Vigeland, host of *Marketplace* and *Marketplace Money*, presented Tess' Trash Challenge, in which for 2 weeks she led a Zero Waste lifestyle as documented on the air and in her blog, www.publicradio.org/columns/marketplace/trash. Attendees were then invited to undertake their own Zero Waste challenge.

A business panel discussion with representatives from REI, Vons, Ricoh Electronics, and Toyota Motor Sales focused on the challenges and accomplishments in changing corporate cultures to incorporate Zero Waste. After the panel discussions and presentations, community members broke into small groups to confer and identify the top citywide goals for SWIRP. Seven top goals (selected from those discussed at the workshops) were identified, as listed below.

2.5.3.1 Top Citywide Goals

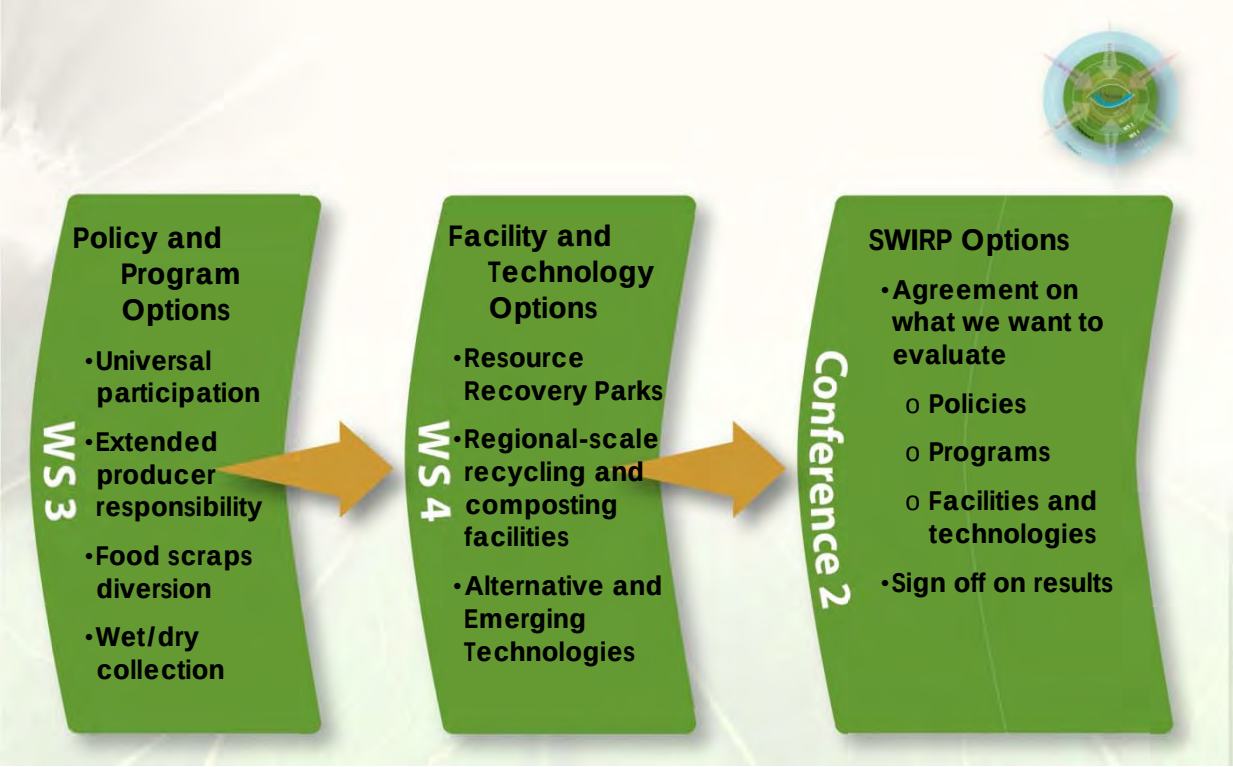
1. Create mass media education campaign targeting the general population focusing on the three "Rs" with specific examples of behavior changes.
2. City should serve as a model in practicing reduce, reuse, and recycling.
3. Hold businesses/industry accountable for their products and packaging.
4. Recycling solutions need to be convenient and doable.
5. Create political will to continue and implement the *Zero Waste Plan.*
6. Recycling bins at all public venues.
7. Zero Waste should become second nature as part of the culture of the family, education system, and community.

[44] The presentations are posted on the City's website at www.zerowaste.lacity.org (accessed October 1, 2013).

2.6 Conference Series 2

The second conference series focused on the policy, program, and facility options available for implementation in the City and identified the stakeholder priorities. Figure 11 illustrates the workshop process leading up to the second citywide conference.

Figure 11: Conference Series 2 Identifying the Options



2.6.1 Workshop 3 – Policy and Program Options

During workshop series 3 in November 2007, stakeholders discussed and ranked 40 different policy options identified through the stakeholder process, including the list of ideas developed in workshop series 1 and the goals and objectives discussed in workshop series 2 and at the citywide conference. For the purpose of discussion, the policy and program options were divided into the following categories:

- **Upstream** – policies that focus on reducing products and packaging at the source and engaging manufacturers to take responsibility for their products and packaging through product stewardship.
- **Downstream** – policies and programs to divert materials from disposal.
- **Changing the culture** – policies and programs to influence behavioral change and to transform public attitudes about waste.

- **Green businesses, green buildings, and green jobs** – policies to promote green businesses, develop green buildings, and create green jobs.
- **Management of restricted materials and residual solid waste** – policies to address materials that cannot be diverted from disposal and the treatment of residual solid waste prior to disposal.

Specific policies and programs discussed by the stakeholders at the November 2007 workshops are listed below.

Policy and Program Options

Upstream Policies

Make Businesses Responsible for Products and Packages

1. Be a strong advocate for legislation and programs regionally, statewide, nationally, and globally that make businesses responsible for their packaging and products.
2. Engage industry, make them aware of materials and products that are problems for the City, and establish a process for resolving those problems.
3. Ban products or packages from being sold or require businesses and institutions to take back designated products and packaging sold in Los Angeles that are toxic in their manufacture, use, or disposal, and/or are not currently recyclable in the area.
4. Engage industry; make them aware that all new manufactured products need to be approved as reusable, recyclable, or compostable.

Downstream Policies

Source Separation

5. Require all residents, businesses, and institutions to source-separate designated reusables, recyclables, and compostables (including yard trimmings, discarded food, and food-contaminated paper).
6. Encourage deconstruction, salvage, and reuse of materials from C&D projects in addition to existing recycling requirements.
7. Place recycling bins wherever there are trash cans in all public locations.

Incentives and New Rules

8. Require private recyclers and waste haulers to provide collection services to commercial businesses to achieve increased recycling goals.
9. Require all multi-family-dwelling building owners to provide recycling services to their tenants.
10. Require reuse or recycling of all bulky items and composting of brush collected from throughout the City (residential curbside, multi-family, and business), whether served by City or private haulers.

11. Increase fees on private waste-hauling services to provide more economic incentives for recycling and to generate funds for new recycling programs.
12. Increase the use of rebates to provide incentives for marginally economic materials to be reused, recycled, or composted.
13. Support local, regional, and state landfill surcharges and bond issues to fund low-interest loans and/or grants to develop needed local recycling and composting infrastructure in urban areas.
14. Increase incentive to residents to reduce waste through revised Pay As You Throw rates (for example, lower rate for 32-gallon bin) and an expanded "Recycle for Dollars" Lottery and/or RecycleBank system.
15. To maintain incentive for recycling, charges for extra recycling and compost services for commercial businesses should not be more than 50 percent of the cost of trash service.

Restore the Health of Our Soil with Composting

16. Adopt policy that no compostable organics should go to landfill.
17. Support elimination of State "credit" to count Alternative Daily Cover as diversion immediately to help stimulate the development of new composting facilities (including urban areas), particularly ones that can process food scraps.
18. Support the phase-out of the use of yard trimmings statewide as Alternative Daily Cover (used in place of soil to cover trash at the end of the day).
19. Help market urban organics to farmers to restore the health of soils and reduce use of fertilizers, pesticides, and irrigation water.
20. Support legislation to require Caltrans to use mulch and compost made from urban organics to landscape freeways and to use other recycled materials (for example, rubberized asphalt) in sub-base and road mixes.

Support Zero Waste Infrastructure

21. Develop Resource Recovery Parks (neighborhood takeback centers) in each wasteshed of Los Angeles (or nearby) to accept all reusables, recyclables, and compostables from the public and provide locations for reuse, recycling, and composting businesses to process materials, manufacture products, and sell products to the public.
22. Form partnerships with the private sector for Zero Waste infrastructure development for the multi-family and commercial waste streams.
23. Modify the zoning code to allow Zero Waste infrastructure by right in appropriate zones.
24. Have the City provide markets for reusables, recyclables, and compostables.
25. Include *Zero Waste Plan* as part of climate action plans.

Changing the Culture

26. Fund programs on an ongoing basis to educate residents, businesses, and visitors about the new rules and changes over time.

27. Work with LAUSD to integrate Zero Waste into the curriculum and to implement Zero Waste systems for all schools and administrative offices.
28. Train managers of buildings and facilities about Zero Waste systems and resources.
29. Use Facebook, Twitter, Instagram, YouTube, texting, and celebrities to talk about Zero Waste messages.
30. City agencies lead by example to implement all actions asked or required of residents and businesses and report on progress annually.

Green Businesses, Green Buildings, and Green Jobs

31. Help retain and expand green businesses. Provide preferences in City procurement, funding, and permitting for certified green businesses in Los Angeles.
32. Purchase Zero Waste products and services; return to vendor any wasteful packaging; reduce packaging and buy in larger units; use reusable shipping containers; purchase reused, recycled, and compost products; buy remanufactured equipment; lease, rent, and share equipment; buy durables using lifecycle cost analyses; and purchase less-toxic products.
33. Adopt the "precautionary principle" for all City purchases. The precautionary approach seeks to minimize harm by using the best available science to identify safer, cost-effective alternatives.
34. Ask businesses to adopt Zero Waste goals and plans that follow Zero Waste business principles (examples are available on the Grassroots Recycling Network website[45]).
35. Expand the City's use of green buildings and encourage residents and businesses to build more green buildings. Restore functional buildings rather than demolish them.

Management of Restricted Materials and Residual Solid Waste

36. Eliminate use of urban landfills for all City-collected municipal solid waste and encourage other communities regionally and statewide to reduce reliance on landfilling and strive for Zero Waste and sustainability.
37. Require processing of all materials (including organics) before they are landfilled.
38. Develop Alternative Technologies to handle "black bin" materials and further process residual solid waste. Limit the City's commitment to such facilities to no more than 10 percent of the total waste stream currently disposed by residents and businesses, require continuous monitoring systems for all criteria and non-criteria pollutants, and adopt best available control technology for dioxins, furans, and other criteria and non-criteria pollutants.
39. Each wasteshed of the City should share in the responsibility for providing Zero Waste infrastructure and disposal or transfer services for residual solid waste. Facilities should be sized and scaled for each community. All communities should have equal access to all facilities and

[45] Grassroots Recycling Network: www.grrn.org/zerowaste/business (accessed October 1, 2013).

services especially for multi-family dwellings, although facilities could vary for each wasteshed. Facilities should be decentralized and collection services provided so that residents do not have to drive far to properly discard materials.

40. The *Zero Waste Plan* should support the *GREEN LA Plan* goals for 20 percent green energy from renewable sources, the conversion of the City's fleet to clean fuel, and a 35 percent reduction of greenhouse gases below 1990 levels by 2030.

At each workshop, the stakeholders were divided into small groups and were asked to indicate which policies they strongly agreed with and which policies they strongly disagreed with. The following nine policies were the ones most strongly supported by stakeholders:

1. Strong advocacy for legislation and programs regionally, statewide, nationally and globally that makes business responsible for their packages and products.
2. Engage industries by making them aware that some materials and products are problems for the City, (they may be harmful to the environment or difficult for the City to recycle) and establish a process for resolving those problems.
3. Engage industries by making them aware that all new manufactured products and packaging need to be approved as reusable, recyclable, or compostable (i.e., blue dot/green dot system – putting a blue dot on recyclable items and a green dot on compostable items).
4. Encourage deconstruction, salvage, and reuse of materials from C&D projects in addition to existing recycling requirements.
5. Place recycling bins wherever there are trash cans in all public locations.
6. Require all multi-family dwelling building owners to provide recycling services to their tenants.
7. Support legislation to require Caltrans to use mulch and compost made from urban organics to landscape freeways, and to use other recycled materials in sub-base and road mixes (e.g., rubberized asphalt).
8. Fund programs on an on-going basis to educate residents, businesses, visitors, and new immigrants about the new rules and changes over time.
9. Work with LAUSD to integrate Zero Waste into the curriculum and to implement Zero Waste systems for all schools and administrative offices.

2.6.2 Workshop 4 – Facility Options

Workshop series 4 in December 2007 focused on facility options. The stakeholders who attended the facility tours in November 2007 were invited to provide a recap of their impressions of the facilities they visited.

The November 2007 facility tours were:

- **Athens Materials Recovery Facility** – a MRF that processes residual waste from other cities.
- **City of Los Angeles East Valley Solid Resources District Yard** – one of the City's district yards that includes a liquefied natural gas fueling station for the City's collection fleet.
- **Downtown Diversion** – a C&D processing facility.
- **Lopez Canyon Environmental Center** – a City-owned mulching facility that processes some of the City's compostable material.
- **Southeast Resource Recovery Facility** – a waste-to-energy facility that processes some of the City's residual solid waste.
- **Sun Valley Paper Stock** – a MRF that processes some of the City's blue bin materials.

At each workshop, stakeholders who were unable to attend the tours had the opportunity to view a virtual tour of the facilities and also viewed a slideshow presentation of community-scale and regional-scale facility types from Los Angeles and around the world. The following is a description of the community-scale and regional-scale facilities that were presented and discussed at the workshop.

2.6.2.1 Community-Scale Facilities

Community-scale facilities include:

- Repair and reuse businesses
- Used building materials yards or re-stores
- Resource Recovery Centers
- Resource Recovery Parks
- S.A.F.E. Centers
- Product care centers



Resource Recovery Park in Monterey County

The more materials that can be processed and used within the City's communities, the less pressure there will be on citywide and regional facilities. Community-scale or neighborhood-scale facilities also create jobs and impart skills at the local level to reduce the environmental and economic burdens of transporting workers and materials in the local economy. Further, by using materials locally (materials such as compost or building materials recovered through deconstruction), the value of these products will rise, strengthening the economics of these programs.

Reuse and Repair Businesses

Many household items can be feedstock for repair enterprises or programs that return items for reuse. These enterprises and programs also help people acquire important skills, including retail, which can be used to get jobs or further personal projects. Examples of reuse and repair businesses include:

- **Bicycle Repair.** Nonprofit bicycle repair operations focus on imparting skills and refurbished bicycles within their communities. Often these shops combine sales of refurbished bicycles with sales of new bicycles and accessories.
- **Appliance Repair.** Appliances that are not too old to be repaired and that do not meet new efficiency standards are refurbished and sold at greatly discounted prices. This process also trains workers in mechanical and electrical skills. Appliances that are too old to be repaired are recycled through the scrap metals yards and brokers. Appliance fix-it shops take responsibility for removing liquids such as Freon from refrigerators prior to final recycling as prescribed by law. An excellent example of a small-scale appliance program is St. Vincent de Paul, Springfield/Eugene, Oregon.
- **Furniture Repair.** Furniture repair shops are involved with cosmetic repairs on slightly damaged items or comprehensive overhaul of wood or metal-framed furniture. These facilities train workers in upholstery skills and woodworking. Some of these operations recycle mattresses by stripping out stuffing, sterilizing the material for reuse, and recycling the metal springs.
- **Textile Refurbishing and Recycling.** There is a vibrant international market for textile discards. Rags are valued at over $100 per ton. A textile operation can collect high-grade textile discards and segregate quality items that can be repaired and resold in local markets. Reused clothing stores throughout the U.S. make high-quality items available at modest prices. These entities also train workers in skills associated with textile refurbishment. Clothing refurbishing enterprises and programs can link with the City's well-established design and fashion industries. For example, the Korean Cultural Center in Los Angeles is producing embroidered canvas bags for sale as replacements for one-way paper and plastic grocery and shopping bags.
- **Bulky Item Collection for Repair and Recycling.** All cities have bulky items that have to be collected on a regular basis. If not, some bulky items such as furniture, appliances, windows, and other building materials are improperly discarded in streets, alleys, and parks. The City has aggressively addressed this problem by initiating bulky item collection services and a recycling program for multi-family dwellings.
    - Reuse partners. Items collected could be made available to fix-it shops as inventory for their operations. Other entities can recycle materials that cannot be refurbished. In Oakland, California, the City contracts with a grassroots reuse group that handles the bulky items collection for the City and then refurbishes and recycles items before ultimate disposal. In Fremont, California, a nonprofit for reuse precedes the garbage company's bulky pickup truck and collects whatever they think is reusable.

- Lot sales. Lot sales allow fix-it shop operators to bid on a large number of bulky items as opposed to acquiring single items. This approach allows speedy processing of bulky items. In Austin, Texas, the most profitable operation for an extensive Goodwill operation is the "Blue Hangar," which is where all the reusable items are sold after not being "sellable" in Goodwill's network of stores in the area.

Used Building Materials

"Re-stores" are businesses or organizations (such as Habitat for Humanity's ReStore locations) that sell used building materials. Some entities also resell new building materials donated by builders, manufacturers, and households. Successful resale operations require an estimated 100,000 square feet under roof for maximum efficiency, but many programs have started with as little as 15,000 square feet under roof, plus space for loading docks and customer and employee parking. A resale business of 100,000 square feet requires 10 workers. Expandable space is critical, as re-stores traditionally grow rapidly. Moving a re-store can be very expensive. Hence, a re-store has a great advantage if it uses space that can be readily expanded through lease or new construction. Re-stores can save a community $250,000 annually based on reduced prices for good building materials and supplies.

A re-store typically relies on three sources of materials for inventory/sales. First, the re-store might be affiliated with a deconstruction entity that provides recovered building materials. If the re-store is a nonprofit organization, it receives donations from builders, contractors, brokers, and businesses that are remodeling their facilities (such as hotels, apartment houses, or office buildings). Second, traditional building material retail stores provide overstock or outdated but still useful products. A third source of inventory is individual households that are remodeling and want to see their old but still useful cabinets, appliances, and flooring put to good use. It is important for a re-store to establish relationships with all of these sources of inventory.

Resource Recovery Centers

Each neighborhood in Los Angeles could support a small center for drop-off of hard-to-recycle items. These centers could be staffed and supported by advanced product fees collected on a citywide basis, with payments from the City on a per-ton basis for diverting materials from disposal to donations and local enterprises. Neighborhood business districts would also benefit from a neighborhood-scale center to service their immediate needs. A drop-off site for corrugated cardboard could reduce by 50 percent the amount of waste hauled by a contractor. Commercial haulers could own and operate these small centers, which would earn revenue from tip fees and sale of materials.

Resource Recovery Parks

Resource Recovery Parks are places where materials can be dropped off for donation or buyback; these parks co-locate reuse, recycling and composting, processing, manufacturing, and distribution activities. Typically, these facilities are located in industrially zoned areas that are reserved for companies that process secondary materials or make products from these materials.

The Resource Recovery Park concept has been evolving naturally in California at landfills and transfer stations. These facilities have continued to provide additional recycling opportunities for self-hauled loads. Landfills and transfer stations have been near the centers of waste generation. A Resource Recovery Park can make the landfill or transfer station more sustainable by diversifying revenue, conserving capacity, and extending the useful life of those facilities.

S.A.F.E. Centers

Seven drop-off points have been established by the City for **S**olvents, **A**utomotive, **F**lammables, **E**lectronics (S.A.F.E.) and other materials. Residents can drop off household chemicals, paint, medicine, needles, light fixtures, pool supplies, motor oil, pesticides, and batteries. These materials are then processed for recycling where feasible and for proper disposal as needed. S.A.F.E. Centers are staffed when they are open to the public.

Additional locations might be needed to make drop-off more convenient for people who live far from the existing sites. Management of S.A.F.E. Center materials is costly. Residents have expressed support for takeback programs or extended producer responsibility. These concepts require manufacturers of products either to take the products back for proper recycling and disposal or to contribute financially to the City's program to undertake these responsibilities.

In Boulder, Colorado, Eco-Cycle, a grassroots recycling program under contract with the City, has started a Center for Hard-to-Recycle Materials (CHaRM) to address the need to manage new products that enter the discard stream and are not readily recyclable or reusable. The CHaRM Center accepts computers, printers, TVs, cell phones, textiles, plastic bags, white block foam, and other hard-to-recycle materials. CHaRM ensures that electronic components are dismantled in the U.S. and that toxins are handled in a responsible manner. Most recently, in an effort to put the responsibility for hard-to-recycle materials back on manufacturers, CHaRM has launched the Partners for Responsible Recycling that encourages retailers and brand manufacturers to assist CHaRM in developing in-store takeback programs. Eco-Cycle now gets financial support from industries that produce the products that are dropped off at that CHaRM facility.

British Columbia, Canada, has also pioneered the development of takeback programs with industry. In the l980s, the Province determined that household products and vehicles were major contributors to the household hazardous waste (HHW) stream. (Paint made up 70 percent of HHW; solvents, thinners, and fuels, 17 percent; and domestic pesticides, 7 percent. Together these products accounted for 94 percent of the HHW stream, all of which was paid for by taxpayers.) The provincial government therefore adopted Extended Producer Responsibility programs for producers and users of products that created the problem waste. These products included paints, solvents and flammable liquids, pesticides, pharmaceuticals, tires, and lubricating oil.

This model applies the takeback and producer responsibility principles to HHW management.

Product Care Centers

As takeback programs expand and increase, more manufacturers will take more products back. Retailers must be the intermediaries in moving the materials from consumer to manufacturer. Yet, retail stores often do not have the space or workforce to manage takeback products and materials. A community product care center can serve numerous manufacturers, which would pick up the products and materials they are responsible for. This model has been developed extensively in British Columbia. By aggregating materials, collection costs are reduced. Further, properly trained staff for a product care center will keep products and materials safe from contaminating other materials or the environment. As noted above, a product care center could be integrated into other community-scale facilities, forming a small Resource Recovery Center.

2.6.2.2 Regional-Scale Facilities

Regional-scale facilities include:

- Materials recovery facilities
- Transfer stations
- C&D processing facilities
- Composting facilities
- Biomass-to-energy facilities
- Alternative Technology facilities



Anaerobic Digestion Facility in Germany

Materials Recovery Facility

A materials recovery facility (MRF) is an intermediate processing facility designed to remove recyclables and other valuable materials from the waste stream. A "dirty MRF," also known as a mixed material processing facility, removes reusable materials from mixed solid waste. A "clean MRF" separates materials from commingled recyclables, typically collected from residential or commercial curbside programs.

Transfer Station

A transfer station is a facility that receives, handles, separates, converts, or otherwise processes solid waste, whose activities are governed by the CalRecycle Registration Permit tier or Solid Waste Facility Permit requirements. Such facilities typically transfer solid waste directly from one container to another or from one vehicle to another for transport, or temporarily store solid waste prior to final disposal at a landfill or waste-to-energy facility.

C&D Processing Facility

This is a facility designed to process building materials from C&D sites. Typical C&D materials include asphalt, concrete, Portland cement, brick, lumber, wallboard, roofing material, ceramic tile, plastic pipe, and associated packaging.

Composting Facility

This is a facility for collecting, grinding, mixing, piling, and supplying sufficient moisture and air to organic materials to speed natural decay. The finished product of a composting operation is compost, a soil amendment suitable for incorporating into topsoil and for growing plants. Compost is different than mulch, which is a shredded or chipped organic product placed on top of soil as a protective layer. Compost technologies include:

- **Windrow** – compostable material is piled in long rows and regularly turned to enhance aerobic activity and control temperature.
- **In-vessel** – compostable material is placed in enclosed reactors (metal tanks, concrete bunkers, or plastic tubes) where airflow and temperature can be controlled through perforated pipes buried in the material.
- **Aerated static pile** – compostable material is placed in piles on perforated pipes under removable covers, and fans are used to push or pull air through the pipes to control the composting process.
- **Anaerobic digestion** – compostable material is placed in a chamber where microbial activity occurs in the absence of oxygen, producing biogas that can be used for energy production. Anaerobic digestion of residual solid waste is sometimes included in descriptions of "Conversion Technology" or "Alternative Technology." Anaerobic digestion is regulated as composting under State law.

Biomass-to-Energy Facility

This is a waste-to-energy facility for controlled burning of specified organic materials such as wood waste, agricultural crop residues, leaves, grass clippings, and prunings to produce electricity or heat.[46]

Alternative Technology Facility

As described in Section 1.2.2.3, "Alternative Technology" is a term that refers to specific technologies for treating residual solid waste, such as thermal, biological, chemical, and physical technologies. Some examples of thermal technology include plasma arc gasification, pyrolysis, and advanced thermal recycling (or second-generation waste-to-energy). Some examples of biological technologies include anaerobic digestion and aerobic composting. Examples of physical technologies include autoclaving and advanced materials recovery systems.

In 2005, LASAN prepared a detailed report that evaluated various types of Alternative Technologies for treating residual solid waste that are used around the world.[47] The report included identification and characterization of Alternative Technologies, an overview of the regulations affecting Alternative

[46] CalRecycle, Local Government Central, Glossary of Terms, http://www.calrecycle.ca.gov/LGcentral/Glossary/default.htm (accessed October 1, 2013).
[47] *Evaluation of Alternative Solid Waste Processing Technologies, City of Los Angeles, September 2005,* www.alternativetechnology.lacity.org/background_documents.htm (accessed October 1, 2013).

Technologies, an assessment of Alternative Technologies and technology vendors, and a lifecycle analysis.

2.6.2.3 January 2008 Facility Tours

Stakeholders attending the workshops in December 2007 appreciated hearing about the types of facilities and technologies described by the City. Participants in the November 2007 facility tours found them to be very helpful in visualizing the City's future facility needs. To accommodate stakeholder interest and to provide an additional opportunity for stakeholders to become familiar with solid waste facilities and processes, a second facility tour was scheduled in January 2008.

The January 2008 facility tours were:

- **E-Recycling of California** – an electronic waste de-manufacturing and recycling facility that processes some of the City's electronic waste.
- **Construction & Demolition Recycling, Inc. (formerly Interior Removal Specialists)** – an interior demolition company that reuses, recycles, and donates material generated from commercial remodeling projects.
- **Southeast Resource Recovery Facility** – a waste-to-energy facility in Long Beach that receives about 100 tons of waste per day from City generators.
- **Sunshine Canyon Landfill** – a landfill owned and operated by BFI/Republic Services, Inc., that receives about 5,000 tons of waste per day from City generators.

As a result of the tours and workshop, stakeholders had a better understanding of the types of facilities that might be needed in the City over the next 20 years.

2.6.3 Citywide Conference 2 – Policy, Program, and Facility Options

The second citywide conference in February 2008 began with a Zero Waste film festival and a welcome from City officials. The almost 400 participants then broke into groups to discuss the goals and objectives and the policy, program, and facility options available for achieving Zero Waste.

At this citywide conference, two methods of evaluation were used: a traditional facilitation method using small group discussion and a computer-based method using a computer-based decision tool.

In partnership with the City, a computer-based decision tool was developed by Professor Krystyna Stave of the Department of Environmental Studies at the University of Nevada, Las Vegas (UNLV). Prof. Stave is an expert in system dynamics (an approach for understanding the behavior of complex systems) and has developed system dynamics simulation tools to assist stakeholders in participating in public policy planning for other resource conservation projects (including transit and traffic studies and water conservation and management).

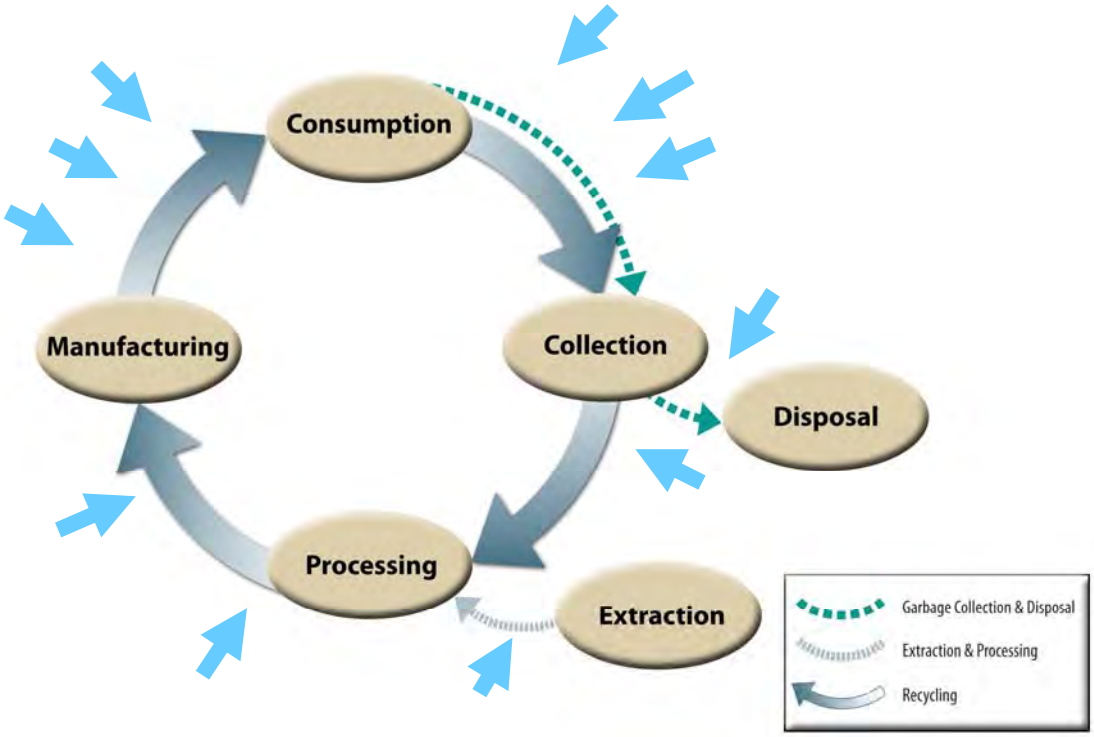
To support UNLV's research, the stakeholders at the conference were divided into two groups. One group used the decision tool developed by UNLV to test the effectiveness of the leverage points, and the other group used the traditional facilitation method of small group discussions with trained facilitators to

assist the stakeholders in prioritizing the leverage points. The hypothesis being tested by UNLV was that stakeholders using the decision tool would choose the more "effective" leverage points (those with the higher potential of reducing waste to landfills if implemented). UNLV's research concluded that the stakeholders using the decision tool had a better understanding of the information and focused more on the information that had been presented. Stakeholders in the traditional facilitation group, however, were more satisfied with the evaluation process and were more confident in their recommendations.

The purpose of the facilitated discussion and the computer-based decision tool was to help stakeholders understand the City's solid waste system and evaluate the consequences of strategic options for achieving Zero Waste.

As illustrated in Figure 12, the structure of the decision tool was based on the Zero Waste loop and the "leverage points" around that loop where the City can influence the flow of materials though the system.

Figure 12: Leverage Points along the Zero Waste Loop



Stakeholders were introduced to the concept of a "leverage point" and were then asked to identify and discuss the leverage points around the Zero Waste loop.

The idea of a leverage point is…

If we could change something by a certain amount, what impact would it have on the system?

The eight strategic leverage points that were tested by the stakeholders were:

Manufacturing

1. Increase the average useful life of consumer products
2. Reduce the amount of waste in products and packaging
3. Increase the recycled content of products and packaging
4. Make products and packaging more recyclable

Consumption

5. Change the average amount of material consumed by each consumer

Collection

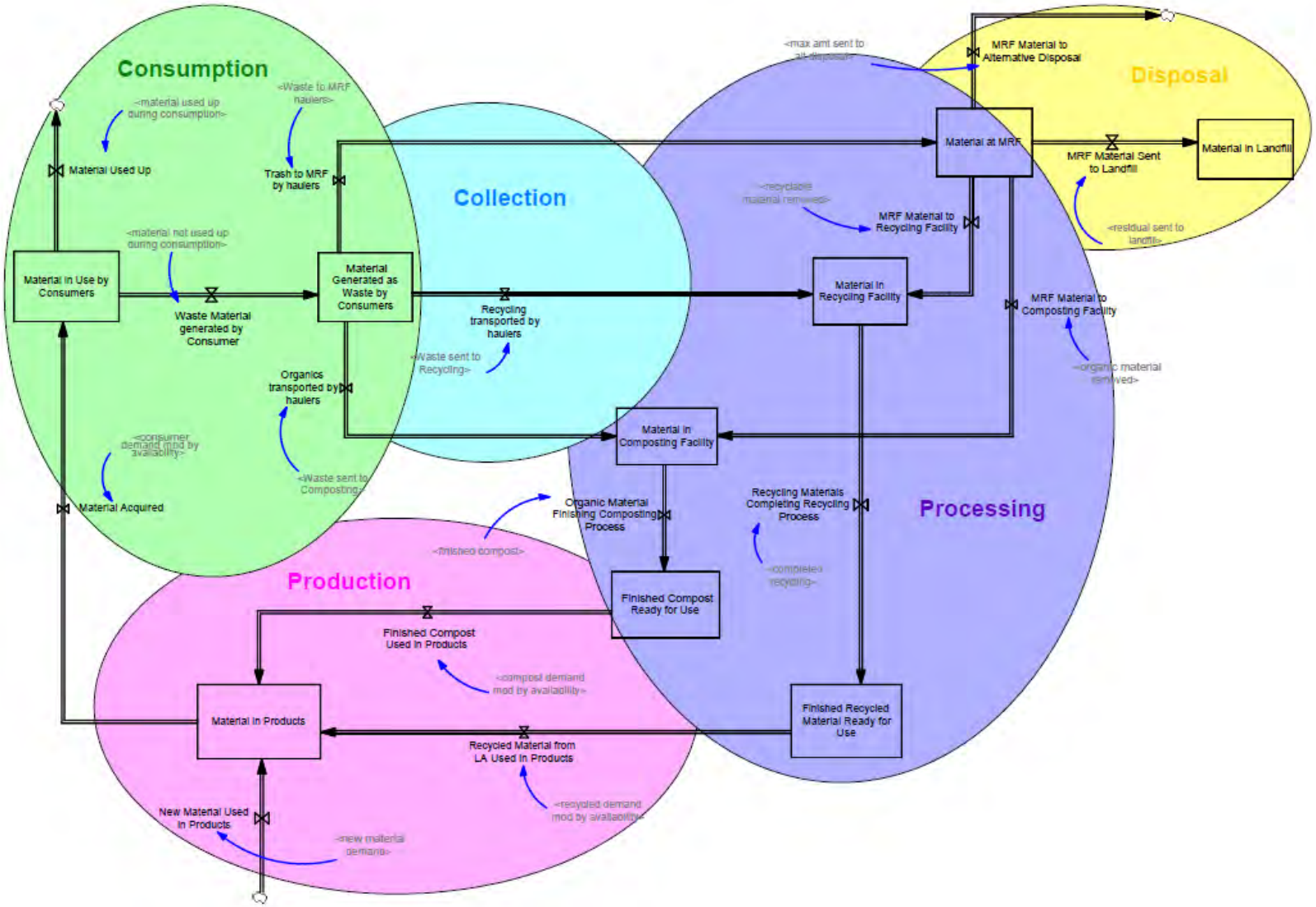
6. Increase consumer diversion rates

Processing

7. Increase the processing capacity for diverted materials
8. Increase capacity for Alternative Technologies

The backbone of the decision tool developed by UNLV mirrored these leverage points. Figure 13 shows how materials flow through the system from production and consumptions to collection, processing, and disposal.

Figure 13: Material Flow Backbone of the Zero Waste Decision-Tool



Stakeholders tested the eight strategic leverage points through the Zero Waste decision tool interface shown in Figure 14. The decision tool included six measures for comparing the output of the strategic decisions:

- Waste sent to landfill
- Material diverted
- Diversion rate
- Relative greenhouse gas emissions reduction
- Relative cost
- Relative effort of implementation

Stakeholders used the decision tool to test the leverage points by manipulating the toggle bars (increasing product lifetime, reducing waste in packaging, etc.) and observing the outputs.

Figure 14: User Interface of Zero Waste Decision Tool



Stakeholders in both groups discussed the strengths and weaknesses of each leverage point, evaluated the effectiveness of each leverage point, and prioritized each leverage point on a scale of 1 (low) to 10 (high) based on how aggressively the City should invest its time, energy, and resources into the leverage point. Stakeholders prioritized each leverage point based on how much effort the City should put into each leverage point:

- Most effort (9 to 10 points)
- More effort (7 to 8 points)
- Average effort (5 to 6 points)
- Less effort (3 to 4 points)
- Least effort (1 to 2 points)

Table 4 summarizes the results from the citywide conference. Stakeholders directed the City to put more emphasis in the traditional roles of city government, thereby increasing consumer diversion and processing capacity. Stakeholders directed the City to put less emphasis on strategies that are typically outside of the control of local government, thereby increasing the useful life of products.

Table 4: Citywide Conference 2 Results

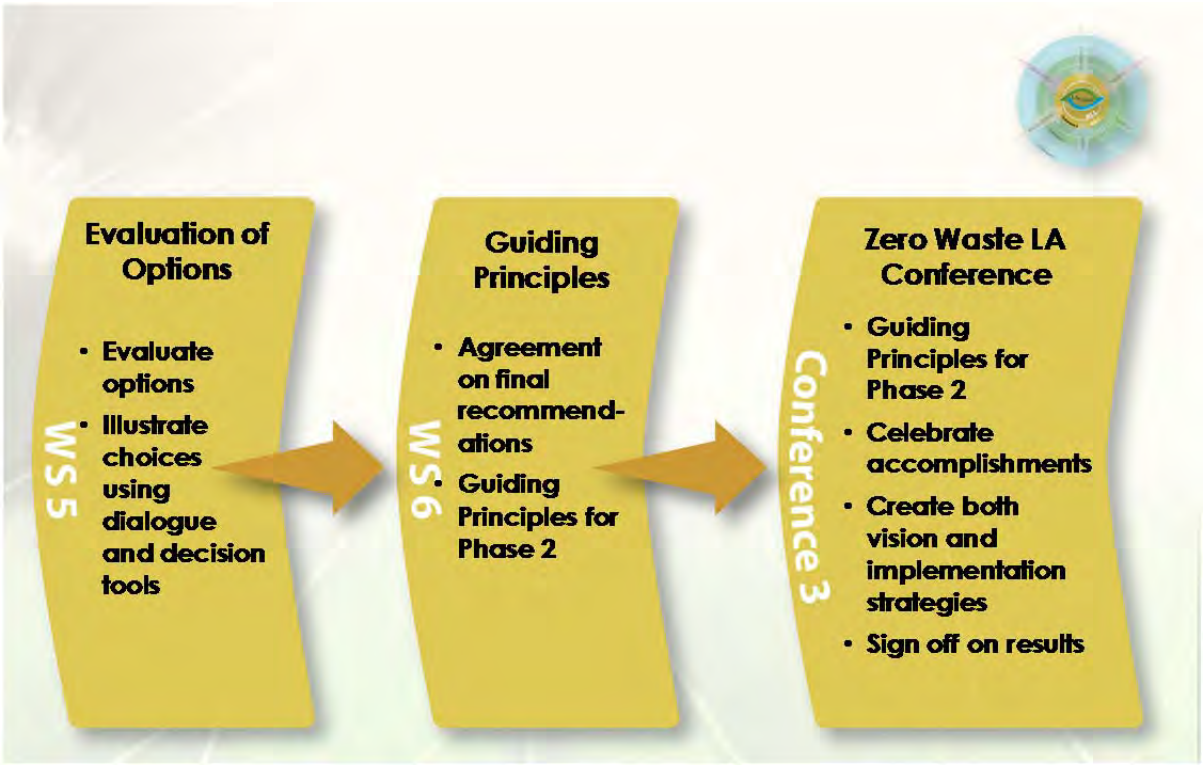
Leverage points	Priority
1. Increase useful life of products	**6**
2. Reduce waste in products	**8**
3. Increase recycled content in products	**7**
4. Make products more recyclable	**7**
5. Change consumption	**7**
6. Increase consumer diversion	**8**
7. Increase processing capacity	**8**
8. Increase Alternative Technology	**8**

Stakeholder recommendations from conference series 2 were used in conference series 3 to develop the guiding principles.

2.7 Conference Series 3

The third conference series focused on the stakeholder guiding principles and recommendations. Figure 15 illustrates the workshop process leading up to the third citywide conference.

Figure 15: Conference Series 3 Guiding Principles for Phase 2



2.7.1 Workshop 5 – Evaluation of Options

The discussion of leverage points led stakeholders to think about the types of concepts or strategies that would emerge as "guiding principles" for SWIRP. At workshop series 5 in February 2008, stakeholders reviewed the results of the citywide conference and discussed regional priorities. Throughout the regional workshop discussions, there was a high degree of consensus on the priorities of the leverage points. Similar to the results from the citywide conference, stakeholders at the regional workshops directed the City on the level of effort to put into each leverage point, as shown in Table 5.

Table 5: Workshop 5 Results

Leverage points	Downtown	West Valley	East Valley	North Central	Western	South LA	Harbor	Average
1. Increase useful life of products	5	6	6	7	6	6	6	6
2. Reduce waste in products	7	8	7	9	8	8	8	8
3. Increase recycled content in products	6	7	7	8	8	8	8	7
4. Make products more recyclable	7	8	7	8	8	8	9	8
5. Change consumption	8	7	7	8	7	8	7	7
6. Increase consumer diversion	9	8	8	9	9	7	9	8
7. Increase processing capacity	9	7	8	9	8	7	9	8
8. Increase Alternative Technology	9	9	8	8	8	8	9	8

Stakeholders then discussed the "emerging guiding principles" that were identified through the stakeholder planning process, including:

- **Education** – stakeholders asserted that the City should put more emphasis on educating residents and businesses about existing City programs and instilling a "Zero Waste culture" in the City. A key strategy for increasing awareness among the next generation of Angelenos was the stakeholder recommendation to partner with LAUSD on developing a Zero Waste curriculum and increasing recycling in the schools.

- **City leadership** – stakeholders agreed that the City should "walk its talk" by demonstrating leadership in recycling at all City facilities and parks. The City should also use its stature in Sacramento to lobby for State legislation on initiatives that are best implemented at the state level, such as producer responsibility and packaging legislation.
- **Consumer responsibility** – stakeholders believe that consumers, including both residents and businesses, need to be part of the solution and should be required to participate in recycling and composting programs.
- **Manufacturer responsibility** – stakeholders supported initiatives to encourage or require producers of products and packaging to take responsibility for the end of life of those products and packaging.
- **Convenience** – stakeholders felt that recycling programs should be convenient and it should be as easy to recycle, as it is to waste. A key strategy for increasing convenience is to provide recycling receptacles wherever there are waste receptacles.
- **Incentives** – stakeholders suggested that the City provide more incentives for recycling and composting, such as "pay-as-you-throw" rate structures.
- **New, safe technology** – stakeholders supported the development of new technology for managing our waste. However, stakeholders emphasized that the technology would need to be demonstrated to be safe and should not impact already burdened communities.
- **Protect public health and the environment** – stakeholders strongly believed that protecting public health and the environment should be a primary tenant of the *Zero Waste Plan*.
- **Equity** – throughout the planning process, stakeholders supported the concept of equity, and shared responsibility for taking care of our waste problems. Stakeholders felt that all areas of the City should share in the burden and benefits of new facilities and new developments should pay their fair share of the system-wide costs. Green jobs created by new programs and facilities should support the local communities, including disadvantaged youth and recently incarcerated residents who need help transitioning back into the community.

2.7.2 Workshop 6 – Guiding Principles

Workshop series 6 in March 2008 focused on discussing the emerging guiding principles. The guiding principles were based on the ideas and priorities that the stakeholders had been discussing since workshop series 1 in August 2007 and included thoughtful consideration of the goals, policies, programs, facilities, and leverage points that emerged over the course of the workshops and citywide conference. Throughout the regional workshops, stakeholders refined and expanded on the guiding principles originally discussed during workshop series 5. Stakeholders clarified that "education" should include both education to decrease consumption and education to increase recycling. Stakeholders also expanded "city leadership" to include both "City leadership as a model for Zero Waste practices" and "City leadership to increase recycling." Stakeholders also identified another important guiding principle: "economic efficiency." The City must invest carefully in new programs and facilities but should also consider the

long-term economic benefits of reducing waste and creating a more-sustainable society. The result of these discussions led to the emergence of the final guiding principles.

Emerging Guiding Principles Identified during Workshop Series 6

1. Education to decrease consumption
2. City leadership as a model for Zero Waste practices
3. Education to increase recycling
4. City leadership to increase recycling
5. Manufacturer responsibility
6. Consumer responsibility
7. Convenience
8. Incentives
9. New, safe technology
10. Protect public health and the environment
11. Equity
12. Economic efficiency

Stakeholders were then asked to apply these principles to a policy issue pending before the City Council regarding plastic litter in the Los Angeles river watershed and the ocean. Stakeholders discussed potential policy options to address plastic litter in the environment, concerns about these policies, and potential solutions.

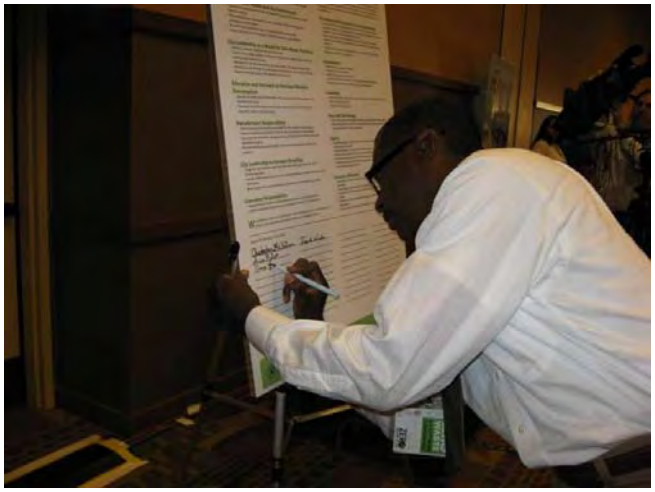
Potential Policy Options to Address Plastic Litter in the Environment

- Mandatory recycling
- Product takebacks
- Expanded polystyrene foam ban
- Plastic bag ban
- Fee on single-use items
- Mandatory rebate for bringing reusable bags or takeout containers

Stakeholders supported the City Council in taking action to reduce plastic litter in the environment but were concerned about financial impacts on low-income families and "mom and pop" businesses, since alternatives to plastic bags and EPS take-out containers are sometimes more expensive. Stakeholders

favored State legislation and a uniform approach. In July 2008, the City Council voted to initiate local legislation to ban plastic bags from stores and supermarkets in the City if, by 2010, the State fails to impose a 25-cent fee on every shopper who requests them. The City Council also directed City staff to phase out the use of expanded polystyrene foam takeout containers at City facilities, thus demonstrating a key guiding principle—City Leadership as model for Zero Waste practices.[48]

2.7.3 Citywide Conference 3 – Recommendations



A Community Member Signing Off on the Zero Waste Goals

On May 3, 2008, the City concluded Phase 1 of the SWIRP planning process with the final citywide conference. Nearly 400 people participated in this conference, which began with speeches by Commissioner Cynthia Ruiz, former President of the Board of Public Works, and Enrique Zaldivar, Director of LASAN. The conference was focused on the stakeholders and their SWIRP experiences and included two panel discussions.

The first panel included seven community members representing the City's seven regional working groups (from the six wastesheds plus the downtown daytime working group) who discussed their experience with the planning process and the results of Phase 1.

The second panel was a Zero Waste Challenge panel that included three presentations from community members who shared the steps they had undertaken to get closer to Zero Waste at home, at school, and at work. One speaker focused on his food scraps composting project at home and his concept of making "salad for the garden." Two LAUSD students gave a presentation of the results of their project to achieve Zero Waste at home and at school by recruiting multi-family buildings to participate in the City's new collection program and initiating recycling at their school. The third speaker described the Zero Waste strategies that had been implemented in his company's supply chain operations.

The third citywide conference was a celebration of the achievement of the stakeholders. A banner with the 12 guiding principles was prominently hung, and large mounted poster boards were stationed around the room for the community members to sign.

[48] On May 23, 2012, the City Council adopted a policy to ban distribution of single-use plastics bags and impose a 10-cent fee on single-use paper bags at supermarkets and select retail stores within the City. The effective date of the ordinance was August 1, 2013 and will apply to specified retail stores on January 1, 2014 (Council File number 11-1531).

2.8 Guiding Principles

The result of the citywide stakeholder outreach process yielded a set of guiding principles that stakeholders recommended be applied to all policies and projects in the future. At the third citywide conference, stakeholders signed a pledge to guide and support the City in the development of SWIRP and adopted the guiding principles to provide the over-arching vision for the plan. The following are the 12 guiding principles that were adopted by the stakeholders at the third citywide conference.

2.8.1 Protect Public Health and the Environment

- Protection of public health and the environment should be at the forefront of all decision-making.
- When embarking on any new idea or plan, carefully consider the long-term consequences and impacts.
- Be careful not to adversely impact already burdened communities.
- Reduce the City's "carbon footprint" through greenhouse gas reduction.



Providing Outreach to All Community Members

2.8.2 City Leadership as a Model for Zero Waste Practices

- Become a national model for Zero Waste practices.
- Use the City's market presence and purchasing power to support waste reduction and recycling in new purchases.
- Advocate for new citywide policies to reduce waste and increase recycling and composting both through local ordinances and programs and through continual leadership and advocacy at the regional and state levels.

2.8.3 Manufacturer Responsibility

- Hold businesses and industry accountable for their products and packaging.
- Require manufactured products to be reusable, recyclable, and/or compostable.
- Encourage deconstruction, salvage, and reuse of materials from C&D projects.
- Educate industry about the economic benefits of environmentally preferable materials and products.



Community Outreach Event

2.8.4 Incentives

- Provide incentives, such as tiered rates or rebates, to encourage residents and businesses to reduce, reuse, and recycle.
- Use "carrots," not just "sticks."

2.8.5 City Leadership to Increase Recycling

- Create the most effective waste reduction and recycling programs at all City facilities and parks.
- Provide model waste reduction and recycling programs to residents, businesses, and institutions.
- Work closely with recycling facilities to determine new markets for recyclables.
- Facilitate the expansion of new and existing processing capacity.

2.8.6 Convenience

- Make recycling easy and convenient.
- Solutions need to be "doable."
- Make recycling easier than wasting.
- Implement a "Blue Dot" system that identifies all recyclable materials.
- Place recycling bins next to all trash cans in all public locations.



Zero Waste Workshop Brainstorming Session

2.8.7 Economic Efficiency

- Find solutions that are both economically efficient and environmentally preferable.
- Costs should not outweigh other considerations.
- Account for the full economic impacts of decisions rather than short-term cost savings.
- Promote economic sustainability through investment in green jobs and economic development.
- Invest in future generations and long-term solutions.



Zero Waste Workshop

2.8.8 Education and Outreach to Decrease Wasteful Consumption

- Educate the public about the benefits of decreasing wasteful consumption.
- Zero Waste should become second nature as part of the culture of the family, education system, and community.

2.8.9 New, Safe Technology

- Invest in new technologies that help to accomplish Zero Waste goals.
- New technologies must be safe and avoid adversely impacting the public health and environment of the host community.

2.8.10 Equity

- Promote equitable solutions that do not unfairly reward or penalize one community over another.
- Share the benefits and impacts fairly among each community.
- Do not unfairly burden existing ratepayers with the impacts from new development.
- Provide Zero Waste solutions for all community members, from residential curbside and multi-family generators and small and large businesses to churches, schools, and community-based organizations.
- Do not burden environmentally sensitive natural or wilderness areas or impacted communities.

2.8.11 Education and Outreach to Increase Recycling

- Partner with the Los Angeles Unified School District, private schools, and preschools to integrate Zero Waste into their curricula and to implement Zero Waste systems for all schools and administrative offices.
- Fund ongoing Zero Waste education and outreach programs for residents, businesses, and visitors and provide timely updates about the new rules and changes over time.
- Communicate using terms that everyone can understand and in the many languages spoken in our community.



Providing Educational Materials to the Community

2.8.12 Consumer Responsibility

- Require that all residents and businesses participate in recycling programs.
- SWIRP stakeholders should become advocates for the City's *Zero Waste Plan*.

These guiding principles were the culmination of all of the stakeholder input and would be used to guide the development of the Phase 2 *Policy, Program, and Facility Plan*. These principles provide the framework for evaluating the feasibility of new policies, programs. or facilities for the City's waste management system to achieve the City's goal of Zero Waste.



Section 3 Transition from Phase 1 to Phase 2

3.1 Phase 1 Results and Phase 2 Planning Process

Phase 1 of SWIRP concluded in May 2008 with the adoption of the 12 guiding principles. This section describes how the Phase 1 results drive the Phase 2 planning process, introduces the Phase 2 planning process, and provides the Phase 2 timeline. The Phase 2 outreach process is fully described in Volume II of SWIRP, the *Policy, Program, and Facility Plan*.

3.1.1 Phase 1 Focus and Introduction to Phase 2

The goal and focus of Phase 1 of the SWIRP planning process was to reach out to stakeholders from all over the City to participate in a stakeholder-driven planning process to identify the guiding principles for the Phase 2 *Policy, Program, and Facility Plan*. During Phase 1, stakeholders provided the City with their vision of the sustainable City of the future, where the City demonstrates its leadership in recycling and Zero Waste; all residents and businesses fully participate in the City's recycling and composting programs; and all future generations learn and share in the goals and values of Zero Waste. Stakeholders identified and discussed the policies, programs, and facilities that will be needed to implement this vision.

In Phase 1, stakeholders undertook a community-based consensus process resulting in the adoption of stakeholder guiding principles. In Phase 2, the City worked with the stakeholders to bring the vision to reality.

The Phase 2 planning process included the following activities:

- Continue to build on the community consensus process established in Phase 1 through regular meetings of the regional working groups.
- Conduct a detailed review of the City's current and future diversion and disposal needs.
- Further define and describe the integrated resource management system including the policies, programs, and facilities identified in Phase 1, and describe how they will be integrated into the City's current and planned solid waste system.
- Develop and describe scenarios for achieving the goals and objectives identified in Phase 1, including:
    - Policies for minimizing waste generation at the source and maximizing recovery of materials generated
    - Requiring manufacturers to take responsibility for the ultimate disposition of products and packaging
    - Facility alternatives, such as neighborhood-based Resource Recovery Parks, regional processing and Alternative Technologies, and ultimate disposal options for residual solid waste
- Assist the stakeholders in identifying scenarios for final evaluation and selection of the preferred alternative to each scenario.

- Document and describe the preferred system scenario and develop the *Policy, Program, and Facility Plan*.
- Carefully review the system elements and evaluate their impacts to the City's environment.
- Develop a funding and financing plan that includes an economic analysis of the Zero Waste system, a projection of capital and operating costs for the system elements, the impacts on the ratepayers, and alternative fee mechanisms.
- Produce a detailed implementation plan that includes all of the tasks, including the decision points and detailed implementation steps, necessary to implement the integrated resources system, including all policies, programs, and facilities.

The result of the Phase 2 planning process is a detailed community-based implementation plan that documents the planning and consensus-building effort and provides a detailed path to the City's future.

3.1.2 Phase 2 Planning Process

Phase 2 of the SWIRP planning process culminates in the development of the stakeholder-driven *Policy, Program, and Facility Plan*. The elements of the plan include:

- Analysis of the policies, programs, and facilities identified during Phase 1 to estimate their diversion potential and planning-level costs
- Development of a material flow model to pinpoint diversion opportunities by projecting tons generated by generator sector and material type citywide and within the City's six wastesheds though 2013
- Evaluation of the policies, programs, and facilities based on scenarios identified through the stakeholder planning process

3.1.2.1 Policy, Program, and Facility Analysis

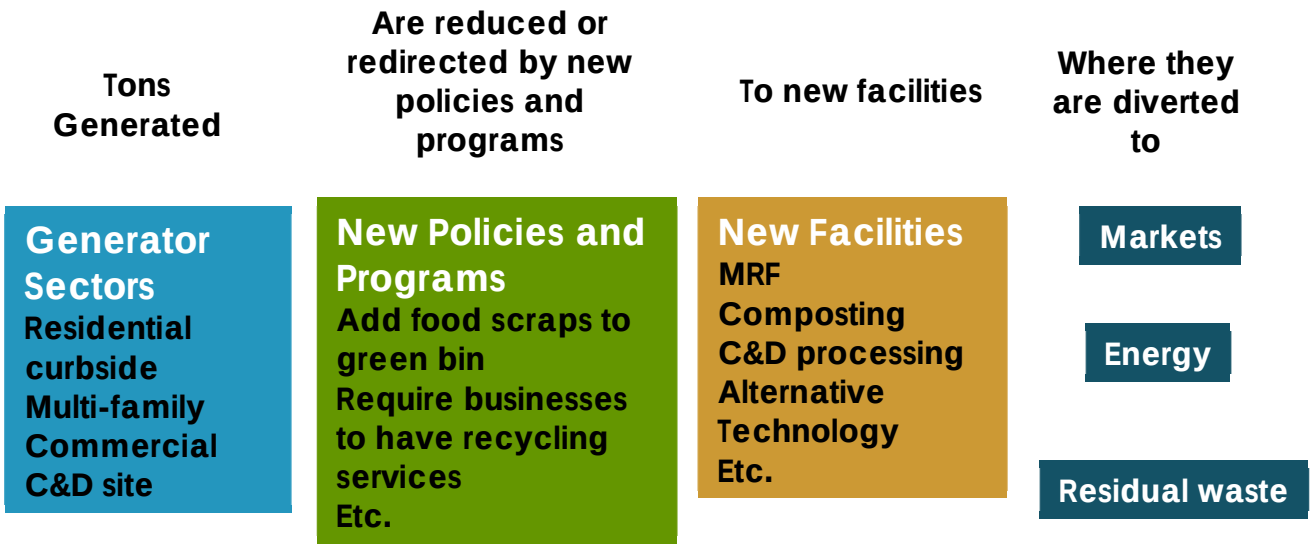
The policy and program analysis includes defining and describing the policies and programs identified by the stakeholders during the Phase 1 planning process. In order to evaluate the effectiveness of the policies and programs in diverting materials from disposal, the policy and program analysis includes estimates of the potential diversion rates and planning-level costs for each policy and program. The analysis also includes research and documentation of benchmarking of programs from other jurisdictions.

The facility analysis includes developing descriptions of the facility types that will be needed in the City through 2030; identifying the existing facility infrastructure in the City and in the region that are used by generators in the City; evaluating the existing capacity for managing recyclables, organics, and residual solid waste in the City; and identifying the future facility requirements. The facility analysis includes estimates of the potential diversion rates and planning-level costs for each facility type. The analysis also includes a description of design elements and other operational considerations for mitigating impacts of facilities to enhance community acceptance and identification of market development opportunities in the City.

3.1.2.2 Material Flow Model

The material flow model is designed to pinpoint diversion opportunities for targeted materials by generator sector through 2030. Based on projections of waste generation and documented assumptions for participation rates and efficiency, the material flow model is able to estimate the diversion potential of different policies, programs, and facilities. Figure 16 depicts how the material flow model works. Tons generated by residential curbside, multi-family, commercial, and C&D sites are reduced by new policies and programs and then are directed to new facilities, where they are diverted to market or converted into energy, and residual solid waste is finally disposed.

Figure 16: Material Flow Model Flow Diagram



3.1.2.3 Scenario Evaluation

During the Phase 2 planning process, stakeholders evaluated scenarios for implementation. Based on an interactive process involving the regional working groups, the initial list of scenarios was screened qualitatively to focus on those alternatives that have the highest potential for success considering cost, impact, feasibility, and implementation requirements. The City analyzed the remaining options to estimate the impacts and costs through 2030. The projected impacts of these alternatives were compared to baseline projections of waste generation and disposal to determine how much material could be diverted over time. The impacts of different programs were combined to project overall progress toward the City's goals and the estimated total cost of reaching those goals. Based on stakeholder direction, evaluation using the guiding principles, and assessments about diversion potential, cost-effectiveness, and other community values, the stakeholders identified a preferred path for implementation.

3.1.3 Phase 2 Stakeholder-Driven Planning Process

The stakeholder-driven planning process continued in Phase 2 with regional meetings of the working groups and the fourth citywide conference. Table 6 provides the schedule for the SWIRP Phase 2 planning process.

Table 6: Phase 2, Year 1 Schedule September 2008 through May 2009

Sep	Nov	March	May 30th
Workshop Series 7 The Road to Zero Waste Continues	Workshop Series 8 Key Issues for the Zero Waste Plan	Workshop Series 9 Evaluating Scenarios for Zero Waste	4th Citywide Conference Policy, Program, and Facility Plan

3.1.3.1 Workshops

The focus of workshop 7 in September 2008 was the Phase 2 workplan: future program and policy development, future service needs by wasteshed, facility capacity needs, new technologies, and disposal options for residual solid waste.

In response to stakeholder input, workshop 8 in November 2008 included the following key issues for discussion: Zero Waste culture change, planning and management of private solid waste facilities, solid waste infrastructure and service voids, and the status of the City's research into new technologies.

During workshop 9 in March 2009, the stakeholders evaluated the policy and program scenarios and discussed the "blue bin" and "green bin" processing facilities and "black bin" processing facility options.

3.1.3.2 Citywide Conference

The fourth citywide conference in May 2009 culminated the Phase 2, Year 1 planning process with an overview of the draft *Policy, Program, and Facility Plan* and feedback from stakeholders through panel discussions and the debut of the SWIRP stakeholder video "Reaching for Zero." Stakeholders were also treated to a Zero Waste fashion show produced by Haute Trash, a nonprofit organization comprised of designers who create fashions out of discarded materials in order to raise awareness about resource conservation and promote Zero Waste.

3.1.3.3 Goals and Expectations

The purpose of the Phase 2 effort was the development of the stakeholder-driven *Policy, Program, and Facility Plan*, which incorporates all of the stakeholder vision and goals for Zero Waste, policies and programs to be implemented by the City, and feedback and direction on future facility development.

3.2 Phase 2 Timeline

3.2.1 Phase 2 Workplan

The Phase 2 planning process included the development of the *Policy, Program, and Facility Plan* in 2008 and 2009, the Program Environmental Impact Report, and the *Financing and Funding Plan* and implementation strategy in 2010 through 2013. Table 7 provides the schedule for Phase 2. Stakeholder meetings continued throughout the planning process to ensure that all of the components of the plan incorporate the vision and goals of the stakeholders.

Table 7: Phase 2 Schedule 2008 through 2013

2008-2009	2010-2013
Tasks o **Policy, Program, and Facility Plan** **Events** o **Regional workshops** o **4th citywide conference**	**Tasks** o **Environmental Impact Report** o **Financing and Funding Plan** o **Implementation strategy** **Events** o **Regional workshops** o **5th Citywide conference**

3.2.1.1 Policy, Program, and Facility Plan

Phase 2, the *Policy, Program, and Facility Plan*, fully describes all components of the integrated solid resources system, including all policies, programs, and facilities. The plan fully describes the policies and programs identified by the stakeholders for implementation and quantifies the diversion potential and planning-level costs. The plan also identifies the new "blue bin" and "green bin" processing capacity that will be needed as a result of implementing the new programs. It also identifies and describes the "black bin" processing facilities that could be developed in the City to treat residual solid waste prior to ultimate disposal.

3.2.1.2 Environmental Impact Report

All discretionary actions of the City are subject to conformance with the California Environmental Quality Act (CEQA). CEQA requires that the City identify the significant environmental impacts of its actions and avoid or mitigate those impacts, if feasible. For the *Policy, Program, and Facility Plan*, the City prepared a Program Environmental Impact Report (EIR) to evaluate the potential impacts of implementing the policies, programs, and facilities identified in the plan. Since specific facilities and sites are not identified in this planning-level document, the Program EIR evaluates the impacts at a citywide level. Specific facility projects that are developed in the future will require the City to prepare project EIRs specific to those facilities and locations. Even actions that appear to be good for the environment, could have unintended environmental impacts. Evaluation of these types of impacts is important prior to City Council action to adopt the plan.

3.2.1.3 Funding and Financing Plan

The City has developed a funding and financing plan to identify the funding mechanisms for implementing the Zero Waste programs. The funding and financing plan includes a detailed economic model that project the costs, revenues, and rate impacts of the integrated resources plan through 2030. The funding and financing plan incorporates the existing and planned City infrastructure and synthesizes this information with the cost model developed for the system components. The funding and financing plan includes the impacts on the ratepayers and alternative fee mechanisms.

3.2.1.4 Implementation Strategy

Concurrent with the development of the funding and financing plan, the City developed a detailed implementation strategy. The implementation strategy is a roadmap to the City's integrated resources management future and describes how all existing and planned policies, programs, and facilities will work together to achieve the City's goals. The implementation strategy includes all of the analyses and information developed for each task in Phase 2, including:

- Waste models, material flows, and generation projections
- Existing programs and facilities analyses and service voids
- Policy, program, and facility system components
- *Policy, Program, and Facility Plan* summary
- Funding and financing plan summary
- Action plan and schedule



The City's Littlest Stakeholder

Section 4 Phase 1 Conclusion

4.1 What Did We Accomplish?

The Phase 1 planning process for SWIRP included both contemplating our future Zero Waste system in separate regional groups throughout the City and coming together to share both our differences and our common goals through the citywide conferences. The regional workshops allowed stakeholders to define themselves as regions within the City for planning and deliberation. The citywide conferences brought the regional groups together to share findings and observations and identify communitywide goals.

Differences between the working groups emerged. For example, in both the Harbor and the East Valley, stakeholders are impacted by existing facilities and feel as though they already have their fair share of the burden of these facilities. Stakeholders in South LA were very focused on changing the culture away from wasting and increasing economic development and green jobs. Stakeholders in North Central were very interested in new policies and programs (including food scraps diversion and EPS take-out container bans), and stakeholders in West LA and West Valley were very interested in new technologies. The Downtown working group was very pragmatic about how future programs and facilities would be implemented and what they would cost. All of the regional working groups shared the view that the most important thing the City can do is increase education and awareness among residents, businesses, students, government workers, and visitors.

While there were differences across the City, the vision and goals were remarkably consistent. Stakeholders concurred on the top goals for SWIRP. There was tremendous support for the 12 guiding principles that emerged as a result of both regional discussions and the citywide celebrations. Stakeholders found that despite differences in demographics and geography, stakeholders throughout the City had more in common than they had differences. All of the stakeholders supported the City's vision of a cleaner, greener City, and all embraced the path toward Zero Waste, recognizing that change will not come overnight but that change is necessary for our families and our future. The investment will take time, energy, and effort. But the investment will be worth it.

4.2 Why Does it Matter?

"Our planet is under a lot of pressure—as the population of the world grows, more and more people are producing trash. If we don't recycle and we continue to use up Earth's non-renewable resources and waste energy, global warming will affect the environment, plants, animals, and people. This will lead to the extinction of the human race, and more importantly, all life on Earth."

Rebecca Snegg and Wendy Rodgers,
6th graders from West LA
SWIRP Citywide Conference, May 2008



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Volume II Solid Waste Integrated Resources Plan

Phase 2 Policy, Program, and Facility Plan

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Acknowledgements

City of Los Angeles

Volume II Solid Waste Integrated Resources Plan
Phase 2 Policy, Program, and Facility Plan

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April 2015

Acknowledging the City representatives responsible for final adoption of the Solid Waste Integrated Resources Plan in April 2015.

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Phase 2 Policy, Program, and Facility Plan

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List of Acronyms, Abbreviations, and Definitions

AB 2020	Assembly Bill 2020, the California Beverage Container Recycling and Litter Reduction Act, "Bottle Bill"
AB 32	Assembly Bill 32, the Global Warming Solutions Act of 2006
AB 341	Assembly Bill 341 established the statewide goal of 75 percent by 2020 and mandatory commercial recycling by July 2012 (chaptered October 6, 2011)
AB 939	Assembly Bill 939, the California Integrated Waste Management Act of 1989 Public Resources Code, Section 40000 et seq.
AD	Anaerobic Digestion
ADC	Alternative Daily Cover
Advanced Thermal Recycling	Advanced Thermal Recycling (ATR) is a second generation advancement of waste-to-energy technology in which municipal solid waste (MSW) is converted, in an oxygen rich environment, to a hot exhaust gas composed primarily of carbon dioxide and water vapor. The inorganic material is converted to bottom ash, for beneficial use, and fly ash which requires disposal. The hot exhaust gas can be used to generate heat or steam to in turn produce electricity. ATR is equipped with advanced pollution control technologies that include both Selective Catalytic Reduction (SCR) and Selective Non-Catalytic Reduction (SNCR) systems that effectively diminish air emissions to a greater extent than its predecessors. ATR technology has been commonly applied in Europe to produce energy from MSW. Currently, no facility of its type exists in the United States.
APC	Air Pollution Control System
Alternative Technology[1]	"Alternative Technology" is a term that refers to specific technologies for treating residual solid waste, such as: thermal, biological, chemical, and physical technologies. Some examples of thermal technology include plasma arc gasification, pyrolysis, and advanced thermal recycling. Some examples of biological technologies include anaerobic digestion and aerobic composting. Examples of physical technologies include autoclaving and advanced materials recovery systems.
ARF	Advanced Recycling Fee

[1] *Evaluation of Alternative Solid Waste Processing Technologies*, URS Corporation, September 2005. http://www.alternativetechnology.lacity.org/PDF/final_report.pdf (accessed October 1, 2013).

List of Acronyms, Abbreviations, and Definitions (continued)

ASP	Aerated Static Piles
ATB	Alternative Technology: Biological
ATR	Alternative Technology: Advanced Thermal Recycling
ATT	Alternative Technology: Thermal
Black bin facilities	"Black bin facilities" are facilities capable of processing residual waste from residential black bins, commercial solid waste sources, or residual waste from processing facilities.
Black bin materials	"Black bin materials" are discarded materials that are handled or controlled by the City directly or through permits, including discarded materials from residential, commercial, and institutional sources.
Blue bin facilities	"Blue bin facilities" are facilities capable of processing source-separated recyclable and reusable materials, including materials recovered from the Bureau of Sanitation blue bin program and source-separated commercial recycling. Other facilities for source-separated materials are also included within this category, including Resource Recovery Centers for self-hauled materials and construction and demolition debris (C&D) processing facilities.
Blue bin materials	"Blue bin materials" are source-separated recyclable materials that have been separated from residual waste for recycling, including recyclable materials from residential, commercial, and institutional sources.
BOE	Board of Equalization
BSS	Bureau of Street Services
C&D	Construction and demolition debris
CA	California
Cal/EPA	California Environmental Protection Agency
CEQA	California Environmental Quality Act
CalRecycle	California Department of Resources Recycling and Recovery
CARB	California Air Resources Board
City	City of Los Angeles
CLARTS	Central Los Angeles Recycling & Transfer Station

List of Acronyms, Abbreviations, and Definitions (continued)

Clean MRF	Clean Material Recovery Facility for processing source-separated recyclable materials from residential and commercial sources. Refer also to "blue bin facilities."
Commercial and Multi-Family Private Hauler Franchise Initiative	"Commercial and Multi-Family Private Hauler Franchise Initiative" or "Franchise Initiative" is a City Council initiative to move from the current private hauler permit system to a franchise system for collection of discarded materials from multi-family and commercial properties not collected by the Bureau of Sanitation. Refer also to "Private Hauler Franchise Initiative."
Contaminants	"Contaminants" are the non-recyclable, non-compostable materials left over after processing residual waste or source-separated recyclables or organics. This material is typically disposed in a landfill. Refer also to "residue."
Conversion Technology[2]	"Conversion Technology" is a term that refers to specific solid waste processing technologies including, but not limited to, non-combustion thermal technologies, such as gasification and pyrolysis; chemical technologies such as acid hydrolysis or distillation; and biological technologies such as anaerobic digestion. For the purposes of this report, Conversion Technology is a subset of Alternative Technology consisting of technologies that do not employ direct combustion of the feedstock.
CRRR	Community Recycling and Resource Recovery
CRTs	Cathode ray tubes
CRV	California Redemption Value
DPW	Department of Public Works
EEI	Education and the Environment Initiative
EIR	Environmental Impact Report
EP&Cs	Environmental Principles and Concepts
EPA	Environmental Protection Agency
EPP	Environmentally Preferable Purchasing
EPPP	Environmentally Preferable Purchasing Policy

[2] California Environmental Protection Agency, New and Emerging Conversion Technologies Report to the Legislature, June 2007. http://www.calrecycle.ca.gov/publications/Documents/Organics%5C44205016.pdf (accessed October 1, 2013).

List of Acronyms, Abbreviations, and Definitions (continued)

EPR	Extended Producer Responsibility
EPS	Expanded polystyrene foam (typically used in take-out containers and coffee cups and also known as Styrofoam™).
E-waste	Discarded electronics such as computers and televisions
GHG	Greenhouse Gas
GPY	Gallons Per Year
Green bin facilities	"Green bin facilities" are facilities capable of processing yard trimmings, food scraps and other compostable materials, either source-separated or sorted from other residual waste at processing facilities.
Green bin materials	"Green bin materials" are source-separated organic materials that have been separated from residual waste for composting, anaerobic digestion, and mulching, including yard trimmings, food scraps, and compostable paper from residential, commercial, and institutional sectors.
HCl	Hydrochloric Acid
HDPE	High-density polyethylene, plastic used for milk jugs
HDPS	High-density polystyrene, plastic used in compact disk covers
HHW	Household Hazardous Waste
Hog fuel	"Hog fuel" is chipped wood or sawmill residues used as fuel at biomass facilities
LADWP	Los Angeles Department of Water and Power
LARA	Los Angeles Regional Agency
LARMDZ	Los Angeles Recycling Market Development Zone, designation includes the boundaries of the entire City of Los Angeles
LAUSD	Los Angeles Unified School District
LACSD	The Sanitation Districts of Los Angeles County
LASAN	City of Los Angeles Bureau of Sanitation
LEED	Leadership in Energy and Environmental Design, a program of the U.S. Green Building Council
LNG	Liquefied Natural Gas
Material stream	Materials that have been segregated from residual waste for recycling

List of Acronyms, Abbreviations, and Definitions (continued)

MMP	Mixed Material Processing for processing residual waste from residential and commercial sources
MRF	Material Recycling Facility. Refer also to "Clean MRF."
Multi-family complex	"Multi-family complex" or "Multi-family dwelling" is a building, structure, unit, or location designed for residential occupancy, exclusive of "Single-family residences." These are typically apartments, townhomes, and condominiums. Multi-family residences consisting primarily of three (3) and four (4) units are serviced by LASAN. Multi-family dwellings with five (5) units or more are primarily serviced by private sector commercial haulers. Some multi-family dwellings of five (5) units or more that have continually received City service have been "grandfathered" into public collection and will continue to receive residential curbside collection services from LASAN.
MW	Megawatt
NRDC	National Resources Defense Council
OCC	Cardboard
ONP	Newspaper
PAYT	Pay As You Throw
PET or PETE	Polyethylene terephthalate, plastic used for soda bottles
Private Hauler Franchise Initiative	"Private Hauler Franchise Initiative" or "Franchise Initiative" is a City Council initiative to move from the current private hauler permit system to a franchise system for collection of discarded materials from multi-family and commercial properties not collected by the Bureau of Sanitation. Refer also to "Commercial and Multi-Family Private Hauler Franchise Initiative."
R&D	Research and Development
R/C	Remainder/Composite
RACLA	Recycling Across Los Angeles
RDF	Refuse-Derived-Fuel
RENEW LA	Recovering Energy, National Resources, and Economic Benefit from Waste for Los Angeles

List of Acronyms, Abbreviations, and Definitions (continued)

Residential curbside	"Residential curbside" customers include generators in single-family residences and some multi-family residences, primarily with four units or less, serviced by LASAN.
Residual waste	"Residual waste" or "residual solid waste" refers primarily to the discarded materials that remain after reducing, reusing, recycling, and composting; or after processing the materials through a mixed materials processing facility. This material can be further converted into energy or fuel through an Alternative Technology facility or disposed as solid waste in a landfill.
Residue	"Residue" is the non-recyclable, non-compostable material left over after processing residual waste or source-separated recyclables or organics. This material is typically disposed in a landfill. Refer also to "contaminants."
RFID	Radio Frequency Identification Device
RRC	Resource Recovery Center
RRP	Resource Recovery Parks
S.A.F.E.	Solvents, Automotive, Flammables and Electronics
SB 20	Senate Bill 20, the Electronic Waste Recycling Act of 2003
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SIC	Standard Industrial Classification system
Single-family residence	"Single-family residence" or "Single-family home" is a building designed for residential occupancy, and containing one or two dwelling units (duplexes).[3] Single family residences and duplexes are serviced by LASAN.
Solid waste	"Solid waste" or "waste" has the meaning set forth in the California Public Resources Code Section 4019[4] and includes all discarded materials (residential, commercial, industrial, and institutional). "Solid waste" is generally used to refer to materials that have not been segregated for reuse, recycling or composting.
State	State of California
SWIRP	Solid Waste Integrated Resources Plan
Syngas	Synthesis gas

[4] California Public Resources Code: http://law.justia.com/california/codes/prc/40100-40201.html (accessed October 1, 2013).

List of Acronyms, Abbreviations, and Definitions (continued)

TAZ	Transportation Analysis Zone
Tip fee	"Tip fee" or "tipping fee" is the price charged to deliver materials to a solid waste or recycling facility.
tpd	Tons per day
tpy	Tons per year
U.S. (or US)	United States
U.S. EPA	United States Environmental Protection Agency
Waste stream	Materials that have not been segregated for reuse, recycling and composting
Wasteshed	"Wasteshed" refers to a geographic area within the City of Los Angeles consisting of a residential solid waste collection district. The City is divided into six wastesheds: East Valley, West Valley, South Los Angeles, North Central, West Los Angeles, and Harbor.
Waste-to-energy	"Waste-to-energy" is the process of combusting material in a chamber to produce heat. The heat flows through a boiler to produce steam to generate electricity. The system is equipped with pollution-control systems to reduce air emissions.
Zero Waste	"Zero Waste" means maximizing diversion from landfills and reducing waste at the source, with the ultimate goal of striving for more sustainable solid waste management practices.[5]

[5] The internationally peer-reviewed definition of "Zero Waste" was developed by the Zero Waste International Alliance, http://zwia.org/standards/zw-definition/ (accessed October 1, 2013).

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Executive Summary

The City of Los Angeles (City) initiated a stakeholder-driven planning process in the spring of 2007 to develop the City's *Solid Waste Integrated Resources Plan* (SWIRP), a long-range master plan for solid waste management in the City. SWIRP was conducted in two phases.

> **Phase 1** - The goal and focus of Phase 1 of the SWIRP planning process was to reach out to stakeholders from all over the City to participate in identifying the guiding principles for SWIRP. This process was documented in Volume I of SWIRP *Phase 1 Forming the Zero Waste Guiding Principles*.
>
> **Phase 2** - The Phase 2 planning process continued to build on the stakeholder-driven process established in Phase 1 to develop this report, the *Phase 2 Policy, Program, and Facility Plan*. Phase 2 continued with the development of the *Program Environmental Impact Report*, the *Financial Plan,* and *Implementation Strategy*.

This report describes the policies, programs, and facilities that will be needed to reach the City's goals; estimates the diversion potential; identifies the alternatives to the plan; and describes the Phase 2 planning process.

The City regularly undertakes long-range planning efforts to address its solid waste infrastructure and program needs. SWIRP is the successor to these planning studies; builds on the resulting findings and research; and will be the solid waste master planning document for the City's solid waste programs through 2030.

The blueprint for SWIRP is the *RENEW LA Plan - Recovering Energy, Natural Resources, and Economic Benefit from Waste for Los Angeles*, the guidance document developed by Councilmember Greig Smith in 2005. RENEW LA was adopted by the full City Council in 2006 and provides the foundation for the SWIRP planning process. *RENEW LA* establishes the vision for Zero Waste and includes the goal of 90 percent diversion by 2025.

The City has implemented many state-of-the-art programs for managing solid waste and diverting waste from landfills, including:

- Four bin collection program for residential curbside customers (blue bin for commingled recycling, green bin for yard trimmings, black bin for residual waste, and brown bin for horse manure).
- Multi-family blue bin recycling available to all multi-family buildings in the City.
- Bulky item collection available to all residential curbside and multi-family generators.
- School site blue bin recycling and classroom recycling presentations available to all schools within the Los Angeles Unified School District that are within the City limits.
- Restaurant food scraps collection available to all restaurants in the City.
- Commercial recycling technical assistance available to all commercial and institutional generators in the City.

- City Department recycling available to all City offices and facilities.
- Seven Solvents, Automotive, Flammables and Electronics Centers (S.A.F.E. Centers) for proper management of household hazardous wastes located throughout the City.

These commercial and residential programs are managed by the Bureau of Sanitation (LASAN) Solid Resources Program. LASAN is responsible for the collection, disposal, and recycling of over 1.5 million tons of discarded materials per year for the residents of the City. The multi-family and commercial programs are managed by LASAN though permitted private haulers.

Approximately 450 permitted private waste haulers provide waste hauling services in the City, which includes construction-related contractors. Under the current waste hauler permit system, multi-family dwellings over four units, commercial, and industrial customers are allowed to select and negotiate waste disposal contracts with any of the City's permitted private waste haulers. LASAN provides multi-family customers with recycling services through three private hauler contracts.

Throughout Phase 1 and Phase 2 of the SWIRP planning process, the City's stakeholders and LASAN staff engaged in an interactive dialogue about the City's future vision of sustainability in planning for Zero Waste. The stakeholders envisioned a future where:

- Recycling is as convenient (or more convenient) as disposal
- Generators have universal access to recycling and it is more cost-effective than disposal
- Products and packaging are made to be disassembled or easy to recycle
- School children are experts in the three Rs (reduce, reuse, recycle) and take the message home to their families
- City government is a model for Zero Waste behavior

During the Phase 1 planning process, the stakeholders identified over 80 individual policies and programs for reaching Zero Waste and discussed over 20 different facility options. During Phase 2, in order to evaluate the effectiveness of the policies, programs, and facilities, a material flow model—a tool for projecting generation, diversion, and disposal over the planning period—was developed.

The policies and programs were grouped according to five scenarios as listed in Table 1. These scenarios were presented to the stakeholders at the regional workshops held in March 2009. Feedback from the workshops was incorporated into the policy, program, and facility phasing approach and presented to the stakeholders at the citywide conference held in May 2009.

Table 1: Policy and Program Scenarios

Scenario 1	No New Programs Baseline
Scenario 2	New Voluntary Downstream Policies and Programs
Scenario 3	Mandatory Requirements added to Scenario 2 Downstream Policies and Programs
Scenario 4	Upstream Policies added to Scenario 2 Downstream Policies and Programs
Scenario 5	Upstream Policies added to Scenario 3 Full Implementation of SWIRP Upstream, Downstream and Mandatory

During the Phase 1 and Phase 2 planning process, stakeholders discussed the types and numbers of facilities that will be needed to reach the SWIRP goals. To facilitate discussion of the types of facilities and their functions, the facilities were categorized as:

- **Blue bin facilities** – facilities capable of processing source-separated recyclable and reusable materials, including materials recovered from the LASAN blue bin program and source-separated commercial recycling. Other facilities for source-separated materials were also discussed within this category, including Resource Recovery Centers for self-hauled materials and construction and demolition debris (C&D) processing facilities.
- **Green bin facilities** – facilities capable of processing yard trimmings, food scraps and other compostable materials, either source-separated or sorted from other residual waste at a processing facility.
- **Black bin facilities** – facilities capable of processing residual waste from residential black bins, commercial sources, or residual waste from processing facilities.

The phasing schedule presented in Table 2 was developed based on direction from the stakeholders at the March 2009 workshops. The phasing schedule takes into account the diversion and disposal tonnage projections that would result from implementation of the policies and programs and identifies the number and types of facilities that will be needed. The policy, program, and facility phasing approach will achieve the City's goal of 90 percent diversion by 2025.

Table 2: Policy, Program and Facility Phasing[1]

2013	2020	2025	2030
New and expanded programs	Additional new programs plus mandatory programs[3]	Continue new and mandatory programs	Continue new and mandatory programs
Upstream Advocacy	Continue upstream advocacy	Continue upstream advocacy	Continue upstream advocacy
1 large or 2 small compost facilities[2]	1 resource recovery center 1 recycling facility and 2 small compost facilities	1 recycling facility and 2 small composting facilities	1 recycling facility
	2 black bin processing facilities	1 black bin processing facility	2 black bin processing facilities
75%	**87%**	**90%**	**97%**

[1] Phasing assumed under SWIRP may not reflect actual implementation and/or roll-out of specific policies, programs and/or facilities.

[2] Facilities may be implemented by either the public or private sector, or by joint public-private partnerships, and may also include expansions to existing facilities.

[3] Statewide mandatory commercial recycling for commercial customers generating four cubic yards or greater of solid waste per week was implemented in July 2012. Mandatory recycling and composting for all generators will be implemented locally by 2020.

The *Policy, Program, and Facility Plan* is organized as follows:

Section 1 - Introduction
Discusses the planning context and Phase 1 summary.

Section 2 - Phase 2 Stakeholder-Driven Planning Process
Describes the activities undertaken by the SWIRP stakeholders during Phase 2.

Section 3 - Policy and Program Analysis
Presents the analysis of the policies and programs identified by stakeholders during Phase 1, and the evaluation and screening process undertaken in Phase 2.

Section 4 - Facility Analysis
Presents the results of the analysis of facilities that will be needed through 2030.

Section 5 - Alternatives to the Plan
Discusses alternatives to SWIRP, including status quo (no new diversion programs, maintaining current diversion levels, and continued local landfilling); and long-haul transfer to remote landfills.

Section 6 - Land Use
Discusses the community planning process and criteria for siting new facilities.

Section 7 - Conclusion
Describes the next steps in the development of SWIRP, including the *Program Environmental Impact Report*, the *Financial Plan*, and the *Implementation Strategy*.

Appendix A - Policy and Program Analysis
Describes policy and program options which were identified by the stakeholders and identifies the diversion potential of each initiative.

Appendix B - Material Flow Model and Generation Projections
Describes the material flow model used to evaluate the effects of different Zero Waste strategies on disposal and diversion throughout the City.

Appendix C - Infrastructure and Material Flows
Documents flows of solid waste, recycling, construction and demolition debris, yard trimmings and organics, and household hazardous waste and electronics among all generators, transfer stations, processing and handling facilities, and landfills used by the City's businesses and residents.

Appendix D - Facility Analysis
Describes the approach and methods used to arrive at the number and types of facilities required for managing solid waste, recyclable and compostable materials, and construction and demolition debris.

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Section 1 Introduction

The City of Los Angeles (City) initiated a stakeholder-driven planning process in the spring of 2007 to develop the City's Solid Waste Integrated Resources Plan (SWIRP), a long-range master plan for solid waste management in the City. This report describes the policies, programs, and facilities that will be needed to reach the City's goals; estimates the diversion potential; identifies the alternatives to the plan; and describes the Phase 2 planning process.

1.1 Planning Context

The Bureau of Sanitation (LASAN) has been managing solid waste since 1890 and collecting solid waste from residents since 1943.



City Rubbish Collection, 1943

LASAN crews provide collection services to residential curbside customers which include generators in single-family residences and some multi-family residences, primarily with four units or less.

Approximately 450 permitted private waste haulers provide waste hauling services in the City, including construction-related contractors.[6] Under the current waste hauler permit system, multi-family dwellings over four units, commercial, and industrial customers are allowed to select and negotiate waste disposal and/or recycling contracts with any of the City's permitted private waste haulers. The City intends to move from the current private waste hauler permit system to a franchise system for the collection of discarded materials from multi-family and commercial properties.

The California Integrated Waste Management Act of 1989 (Assembly Bill 939, AB 939), as amended, established the statewide solid waste planning requirements for cities and counties in California and set diversion goals of 25 percent diversion by 1995 and 50 percent diversion by 2000. The City achieved 60 percent diversion in 2000 and has maintained consistently high rates of diversion, reaching 72 percent in 2010 and 76.4 percent in 2011 (based on the most current data available).

AB 939 requires that cities and counties develop a *Source Reduction and Recycling Element*, describing the policies and programs that would be implemented to reach the diversion requirements of the act; a *Household Hazardous Waste Element*, describing the programs and facilities that would be implemented to appropriately handle household hazardous waste generated within a community; and a *Non-Disposal Facility Element*, identifying the facilities that will be used to implement the diversion programs described

[6] Source: Department of Public Works, Bureau of Sanitation, Board Report No. 1, February 13, 2012.

in the *Source Reduction and Recycling Element*. The City completed the AB 939 planning requirements in 1993, and provides annual updates to the California Department of Resources, Recycling, and Recovery (CalRecycle), the State agency responsible for overseeing the implementation of AB 939. In 2004, the City formed the Los Angeles Regional Agency (LARA) along with 15 other cities in Los Angeles County to coordinate planning efforts and reporting to CalRecycle. The City is the lead agency for LARA and provides staffing and support to the agency.

In addition to the planning requirements under AB 939, the City regularly undertakes long-range planning efforts to address its solid waste infrastructure and program needs. SWIRP is the successor to these planning studies and builds on their findings and research, and will be the solid waste master planning document for the City's solid waste programs through 2030. Table 3 lists the major studies completed between 1989 and 2007.

Table 3: City of Los Angeles Solid Waste Planning Studies 1989 to 2007

Year	Planning Study
1989	• Recycling Implementation Plan • Long Haul Study
1993	• AB 939 Source Reduction and Recycling Element • Solid Waste Management Plan
2000	• Best Practices Report • Solid Resources Infrastructure Strategy Facilities Plan
2001	• Year 2000 AB 939 Report
2002	• Waste Characterization and Quantification Study Year 2000
2005	• Evaluation of Alternative Solid Waste Processing Technologies • Recovering Energy, Natural Resources, and Economic Benefit from Waste for Los Angeles (RENEW LA)
2007	• Initiated SWIRP planning process

Source: "City of Los Angeles Solid Waste Planning Background Studies Summary Report," January 2006.

1.1.1 RENEW LA

The blueprint for SWIRP is RENEW LA, the guidance document developed by Councilmember Greig Smith in 2005. RENEW LA was adopted by the full City Council in 2006 and provides the foundation for the SWIRP planning process. RENEW LA establishes the vision for Zero Waste and includes the goal of 90 percent diversion by 2025. RENEW LA recognizes that to manage discarded materials appropriately in the future, the City and its residents and businesses will need a new paradigm of sustainability and resource conservation. The strategies outlined in RENEW LA were carried forward in the stakeholder planning process for SWIRP and include:

- Residential food scraps collection (co-collected with yard trimmings in the green bin).
- Multi-family blue bin recycling.
- Pre-processing of commercial waste at mixed material processing facilities.
- Investment in new technologies – RENEW LA includes a description of "conversion technologies" including thermal conversion technologies (gasification and pyrolysis); anaerobic digestion; composting; autoclaving; and fermentation.

RENEW LA anticipated the need for seven new technology facilities for residual waste from both residential and commercial sources, one for each wasteshed and an additional facility outside of the City for use by generators within the City. The total capacity need identified through 2025 for all seven facilities was 14,500 tons per day (tpd) with daily capacities for each facility ranging from 1,250 to 3,000 tpd. Three of these facilities would be needed for residual waste from residential sources (residential curbside and multi-family) and four of these facilities would be needed for residual waste from commercial sources.[7]

The *Phase 2 Policy, Program, and Facility Plan* revisits the City's facility needs in light of the stakeholder-identified policies and programs and analyzes the capacity needed for "blue bin," "green bin," and "black bin" processing facilities through 2030.

1.1.2 SWIRP

Based on the vision of RENEW LA and the City directive to engage in a stakeholder-driven planning process, the City undertook the development of SWIRP in 2007. The goals of SWIRP are to:

- Conduct an innovative stakeholder-driven process to outline the City's objectives to provide sustainability, resource conservation, source reduction, recycling, renewable energy, maximum material recovery, and environmental protection for solid waste management planning through 2030.
- Evaluate existing collection, transfer, recycling, processing and disposal operations, and recommend programs, changes and new initiatives that will help the City meet at least 90 percent diversion from urban landfills and develop a long-term plan for disposal of residual waste.
- Identify cost-effective source reduction and solid waste management policy options, through a stakeholder process, taking into consideration communities and environments that may be affected, the numerous institutions concerned with solid waste management systems, and the potential for competing policy goals.

[7] *Recovering Energy, Natural Resources and Economic Benefit from Waste for Los Angeles*, Los Angeles City Councilman Greig Smith, June 2005, Table 5.8, page 5-46.

- Develop an integrated plan that is aligned with the City's objectives to protect the public health and environment and will enhance the City's leadership position in environmental planning well into the 21st century, through sustainability, resource conservation and source reduction, maximum material recovery, environmental protection, and renewable energy.

SWIRP was conducted in two phases.

Phase 1 -The goal and focus of Phase 1 of the SWIRP planning process was to reach out to stakeholders from all over the City to participate in identifying the guiding principles for SWIRP. This process was documented in Volume I of SWIRP *Phase 1 Forming the Zero Waste Guiding Principles*.

Phase 2 - The Phase 2 planning process continued to build on the stakeholder-driven process established in Phase 1 to develop this report, the *Phase 2 Policy, Program, and Facility Plan*. Phase 2 continued with the development of the *Program Environmental Impact Report*, the *Financial Plan,* and the *Implementation Strategy*.

1.2 Phase I Summary

In April 2007, LASAN began an intense stakeholder-driven process to develop SWIRP, the long-range Zero Waste master plan. During the first phase, which was completed in May 2008, a total of 256 public outreach meetings were conducted (109 key constituent meetings, 27 grass-roots house meetings, 75 business interviews, 42 regional workshops in the six wastesheds throughout the City, and three citywide conferences). Over 2,500 stakeholders have been engaged in providing feedback and input into the development of the Zero Waste plan.

During the year-long planning process, stakeholders gathered together in regional workshops and citywide conferences to establish the vision and goals for achieving Zero Waste. The City conducted six workshops in each of the six wastesheds plus a downtown citywide workshop (42 workshops total) and three citywide conferences.

In May 2008, the SWIRP stakeholders identified the road to Zero Waste by developing twelve stakeholder guiding principles:

1. **Education to decrease consumption** – Stakeholders felt that the City should instill a "Zero Waste culture" citywide. A key strategy for increasing awareness among the next generation of Angelenos was the stakeholder recommendation to partner with Los Angeles Unified School District to develop a Zero Waste curriculum and increase recycling in the schools.
2. **City leadership as a model for Zero Waste practices** – Stakeholders agreed that the City should "walk its talk" by demonstrating leadership in recycling at all City facilities and parks and modeling Zero Waste behaviors such as phasing out expanded polystyrene containers and single use water bottles.

3. **Education to increase recycling** – Stakeholders asserted that the City should put more emphasis on educating residents and businesses about existing City programs and encourage them to make recycling and Zero Waste "second nature."
4. **City leadership to increase recycling** – Stakeholders want the City to use its stature in Sacramento to lobby for State legislation on initiatives that are best implemented at the State level, such as producer responsibility and packaging legislation.
5. **Manufacturer responsibility** – Stakeholders supported initiatives to encourage or require producers of products and packaging to take responsibility for the "end of life" management of those products and packaging.
6. **Consumer responsibility** – Stakeholders believed that consumers, including both residents and businesses, need to be part of the solution and should be required to participate in recycling and composting programs.
7. **Convenience** – Stakeholders felt that recycling programs should be convenient and that it should be as easy to recycle as it is to waste. A key strategy for increasing convenience is to provide recycling receptacles wherever there are waste receptacles.
8. **Incentives** – Stakeholders suggested that the City provide more incentives for recycling and composting, such as "pay-as-you-throw" rate structures.
9. **New, safe, technology** – Stakeholders supported the development of new technology for managing the City's waste. However, stakeholders emphasized that the technology would need to be demonstrated to be safe and should not impact already burdened communities.
10. **Protect public health and the environment** – Stakeholders strongly believed that protecting public health and the environment should be at the forefront of all decision-making. When embarking on any new idea or plan, the City should carefully consider the long-term consequences and impacts.



Signing off on the Guiding Principles

11. **Equity** – Throughout the planning process, stakeholders supported the concept of equity; shared responsibility for taking care of our waste problems. Stakeholders felt that all areas of the City should share in the burden and benefits of new facilities and that new developments should pay their fair share of the system-wide costs. All generators should have access to recycling and composting programs and sensitive environmental areas and communities should not be burdened with waste impacts. Green jobs created by new programs and facilities should support the local communities, including disadvantaged youth and formerly incarcerated residents who need help transitioning back into the community.

12. **Economic efficiency** – Stakeholders felt that the City must invest carefully in new programs and facilities, but costs should not outweigh other considerations. The City should also consider the long-term economic benefits of reducing waste and creating a more sustainable society. The City should find solutions that are both economically efficient and environmentally preferable and promote economic sustainability through investment in green jobs and economic development.

During Phase 1, stakeholders provided the City with their vision of the sustainable City of the future, where the City demonstrates its leadership in recycling and Zero Waste; all residents and businesses fully participate in the City's recycling and composting programs; and all future generations learn and share in the goals and values of Zero Waste. Stakeholders identified and discussed the policies, programs, and facilities that will be needed to implement this vision and prepared for the development of the *Policy, Program, and Facility Plan* which was then undertaken in Phase 2 of the SWIRP planning process.

Phase 2 of the SWIRP planning process culminated in the development of this report, the stakeholder-driven *Policy, Program, and Facility Plan*.

The elements of the plan include the following:

- Analysis of the policies, programs, and facilities identified during Phase 1 to estimate their diversion potential and planning level costs.
- Development of a material flow model to pinpoint diversion opportunities by projecting tons generated by generator sector and material type citywide and within the City's six wastesheds through 2030.
- Evaluation of the policies, programs, and facilities based on scenarios identified through the stakeholder planning process.

Section 2 Phase 2 Stakeholder-Driven Planning Process

2.1 Overview

2.1.1 Phase 1 of the Stakeholder-Driven Planning Process

The purpose of the stakeholder-driven planning process was to ensure that the goals and vision of the community are reflected in SWIRP. The twelve guiding principles developed in Phase 1 established the direction for the plan.

During the year-long Phase 1 planning process, stakeholders gathered together in regional workshops and citywide conferences to establish the vision and goals for achieving Zero Waste. The City conducted six workshops in each of the six wastesheds plus a downtown citywide workshop (42 workshops total) and three citywide conferences. Each conference series consisted of two workshops (conducted in each of the six wastesheds) followed by a citywide conference where stakeholders across the City could share their perspectives and learn from each other. The workshops and conferences built upon each other and provided a foundation for the planning process, which would continue in Phase 2 with the development of the *Policy, Program, and Facility Plan*.

- **Conference Series 1 –** Stakeholders focused on the **Goals and Objectives** for SWIRP and shared their vision of Zero Waste.
- **Conference Series 2** – Stakeholders reviewed the **Policy, Program, and Facility Options** and discussed over 80 policy options and 20 facility options.
- **Conference Series 3 –** Stakeholders formulated, discussed, and signed off on the **Guiding Principles** for SWIRP.

2.1.2 Phase 2 of the Stakeholder-Driven Planning Process

During the first year of Phase 2 of SWIRP, stakeholders provided input on the specific policies and programs to be considered for implementation, and identified the needed infrastructure to implement the plan through 2030.

The planning process continued in Phase 2 with regional workshops and the fourth citywide conference, and culminated in the development of the *Phase 2 Policy, Program, and Facility Plan*. Table 4 provides the schedule for the SWIRP Phase 2, Year 1 planning process.

Table 4: Phase 2, Year 1 Schedule September 2008 through May 2009

September	November	March	May 30th
Workshop Series 7 **The Road to Zero Waste Continues**	Workshop Series 8 **Key Issues for the Zero Waste Plan**	Workshop Series 9 **Evaluating Scenarios for Zero Waste**	4th Citywide Conference **Policy, Program, and Facility Plan**

2.1.3 Conference Series 4

The fourth conference series focused on developing the input and content for the *Phase 2 Policy, Program, and Facility Plan*. The workshops were tailored based on stakeholder input to cover the issues of greatest interest and concern to the stakeholders. Figure 1 illustrates the workshop process leading up to the fourth citywide conference which culminated in the presentation of the *Policy, Program, and Facility Plan* summary.

Figure 1: Conference Series 4 Policy, Program, and Facility Plan



2.2 Workshop 7 – Phase 2 Workplan

The focus of workshop 7, in September 2008, was the Phase 2 workplan: future program and policy development, future service needs by wasteshed, facility capacity needs, new technologies, and disposal options for residual waste. At the workshops, stakeholders were able to learn about the new programs that had been implemented or initiated by the City over the past year, including some programs suggested by the stakeholders at earlier workshops. These programs included:

- Multi-family recycling available to all buildings
- Plastic bag policy and expanded polystyrene ban
- Mandatory construction and demolition debris recycling
- Pay-as-you-throw pilot
- Residential food scraps collection pilot program
- City facility recycling program
- Sharps (needles and syringes) management
- Illegal dumping clean-up through the multi-family bulky item pickup program

Stakeholders also provided input to the workplan and discussed four key policy questions:

1. *Should programs be consistent across the City or should there be regional or generator differences? Food scraps collected with yard trimmings? More intensive processing of "black bin"?*

   Stakeholders strongly felt that the major City programs should be uniform across the City and all generators in the City should have equal access to the programs.



South LA Workshop, Fall 2008

2. *Should the City continue to focus on source-separated programs or invest in "downstream" infrastructure?*

   Stakeholders strongly supported the City's source-separated programs (blue bin, green bin, black bin) and felt that they should continue to be the focus of the City's efforts. Stakeholders supported the processing of "black bin" materials and the concept of "MRF first," processing residual waste through a "dirty" Materials Recovery Facility (MRF) or Mixed Material Processing (MMP) facility, so that all recyclable or compostable materials that can be feasibly recovered are diverted from landfills.

3. *How should the City regulate the private haulers? Continue open-market competition? Consider rate-regulation and uniform programs? What are the unintended consequences of more regulation?*

   Stakeholders were cautious about changing the status quo and did not want to see small haulers forced out of business or commercial generators left with fewer choices through exclusive franchises. Stakeholders supported requirements, on both haulers and generators, to recycle.

4. *If we can actually achieve 90 percent or more diversion, should we reconsider our commitment to end urban landfilling? Should residual waste be hauled to other regional landfills? Should we consider rail-haul to the desert landfills?*

   Stakeholders felt strongly that the City should continue to pursue the elimination of urban landfilling (and all landfilling) and did not feel that the City should consider rail-haul to distant landfills. There was strong support for continued research into technologies to treat residual waste (environmentally and economically) and a belief that through Zero Waste policies and leadership the City could reduce waste at the source and achieve Zero Waste (or close to it).

2.3 Workshop 8 – Culture Change, Planning, and Alternative Technology

In response to stakeholder input at workshop 7, workshop 8 in November 2008, included the following key issues for discussion:

- Zero Waste culture change
- Planning and management of private solid waste facilities
- Solid waste infrastructure and service voids
- Status of the City's research into new technologies

To accommodate stakeholder interest in these issues and to identify related policy and program issues to be addressed by SWIRP, the City scheduled guest speakers on the topics listed above to present at the regional workshops. The speakers included representatives from the following organizations:

- **Zero Waste culture change**: L.A. SHARES, Interfaith Environmental Council, City of Los Angeles Office of Community Beautification, the Institute for Local Self-Reliance
- **Planning and management of private solid waste facilities**: City of Los Angeles Planning Department, CalRecycle Local Enforcement Agency
- **Solid waste infrastructure and service voids**: City of Los Angeles Bureau of Sanitation Processing and Construction Division and Support Services Division
- **Status of the City's research into new technologies**: City of Los Angeles Bureau of Sanitation Support Services Division, Recycling Development Office of the Scarborough Borough Council (United Kingdom)



L.A. SHARES Reuse Warehouse

At the workshop, stakeholders discussed case studies of organizational models for changing norms of behavior and motivating culture change. Stakeholders recommended expanding the neighborhood beautification grant program to include community Zero Waste grants. Stakeholders also recommended supporting the development of non-profits, as the City has done with L.A. SHARES, to create the social

infrastructure for Zero Waste. These concepts were incorporated into the Zero Waste policy and programs for SWIRP.

Stakeholders also discussed facility planning and support for community-based Zero Waste businesses. Stakeholders had questions about the costs and emissions from Alternative Technology facilities. City staff described the process for evaluating new technology proposals. Stakeholders provided feedback to the City on facility development and Alternative Technology.

- Some communities have more than their fair share of facilities, so the new facilities should not be sited in these areas.
- Smaller facilities are preferred to large-scale regional facilities.
- Facilities should be fully enclosed to reduce noise, odor, and visual impacts.
- Facilities should blend into the surrounding land uses.
- All facilities will require state-of-the-art emissions controls and traffic mitigations.

2.4 Workshop 9 – Policy, Program and Facility Analysis

At workshop 9 in March 2009, the City presented the following results of the policy, program, and facility analysis:

- Over 80 policies and programs identified during Phase 1 meetings.
- Over 40 policies and programs modeled to project diversion estimates.
- Five scenarios used in the model: 1) No new policies or programs (baseline); 2) New policies and programs; 3) Adding mandatory requirements to Scenario 2; 4) Adding upstream policies to Scenario 2; and 5) Adding upstream policies to Scenario 3 (full implementation of SWIRP).
- Diversion estimates expected from each scenario.
- Maximum diversion rate from identified policies and programs expected to be 73 to 82 percent diversion.[8]
- New "blue bin" and "green bin" facility capacity needs, including clean materials recovery facilities, composting facilities, Resource Recovery Centers, and construction and demolition facilities.
- Alternatives for processing "black bin" materials, including mixed material processing, Alternative Technology advanced thermal recycling, Alternative Technology biological (anaerobic digestion), and Alternative Technology thermal (pyrolysis, plasma arc, gasification).
- Costs, impacts, and benefits of processing "black bin" materials, including high diversion rates, relatively high costs, emissions and other impacts, reduced landfilling, and other benefits.

[8] The material flow model was updated in 2012 using more recent data from 2010 and projected diversion rates between 79 and 86 percent.

Stakeholders provided feedback on the initial analysis and direction for completing the *Policy, Program, and Facility Plan*, by ranking the approaches discussed:

1. *What is the best Policy and Program Scenario?*

   Stakeholders preferred a phased approach, where voluntary programs are maximized prior to implementing mandatory requirements. The majority of stakeholders recommended implementing mandatory requirements if voluntary programs are not sufficient to reach the City's diversion goals.

2. *What is the best Facility Scenario (for "black bin" waste after recycling)?*

   Stakeholders recommended that the City proceed slowly and carefully in pursuing black bin processing. Stakeholders felt that education and outreach should be emphasized and source-separation programs provided to all generators. Some stakeholders were concerned about the potential impacts of Alternative Technology facilities, including potential emissions.

3. *Where should the City invest its limited funding?*

   Stakeholders emphasized that the City should focus on providing more education, outreach, and technical assistance. Investing in conventional processing technology and new technologies were lower ranked. Stakeholders recommended that the City pursue education over enforcement.

2.5 Citywide Conference 4 – Policy, Program, and Facility Plan

Based on the feedback provided by the stakeholders at the March 2009 workshops, the City developed a phasing plan and presented the draft *Policy, Program, and Facility Plan* summary at the citywide conference held on May 30, 2009.



Opening remarks for the conference were provided by Councilman Ed Reyes, Councilwoman Jan Perry, Board of Public Works President Cynthia Ruiz, and Bureau of Sanitation Director Enrique Zaldivar. Following the opening remarks, City staff presented the major plan elements of the draft *Policy, Program, and Facility Plan*.

A new video, "Reaching for Zero," was debuted at the conference to highlight the SWIRP planning process and stakeholder input. Stakeholders who were interviewed in the video were then part of a panel to share updates since being interviewed, and answer questions asked by other stakeholders.

To celebrate this major milestone in the planning process, stakeholders and City staff were featured in a Zero Waste fashion show presented by the design group, *Haute Trash*. This non-profit educational organization creates fashion out of discarded materials in order to entertain, educate, and empower others to rethink, reuse, and recycle. The organization aspires to change the way the community sees the world through art.

Over 300 stakeholders attended the conference in addition to 23 exhibitor organizations, City staff, and project team members.



Zero Waste Fashion Show Models

Conference series 4 provided a forum for the stakeholders to provide their direct input into the *Policy, Program, and Facility Plan*. Stakeholders from across the City and in each wasteshed were able to provide meaningful feedback and direction to the City in an interactive process to ensure that the plan elements were reflective of the community's values.

A summary of goals achieved at each workshop and conference is included below:

- During workshop 7, stakeholders provided direction on research elements and policy considerations for the plan.
- During workshop 8, stakeholders reviewed model programs for culture change and provided insights on planning for new facilities.
- During workshop 9, stakeholders reviewed the preliminary policy, program, and facility analysis and provided direction on phasing-in the policies, programs, and facilities.
- At the citywide conference, stakeholders reviewed the draft *Policy, Program, and Facility Plan* elements and celebrated the success of the stakeholder-driven planning process.

Section 3 Policy and Program Analysis

This section describes the City's existing policies and programs; the new policies and programs identified through the stakeholder planning process; the scenarios for implementation; potential diversion by scenario; and the phasing approach recommended by the stakeholders.

3.1 Introduction

3.1.1 City Council Directives

3.1.1.1 GREEN LA Plan

In May 2007, the City unveiled GREEN LA - An Action Plan to make the City of Los Angeles the greenest city in the nation and the national leader to fight global warming. The 50+ initiatives of the plan include diverting 70 percent of the City's waste by 2013. This goal was subsequently escalated to 75 percent by 2013. The City established additional directives for solid waste management, including:

- Implement a stakeholder-driven Solid Waste Integrated Resources Plan
- Convert the LASAN collection fleet to clean fuel
- Shift from reliance on *waste disposal* to a greater focus on *resource recovery*
- Establish an operating Alternative Technology facility

3.1.1.2 RENEW LA

RENEW LA, which was adopted by the City Council in 2006, establishes further policy directives for the City. RENEW LA identified the following action steps (the implementation of which were overseen by the RENEW LA Oversight Committee, an ad hoc committee of the City Council):

1. Establish RENEW LA Oversight Committee (complete).
2. Adopt RENEW LA Blueprint and Zero Waste policy (complete).
3. Modify zoning code to allow conversion technology by right in M2 (light industrial) and M3 (heavy industrial) zones with conditions (complete[9]).
4. Establish site areas for conversion technology in each of the wastesheds (in process).
5. Site and develop the first and second conversion technology facility (in process).
6. Establish a fund from Sunshine Canyon host fees for development of facilities that reduce landfilling (complete).
7. Implement recycling in 50 percent of the commercial sector (complete).
8. Mandate a time-certain reduction in City solid waste disposed at Sunshine Canyon (in process).

[9] The Los Angeles Municipal Code was amended by ordinance on August 4, 2010, and allows Solid Waste Alternative Technology Processing Facilities to be located in M2, M3 and PF zones based on specific findings of the City Planning Commission (described below in section 3.1.2.6).

9. Expand multi-family recycling to 50 percent of the City (complete).
10. Establish City tax breaks for Zero Waste and new re-manufacturing companies (in process).
11. Establish a green energy producer bonus from the Department of Water and Power (complete).
12. Add residential food waste to the green bin program (in process).

3.1.2 Existing City Policies

The City Council has adopted many resolutions, initiatives, and ordinances related to solid waste management. Highlighted below are the initiatives and ordinances that are directly related to the SWIRP policies and programs identified by the stakeholders.

3.1.2.1 Private Hauler Fee Ordinance

Adopted by the City Council in July 2002, the Private Hauler Fee Ordinance requires non-exclusive permitting of private haulers who operate in the City, and collects fees from those haulers who collect more than 1,000 tons of solid waste annually from City customers. With this revenue source, staff administers a number of private sector contracted programs which include the following:

- Multi-family recycling services for those serviced by private haulers
- Commercial and institutional waste assessments and recycling technical assistance
- Funding of reuse agencies receiving corporate donations, such as L.A. SHARES
- A rebate incentive program to encourage private haulers to recycle mixed refuse, mixed construction and debris loads, and mixed food waste loads
- Commercial food scraps recycling for restaurants
- Los Angeles Unified School District (LAUSD) blue bin recycling program
- Public outreach and education

3.1.2.2 Private Hauler Franchise Initiative

In 2012, the City Council indicated its intention to move from the current private hauler permit system to a franchise system for the collection of discarded materials from both multi-family and commercial properties not collected by the City. The franchise system is intended to help the City reach its Zero Waste goals, and will contain elements such as maximum disposal amounts per zone, aggressive diversion programs (including outreach and education), clean fuel requirements, and worker health and safety requirements, to be administered by LASAN.

In November 2012, the City Council directed LASAN to begin the environmental review process pursuant to the California Environmental Quality Act (CEQA) for the commercial and multi-family private hauler franchise initiative adopted by Council, to return with an implementation plan for the franchise system, and requested the City Attorney to draft required ordinances for the project (Council File number 10-1797). On April 24, 2013, the City Council approved LASAN's Implementation Plan, adopted the 10 goals of the franchise program, and directed LASAN to proceed with the development of

a Request For Proposals. The City Council is expected to consider the commercial and multi-family private hauler franchise ordinance and associated environmental documentation in early 2014.

3.1.2.3 Green Building Ordinance

Adopted by the City Council on April 22, 2008, the Green Building Ordinance establishes the following:

- The Green Building Program; the Standard of Excellence incentive program for projects that register with the U.S. Green Building Council's LEED (Leadership in Energy and Environmental Design) program.
- The Standard of Sustainability which requires residential and non-residential projects 50,000 square feet or above and residential projects 50 units or more to meet the intent of LEED at the Certified level.

3.1.2.4 Plastic Bag and Polystyrene Policy

Passed by the City Council in July 2008, the Plastic Bag Policy signaled the City's intent to ban plastic bags at supermarkets and retail locations by 2010 if the State did not impose a 25 cent per bag fee for each bag requested by a customer. The State legislation that has been introduced in the past has failed passage.[10] The most recent bill attempted was Senate Bill 405, in May 2013, which was not approved. Assembly Bill 158, another bill that aims to ban plastic bags, has had its hearing postponed until 2014.[11]

On May 23, 2012, the City Council adopted a policy to ban distribution of single-use plastics bags and impose a 10-cent fee on single-use paper bags at supermarkets and select retail stores within the City. The effective date of the ordinance was August 1, 2013 and will apply to specified retail stores on January 1, 2014.[12]

The City Council also voted to ban all polystyrene food service products at City offices, facilities, and City-sponsored events as of July 1, 2008. The City Council also voted to ban polystyrene food service products at City-permitted events by July 1, 2009, and to renegotiate all lease and concession agreements to phase out polystyrene food service products by 2010.

3.1.2.5 Environmentally Preferable Procurement Ordinance

Adopted on June 12, 2009, the Environmentally Preferable Procurement Ordinance establishes the policy for the City to implement the following:

- Purchase environmentally preferable products by including environmental considerations in the City's purchasing decisions, along with traditional criteria of price, performance, and availability.
- Incorporate environmental factors into the City's product specifications.
- Raise staff awareness of environmentally preferable products.

[10] Assembly Bill 1998, introduced by Assembly member Julia Brownley, failed passage in 2010. Senate Bill 405, introduced by Senator Alex Padilla, failed passage in May 2013.
[11] Assembly Bill 158, introduced by Assemblymember Marc Levine, in January 2013.
[12] The Council Action on the single-use bag policy is available through the City of Los Angeles Council File 11-1531.

- Encourage suppliers and service providers to use environmentally preferable products when providing goods or services to the City.

3.1.2.6 Recycling Chute Ordinance

Adopted by the City Council on July 7, 2010, this ordinance does the following:

- Defines trash and recycling chutes.
- Requires recycling chutes for commercial and multi-family buildings when new or expanding projects are adding trash chutes.
- Requires proper identification for recycling chutes.

3.1.2.7 Solid Waste Alternative Technology Processing Facility Ordinance

Adopted by the City Council on August 4, 2010, this ordinance allows Alternative Technology facilities to be sited in M2 (light industrial/commercial), M3 (heavy industrial) and PF (Public Facility) zones within the City provided that the following criteria are met:

- The facility location would not result in an undue concentration of such facilities.
- An effort was made to locate the facility near existing solid waste facilities.
- The facility will not detrimentally affect residential or other sensitive land uses within a 1,500-foot radius of the proposed site.
- The facility operator will provide a quarterly newsletter and other benefits to the surrounding community.
- The facility and vehicles used for the facility are designed to mitigate noise, odor, and visual blight.
- Access, parking, and vehicle storage will not cause a traffic hazard.
- Hazardous waste, household hazardous waste, universal waste, radioactive waste and medical waste will not be received at the facility.

3.1.2.8 Construction and Demolition Debris Ordinance

All City Public Works construction projects are required to divert 75 percent of inert materials (including concrete, asphalt, and dirt) and 50 percent of all other materials generated by the construction project. The C&D ordinance, approved by the City Council on December 17, 2010, requires all mixed C&D debris generated within the City, from both public and privately developed projects, to be taken to a C&D debris processor certified by the City. Residential self-hauled material and source-separated recycled material are exempted.

3.1.3 Existing City Programs

The City has implemented many state-of-the-art programs for managing solid waste and diverting waste from landfills, including the following:

- Four bin collection program for residential curbside customers (blue bin for commingled recycling, green bin for yard trimmings, black bin for residual waste, and brown bin for horse manure).
- Multi-family blue bin recycling available to all multi-family buildings in the City.
- Bulky item collection available to all residential curbside and multi-family generators.
- School site blue bin recycling and classroom recycling presentations available to all schools within the City in the Los Angeles Unified School District.
- Restaurant food scraps collection available to all restaurants in the City.



The City's Residential Collection Program

- Commercial recycling technical assistance available to all commercial and institutional generators in the City.
- City Department recycling available to all City offices and facilities.
- Seven S.A.F.E. Centers for proper management of household hazardous wastes located throughout the City.

These commercial and residential programs are managed by the LASAN Solid Resources Program. LASAN is responsible for the collection, disposal, and recycling of over 1.5 million tons per year (tpy) of discarded materials for the residents of the City. The multi-family and commercial programs are managed by LASAN though permitted private haulers. Program responsibilities are divided among the divisions listed below.

3.1.3.1 Solid Resources Support Services Division

The Solid Resources Support Services Division provides administrative, technical, engineering, construction, and planning support to the Solid Resources Collection Divisions and their residential customers. The Division accomplishes this function through long-term planning (including the development of SWIRP), the study and evaluation of advanced technology for alternative treatment of residual waste (Alternative Technology), operation of the customer call center, management and operation of the refuse collection container program, the implementation of an alternative fuel program for the Bureau of Sanitation refuse collection fleet, and the implementation of a pilot residential food scraps collection program. The Division also oversees the LASAN yard trimmings processing, recyclables processing, and disposal contracts, as well as the development of the five-year Capital Improvement Program.

3.1.3.2 Solid Resources Citywide Recycling Division

The Solid Resources Citywide Recycling Division is responsible for the funding, development, and implementation of commercial, industrial, and institutional waste diversion programs for the City, including multi-family recycling, City Facilities Recycling Programs, and restaurant food scraps recycling.

The Division is also responsible for the management of the permitted private haulers, household hazardous waste, used oil, electronics, and other special materials (such as batteries and sharps (e.g., hypodermic needles and lancets)) for residents, small businesses, and City departments. This includes the operation of the S.A.F.E. Centers which provide a permanent, convenient option for the collection of these materials, and periodic mobile events. The Division also manages the Public Affairs Office of the Department of Public Works.

3.1.3.3 Solid Resources Processing and Construction Division

The Solid Resources Processing and Construction Division is composed of two groups with complementary responsibilities. The Technical Support Group provides specialized engineering and project management services, such as the development of City-owned and operated solid resource management facilities including composting and mulching facilities, transfer stations, and other similar facilities. The Operations Group provides specialized services by operating transfer stations, mulching and composting facilities, and performing landfill closure activities.



Central Los Angeles Recycling & Transfer Station

3.1.3.4 Solid Resources South Collection Division/Solid Resources Valley Collection Division

The Solid Resources Collection Divisions provide waste collection and recycling services for approximately 750,000 residential households in the City. The Divisions operate six collection wastesheds throughout the City. Crews are dispatched from each wasteshed to collect household refuse, recyclables, yard trimmings, bulky items, horse manure, tires, and dead animals. The number of crews per wasteshed ranges from approximately 30 to 130 depending on the size of the wasteshed.

3.2 SWIRP Policies and Programs

Throughout Phase 1 and Phase 2 of the SWIRP planning process, the City's stakeholders and LASAN staff engaged in an interactive dialogue about the City's future vision of sustainability in planning for Zero Waste. The stakeholders envisioned a future where:

- Recycling is as convenient (or more convenient) than disposal
- Generators have universal access to recycling and it is more cost-effective than disposal
- Products and packaging are made to be disassembled or easy to recycle
- School children are experts in the three Rs (reduce, reuse, recycle) and take the message home to their families
- City government is a model for Zero Waste behavior

The stakeholders acknowledged that the City has some of the most extensive recycling programs in the country, but expressed concern that not enough residents and businesses take advantage of these programs. The stakeholders also acknowledged that City government has a limited role in changing consumer behavior and limited ability to require producers to change their products and packaging. Nevertheless, stakeholders expect the City to be a leader and use its influence to create the changes that it seeks from its residents and businesses.

3.2.1 Culture Change and Education

Stakeholders identified "culture change," changing modes of behavior and attitudes toward waste, as an important component of Zero Waste. Culture change is not something that happens overnight, but it is a process that can lead to behavioral and personal changes. Culture change happens when people communicate openly and strive to build consensus through a call to action. It takes place when government leaders involve their residents and businesses in decision making (like the SWIRP planning process). It happens when neighbors band together to form a community, like neighborhood watch groups or community gardens. The City can support culture change by supporting community groups and other institutions that form the fabric of the City.

3.2.1.1 Community Beautification Grants for Zero Waste Projects

The Office of Community Beautification serves as a resource for community improvement programs throughout Los Angeles. These programs are designed to empower neighborhoods and community groups. By utilizing these services, participants improve their environment while building partnerships with the City. The Office of Community Beautification provides cash grants of up to $10,000 to community groups for physical improvements to neighborhoods. Examples of projects may include community gardens, landscaping, murals, pedestrian furniture, or whatever else community members can imagine for their neighborhoods. Stakeholders identified an opportunity for leveraging resources by expanding the role of this already successful program to include funding for community Zero Waste projects.



Los Angeles Indigenous Peoples Alliance Community Beautification Grant Project

3.2.1.2 Supporting the Development of Non-Profits

Stakeholders recognized that supporting the development of non-profits could be another useful strategy for creating cultural change. L.A. SHARES is an example of this approach. L.A. SHARES is a non-profit materials reuse program, which takes donations from the local business community of reusable goods and materials (both new and used) and redistributes these items free-of-charge to non-profits and schools throughout Los Angeles County.

Created in 1991, L.A. SHARES was formerly a pilot program of the City of Los Angeles Cultural Affairs Department known as Materials for the Arts. In 1994, in an effort to expand beyond the Los Angeles City limits and to service even more non-profit groups and schools, L.A. SHARES became an independent, non-profit organization.

3.2.1.3 Social Marketing

The City has an extensive public outreach program that provides print material, advertisements, and web-based information to City generators. The City conducts outreach at public events, conducts workshops and training programs, provides school assemblies and classroom presentations, and holds annual open houses at the District Yards (the home base for the collection crews within each wasteshed). However, based on feedback from the stakeholders at the Zero Waste workshops, waste prevention and recycling messages are not reaching all generators.

A community-based social marketing program could be implemented to help change the culture and behavior in the City, with different messages targeted to different demographic groups using a wide assortment of tools. The social marketing strategy would penetrate all three major aspects of each individual's life (home, work, and play) with a Zero Waste message. This would not take the form of three separate campaigns, but rather an integrated lifestyle campaign. The four phases of the social marketing campaign would focus on the following:

- **Awareness –** Employing mostly media tactics
- **Persuasion –** Hands-on, community-based work with community organizations, churches, school groups, and business groups
- **Implementation –** "How-to" strategies and tactics
- **Confirmation –** Publicity on awards, recognition, and success stories

Stakeholders felt that the City's recycling program (including the Recycling Ambassadors) should be a more prominent part of the local neighborhoods and the community.

There are also numerous opportunities to employ social media techniques (including Facebook, Twitter, Instagram, blogs, and podcasts) to reach out to and educate the younger population (ages 18-30) of the City who rely on the internet and other real-time technologies to communicate and mobilize around issues that they care most about (e.g., "being green" and "saving the planet"). LASAN should use both traditional and new outreach and marketing tools to reach all sectors of the residential and business communities.



Future Zero Waste Ambassadors

3.2.1.4 Zero Waste Curriculum

A key initiative identified by the stakeholders is working with LAUSD and private schools to take the Zero Waste message to the next generation of Los Angeles residents through providing a Zero Waste curriculum in the schools. One of the top goals of SWIRP, identified by stakeholders during Phase 1 is:

"Zero waste should become second nature as part of the culture of the family, education system, and community."

Stakeholders have emphasized school outreach as a way of reaching the greater community. By practicing Zero Waste at school, students learn the importance of reduction and conservation and bring the message back home to their families. In this way, LAUSD and the City can help change the "norms" of behavior to strive for Zero Waste.

Public schools are increasingly under financial and time pressure to deliver basic education and test preparation skills to students. Teachers need curricula aligned with the State standards. Pursuant to State law,[13] the California Environmental Protection Agency and CalRecycle are actively engaged in the development of the Education and Environment Initiative (EEI) that would bring a unified environmental education strategy to the State's schools.

The EEI is still under development and the model EEI curriculum does not currently include a Zero Waste module. However, communities throughout the State (including Alameda County Stopwaste.org) have expressed interest in developing a Zero Waste curriculum aligned to the State standards in math and reading. The City could advocate for the EEI to include Zero Waste subjects and it could also work with other agencies to independently develop a Zero Waste curriculum that could be adopted by LAUSD and other schools in the City. At almost every Zero Waste workshop held throughout Phase 1 and Phase 2, stakeholders have identified this initiative as the most important thing that the City could do to change the culture and support the goal of Zero Waste.

3.2.2 Upstream Policies

"Upstream" is a way of describing policies prior to the point of generation. Figure 2 depicts the Zero Waste loop discussed extensively in the workshops throughout Phase 1 and Phase 2. Within the Zero Waste loop, upstream policies would affect design of the product or package prior to manufacturing. Extended Producer Responsibility (EPR) is a strategy for encouraging manufacturers to take responsibility for the end-of-life of their products.

These initiatives seek to encourage manufacturers to design their products or packaging with less waste or with materials that are easy to recycle. In implementing EPR initiatives, the City would take an active role in advocating for legislation that requires product manufacturers, retail establishments, wholesale distributors and other appropriate entities to take back certain products or packaging that currently are difficult to recycle, contain toxics or otherwise pose problems when they are discarded as waste. The City would work with various federal, State, and regional agencies and community groups to ensure that effective take-back programs are enacted into law, thereby enhancing the City's goals to reduce the volume and toxicity of the materials entering the City's waste stream. Upstream policies could also

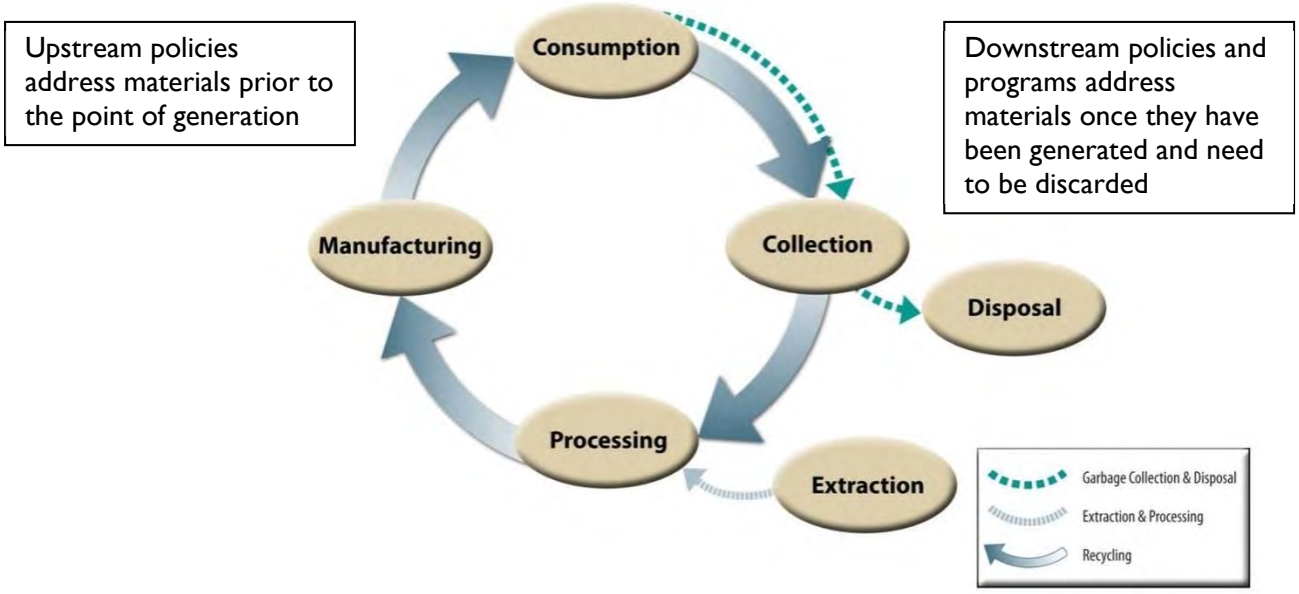
[13] Assembly Bill 1548 (Pavley, Chapter 665, Statutes of 2003) and Assembly Bill 1721 (Pavley, Chapter 581, Statutes of 2005).

include material bans, such as the City department expanded polystyrene foam ban and the single-use bag policy.[14] Upstream policies discussed by the stakeholders include:

- Advocating for EPR for toxics
- Advocating for EPR for difficult to recycle materials
- Advocating for State packaging legislation
- Single-use bag ban
- Advocate for businesses to develop life-cycle analyses for products and packaging, taking into account all environmental impacts of the product from manufacturing to the end of its useful life
- Advocate for legislation to incentivize manufacturers to use local reuse and recycling markets for the products they manufacture

These policies are described in *Appendix A Policy and Program Analysis*.

Figure 2: The Zero Waste Loop



3.2.2.1 Blue Dot/Green Dot Program

City staff have developed the concept of the "Blue Dot" program. Similar to the "Green Dot" program in Europe and Japan, manufacturers would voluntarily label their products and packaging to indicate whether they are recyclable or compostable.

[14] On May 23, 2012, the City Council adopted a policy to ban distribution of single-use plastics bags and impose a 10-cent fee on single-use paper bags at supermarkets and select retail stores within the City (Council File 11-1531).

Stakeholders have expressed confusion about what materials should be placed in the blue bin and the green bin. This program would make it easier for residents and businesses to recycle and compost.

Advocacy for this approach is best accomplished at the State level, as it may be difficult for manufacturers to comply at the municipal level. The Blue Dot/Green Dot program could also be implemented on a local level as a business recognition program, by providing Blue Dot/Green Dot symbols to commercial businesses that recycle or restaurants that divert food scraps.

This approach is further described in *Appendix A Policy and Program Analysis*.

3.2.3 Downstream Policies and Programs

"Downstream" policies and programs are those that address materials after they are generated. On the Zero Waste loop, they affect collection, processing, and disposal. Stakeholders have identified additional downstream programs that will be needed to achieve Zero Waste, including the following:

- Adding textiles to the blue bin program
- Adding food scraps to the green bin program
- Modifying collection rates to provide incentives (pay-as-you-throw)
- Providing more direct technical assistance
- Requiring all multi-family and commercial generators to have recycling collection services
- Requiring all C&D loads to be processed

These programs are described in *Appendix A Policy and Program Analysis*.

3.2.3.1 Universal Access to Programs

In developing its Zero Waste programs and infrastructure, the City needs to ensure that all generators have universal access to recycling programs. Currently, the City provides: residential curbside blue bin recycling and green bin yard trimmings collection; multi-family blue bin recycling available to all multi-family buildings; school blue bin recycling available to all LAUSD schools within the City; and food scraps collection available to all restaurants. Commercial recycling services are provided by private haulers operating within the City. Approximately 450 permitted private waste haulers provide waste hauling services in the City, including construction-related contractors.

The market for recyclable materials allows large volume generators to effectively divert their materials. As a whole, the commercial generator sector diverts 69 percent of materials generated away from landfills. However, not all commercial establishments have access to cost-effective recycling programs. Small volume generators (such as private schools and pre-schools, churches, small offices, and retail businesses) are not able to attract a private recycler, or the costs of recycling are prohibitive. The City has undertaken several initiatives designed to increase recycling in the commercial generator sector, including the following:

- **Business Recycling Guides** – The City distributes a recycling guide specifically designed for the 28 different types of businesses in the City. Information is tailored to each business group

and includes waste prevention tips and case studies of similar local businesses that have implemented successful recycling programs.

- **AB 939 Fee Rebate** – Permitted haulers in the City pay the AB 939 Compliance Fee, which provides the funding for the City's multi-family and commercial programs. Haulers can receive a rebate for delivering mixed materials to a City Certified Processor. Approximately three million dollars are rebated each year.
- **Commercial and Multi-Family Private Hauler Franchise Initiative** – The City Council indicated its intention to move from the current private waste hauler permit system to a franchise system for the collection of waste from both multi-family and commercial properties, not collected by the City. The franchise system is intended to help the City reach its Zero Waste goals, and will contain elements such as maximum disposal amounts per zone, aggressive diversion programs, including outreach and education, clean fuel requirements, and worker health and safety requirements, to be administered by LASAN.
- **Recycling Market Development Zone** – The Recycling Market Development Zone (RMDZ) program was created in 1989 by State legislation[15] to develop local markets for recyclable materials. CalRecycle provides low-interest loans to qualifying processors and manufacturers. The City administers the loan program, which has provided over ten million dollars in direct loan proceeds to City businesses.
- **Business Waste Assessment and Technical Assistance Program** – In 2006, the Business Waste Assessment program was launched to provide free on-site waste evaluations and technical assistance to improve recycling for large businesses in the City. The assessment teams assist the businesses to identify an appropriate recycler, identify proper placement of bins, and develop streamlined recycling procedures. LASAN has completed 700 assessments and followed up with many more requests for technical assistance which did not require a site visit.
- **Multi-family Recycling Program** - The City has approximately 600,000 multi-family units which are not served by the four-bin curbside recycling program. These units act in an open market to acquire waste services from over a hundred permitted private waste haulers. In 2004, LASAN began a series of pilot programs to 70,000 units throughout Los Angeles to test the most effective recycling methods, and in 2007 began the rollout of a voluntary weekly blue bin program similar to the curbside recycling program using three contracted private haulers. In 2012, the program serviced over 429,000 units with "valet" type service each week through this voluntary recycling effort.
- **Restaurant Food Waste Recycling Program** - Nearly 70 percent of waste from restaurants is organic and can be diverted from landfills by composting or using other processing technologies. The City has over 8,000 restaurants within its boundaries. In 2004, LASAN initiated a pilot program in a limited area of the City to divert food scraps from restaurants to composting facilities. Due to the success of the pilot, the program was expanded citywide in 2007. In 2012,

[15] Senate Bill 1322 (Bergeson, Chapter 1096, Statutes of 1989), passed in conjunction with AB 939.

there were over 1,300 restaurants participating in the program. Staff estimates that over 48,000 tons of food scraps are being diverted annually from the current participating restaurants.

- **LAUSD Recycling Partnership** - In 2002, the City began an outreach program and pilot to offer blue recycling bins to elementary schools and coupled this effort with education of school staff and students on the proper way to participate in the recycling. With this successful partnership, LASAN rolled out this program citywide in 2006 and currently services approximately 700 LAUSD schools located within the City that have blue bin recycling. Over 90 percent of elementary schools are now enrolled in the recycling program. LASAN also educates 20,000 students annually to increase recycling and decrease blue bin contamination.



Educational Outreach for Recycling at Schools

- **Recycling Practices Survey** – In 2006, the City conducted a survey mailed to over 40,000 businesses to assess waste prevention and recycling practices. Respondents reported that the greatest challenges to recycling are separation and storage of recyclables and transporting the materials to a recycling center. Most businesses said that if free collection was available or if there was more of a rate incentive (such as a reduction in their waste bill), they would recycle more. They also requested more outreach and education and access to shared recycling bins in commercial areas.

The AB 939 Compliance Fee, a ten percent fee on gross revenues, is assessed on permitted haulers operating in the City for residual waste (i.e., materials collected that are not source-separated for recycling by the generator). This fee pays for the commercial programs operated by the City, including the multi-family blue bin recycling program, the LAUSD school recycling program, and subsidizes the restaurant food scraps recycling program. However, this funding is insufficient to pay for free recycling at commercial businesses.

To ensure that all commercial and multi-family customers have access to recycling services, on April 24, 2013, the City Council approved the Commercial and Multi-Family Private Hauler Franchise Initiative Implementation Plan and directed LASAN to proceed with the development of a Request For Proposals for the collection of discarded materials from commercial and multi-family generators in the City.[16]

3.2.3.2 Mandatory Participation in Programs

During Phase 1 and Phase 2 of SWIRP, the stakeholders discussed mandatory recycling requirements for both residents and businesses. During Phase 1, interviews were conducted with 75 businesses in the City,

[16] The Council Action on the Commercial and Multi-Family Private Hauler Franchise Initiative is available through the City of Los Angeles Council File 10-1797-81.

including large Fortune 500 companies and smaller local businesses. By and large, the business community supported mandatory recycling as long as there was a level playing field, the program was cost-effective, and did not impose an undue burden on commercial generators. Stakeholders at the workshops favored phasing-in mandatory requirements over time, first increasing outreach and education and providing better access to voluntary recycling programs.

Stakeholders supported implementation of mandatory requirements if voluntary programs are insufficient. This approach represents a major shift from voluntary to mandatory participation in recycling collection programs, and is intended to motivate all waste generators (residential and commercial) within the City to separate recyclable materials from the waste they generate at their homes or businesses, and place it in the appropriate blue bin, green bin or other appropriate recycling collection container on a regular basis for collection.

To effect this change, the City would need to develop and adopt a "Mandatory Recycling" policy that requires waste generators to source-separate recyclables from other waste, and set the recyclables out for collection as appropriate for the recycling programs and services available through the City or the private haulers. The ordinance would need to be carefully developed based on consideration of legitimate concerns raised by various stakeholders and consistency with City policy directives, and publicized adequately to inform all residents, businesses, service providers, and others of the intent and purpose of the ordinance.

Communities across California, including Fresno, Sacramento, San Diego, San Francisco, and Stockton have implemented mandatory recycling ordinances requiring generators to divert recyclable materials from disposal.

On July 1, 2012, the mandatory commercial recycling regulation was implemented state-wide. The regulation, Assembly Bill 341, requires all businesses that generate more than four cubic yards of solid waste per week and multi-family complexes with five or more units, to arrange for recycling services.

Many communities, including Alameda County, have implemented local ordinances to set local standards, and to supplement and expand on the State requirement. For example, Alameda County will require large commercial business and multi-family complexes to have mandatory collection of organics, in addition to recycling, by July 2014.

The South Bayside Waste Management Authority, a joint powers agency which includes ten communities within San Mateo County, conducted an evaluation of existing mandatory recycling programs and identified the following approaches for successful implementation:

- Use a detailed rationale
- Include all businesses, regardless of size or type
- Include all sectors
- Require source-separation of any material that is collected
- Do not specify materials by name in the ordinance
- Do not establish an acceptable threshold for contamination

- Require haulers to deliver tags and warning notices
- Require haulers to provide information about such actions
- Allow haulers, at their discretion, but subject to health/safety codes, not to collect incorrectly-placed materials
- Establish a protocol for enforcement
- Establish that government staff have the power to clarify the ordinance through the issuance of regulations
- Establish a sliding scale of fines based on service levels
- Establish a protocol to grant limited exemptions
- Use public sector inspectors or third-party contractors to verify non-compliance
- Include specific requirements for multi-family or multi-tenant building owners and managers
- Require haulers to conduct periodic waste audits of loads
- Establish a grace period of non-enforcement
- Initiate a stakeholder and scoping process for ordinance details
- Focus service delivery on the carrots rather than the threat of the sticks, but convey expectations ("it's the law") that recycling must be taken seriously ("enforcement measures can include...")
- Use a "light touch" on enforcement (enforce flagrant violations rather than minor infractions)

The research included the evaluation of mandatory requirements for both generators and private collection service providers. Regulatory requirements, such as seatbelt laws and smoking restrictions have contributed to changing the norms of behavior. Stakeholders in Los Angeles acknowledged that an eventual transition to mandatory requirements for all generators, residential and commercial, will be needed to achieve Zero Waste.

3.2.3.3 Commercial and Multi-Family Private Hauler Franchise Initiative

In 2012, the City Council indicated its intention to move from the current private waste hauler permit system to a franchise system for the collection of discarded materials from both multi-family and commercial properties not collected by the City.

On April 24, 2013, the City Council approved the Commercial and Multi-Family Franchise Initiative Implementation Plan and adopted the 10 goals of the franchise program:[17]

1. Meet the city's zero waste goals.
2. Meet and exceed State requirements for waste diversion and mandatory recycling.
3. Improve health and safety for solid waste workers.
4. Improve efficiency of the city's solid waste system.
5. Improve the city's air quality.

[17] Bureau of Sanitation Final Implementation Plan for Exclusive Commercial and Multifamily Solid Waste Franchise Hauling System (Council File I0-1797-S15) http://clkrep.lacity.org/onlinedocs/2010/10-1797-s15_misc_4-12-13.pdf (accessed October 1, 2013).

6. Provide the highest level of customer service.
7. Create a consistent, clearly defined system, fair and equitable rates and contingency plans to ensure reliable service.
8. Create a system that ensures long term competition.
9. Ensure sufficient staffing to meet program goals.
10. Ensure reliable system infrastructure to provide uninterrupted service to customers.

The City Council is expected to consider the commercial and multi-family private hauler franchise ordinance and associated environmental documentation in early 2014.

The SWIRP policies and programs anticipated to fall under the private hauler initiative include, but are not limited to, the following:

- Multi-family recycling
- Multi-family yard trimmings
- Multi-family food scraps
- Modify multi-family and commercial collection rates
- Provide more public area recycling
- Require all commercial haulers to offer recycling services to their customers
- Request all businesses to have recycling
- Mandatory source separated recycling for multi-family and commercial sectors
- Mandatory organics separation for multi-family and commercial sectors
- Multi-family recycling ambassador program
- Expand commercial technical assistance
- Program reinforcement for multi-family and commercial sectors
- Large scale media campaign for multi-family and commercial sectors

3.3 Material Flow Model and Generation Projections

During the Phase 1 planning process, stakeholders identified over 80 individual policies and programs for reaching Zero Waste and discussed over 20 different facility options. To evaluate the effectiveness of the policies, programs, and facilities, a material flow model was developed and became a useful tool for projecting waste generation, diversion, and disposal over the planning period.

3.3.1 Generation Projections

Data gathering for the SWIRP analysis began in 2007, using 2006 as the "base year" for the plan. In 2012, additional research was conducted and the analysis was updated using 2010 as the base year. Baseline tonnages were identified for 2010 and projected through 2030. Table 5 provides the estimated baseline

tonnage for 2010 by the "generator sector" where the material was generated (residential curbside, multi-family, commercial, and C&D sites).

Table 6 provides the projected solid waste quantities by generator sector with estimates for the planning year increments, based on projected changes in population and employment provided by the Southern California Association of Governments. City generators disposed of 2,849,237 tons of solid waste in 2010, or about 4.1 pounds per person per day. Assuming no additional programs are implemented to reduce waste, citywide disposal is projected to increase to over 3.1 million tons by 2030.

Table 5: Estimated 2010 Solid Waste Quantities by Generator (tons)

Source	Generator Division
Residential curbside (LASAN)	870,286
Self-hauled residential	23,485
Total residential curbside	893,771
Multi-family	441,749
Commercially-hauled commercial	1,353,777
Self-hauled commercial	88,014
Total commercial	1,441,791
C&D sites	71,927
Total	**2,849,237**

Source: LASAN database "Sanitation Refuse and Transfer Tonnage Calendar Year 2010" and CalRecycle Disposal Reporting System. Refer to *Appendix B Material Flow Model and Generation Projections*, Table 3, page B-12. Note that values may not sum to total due to rounding.

Table 6: Projected Solid Waste Quantities by Generator (tons)[1]

Year	Residential Curbside	Multi-Family	Commercial	C&D	Total
2010	893,771	441,749	1,441,790	71,927	2,849,237
2013	895,643	444,497	1,501,553	73,565	2,915,258
2020	924,252	465,415	1,584,306	76,977	3,050,949
2025	847,235	530,171	1,621,493	77,643	3,076,542
2030	856,944	537,190	1,649,062	78,741	3,121,937

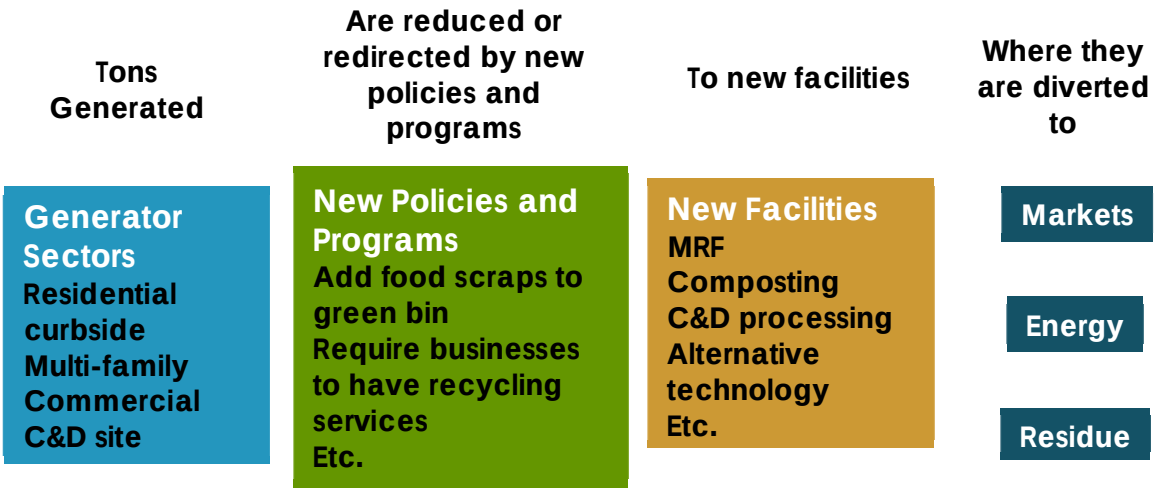
[1]Tonnage projections based on Southern California Association of Governments population and employment projections, Integrated Growth Forecast by Transportation Analysis Zone, 2010. Note that values may not sum to total due to rounding. Refer to *Appendix B Material Flow Model and Generation Projections*, Table 4, Page B-12.

3.3.2 Material Flow Model

The material flow model is designed to pinpoint diversion opportunities for targeted materials by generator sector through 2030. Based on projections of waste generation and documented assumptions for participation rates and efficiency, the material flow model is able to estimate the diversion potential of different policies, programs, and facilities.

Figure 3 depicts how the material flow model works. Tons generated by residential curbside, multi-family, commercial, and C&D sites, are reduced by new policies and programs and then are directed to new facilities, where they are diverted to market or converted into energy and residue is finally disposed. The material flow model and the waste generation projections are further described in *Appendix B Material Flow Model and Generation Projections.*

Figure 3: Material Flow Model Flow Diagram



3.4 Policy and Program Scenarios

During Phase 1, stakeholders identified over 80 individual policies and programs for reaching Zero Waste. The complete list of policies and programs is included in *Appendix A Policy and Program Analysis.* To quantify the diversion potential using the material flow model, research and analysis was conducted on over 40 policy and program options which were identified by the stakeholders as potential components of SWIRP.

The policies and programs included various options to address residential and non-residential waste streams, in order to maximize citywide waste diversion. In identifying the policies and programs to model, the following criteria were used:

- Ability to quantify (e.g., can reasonably project increased tonnages of materials that will be diverted from disposal, based on the policy or program being fully implemented).
- Did not duplicate another policy or program already in place.

- Did not duplicate facility analysis (e.g., Alternative Technology is included in facility analysis).
- Consistent with integrated waste management hierarchy set forth in AB 939: CalRecycle and local agencies shall promote the following waste management practices in order of priority:[18]
    1. Source reduction (and reuse)
    2. Recycling and composting
    3. Environmentally safe transformation (thermal treatment) and environmentally safe land disposal
- Consistent with the following 12 guiding principles selected by stakeholders:
    1. Education to decrease consumption
    2. City leadership as a model for Zero Waste practices
    3. Education to increase recycling
    4. City leadership to increase recycling
    5. Manufacturer responsibility
    6. Consumer responsibility
    7. Convenience
    8. Incentives
    9. New, safe, technology
    10. Protect public health and the environment
    11. Equity
    12. Economic efficiency

The policies and programs were grouped according to five scenarios. These scenarios, as listed in Table 7, were presented to the stakeholders at the regional workshops held in March 2009. Feedback from the workshops was incorporated into the policy, program, and facility phasing approach and presented to the stakeholders at the citywide conference held in May 2009.

[18] California Public Resources Code Section 40051.

Table 7: Policy and Program Scenarios

Scenario 1	No New Programs Baseline
Scenario 2	New Voluntary Downstream Policies and Programs
Scenario 3	Mandatory Requirements added to Scenario 2 Downstream Policies and Programs
Scenario 4	Upstream Policies added to Scenario 2 Downstream Policies and Programs
Scenario 5	Upstream Policies added to Scenario 3 Full Implementation of SWIRP Upstream, Downstream and Mandatory

Scenario 1: No New Policies or Programs

Scenario 1 assumes that the City does not implement any new policies or programs, in order to establish a base case for comparison with the other programs and policies selected for the waste diversion model. The City stays at 72 percent diversion.[19]

Scenario 2: New Policies and Programs

Scenario 2 includes the following programs selected from the master list of policies and programs to model for estimating diversion potential. They are not inclusive of all policies and programs to be implemented by the City. These policies and programs are further described in *Appendix A Policy and Program Analysis*.

Generator	New Policies and Programs (Scenario 2)
Residential curbside	Modify refuse and recycling rates Recycling ambassador (education) Add textiles to blue bin or partner with non-governmental organizations to increase textile diversion Bulky item reuse Add food scraps to green bin Large scale media/social marketing
Multi-family	Modify refuse and recycling rates Multi-family recycling Recycling ambassador (education) Add textiles to blue bin Bulky item reuse Multi-family green bin

[19] The 72 percent diversion is based on 2010 baseline year tonnage data.

Generator	New Policies and Programs (Scenario 2)
	Add food scraps to green bin Large scale media/social marketing
Commercial	Request all businesses to have recycling services Require all commercial haulers to offer recycling services to their customers Modify refuse and recycling rates Expanded technical assistance Large scale media campaign-social marketing Provide more public recycling areas
C&D sites	Require all C&D loads to be processed[20] Expanded technical assistance

Scenario 3: Adding Mandatory Requirements to Scenario 2

Scenario 3 includes the following programs selected from the master list of policies and programs:

Generator	Mandatory Requirements (Scenario 3)
Residential curbside and multi-family	Mandatory recycling separation Mandatory organics separation Ordinance requiring Resource Recovery Centers at transfer stations and landfills Recycling ambassadors (enforcement)
Commercial	Mandatory C&D recycling Mandatory recycling separation Mandatory organics separation Ordinance requiring Resource Recovery Centers at transfer stations and landfills Direct technical assistance (enforcement)
C&D sites	Ordinance requiring Resource Recovery Centers at transfer stations and landfills Direct technical assistance (enforcement) Increase diversion requirements at C&D facilities

Scenario 4: Adding Upstream Policies to Scenario 2

Scenario 4 includes the following programs selected from the master list of policies and programs to be applied to all generators:

Upstream Policies (Scenario 4)
Advocate for EPR for toxics Advocate for EPR for difficult to recycle materials Advocate for State packaging legislation Single use bag ban Advocate for businesses to develop life-cycle analyses for products and packaging Advocate for legislation to incentivize manufacturers to use local reuse and recycling markets

[20] The mandatory C&D ordinance was adopted by the City Council on December 17, 2010. All mixed C&D waste generated within City limits must be taken to City certified C&D waste processors. http://san.lacity.org/solid_resources/recycling/c&d.htm (accessed October 1, 2013).

Scenario 5: Adding Upstream Policies to Scenario 3 (Full Implementation of SWIRP)

Scenario 5 includes the following programs selected from the master list of policies and programs to be applied to all generators:

Upstream Policies (Scenario 5)
Advocate for EPR for toxics
Advocate for EPR for difficult to recycle materials
Advocate for State packaging legislation
Single use bag ban
Advocate for businesses to develop life-cycle analyses for products and packaging
Advocate for legislation to incentivize manufacturers to use local reuse and recycling markets

3.4.1 Scenario Evaluation

During the Phase 2 planning process, stakeholders evaluated the scenarios for implementation. Based on an interactive process involving the regional working groups, the initial list of scenarios was screened qualitatively to focus on those alternatives that have the highest potential for success, considering cost, impact, feasibility, and implementation requirements. In order to estimate the impacts and costs through 2030, the remaining options were analyzed. The projected impacts of these alternatives were compared to baseline projections of waste generation and disposal to determine how much material could be diverted over time. The impacts of different programs were combined to project overall progress towards the City's goals and the estimated total cost of reaching those goals. Based on stakeholder direction, evaluation using the guiding principles and assessments for diversion potential, cost-effectiveness, and other community values, the stakeholders identified a preferred path for implementation.

3.4.1.1 Diversion Potential

The diversion potential of each policy and program was estimated based on data from comparable policies and programs implemented in other communities, research based on national studies and City pilot data, and educated estimates based on experiences with other similar programs. The diversion rates presented in this section assume full implementation of the policies and programs all at once. However, new policies and programs will be developed over time through additional research, testing, and pilot programs before full-scale implementation. Several policies will require new ordinances which will require City Council action and time to implement. Table 8 presents the tons disposed, tons diverted, and the diversion rate by scenario. Table 9 presents the diversion rate by generator sector. Descriptions and diversion assumptions for each of the policies and programs included in each scenario are included in *Appendix A Policy and Program Analysis*.

Table 8: Projected Diversion Potential by Scenario[1]

Scenario	Tons Disposed	Tons Diverted	Diversion Rate
Scenario 1 No New Policies or Programs (2010 Baseline)	**3,121,937**	**7,978,008**	**72%**
Scenario 2 New Policies and Programs	**2,317,771**	**8,782,174**	**79%**
Scenario 3 Add Mandatory Requirements to Scenario 2	**1,620,029**	**9,479,916**	**85%**
Scenario 4 Add Upstream Policies to Scenario 2	**2,201,847**	**8,898,098**	**80%**
Scenario 5 Add Upstream Policies to Scenario 3 (Full Implementation of SWIRP)	**1,547,799**	**9,552,146**	**86%**

[1]Assumes 2010 baseline tonnage and implementation of all SWIRP policies and programs.
Source: City of Los Angeles Zero Waste Planning Model – Final Results, January 2013.

Table 9: Diversion Potential by Generator Sector

Scenario	Residential Curbside	Multi-Family	Commercial	C&D	Citywide
Scenario 1 No New Policies or Programs (2010 Baseline)	**60%**	**23%**	**69%**	**97%**	**72%**
Scenario 2 New Policies and Programs	**70%**	**40%**	**77%**	**99%**	**79%**
Scenario 3 Add Mandatory Requirements to Scenario 2	**78%**	**58%**	**84%**	**99%**	**85%**
Scenario 4 Add Upstream Policies to Scenario 2	**71%**	**44%**	**78%**	**99%**	**80%**
Scenario 5 Add Upstream Policies to Scenario 3 (Full Implementation of SWIRP)	**79%**	**61%**	**85%**	**99%**	**86%**

Source: City of Los Angeles Zero Waste Planning Model – Final Results, January 2013.

By implementing all of the Zero Waste policies and programs identified by the stakeholders, the City could achieve as much as 86 percent diversion citywide, diverting over 9.5 million tons annually—over 1.5 million tpy more than the 2010 baseline levels.

3.4.1.2 Greenhouse Gas Emissions Reductions and Green Jobs

Landfills are one of the largest sources of methane, a powerful greenhouse gas which is 21 times more potent than carbon dioxide. As described in the GREEN LA plan, the City can significantly reduce its greenhouse gas emissions levels through waste reduction and recycling. Recycling can reduce greenhouse gases both by reducing methane generation at landfills and by saving energy through recycling. During Phase 1, stakeholders recommended that SWIRP support the GREEN LA plan goal of 35 percent reduction of greenhouse gases below 1990 levels by 2030, a reduction of 18.9 million tons of carbon dioxide emissions.

Estimates were prepared of the greenhouse gas emissions reductions that will be achieved and the green jobs that will be created by implementing the policies and programs identified by the stakeholders.

Based on the diversion results described in Table 9, Table 10 projects the greenhouse gas reduction potential of the scenarios using the U.S. EPA Waste Assessment Model (WARM) to estimate greenhouse gas reduction based on material types and amounts diverted. Table 10 also includes the number of green jobs that would be created through implementation of new policies and programs. This calculation was prepared by the Institute of Local Self-Reliance based on the methodology developed from their research published in *Recycling Economic Development through Scrap-Based Manufacturing* (Michael Lewis, 1994).

Table 10: Greenhouse Gas Emissions Reduction and Green Jobs by Scenario

Scenario	Greenhouse Gas Emissions Reduction ($MTCO_2E$)[1]	Equivalent number of passenger vehicles removed from the road[1]	Number of Green Jobs Created[2]
Scenario 1 No New Policies or Programs (Baseline)	--	--	--
Scenario 2 New Policies and Programs	1.4 million	281,600	2,000
Scenario 3 Add Mandatory Requirements to Scenario 2	1.0 million	204,300	1,600
Scenario 4 and 5 Add Upstream Policies to Scenarios 2 and 3	0.1 million	31,500	700
Total[3]	**2.6 million**	**517,400**	**4,300**

[1]Calculated based on US EPA WARM (February 2012 version) in metric tons of carbon dioxide equivalent.
[2]Source: *Recycling-Based Job Potential for Los Angeles*, Institute of Local Self-Reliance, March 2013.
[3]Note that values may not sum to total due to rounding.

By implementing all of the Zero Waste initiatives, the City would achieve 14 percent of its goal to reduce carbon dioxide emissions by 18.9 million metric tons by 2030. This is the equivalent of removing over 25 percent of the 2 million passenger vehicles registered in the City (as calculated by WARM). The new programs will also create approximately 4,300 new green jobs in the City, including jobs in refurbishing, recycling and processing, and remanufacturing.

3.5 Policy and Program Phasing

At the Phase 2 workshops in March 2009, stakeholders discussed the results of the policy and program analysis and provided the following recommendations:

- The City should devote more resources to outreach and education of all generators, including residential, commercial, and schools.
- The City should increase efforts to provide universal access to recycling to all generators and maximize voluntary programs prior to implementing mandatory requirements.
- The stakeholders continued to emphasize "education, education, education."

Table 11 presents the phasing schedule for the policies and programs identified by the stakeholders. The phasing schedule is based on the stakeholder direction to maximize voluntary programs before implementing mandatory requirements. Several programs identified by the stakeholders are currently being implemented (e.g., residential food scraps pilot) or are transitioning from voluntary to mandatory after a period of voluntary implementation (e.g., C&D ordinance, commercial recycling). LASAN is also expanding current programs, including the restaurant food scraps diversion program to provide rebates to all haulers providing food scraps collection.

The timing of some programs, such as mandatory commercial recycling, is influenced by State law. A future mandatory ordinance could require residential and smaller commercial generators to recycle and could add in the requirement that all generators divert organics.

Some programs will need to be phased in over time as infrastructure is developed. LASAN is in the process of securing composting capacity for its residential food scraps program. LASAN is also developing and securing transfer capacity for food scraps co-collected with yard trimmings to transfer these materials to processing facilities outside of the City. Additionally, LASAN is evaluating the option of utilizing existing wastewater infrastructure for the management of food scraps.

The facility analysis is presented in Section 4 and identifies the facilities that will be needed to process the materials generated through the implementation of the policies and programs listed in Table 11. To fully implement these programs, some new facility capacity will need to be developed or secured. The facility phasing schedule is included in Section 4, Table 34. The phasing schedule was presented to the stakeholders at the citywide conference in May 2009 and recommended for the implementation of SWIRP.

Table 11: Policy and Program Phasing through 2030

Scenario	2013	2020	2025	2030
Scenario 2 New Policies and Programs	-Increase Recycling Ambassadors -Bulky item reuse and recycling -Add textiles to blue bin or partner with non-governmental organizations to increase textile diversion -Add food scraps to green bin[21] -Large scale media/social marketing/education -Multi-family recycling (rollout to all buildings) -Provide more public area recycling containers (streets and parks) -Require all C&D loads to be processed[22] -Market development -Environmentally Preferable Purchasing Policy -Los Angeles Unified School District Zero Waste curriculum -Community Beautification Grants for Zero Waste Projects	-Rate structure modifications -Multi-family green bin (phase in as appropriate) -Commercial haulers to provide recycling services to all of their customers -All businesses to provide recycling within their businesses	-Continue new programs	-Continue new programs
Scenario 3 Add Mandatory Requirements to Scenario 2		-Mandatory recycling separation for all generators -Mandatory organics separation for all generators -Ordinance requiring Resource Recovery Centers at transfer stations and landfills -Increase diversion requirements at City Certified C&D facilities -Increased code enforcement	-Continue mandatory programs	-Continue mandatory programs
Scenario 4 and 5 Add Upstream Policies to Scenarios 2 and 3	-Advocate for Extended Producer Responsibility for toxics -Advocate for Extended Producer Responsibility for difficult to recycle materials -Advocate for State packaging legislation -Single use bag ban -Advocate for businesses to develop life-cycle analyses for products and packaging -Advocate for legislation to incentivize manufacturers to use local reuse and recycling markets -Advocate for manufacturer take back programs	-Continue upstream advocacy	-Continue upstream advocacy	-Continue upstream advocacy

[21] Requires LASAN to secure sufficient composting capacity from operators. Expansion of the program would be phased in as capacity is secured.

[22] Mandatory C&D ordinance was adopted by the City Council on December 17, 2010. All mixed C&D waste generated within City limits must be taken to City certified C&D waste processors. http://san.lacity.org/solid_resources/recycling/c&d.htm (accessed October 1, 2013).

Section 4 Facility Analysis

This section describes the City's existing solid waste system and infrastructure; the new facilities that will be needed to implement SWIRP programs; the scenarios for implementation; and the phasing approach recommended by the stakeholders.

4.1 Introduction

An essential component of SWIRP is the identification and development of future facilities to meet the City's recycling and solid waste infrastructure needs through 2030. Some of the City's current infrastructure is owned and operated by the City, including:

- Central Los Angeles Recycling & Transfer Station (CLARTS)
- Griffith Park Composting Facility
- Harbor Mulching Facility
- Lopez Canyon Environmental Center, including a composting/mulching facility
- Seven S.A.F.E. Centers located throughout the City
- Six District Yards serving each of the City's six wastesheds

However, much of the recycling and solid waste infrastructure used by generators in the City is owned and operated by the private sector and other public agencies, including the Sanitation Districts of Los Angeles County.

Over the past 20 years, as the City's landfills were closing, the City sought options for transfer and disposal of solid waste. In 2004, the City purchased the Central Los Angeles Recycling & Transfer Station and has been interested in seeking transfer station options in West Los Angeles.

In support of the City's goal of ending urban landfilling, the City has also evaluated long-haul options to the remote desert landfills. However, the City's orientation shifted with the adoption of the RENEW LA Plan in 2006. RENEW LA focused not on transfer and disposal, but maximizing diversion through source-separation programs, material recovery facilities, composting facilities, and converting residual waste into energy through new technologies.

The City has been investigating advanced technology for alternative treatment of residual waste since 2004 and is currently procuring the City's first Alternative Technology project.

Throughout Phase 1 of the SWIRP planning process, stakeholders discussed facility options and toured local facilities. During Phase 2, stakeholders identified the specific facility needs resulting from the implementation of the SWIRP policies and programs and discussed options for maximizing diversion from disposal through residual waste processing and treatment through Alternative Technologies.

4.1.1 Existing Solid Waste System and Infrastructure

An understanding of the private and public waste infrastructure and services currently used by the City is essential to inform planning and future infrastructure development. This section describes the City's existing solid waste system and infrastructure. *Appendix C Infrastructure and Material Flows* documents the

flows of solid waste, recycling, construction and demolition materials, yard trimmings, and household hazardous waste and electronics among all generators, transfer stations, processing and handling facilities, and landfills used by the City's businesses and residents. The original facility surveys, documented in *Appendix C Infrastructure and Material Flows,* were conducted in 2006 and 2007. Updated citywide diversion tonnages for 2010 were identified in 2012. This information is included in the sections below, where appropriate.

There are currently over 40 facilities that are operating in and around the City that receive, process, and transport recyclable material and yard trimmings to markets, and solid waste to disposal. These include:

- Material Recovery Facilities (MRFs)
- Yard Trimmings and Food Scraps Processing Facilities
- Construction and Demolition Debris Processing Facilities
- Waste-to-Energy Facilities
- Transfer Stations
- Landfills

4.1.1.1 Material Recovery Facilities

An estimated 2.6 million tons of recyclables were collected from residents and businesses within the City in 2010. LASAN collection crews collected about 209,535 tons of recyclables (excluding contamination) from residential curbside customers using the curbside blue bins in 2010 and approximately 130,000 were self-hauled by residents. The City' multi-family collection contractors recycled 14,366 tons in 2010. Approximately 2,260,000 tons of recyclables were transported from commercial sources to MRFs and/or markets by commercial haulers and through commercial self-haul. Numerous local and regional facilities (material recovery facilities, recycling companies, end-user processors, etc.) handle recyclables delivered by multiple sources, and specific City data is not available.

The City contracts with various MRFs to process the blue bin recyclables collected by LASAN. The following MRFs have capacity to process blue bin recyclables collected by LASAN.

- Angelus Western Paper Fibers – Porter Street, Los Angeles
- Bestway Recycling – Main Street, Los Angeles
- City Fibers – Schoenborn Street, North Hills
- City Fibers, Inc. – Santa Fe Ave., Los Angeles
- CR&R – Western Ave., Stanton
- Potential Industries – East E Street, Wilmington
- RockTenn – Denker Avenue, Torrance
- Sun Valley Paper Stock – San Fernando Road, Sun Valley

There are 11 major processors of commercially generated recyclables. These facilities processed about 410,000 tons of commercial recyclables in 2007. About 207,000 of those tons are commercially hauled and about 203,000 are self-hauled by the business or institution that generated the recyclables. In addition

to the 410,000 tons recycled by the major processors surveyed for this report, approximately 1.86 million tons of materials were diverted from disposal citywide. These additional sources of diversion include:

- Waste prevention activities undertaken by individual generators
- Materials that are reused on-site or diverted by other recyclers (other than the 11 major commercial processors listed here), including scrap metal dealers, pallet reuse, industrial food diversion, and many other sources.

These sources were documented in the *City of Los Angeles Waste Characterization and Quantification Study Year 2000*, July 2002. The 11 major processors surveyed in 2007 and 2008 for SWIRP were:

- Allan Company – Delaware Ave., Santa Monica
- Angelus Western Paper Fibers – Porter Street, Los Angeles
- Bestway Recycling – Firestone Blvd., Los Angeles
- Burbank Recycling – South Flower Street, Burbank
- Los Angeles Recycling Center – Main Street, Los Angeles
- Potential Industries – East E Street, Wilmington
- Recycle America Alliance – East Florence, Los Angeles
- RockTenn – Denker Avenue, Torrance
- South Coast Recycling – Doran Street, Los Angeles
- Sun Valley Paper Stock – San Fernando Road, Sun Valley
- West Valley Fibres – Keswick Street, Van Nuys

The "major processors" of commercially generated material include most of the same processors that handle the City's residential blue bin materials. The major processors were identified as those facilities handling the majority of commercially generated material in the City. Two of the City's residential processors, City Fibers (West Valley and South Los Angeles) and CR&R (Stanton), also process commercial recyclables, but at lower levels than the major processors.

Details about each of these facilities, including daily and annual capacity, materials processed, end-markets, costs, expansion plans, and opportunities are included in Attachment C-3 of *Appendix C Infrastructure and Materials Flows*, beginning on page C-3-1.

4.1.1.2 Yard Trimmings Processing Facilities

In 2010, an estimated 835,033 tons of yard trimmings were generated by residents and businesses within the City as follows:

- Residential yard trimmings collected by the LASAN from residential curbside customers (55 percent)
- Commercial yard trimmings collected by permitted waste haulers (25 percent)
- Self-haul/other yard trimmings brought to solid waste facilities by residents, landscapers or other businesses that generated it (21 percent)

LASAN brings residential curbside green bin yard trimmings to the following facilities:

- Yard trimmings processing facilities to be mulched and/or composted
- Transfer stations to be transported to yard trimmings processing facilities

Materials such as yard trimmings are considered diverted from disposal under State law if used as Alternative Daily Cover (ADC) in landfill operations, and count toward the diversion goals mandated by AB 939. City policy[23] does not allow yard trimmings collected by LASAN to be used as ADC. However, private haulers in the City can bring yard trimmings to landfills for use as ADC.

Private haulers bring yard trimmings to the following facilities:

- Landfills for beneficial use such as ADC
- Yard trimmings processing facilities to be mulched and/or composted
- Transfer stations to be transported to landfills for beneficial use, or to yard trimmings processing facilities

Eleven transfer stations reported receiving source-separated yard trimmings which were consolidated and delivered to landfills for beneficial use or to yard trimmings processors.

In 2006, about half of the yard trimmings generated in the City were taken to a transfer station before reaching a final destination. Ultimately, the majority of the yard trimmings generated in the City were composted, mulched or beneficially used at landfills. Table 12 lists the facilities that received and diverted yard trimmings from City sources in 2006. Details about each of these facilities, including daily and annual capacity, materials processed, end-markets, costs, expansion plans, and opportunities are included in the facility surveys included in Attachments C-1, C-2, and C-5 in *Appendix C Infrastructure and Materials Flows* beginning on page C-1-1.

4.1.1.3 Food Scrap Processing Facilities

The City implemented a residential food scraps pilot program in September 2008 for 8,700 households in the South Los Angeles and North Central wastesheds. During the pilot, the City is collecting the following additional materials for diversion as part of the green bin program:

- Food scraps, including fruits, vegetables, grains, meat, and bones
- Compostable paper, including napkins and paper towels, and food contaminated paper and cardboard, such as takeout containers and pizza boxes

These materials are taken to CLARTS, which is owned and operated by LASAN, and transferred to the Victor Valley Regional Compost Facility (formerly California Biomass), which is owned and operated by Arakelian Enterprises, in Victorville, California. This facility is permitted to compost food scraps.

In addition to the food scraps processing capacity needed for residential food scraps collection, the City has expanded its restaurant food scraps program.[24] Effective May 1, 2010, LASAN has included

[23] Public Works Board Report on Green Waste Processing Contingency Plan adopted on September 22, 2006.
[24] LASAN food scraps program description: http://www.lacitysan.org/solid_resources/recycling/services/food.htm (accessed October 1, 2013).

commercial food scraps in the waste hauler rebate program. All permitted waste haulers will now have the opportunity to participate in the City's commercial food scraps division program by offering this service to their customers and receiving a rebate from the City.

For every ton of food scraps diverted from disposal, the City will provide a rebate of $35 per ton. The purpose of the rebate program is to encourage permitted haulers to increase the number of their customers participating in the food scraps program. In 2012, there were over 1,300 restaurants participating in the food scraps program. The City has also certified four food scraps processors, Athens Services, CLARTS, Community Recycling and Waste Management.[25] The rebate program is funded through the Waste Hauler Permit/AB 939 Compliance Fee.

There are 48 composting facilities in California that are permitted to accept food scraps. Twelve commercial scale facilities are located in southern California. Table 13 lists the facilities in Southern California permitted to accept food scraps. These facilities (except for Community Recycling) were not surveyed for this report because they did not receive tons from City sources in 2006, but are included as they are important for future planning.

[25] City Certified as of July 1, 2013.

Table 12: Facilities Receiving Yard Trimmings from City Sources in 2006[1]

Facilities that Processed Yard Trimmings from City Sources	Reported Citywide Tons Received (2006)	Percent Received (%)
Lopez Canyon (Lake View Terrace)	31,301	3.2
Griffith Park	39,684	4.1
North Hills Recycling	80,000	8.2
Harbor Mulching Facility	20,521	2.1
Van Norman (no longer in operation)	47,734	4.9
Eco-Logics (no longer in operation)	48,820	5.0
Subtotal	**268,060**	**27.6**
Transfer Stations that Receive Yard Trimmings	**Reported Citywide Tons Received (2006)**	**Percent Received (%)**
American Waste Transfer Station	280	0.0
Bel-Art Waste Transfer Station	35	0.0
Central Los Angeles Recycling & Transfer Station	917	0.1
Community Recycling	363,652	37.4
Compton Recycling and Transfer Station	283	0.0
Downey Area Recycling and Transfer Station	32	0.0
East Los Angeles Recycling & Transfer Station	296	0.0
Falcon Refuse	6,012	0.6
Mission Road Recycling and Transfer Station	81,304	8.4
Southern California Disposal	1,088	0.1
Waste Resources Recovery	384	0.0
Subtotal	**454,283**	**46.8**
Landfills and Waste-to-Energy Facilities that Process Yard Trimmings for Beneficial Reuse	**Reported Citywide Tons Received (2006)**	**Percent Received (%)**
Bradley Landfill	179,542	18.5
Calabasas Sanitary Landfill	15,602	1.6
Chiquita Canyon Sanitary Landfill	52,600	5.4
Puente Hills Landfill	63	0.0
Scholl Canyon Sanitary Landfill	2	0.0
Sunshine Canyon Landfill	1,287	0.1
Southeast Resource Recovery Facility	57	0.0
Subtotal	**249,153**	**25.6**
Total	**971,496**	**100.0**

[1]Data based on surveys conducted for SWIRP in 2007 and 2008. Refer to Attachments C-1, C-2 and C-5 in *Appendix C Infrastructure and Material Flows*.

The total listed in Table 12 is the sum of all of the tons of yard trimmings received by the facilities in this table. This number is larger than the total tons generated by residents and businesses within the City because approximately 70,000 tons of yard trimmings (out of the total approximately 454,000 tons handled at transfer stations) pass through transfer stations on their way to landfills for beneficial reuse. This table counts these tons twice—once in transfer stations and once at the landfills. Refer to Attachments C-1, C-2, and C-5 in *Appendix C Infrastructure and Materials Flows*, beginning on page C-1-1.

Table 13: Facilities in Southern California Permitted to Accept Food Scraps

Food Scrap Composting Facilities[1]	Location	Distance from CLARTS (miles one-way)[2]	Permitted Capacity (tons per day)[1]
California Biomass Compost Facility	Thermal, Riverside County	137	700
Coachella Valley Composting Facility	Coachella, Riverside County	129	250
Community Recycling Lamont Compost Facility	Lamont, Kern County	97	3,692
Victor Valley Regional Composting Facility (formerly California Biomass)	Victorville, San Bernardino County	92	700
Engel & Gray, Inc.	Santa Maria, Santa Barbara County	199	700[3]
El Corazon Compost Facility	Oceanside, San Diego County	83	500
Kochergan Farms Composting	Avenal, Kings County	188	1,000
Lancaster Reclaimable Anaerobic Composter	Lancaster, Los Angeles County	69	500
Liberty Composting (San Joaquin Composting)	Lost Hills, Kern County	160	2,620[4]
Miramar Greenery	San Diego, San Diego County	112	690
Ralphs Renewable Energy Facility	Compton, Los Angeles County	16	350
Tierra Verde Industries EcoCentre	Irvine, Orange County	40	3,000

[1]Source: CalRecycle Solid Waste Information System database, http://www.calrecycle.ca.gov/SWFacilities/Directory/Search.aspx (accessed October 1, 2013).
[2]Estimated using Google Maps.
[3]Based on permitted capacity of 208,800 tpy (300 operating days per year).
[4]Based on permitted capacity of 786,000 tpy (300 operating days per year).
Refer to *Appendix C Infrastructure and Material Flows*, Attachment C-5 page C-5-9.

4.1.1.4 Construction and Demolition Debris Processing Facilities

In 2006, an estimated 2.06 million tons of the disposed C&D materials generated within the City were taken to solid waste landfills for beneficial use. An additional 190,000 tons of C&D materials were recycled, and 360,000 tons were disposed in inert landfills. In 2006, the Puente Hills Landfill accepted more C&D materials from within the City than any other landfill, receiving 1.84 million tons, primarily soil and dirt for beneficial use. C&D materials can also be used for road construction at landfills. Approximately 360,000 tons of C&D materials were delivered to inert landfills in 2006. Most inert landfills are classified as "Inert Debris Engineered Fill Operations" under State regulations[26] and inert materials disposed at an inert landfill are considered beneficially reused and are not considered disposed as solid waste. Approximately 88 percent of the total C&D tons are commercially hauled and the

[26] California Code of Regulations Title 14, Natural Resources-Division 7, Article 5.95, Section 17388 (l).

remaining 12 percent are self-hauled. The City's C&D ordinance adopted December 17, 2010, requires that mixed C&D generated in the City be delivered to a C&D processor certified by the City.

Table 14 lists the facilities that received and diverted C&D debris from City sources in 2006. Details about each of these facilities, including daily and annual capacity, materials processed, end-markets, tipping fees, expansion plans and opportunities are included in the facility surveys included in Attachments C-1 and C-2 in *Appendix C Infrastructure and Materials Flows*.

Table 14: Facilities Receiving C&D Debris from City Sources in 2006[1]

Transfer Stations that Receive C&D	Reported Citywide Tons Received (2006)	Percent Received (%)
American Waste Transfer Station	2,075	0.1
Athens Transfer Station	22	0.0
Bel-Art Waste Transfer Station	283	0.0
Carson Transfer Station	5,281	0.2
Community Recycling	234,841	8.8
East Los Angeles Recycling & Transfer Station	2,485	0.1
Falcon Refuse	10,000	0.4
Mission Road Recycling and Transfer Station	202	0.0
Waste Resources Recovery	720	0.0
Subtotal	**255,909**	**9.6**
Landfills that Process C&D for Beneficial Reuse	**Reported Citywide Tons Received (2006)**	**Percent Received (%)**
Antelope Valley Public Landfill	6	0.0
Bradley Landfill	64	0.0
Calabasas Sanitary Landfill	35,271	1.3
Chiquita Canyon Sanitary Landfill	6,800	0.3
Lancaster Landfill	50,455	1.9
Puente Hills Landfill	1,838,071	68.6
Scholl Canyon Sanitary Landfill	87,765	3.3
Sunshine Canyon Landfill	42,262	1.6
Subtotal	**2,060,694**	**76.9**
Inert Landfills that Accept C&D for Disposal	**Reported Citywide Tons Received (2006)**	**Percent Received (%)**
Azusa Landfill	43,499	1.6
Peck Road	25,659	1.0
Chandler' s Landfill	12,679	0.5
Hanson Aggregates	916	0.0
Nu Way Arrow	85,950	3.2
Reliance Pit #2	625	0.0
Sun Valley Landfill	193,313	7.2
Subtotal	**362,641**	**13.5**
Total	**2,679,244**	**100.0**

[1]Data based on surveys conducted for SWIRP in 2007 and 2008. Refer to Attachments C-1 and C-2 in *Appendix C Infrastructure and Material Flows*.

The total listed in Table 14 is the sum of all of the tons of C&D materials received by the facilities in this table. This number is larger than the total tons generated within the City because approximately 60,000 tons of C&D materials pass through transfer stations on their way to their final destinations at the solid waste or inert landfills. This table counts these tons twice—once in transfer stations and once at the final destination at the solid waste or inert landfills. Approximately 190,000 tons of the C&D received by transfer stations is diverted for recycling. Refer to Attachments C-1 and C-2 in *Appendix C Infrastructure and Materials Flows*, beginning on page C-1-1.

4.1.1.5 Certified Mixed Debris Processors

The City publishes a Construction and Demolition Recycling Guide to assist C&D generators in diverting C&D material from disposal. The guide lists over 50 companies that receive, process, and market source-separated and mixed construction and demolition debris. Thirteen of these companies have been certified by the City as Certified Mixed C&D Debris Processors.

These facilities take in mixed construction and demolition debris for sorting and processing. The recyclable materials resulting from this process are sent out to recyclers and end users, and the remainder is disposed of in landfills.

These facilities have recycling rates that have been certified by the City through the voluntary Certified Processor program. Table 15 lists the certified processors, the materials recycled or reused, and each facility's recycling rate.[27]

[27] City Certified as of July 1, 2013. http://www.lacitysan.org/solid_resources/strategic_programs/ab939/compliance_fee.htm (accessed October 1, 2013).

Table 15: City Certified Mixed C&D Debris Processors[1]

Certified Processor	Materials Recycled/Reused	Recycling Rate
American Reclamation	Asphalt - Brick - Cardboard - Cinder Block - Concrete - Dirt - Drywall - Gypsum - Metal - Rock - Gravel - Tree Trimmings - Wood	87.36%
American Waste Pendleton Facility	Asphalt - Brick - Cardboard - Carpet - Cinder Block - Concrete - Dirt - Drywall - Gypsum - Metal -Rock - Gravel - Tree Trimmings - Wood	75.01%
California Waste Services Inc.	Asphalt - Brick - Cardboard - Cinder Block - Concrete - Dirt - Drywall - Gypsum - Glass - Metal - Rock - Gravel - Tree Trimmings - Wood	70.00%
Clean Up America	Asphalt - Brick - Cardboard - Cinder Block - Concrete - Dirt - Drywall - Gypsum - Metal - Rock - Gravel - Tree Trimmings - Wood	75.59%
Community Recycling & Resource Recovery, Inc.	Asphalt - Brick - Cardboard - Cinder Block - Concrete - Dirt - Drywall - Gypsum - Metal - Rock - Gravel - Tree Trimmings - Wood - Food Waste	94.34%
Construction and Demolition Recycling, Inc.	-Asphalt - Brick - Cardboard - Carpet - Cinder Block - Concrete - Drywall - Gypsum - Glass - Metal - Structural Elements for Reuse - Wood -	76.89%
CR Transfer	Asphalt - Brick - Cardboard - Cinder Block - Concrete - Dirt - Drywall - Gypsum - Metal - Rock - Gravel - Tree Trimmings - Wood	76.29%
Direct Disposal	Asphalt - Brick - Cardboard - Concrete - Dirt Metal - Rock - Wood	71.42%
Downtown Diversion / USA Waste of California	Asphalt - Brick - Cardboard - Carpet - Cinder Block - Concrete - Dirt - Drywall - Gypsum - Metal - Rock - Gravel - Structural Elements for Reuse - Tree Trimmings - Wood	83.80%
East Valley Diversion / USA Waste of California	Asphalt - Brick - Cardboard - Carpet - Cinder Block - Concrete - Dirt - Drywall - Gypsum - Metal - Rock - Gravel - Structural Elements for Reuse - Tree Trimmings - Wood - Commingled Debris	72.69%
Falcon Refuse Center / Allied Waste	Asphalt - Brick - Cardboard - Cinder Block - Concrete - Dirt - Drywall - Gypsum - Metal - Rock - Gravel - Tree Trimmings - Wood	81.85%
Madison Materials	Asphalt - Brick - Cardboard - Carpet - Cinder Block - Concrete - Dirt - Drywall - Gypsum - Glass - Metal - Rock - Gravel - Tree Trimmings - Wood - Tires - Electronic Waste - All Plastics	84.22%
Simi Valley Landfill and Recycling Center	Asphalt - Brick - Cardboard - Cinder Block - Concrete - Dirt - Drywall - Gypsum - Metal - Rock - Gravel - Tree Trimmings - Wood	78.38%

[1]City Certified as of July 1, 2013.

4.1.1.6 Transfer Stations

Slightly less than 50 percent of the solid waste generated in the City is taken to 17 regional transfer stations, where it is consolidated, loaded into large capacity transfer trailers, and delivered to landfills for ultimate disposal. The Central Los Angeles Recycling & Transfer Station accepted the largest quantities of residential curbside waste and self-hauled waste, as well as the most waste overall (31.8 percent) from within the City in 2006. American Waste Transfer Station received the largest quantity of commercial/multi-family waste from within the City in 2006. Table 16 lists the transfer stations that reported receiving solid waste from City generators in 2006. Details about each of these facilities, including daily and annual capacity, materials

processed, end-markets, tipping fees, expansion plans and opportunities are included in the facility surveys included in Attachment C-1 in *Appendix C Infrastructure and Materials Flows,* beginning on page C-1-1.

Table 16: Regional Transfer Stations Receiving Solid Waste from City Sources in 2006[1]

Regional Transfer Stations	Reported Citywide Tons Received (2006)	Percent Received (%)
American Waste Transfer Station	274,291	12.8
Athens Transfer Station	112	0.0
Bel-Art Waste Transfer Station	54,005	2.5
Carson Transfer Station	76,468	3.6
Central Los Angeles Recycling & Transfer Station	683,752	31.8
Community Recycling	270,004	12.6
Compton Recycling and Transfer Station - Browning	112,883	5.3
Downey Area Recycling and Transfer Station	26,604	1.2
East Los Angeles Recycling & Transfer Station	48,531	2.3
Falcon Refuse	48,000	2.2
Innovative Waste Control	203,028	9.5
Mission Road Recycling and Transfer Station	191,985	8.9
Paramount Resource Recycling Facility	6,000	0.3
South Gate Transfer Station - Sanitation Districts	30,764	1.4
South Gate Transfer Station - Waste Management	19,433	0.9
Southern California Disposal	97,594	4.5
Waste Resources Recovery	3,696	0.2
Total	**2,147,150**	**100.0**

[1]Data based on surveys conducted for SWIRP in 2007 and 2008. Refer to Attachment C-1 in *Appendix C Infrastructure and Material Flows.*

4.1.1.7 Landfills and Waste-to-Energy Facilities

In 2006, solid waste collected by LASAN crews was taken to the Sunshine Canyon Landfill and the Calabasas Landfill (during service disruptions at Sunshine) for disposal, and to Southeast Resource Recovery Facility for energy conversion. Under current State law, solid waste delivered to waste-to-energy facilities is considered disposal unless a jurisdiction applies for diversion credit and meets other criteria.

Up to 10 percent of the 50 percent diversion requirement for jurisdictions can be met by delivering waste to the waste-to-energy facilities grandfathered under State law (Covanta Stanislaus, Commerce Refuse to Energy, and Southeast Resource Recovery Facility).[28] Solid waste collected by private haulers is delivered directly to 13 regional landfills for disposal and two waste-to-energy facilities for energy conversion.[29]

Table 17 lists the regional landfills and waste-to-energy facilities that received solid waste from City sources in 2006. Details about each of these facilities, including daily and annual capacity, materials processed, end-markets, tipping fees, expansion plans and opportunities are included in the facility surveys included in Attachment C-2 in *Appendix C Infrastructure and Materials Flows*, beginning on page C-2-1. Figure 4 shows the regional recycling and solid waste infrastructure used by City sources in 2006.

Table 17: Regional Landfills and Waste-to-Energy Facilities Receiving Solid Waste from City Sources in 2006[1]

Regional Landfills and Waste-to-Energy Facilities	Reported Citywide Tons Received (2006)	Percent Received (%)
Antelope Valley Public Landfill	8,483	0.2
Bradley Landfill	350,059	9.6
Calabasas Sanitary Landfill	321,147	8.8
Chiquita Canyon Sanitary Landfill	764,300	20.9
El Sobrante Sanitary Landfill	85,235	2.3
Frank R. Bowerman Sanitary Landfill	41,173	1.1
Lancaster Landfill	133,433	3.7
Olinda Alpha Sanitary Landfill	130,473	3.6
Prima Deshecha Sanitary Landfill	24,047	0.7
Puente Hills Landfill	96,414	2.6
Scholl Canyon Sanitary Landfill	3,553	0.1
Simi Valley Landfill-Recycling Center	62,376	1.7
Sunshine Canyon Landfill	1,599,344	43.8
Commerce Refuse-to-Energy Facility	7,140	0.2
Southeast Resource Recovery Facility	27,380	0.7
Total	**3,654,557**	**100**

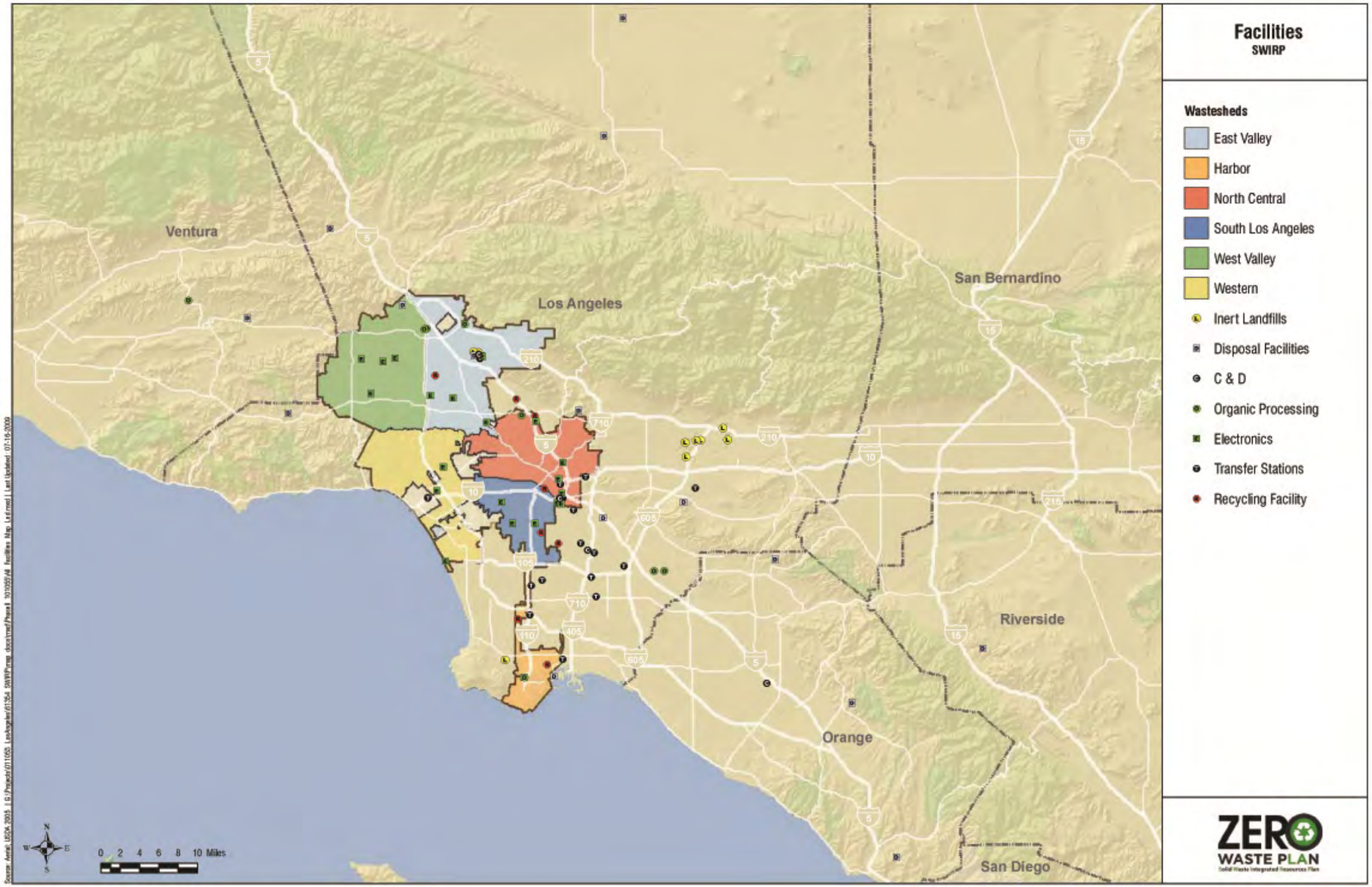
[1]Data based on surveys conducted for SWIRP in 2007 and 2008. Refer to Attachment C-2 in *Appendix C Infrastructure and Material Flows*.

[28] CalRecycle: Requirements for Jurisdictions Claiming Transformation Disposal Deductions http://www.calrecycle.ca.gov/lgcentral/basics/Transform.htm (accessed October 1, 2013).

[29] The City has not applied for diversion credit for transformation. Material delivered to waste-to-energy facilities is considered disposed.

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Figure 4: Recycling and Solid Waste Infrastructure Used by City Generators (2006)



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4.2 Facility Profiles

During the Phase 1 and Phase 2 planning process, stakeholders discussed the types and numbers of facilities that will be needed to reach the SWIRP goals. To facilitate discussion of the types of facilities and their functions, the facilities were categorized as:

- **Blue bin facilities** – facilities capable of processing source-separated recyclable and reusable materials, including materials recovered from the LASAN blue bin program and source-separated commercial recycling. Other facilities for source-separated materials were also discussed within this category, including Resource Recovery Centers for self-hauled materials and C&D processing facilities.
- **Green bin facilities** – facilities capable of processing yard trimmings, food scraps and other compostable materials, either source-separated or sorted from other waste at processing facilities.[30]
- **Black bin facilities** – facilities capable of processing residual waste from residential black bins, commercial waste sources, or residual waste from processing facilities.

Over 20 facility types were discussed by stakeholders and researched for the plan, including:

1. Clean MRF
2. Mixed Material Processing
3. C&D mixed processing
4. Inert landfill
5. Mulching facility
6. Aerobic composting of yard trimmings
7. Aerobic composting of yard trimmings and food scraps
8. Composting
9. Anaerobic digestion (source-separated organics)
10. Anaerobic digestion (residual waste wet)
11. Anaerobic digestion (residual waste dry)
12. Advance thermal recycling
13. Gasification
14. Plasma arc gasification
15. Pyrolysis

[30] "Green bin facilities," such as composting facilities, can also process materials collected through the City's brown bin collection program for horse manure.

16. Hydrolysis
17. Biomass-to-energy
18. S.A.F.E. Centers
19. Reuse/Resource Recovery Center(small scale self-haul MRF with reuse)
20. Used item store (e.g., Goodwill)
21. Transfer station
22. Preprocessing prior to create feedstocks for Alternative Technologies
23. Dismantling facility

Appendix D Facility Analysis provides detailed descriptions of these facility types. Based on this analysis, 12 facility types were selected for evaluation in the material flow model. Table 18 lists these facility types. As described in *Appendix B Material Flow Model and Generation Projections*, the material flow model was designed to be dynamic. The facilities selected for the model were those that were best suited to match the policies and programs identified by the stakeholders during the SWIRP planning process. Additional viable processing technologies could be considered for development in the future and can be evaluated for their diversion potential using the material flow model.

Table 18: Facility Types Evaluated for the Material Flow Model

	Facility Type	Materials Processed
Blue bin facilities[31]	Clean MRF	Residential blue bin materials and commercial source-separated recyclables
	C&D mixed processing	Mixed C&D debris
	Resource Recovery Center	Self-hauled recyclable and reusable materials
Green bin facilities	Mulching facility	Yard trimmings
	Aerobic composting facility	Yard trimmings, food scraps and other compostable materials
	Anaerobic digestion (organics)	Source-separated organics
	Biomass-to-energy	Wood waste
	Facility Type	**Materials Processed**
Black bin facilities	Mixed material processing facility (MMP)	Residential black bin materials and commercial solid waste
	Anaerobic digestion (residual waste)	Residential black bin materials and commercial solid waste
	Gasification	Residential black bin materials and commercial solid waste
	Pyrolysis	Residential black bin materials and commercial solid waste
	Advanced thermal recycling	Residential black bin materials and commercial solid waste

4.2.1 Blue Bin and Green Bin Facilities

The SWIRP policies and programs have the potential to divert over 1.5 million tons more per year than the 2010 baseline levels. The City will require additional blue bin and green bin infrastructure capacity, for both residential and commercial generators, to meet this need. LASAN currently contracts with private sector recyclers for processing residential blue bin material. Green bin material is processed at both private sector facilities and at the City-owned composting and mulching facilities. Commercial recycling and C&D processing is provided through private sector recyclers.

The City has a large and vibrant private sector recycling infrastructure, contributing to the 69 percent diversion rate for the commercial sector. Large generators of recyclable commodities sell their materials to local processors. Local processors have good access to end use markets through the ports of Los Angeles and Long Beach.

[31] "Blue bin facilities" are categorized as all facilities capable of processing source-separated recyclables and reusable materials, including materials from the LASAN blue bin program and source-separated commercial and C&D recycling.

The market for yard trimmings in southern California has been dominated by the landfills, which use processed yard trimmings for ADC. City policy prohibits the use of City-collected yard trimmings for ADC. Thus, the City has developed mulching and composting operations to supplement the limited alternatives available through the private sector. Compost facilities are required to control their emissions and can be difficult to site locally. Most of the existing private sector composting operations are located in agricultural areas outside of the City.

The existing blue bin and green bin capacity was documented and the potential new capacity that will be needed to fully implement the SWIRP policies and programs was evaluated.

The blue bin and green bin processing facilities discussed by the stakeholders were evaluated. These include:

- Clean MRFs
- Aerobic composting/mulching facilities
- Resource Recovery Centers
- C&D processing facilities

Note that anaerobic composting or anaerobic digestion may also be suitable for source-separated organics generated in the City. Anaerobic digestion is a biological process where microorganisms break down biodegradable materials, in this case food scraps or other organics, in an oxygen-deficient environment, creating a biogas that can be used to produce electricity or converted into a transportation fuel. This type of biogas consists primarily of methane and carbon dioxide. Although the first phase of the biological process (hydrolysis phase) often operates in batch-type processes, the methane generating and subsequent electrical generation phase of these facilities are designed to operate continuously and provide uninterruptible power. With a proper feedstock, these reactions can reduce the volume of materials by approximately 70 percent and produce a biogas which can be converted into energy or fuel. The residuals or "digestate" from this process can be sent to a compost facility for further processing.

4.2.1.1 Clean MRF



Phoenix North Transfer Station and Material Recovery Facility

Typical Facility	
Tons per day	50-600
Cost per ton	Pays $10-30
Acres required	5-10



Curbside Processing

Refer to Facility Descriptions in Attachment D-2 of *Appendix D Facility Analysis*

Clean MRFs receive and process source-separated recyclables from residential blue bin programs and commercial recycling programs. Clean MRFs use various technologies and methods to sort, bale, and ship material by commodity type to markets. Clean MRFs typically recover traditional recyclable materials, including newspaper, cardboard, mixed paper, aluminum cans, bi-metal cans, plastic bottles, mixed plastics and glass containers. Typical contaminants include food scraps, auto parts, yard trimmings, wood, dirt and other inerts, glass shards, and garbage. Contaminant levels for Clean MRFs are strongly tied to the performance of the residential curbside recycling programs to eliminate contamination, which depends on education and enforcement. Clean MRFs have been in operation in the US and internationally for over 25 years and are considered to be mature, proven technologies.
Local examples include:

- Angelus Western Paper Fibers – Porter Street, Los Angeles
- Bestway Recycling – Main Street, Los Angeles
- City Fibers – Schoenborn Street, North Hills
- City Fibers, Inc. – Santa Fe Avenue, Los Angeles
- CR&R – Western Avenue, Stanton
- Potential Industries – East E Street, Wilmington
- RockTenn – Denker Avenue, Torrance
- Sun Valley Paper Stock – San Fernando Road, Sun Valley

4.2.1.2 Aerobic Composting



Lamont Composting Facility, Kern County

Typical Facility	
Tons per day	100-1,000
Cost per ton	$35-60
Acres required	15-60



Griffith Park Composting Facility

Refer to Facility Descriptions in Attachment D-2 of *Appendix D Facility Analysis*

Aerobic composting facilities are designed for collecting, grinding, mixing, piling, and supplying sufficient moisture and air to organic materials to speed natural decay. The finished product of a composting operation is compost, a soil amendment suitable for incorporating into topsoil and for growing plants. Compost is different from mulch, which is a shredded or chipped organic material placed on top of soil as a protective layer. Compost facilities can vary greatly in size. Small compost facilities are typically in the range of 100-250 tpd (26,000-65,000 tpy), and large compost facilities range from 1,000 to 3,000 tpd (260,000-780,000 tpy), based on 260 operating days per year. Compost technologies include:

- **Windrow** – compostable material is piled in long rows and regularly turned to enhance aerobic activity and control temperature and moisture.
- **In-vessel** – compostable material is placed in enclosed reactors (metal tanks, concrete bunkers or plastic tubes or "ag bags") where airflow and temperature can be controlled through perforated pipes buried in the material.
- **Aerated static pile** – compostable material is placed in piles on perforated pipes under removable covers, and fans are used to push or pull air through the pipes to control the composting process.

Local examples include:

- Griffith Park Compost Facility - Griffith Park Drive, Los Angeles (aerated static pile)
- Community Recycling Lamont Compost Facility - Lamont, Kern County (windrow)

Yard trimmings can be processed into mulch at a chip-and-grind/mulching facility. This type of facility typically includes minimal processing (chipping, grinding, and possibly screening) of the feedstock to produce a mulch product or to prepare wood as fuel for biomass power plants.

Local examples include:

- Harbor Mulching Facility – North Gaffey Street, Los Angeles
- North Hills Recycling – Blucher Ave., Granada Hills

4.2.1.3 Resource Recovery Center



San Luis Obispo County
Resource Recovery Park

Tons per day	10-200
Cost per ton	$50-100
Acres required	2



Monterey Regional Waste
Management District

Refer to Facility Descriptions in Attachment D-2 of *Appendix D Facility Analysis*

Resource Recovery Centers are small centers for drop-off of hard to recycle items, including mattresses, large blocks of expanded polystyrene foam, and textiles. Resource Recovery Parks are places where materials can be dropped off for donation or buyback and co-locates reuse, recycling and composting, processing, manufacturing,[32] and distribution activities. Typically, these facilities are located in industrially zoned areas that are reserved for companies that process secondary materials or make other products from these materials.

The Resource Recovery Park concept has been evolving naturally in California at landfills and transfer stations. These facilities have continued to provide additional recycling opportunities for self-hauled loads. Landfills and transfer stations have been near the centers of waste generation. A Resource Recovery Park can make the landfill or transfer station more sustainable by diversifying revenue, conserving capacity, and extending the useful life of those facilities.

Self-haul customers are typically charged by the load. For example, at the Cold Canyon Landfill in San Luis Obispo County, self-haul customers are charged $ 30.00 per load (which equates to $ 72.00 per ton).[33] At this facility customers must separate recyclables at the Resource Recovery Center or pay an additional $20 fee if they are unwilling to sort their loads.

Reuse stores or drop-off centers may not charge a fee or may pay for some materials.

Local examples of drop-off centers for hard to recycle materials include:

- Architectural Details, a reuse and salvage organization, East Foothill Boulevard, Pasadena
- Habitat For Humanity Restore, a reuse and salvage organization, Rice Avenue, Oxnard

[32] Resource Recovery Parks can include manufacturing activities for reclaimed materials. The Cabazon Resource Recovery Park in Indio, California, has a manufacturing plant that makes crumb rubber from old tires and biomass-fueled power generation plant. The facility is seeking additional manufacturers and processors to co-locate at the facility.
[33] By comparison, Sunshine Canyon Landfill self-haul customers are charged the minimum rate of $59.88 per ton and Puente Hills Landfill self-haul customers are charged $ 37.40 minimum per load or $38.41 per ton.

4.2.1.4 Construction and Demolition Facility



Downtown Diversion C&D Facility, Los Angeles

Typical Facility	
Tons per day	50-500
Cost per ton	$30-40
Acres required	10



C&D Processing

Refer to Facility Descriptions in Attachment D-2 of *Appendix D Facility Analysis*

C&D mixed processing facilities receive and process construction and demolition debris. These types of facilities provide different levels of processing depending on acceptable materials they receive, and may produce a variety of commodities at each facility. Typical C&D materials include: asphalt, concrete, Portland cement, brick, lumber, wallboard, roofing material, ceramic tile, plastic pipe, and associated packaging. Typical commodities produced include gypsum, clean wood, ferrous metal, aluminum, inert material (including engineered fill) and ADC.

Local examples include the City's 13 certified processors:

- Allied-Falcon Refuse Center – East I Street, Wilmington
- American Reclamation – Doran Street, Los Angeles
- America Waste Services – Pendleton Street, Sun Valley
- California Waste Services, Inc. – West 152 Street, Gardena
- Clean Up America - East Lugo Street, Los Angeles
- Community Recycling & Resource Recovery, Inc. – De Garmo Avenue, Sun Valley
- Construction and Demolition Recycling, Inc. – Rayo Avenue, South Gate
- CR Transfer - Knott Avenue, Stanton
- Direct Disposal – Noakes Street, Los Angeles
- Downtown Diversion, Inc. – East Olympic Boulevard, Los Angeles
- East Valley Diversion / USA Waste of California, Sheldon Street, Sun Valley
- Madison Materials – East 4th Street, Santa Ana
- Simi Valley Landfill and Recycling Center – Madera Road, Simi Valley

4.2.2 Black Bin Processing Facilities

Black bin processing facilities include mixed material processing facilities, anaerobic digestion, advanced thermal recycling, and non-combustion thermal technologies, such as gasification, plasma arc gasification, and pyrolysis.

Black bin processing facilities target residual waste that is left-over after recycling and composting and can include residual waste from blue bin and green bin processing facilities. By implementing all of the policies and programs identified by the stakeholders and described in *Appendix A Policy and Program Analysis*, the City could achieve a citywide diversion rate of 86 percent. However, at that rate of recovery, City generators would still produce over 1.5 million tons of solid waste annually. This material would need to either be disposed in local or remote landfills or processed for further recovery.

LASAN defines these black bin processing facilities as "Alternative Technology," meaning alternatives to landfill disposal.

To support the City's goal of ending urban landfilling, LASAN has investigated options for diverting waste through Alternative Technologies such as: biological, thermal, chemical, and physical technologies for treating waste. Some examples of biological technologies include anaerobic digestion and aerobic composting. Some examples of thermal technology include gasification, plasma arc gasification, pyrolysis, and advanced thermal recycling. An example of chemical technology is acid hydrolysis. Examples of physical technologies include autoclaving and advanced material recovery systems. These technologies are all methods to process residual waste as alternatives to landfilling in order to generate energy and recover useful by-product materials.

Currently, the City is evaluating vendor proposals for commercial scale (200 to 1,000 tpd) and emerging technologies (10 to 200 tpd).

The term "Alternative Technology" is all-inclusive. A subset of these black bin processing facility types is called "conversion technology"; the term used by CalRecycle to describe new and emerging non-combustion thermal, chemical, and biological technologies. Anaerobic digestion, which is sometimes included in the list of "conversion technologies," is regulated as composting under State law.[34]

The black bin processing facilities discussed by the stakeholders include:

- Mixed material processing (also known as "dirty MRF")
- Advanced thermal recycling
- Anaerobic digestion
- Non-combustion thermal technologies (including plasma arc gasification, gasification, and pyrolysis)

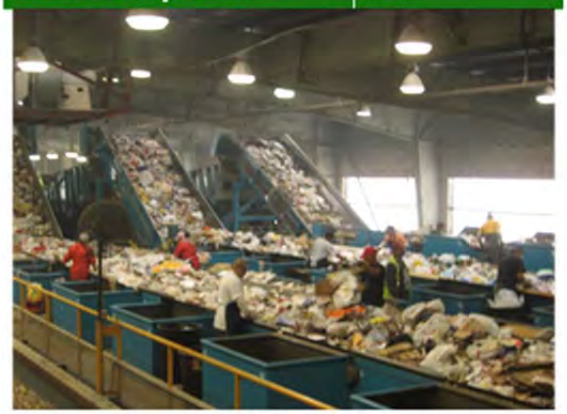
[34] Public Resources Code section 40200(b)(3).

4.2.2.1 Mixed Material Processing Facility



Rainbow Disposal, Huntington Beach

Typical Facility	
Tons per day	200-400
Cost per ton	$40-60
Acres required	5-7



Mixed Material Processing

Products/By-Products
Recyclables
Compostables

Refer to Facility Descriptions in Attachment D-2 of *Appendix D Facility Analysis*

A mixed material processing (MMP) facility, also referred to as a dirty MRF, is a facility that sorts recyclable material from residual waste from residential and commercial sources. These facilities can also be adapted to sort or remove different materials to prepare residual waste for composting, advanced thermal recycling, and other Alternative Technologies. Desired loads include residual waste from residential and commercial generators, and undesirable loads include concentrated amounts of C&D materials or concentrated amounts of wet materials, such as restaurant food. All of the other black bin processing facility types can include a mixed material processing facility to prepare the materials for the technology.

Local examples include:

- Athens MRF – City of Industry, Los Angeles County
- Rainbow Disposal – Huntington Beach, Orange County
- CVT – Anaheim, Orange County
- CR&R – Stanton, Orange County

4.2.2.2 Advanced Thermal Recycling



TREA Breisgau Advanced Thermal Recycling - Freiberg, Germany

Tons per day	500-2000
Cost per ton	$100-200
Acres required	5-15

Products/By-Products
Heat for energy
Metals, Chemicals
Ash for beneficial use



Müllverwertung Rugenberger Damm Advanced Thermal Recycling Facility - Hamburg, Germany

Refer to Facility Descriptions in Attachment D-2 of *Appendix D Facility Analysis*

Advanced Thermal Recycling (ATR) is a technology that uses complete combustion of organic carbon-based materials in an oxygen-rich environment, producing an exhaust gas composed primarily of carbon dioxide and water with inorganic materials converted to bottom ash and fly ash. ATR facilities use residual waste from residential or commercial generators, or residual waste from other solid waste facilities, to produce an uninterruptible source of energy and by-products. ATR facilities produce energy, recover metals from the bottom ash, and reduce waste volume by combusting the waste and injecting air at atmospheric pressure to reach the chemically balanced air-fuel ratio for combustion. The hot exhaust gases flow through a boiler, where steam is produced for driving a steam turbine-generator, producing electricity. Exhaust air is treated with advanced pollution control technologies that remove air pollutants to meet stringent clean air emissions standards from environmental regulatory agencies. Cooled exhaust gas flows through emissions control systems before being exhausted through stacks into the atmosphere. Common by-products for controlling air quality of plant emissions include gypsum and hydrochloric acid (HCl). Other products include the recovery of ferrous and non-ferrous metals from the bottom ash. The fly ash and bottom ash are separated and the bottom ash can be reused as landfill cover, processed for road base, or possibly used for other beneficial uses. Benefits of ATR include: volume reduction of residual waste, energy from waste, and green jobs.

Examples ATR facilities include:

- TREA Breisgau Advanced Thermal Recycling Facility, Freiberg, Germany
- Müllverwertung Rugenberger Damm Advanced Thermal Recycling Facility, Hamburg, Germany

4.2.2.3 Anaerobic Digestion



Dranco, Brecht, Belgium

Typical Facility	
Tons per day	200-500
Cost per ton	$100-130
Acres required	5-10



Valorga Process, Barcelona, Spain

Products/By-Products
Biogas for energy
Digestate for compost

Refer to Facility Descriptions in Attachment D-2 of *Appendix D Facility Analysis*

Anaerobic digestion is a biological process where micro-organisms break down biodegradable materials, (e.g., food and paper) in an oxygen-deficient system, creating a biogas that can be used to produce electricity or can be converted into a transportation fuel. The technology converts organic waste to energy using bacteria to break down waste to produce biogas. This type of biogas consists primarily of methane and carbon dioxide. These facilities process food scraps, food-soiled paper and other organics. Although the first phase of the biological process (hydrolysis phase) of these facilities often operate in batch-type processes, methane generating and subsequent electrical generation phases of these facilities are designed to operate continuously and provide uninterruptible power. With a proper feedstock, these reactions can reduce the volume of waste by 70 percent, provide energy, and residuals can be sent to a compost facility.

According to the California Energy Commission, there are 22 animal waste or food waste digesters in operation in the State that process manures and food manufacturing residues. The technology is also used for the treatment of biosolids at wastewater treatment plants.

There are several facilities under development locally to process solid waste and organic feedstocks; including Ralphs Renewable Energy Facility and the Lancaster Reclaimable Anaerobic Composter (which are permitted as anaerobic digestion research projects in Los Angeles County).

Local examples of anaerobic digestion for the treatment of wastewater include:

- Hyperion Sewage Treatment Plant – City of Los Angeles
- Terminal Island Sewage Treatment Plant – City of Los Angeles

4.2.2.4 Non-Combustion Thermal Technology (Plasma Arc/Gasification/Pyrolysis)



JFE Thermoselect - Chiba, Japan

Products/By-Products
Syngas for energy
Ash for beneficial reuse
Chemicals

Typical Facility	
Tons per day	100-500
Cost per ton	$120-200
Acres required	2-7



Plasco Conversion System - Ottawa, Canada

Refer to Facility Descriptions in Attachment D-2 of *Appendix D Facility Analysis*

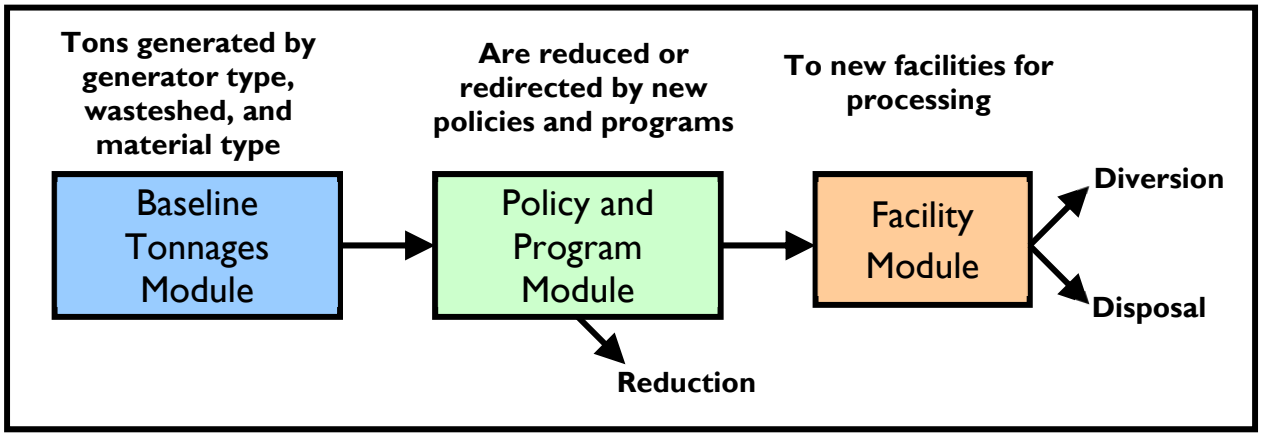
Pyrolysis, gasification, and plasma arc gasification are all technologies used to treat waste producing a synthesis gas ("syngas") that can be used to produce electricity or can be converted into a transportation fuel. Pyrolysis is the thermal degradation of organic carbon-based materials through the use of an indirect, external source of heat in the absence or almost complete absence of free oxygen. Gasification is the thermal conversion of organic carbon-based materials that involves the partial oxidation through the use of an indirect, external source of heat, high pressure, and in a limited supply of air/oxygen (less than stoichiometric, or less than is needed for complete combustion). Plasma arc technology uses an electrical discharge to heat gas, typically air, oxygen, nitrogen, hydrogen, or argon, or combinations of these gases. The heated gas, or plasma, can then be used for welding, cutting, melting, or treating waste materials. These facilities use an external heat source to heat waste to high temperatures in a low oxygen environment. This causes the waste to decompose and produce syngas. Syngas consists primarily of hydrogen, carbon monoxide, and carbon dioxide. With a proper feedstock, this process can reduce the volume of waste by 80 percent, and is intended to produce more energy than is required for processing the materials. Ideal feedstock for these facilities includes mixed paper, plastics, and other dry organics. Temperatures for treating waste using these technologies range from: 750°F to 1,650°F for pyrolysis; 1,400°F to 2,500°F for gasification; and 5,000-8,000°F for plasma arc gasification.

Gasification is used at the commercial scale for coal, and plasma arc technology is used at the commercial scale to treat hazardous and radioactive wastes. These technologies are still emerging as methods to treat residual waste. There are active proposals for development of non-combustion thermal technology being considered by the City of Los Angeles, the City of Santa Barbara and Santa Barbara County, Los Angeles County, and the Salinas Valley Solid Waste Authority (Monterey County).

4.3 Facility Analysis

In order to determine the number, types, and sizes of the facilities that will be needed through 2030, the facility scenarios using the 13 facility types described in Section 4.2 were developed. The facility scenarios were programmed into the material flow model and tested using the results from the policy and program scenarios as illustrated in Figure 5.

Figure 5: Structure of the Material Flow Model



Tons are fed through the baseline module and modeled by generator sector, wasteshed, and material type. Using the baseline tonnages and projecting waste generation through 2030, the model applies the participation rate and efficiency rate assumptions for each policy and program selected in the policy and program module. "Participation rate" means the percentage of total generator sector tons available that are targeted by the program, and "efficiency rate" means the percentage of those remaining targeted tons that can be reasonably diverted by the program. The assumptions were based on research of comparable programs and policies implemented in other communities. The output of this analysis is the resulting tons of material that are either diverted or disposed. The material flow model is further described in *Appendix B Material Flow Model and Generation Projections*.

Using the results from the material flow model, the numbers and types of facilities that will be needed through 2030 were estimated. These included:

- Blue bin facility requirements
- Green bin facility requirements
- Black bin processing scenarios (four scenarios are described)

Sections 4.3 and 4.4 provide the projected number of facilities that would be needed (assuming no additional capacity is available) and Section 4.5 provides the existing facility capacity and expansion potential and shows the net new number of needed facilities.

4.3.1 Blue Bin Facility Requirements

The projected number of facilities that would be required to process all new blue bin materials is calculated in this section. Existing infrastructure, much of which is controlled by private industry, currently processes all blue bin materials that are being generated in the City at this time. In addition to this infrastructure, new facilities would also need to be constructed to process increases in the generation of blue bin materials between 2010 and 2030. The projected demand of blue bin facilities is the number of facilities that would be required to process the additional tons of blue bin materials generated in the City in 2030 if no processing infrastructure already existed. Section 4.5 details the number of facilities that would be required after existing available processing capacity is considered. The increase in tonnage for blue bin materials between 2010 and 2030 is shown in Table 19 for each of the five policy scenarios:

1. Scenario1 – No New Policies or Programs (Baseline)
2. Scenario 2 - New Policies and Programs
3. Scenario 3 – Add Mandatory Requirements to Scenario 2
4. Scenario 4 – Add Upstream Policies to Scenario 2
5. Scenario 5 – Add Upstream Policies to Scenario 3 (Full Implementation of SWIRP)

Table 19: Projected Increase in Annual Tons of Blue Bin Materials between 2010 and 2030

Wasteshed	Additional tons of blue bin materials between 2010 and 2030 by wasteshed				
	Scenario 1 No New Policies or Programs (Baseline)	**Scenario 2** New Policies and Programs	**Scenario 3** Add Mandatory Requirements to Scenario 2	**Scenario 4** Add Upstream Policies to Scenario 2	**Scenario 5** Add Upstream Policies to Scenario 3 (Full Implementation of SWIRP)
Overall	340,455	771,362	1,110,746	746,807	1,042,859
East Valley	65,870	146,121	207,087	136,074	189,965
Harbor	13,999	35,011	50,599	32,357	46,120
North Central	93,917	207,221	312,576	223,014	312,341
South LA	28,841	94,742	145,764	86,746	131,901
West Valley	98,155	178,957	237,965	168,401	220,462
Western	39,674	109,310	156,755	100,216	142,069

Refer to *Appendix D Facility Analysis*, Table 13, Page D-28. Note that values may not sum to total due to rounding.

As shown in Table 19, the increase in generation from population growth and other changes (including demographic shifts and economic development) not related to new policies and programs will increase the number of tons generated in the City by over 340,000 tpy under Scenario 1, while different policy scenarios can increase the production of blue bin tonnage by over 1 million tpy under Scenario 5. The number of Clean MRFs that would be required to process the projected increases is shown in Table 20.

Table 20: Projected Blue Bin Facility Demands (200,000 TPY)

Wasteshed	Additional blue bin facilities needed in 2030 by wasteshed				
	Scenario 1 No New Policies or Programs (Baseline)	**Scenario 2** New Policies and Programs	**Scenario 3** Add Mandatory Requirements to Scenario 2	**Scenario 4** Add Upstream Policies to Scenario 2	**Scenario 5** Add Upstream Policies to Scenario 3 (Full Implementation of SWIRP)
Overall	2	4	6	4	5
East Valley	<1	1	1	1	1
Harbor	<1	<1	<1	<1	<1
North Central	<1	1	2	1	2
South LA	<1	<1	1	<1	<1
West Valley	<1	1	1	1	1
Western	<1	1	1	1	1

Refer to *Appendix D Facility Analysis*, Table 14, Page D-29. Note that values may not sum to total due to rounding. Note that "<1" means less than one facility is needed and some facilities could serve multiple wastesheds.

In the wastesheds listed in Table 20, less than one facility is indicated by "<1," and suggests that, in those cases, facilities may be desired to serve multiple wastesheds. The number of facilities by wasteshed indicated in the table above may not add up to the total number of facilities required per scenario, due to rounding. The number of facilities is rounded to the nearest whole facility. The symbol "<1" is used when the total tons available are less than 50 percent of the capacity of one facility. In each scenario, transfer station capacity may be desired in certain districts, such as Harbor, to make transportation of blue bin materials to Clean MRFs more efficient and environmentally friendly.

4.3.2 Green Bin Facility Requirements

The projected number of facilities that would be required to process all new green bin materials is calculated in this section. All green bin materials generated in the City at this time are processed using existing infrastructure. Much of the existing composting and mulching infrastructure is owned and operated by the City. A portion of the existing infrastructure is controlled by private industry.

As the City expands its food scraps program (where food scraps and compostable paper are co-collected with yard trimmings), some of the existing composting and mulching facilities will need to be re-permitted to accept food scraps. In addition to this infrastructure, new facilities would also need to be constructed to process increases in the generation of green bin materials between 2010 and 2030. The projected demand of green bin facilities is the number of facilities that would be required to process the additional tons of green bin materials generated in the City in 2030 if no processing infrastructure already existed. Section 4.5 details the number of facilities that would be required after existing available processing capacity is considered.

The increase in tonnage for green bin materials between 2010 and 2030 is shown in Table 21 for each of the five policy scenarios.

Table 21: Projected Increase in Annual Tons of Green Bin Materials between 2010 and 2030

Wasteshed	Additional tons of green bin materials in 2030 by wasteshed				
	Scenario 1 No New Policies or Programs (Baseline)	**Scenario 2** New Policies and Programs	**Scenario 3** Add Mandatory Requirements to Scenario 2	**Scenario 4** Add Upstream Policies to Scenario 2	**Scenario 5** Add Upstream Policies to Scenario 3 (Full Implementation of SWIRP)
Overall	26,460	216,890	557,118	216,890	557,118
East Valley	29,669	68,615	134,025	68,615	134,025
Harbor	1,173	10,026	26,436	10,026	26,436
North Central	(7,316)	40,786	133,172	40,786	133,172
South LA	(19,608)	12,481	66,356	12,481	66,356
West Valley	60,825	99,692	166,561	99,692	166,561
Western	(38,283)	(14,710)	30,568	(14,710)	30,568

Refer to *Appendix D Facility Analysis*, Table 10, Page D-26. Note that values may not sum to total due to rounding.

Table 21 shows that only a little over 26,000 tons of additional green bin materials (under Scenario 1) are expected to be generated from population increases and waste generation increases per capita. However, Scenarios 2 through 5 policies and programs are capable of increasing green bin materials by an additional 220,000 to 560,000 tons. Note that for some of the wastesheds, the green bin materials decline in 2030 from the base year of 2010. This is because the population projections provided by the Southern California Association of Governments predict a decline in single-family households across Los Angeles beginning in 2025.

Two options for green bin facilities are shown below. Table 22 shows the number of green bin facilities that would be required if small capacity 60,000 tpy (approximately 230 tpd) at 260 operating days per year) facilities are used. Table 23 shows the number of green bin facilities that would be required if larger capacity 260,000 tpy (approximately 1,000 tpd) facilities are used.

Table 22: Projected Small Green Bin Facility Demands (60,000 TPY)

Wasteshed	Additional small green bin facilities needed in 2030 by wasteshed				
	Scenario 1 No New Policies or Programs (Baseline)	**Scenario 2** New Policies and Programs	**Scenario 3** Add Mandatory Requirements to Scenario 2	**Scenario 4** Add Upstream Policies to Scenario 2	**Scenario 5** Add Upstream Policies to Scenario 3 (Full Implementation of SWIRP)
Overall	1	4	9	4	9
East Valley	<1	1	2	1	2
Harbor	<1	<1	<1	<1	<1
North Central	<1	1	2	1	2
South LA	<1	<1	1	<1	1
West Valley	1	2	3	2	3
Western	<1	<1	1	<1	1

Refer to *Appendix D Facility Analysis*, Table 11, Page D-27. Note that values may not sum to total due to rounding.

Table 23: Projected Large Green Bin Facility Demands (260,000 TPY)

Wasteshed	Additional large green bin facilities needed in 2030 by wasteshed				
	Scenario 1 No New Policies or Programs (Baseline)	**Scenario 2** New Policies and Programs	**Scenario 3** Add Mandatory Requirements to Scenario 2	**Scenario 4** Add Upstream Policies to Scenario 2	**Scenario 5** Add Upstream Policies to Scenario 3 (Full Implementation of SWIRP)
Overall	<1	1	2	1	2
East Valley	<1	<1	<1	<1	<1
Harbor	<1	<1	<1	<1	<1
North Central	<1	<1	1	<1	1
South LA	<1	<1	<1	<1	<1
West Valley	<1	<1	1	<1	1
Western	<1	<1	<1	<1	<1

Refer to *Appendix D Facility Analysis*, Table 12, Page D-27. Note that values may not sum to total due to rounding.

In some columns in the above tables, the number of green bin facilities by wasteshed is less than one ("<1"), and suggests that some facilities may be required to serve multiple wastesheds in the City. The number of facilities is rounded to the nearest whole facility. For example, Scenario 4 in Table 23 includes many partial facilities that sum to one overall. The symbol "<1" is used when the total tons available are less than 50 percent of the capacity of one facility.

Transfer stations may be utilized in some wastesheds to help efficiently haul green bin materials to the facilities. Some combination of large and small facilities will likely be desired, and will depend on both the availability of land and the requirements and availability of markets. Large capacity compost facilities may need to be sited outside the City limits, in which case transfer stations will be required to efficiently transport green bin materials to these facilities.

4.4 Facility Scenarios

4.4.1 Black Bin Processing Scenarios

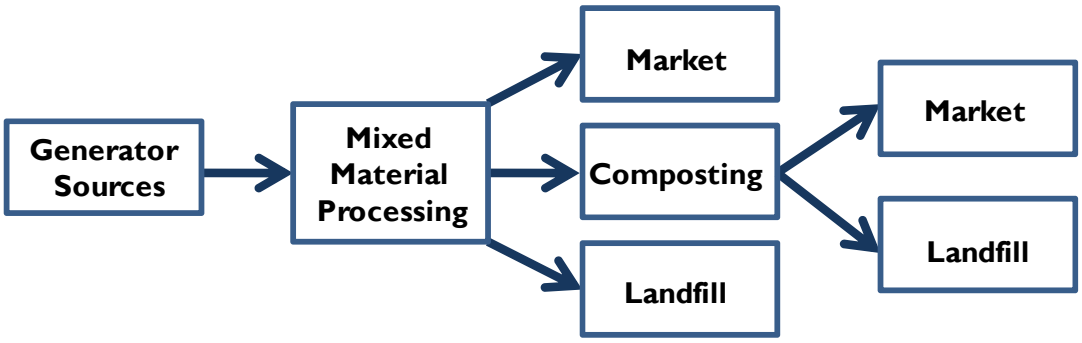
Eight black bin facility scenarios were initially tested and the preliminary results were presented to the stakeholders at the regional workshops held in March 2009. Each of the eight facility scenarios is described in *Appendix D Facility Analysis*. Based on the feedback from the stakeholders, four primary facility scenarios to test four different black bin processing strategies were analyzed in detail. These were labeled Facility Scenarios B, D, E, and F.

- All facilities include pre-processing using an automated mixed material processing facility (MMP). This facility type prepares the feedstock for other facilities.
- Facility Scenario B tests the results using MMP and aerobic composting.
- Facility Scenario D tests the results using MMP and Alternative Technology -Advanced Thermal Recycling (ATR).
- Facility Scenario E tests the results using MMP and anaerobic digestion/Alternative Technology biological (ATB).

- Facility Scenario F tests the results using MMP and non-combustion thermal (including gasification/plasma arc/pyrolysis)/Alternative Technology thermal (ATT).

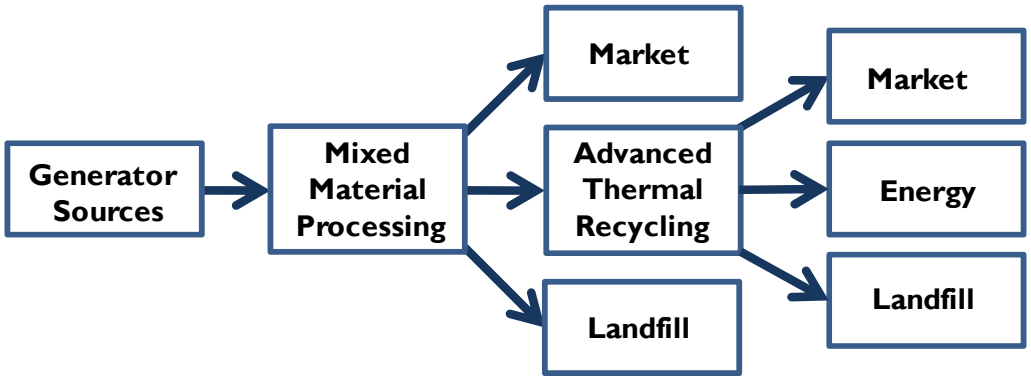
Facility Scenario B: Under this scenario, MMP receives all residual waste and processes it to recover recyclables for market and compostable materials for composting. Materials that are not recyclable or compostable are sent to landfill. Compost facilities process compostable materials for market and send non-compostable residues to landfill. This scenario separates all organics and materials that have markets for diversion and residue is disposed at landfills. A diagram of this scenario is shown below:

Facility Scenario B



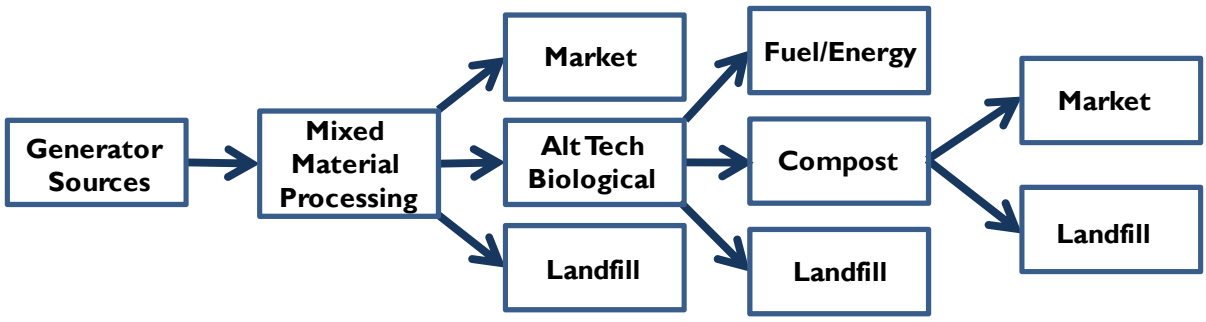
Facility Scenario D: MMP receives all residual waste and processes it to separate marketable materials from materials acceptable for conversion at an ATR facility and non-processable residue (which is sent to landfill). The ATR facility receives residual materials from MMP for conversion to energy and by-products. This scenario assumes that it is more desirable to recover material for recycling than convert it to energy at an ATR facility. MMP would remove all marketable materials, and would prepare non-marketable residual materials for ATR. Preparation for ATR would include screening waste to remove glass, C&D, metals, soil, and other inert materials which would increase conversion efficiency. This scenario represents a situation where recycling is preferred over ATR, but post-processing residual materials are still sent to ATR, ash is beneficially reused at landfills, and residue is disposed at landfills. A diagram of this scenario is shown below:

Facility Scenario D



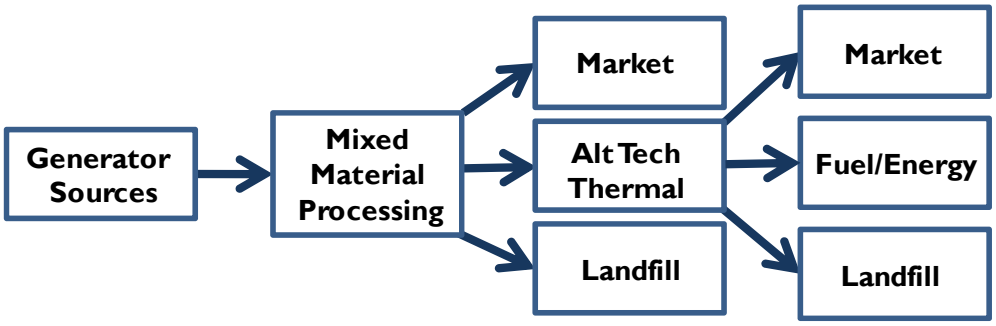
Facility Scenario E: MMP receives all residual waste and processes it to separate marketable materials from organic materials (food, food-soiled paper, and other organics) and non-processable residue (which is sent to landfill). ATB converts the organic materials into fuel or energy, and post-processing residual materials are composted or sent to landfill. MMP would thus provide a feedstock of food, food-soiled paper, and other organics. This scenario represents a situation where recycling is prioritized, organic materials are sent to ATB prior to composting, and materials which cannot be recycled, digested or composted are disposed at landfills. A diagram of this scenario is shown below:

Facility Scenario E



Facility Scenario F: MMP receives all residual waste and processes it to separate marketable materials from materials acceptable for processing at an ATT facility and non-processable residue (which is sent to landfill). ATT converts materials into energy or fuel, and creates ash and other by-products. Marketable by-products are sold to markets and non-marketable residues are sent to landfill. MMP would create a feedstock of paper, plastics, dry organics, and other material that would be desirable for ATT. This scenario represents a situation where recycling is prioritized, materials that cannot be recycled are sent to ATT, and materials that cannot be converted or recycled are disposed at landfills. A diagram of this scenario is shown below:

Facility Scenario F



4.4.2 Black Bin Facility Requirements

The number of required black bin facilities was calculated by putting the projected waste characterization through the different facility scenarios using the expected facility performances (for diversion potential and processing efficiency) to determine how each material type would travel through the facility scenario. The facility performance expectations (as described in *Appendix D Facility Analysis* - Attachment D-2 Facility Descriptions), were used to determine how much material would need to be handled by each facility type. These tonnage volumes are shown in Table 24:

Table 24: Projected Processing Requirements in 2030 - Annual Tons by Facility Type

Facility Scenario	Facility Type	Projected tons received by each facility type in 2030, by policy scenario				
		Scenario 1 No New Policies or Programs (Baseline)	**Scenario 2** New Policies and Programs	**Scenario 3** Add Mandatory Requirements to Scenario 2	**Scenario 4** Add Upstream Policies to Scenario 2	**Scenario 5** Add Upstream Policies to Scenario 3 (Full Implementation of SWIRP)
B	MMP	3,043,196	2,283,754	1,603,556	2,167,830	1,531,326
	Compost	1,697,094	1,275,375	863,645	1,248,719	854,019
D	MMP	3,043,196	2,283,754	1,603,556	2,167,830	1,531,326
	ATR	2,367,430	1,794,942	1,277,985	1,704,628	1,219,510
E	MMP	3,043,196	2,283,754	1,603,556	2,167,830	1,531,326
	ATT	2,030,548	1,522,253	1,051,143	1,441,188	998,653
F	MMP	3,043,196	2,283,754	1,603,556	2,167,830	1,531,326
	ATB	1,559,308	1,173,993	785,261	1,147,337	775,636

Refer to *Appendix D Facility Analysis*, Table 7, Page D-23. Note that values may not sum to total due to rounding.

As shown in Table 24, the City is expected to generate between 1.5 and 3 million tons of residual waste in 2030 that will require processing. This range is based on the generation projections (described in *Appendix B Material Flow Model and Generation Projections*) and varies based on the program and policy scenarios implemented (described in *Appendix A Policy and Program Analysis*).

The siting of a limited number of large-scale (2,000 to 5,000 tpd) solid waste processing facilities within the City limits to handle the amount of residual waste, listed in Table 25, would be extremely difficult due to potential environmental impacts and potential community resistance. Alternatively, direct hauling and/or using transfer stations to deliver residual waste to remote processing sites would be extremely costly and impractical. Consequently, the number of smaller ("community scale") facilities (less than 2,000 tpd) that would be needed to process the waste generated within the City were identified. Table 25 summarizes the number of required smaller scale facilities that would be suitable for siting throughout the City to process all the black bin materials in 2030.

Table 25: Projected Black Bin Facility Demand

Facility Scenario	Facility Type	Number of black bin facilities required by policy scenario				
		Scenario 1 No New Policies or Programs (Baseline)	**Scenario 2** New Policies and Programs	**Scenario 3** Add Mandatory Requirements to Scenario 2	**Scenario 4** Add Upstream Policies to Scenario 2	**Scenario 5** Add Upstream Policies to Scenario 3 (Full Implementation of SWIRP)
B	MMP	15	11	8	11	8
	Compost (large)	7	5	3	5	3
	Compost (small)	28	21	14	21	14
D	MMP	15	11	8	11	8
	ATR	6	5	4	5	3
E	MMP	15	11	8	11	8
	ATT	11	8	6	8	5
F	MMP	15	11	8	11	8
	ATB	9	6	4	6	4

Refer to *Appendix D Facility Analysis*, Table 8, Page D-24. Note that values may not sum to total due to rounding.

Depending on the scenario of policies and programs implemented in the City, anywhere from 8 to 15 MMP facilities may be required to process all black bin materials generated in 2030. The number of MMP facilities required by wasteshed to process black bin materials is presented in Table 26.

Table 26: Projected Black Bin Facilities Required by Wasteshed

Wasteshed	Total black bin facilities required in 2030 by wasteshed				
	Scenario 1 No New Policies or Programs (Baseline)	**Scenario 2** New Policies and Programs	**Scenario 3** Add Mandatory Requirements to Scenario 2	**Scenario 4** Add Upstream Policies to Scenario 2	**Scenario 5** Add Upstream Policies to Scenario 3 (Full Implementation of SWIRP)
Overall	15	11	8	11	8
East Valley	3	2	2	2	2
Harbor	1	1	<1	1	<1
North Central	4	3	2	3	2
South LA	2	2	1	2	1
West Valley	3	2	2	2	2
Western	2	1	1	1	1

Refer to *Appendix D Facility Analysis*, Table 9, Page D-25. Note that values may not sum to total due to rounding.

The number of facilities by wasteshed indicated in Table 26 may not add up to the total number of facilities required per scenario, due to rounding. The number of facilities is rounded to the nearest whole facility. The symbol "<1" is used when the total tons available are less than 50 percent of the capacity of one facility. In some cases, use of transfer stations may be required to help efficiently transfer material between wastesheds in order to maximize the capacity of a facility.

4.4.3 Diversion Potential

As shown in Table 27, assuming citywide implementation, the diversion potential for each of the black bin processing scenarios is very high. Biological treatment methods, such as aerobic composting and anaerobic digestion are somewhat less efficient than thermal treatments, as they process only the compostable or digestible portion of the materials.

Table 27: Projected Diversion Potential by Policy and Facility Scenario

Facility Scenario	Facility Type	**Scenario 1** No New Policies or Programs (Baseline)	**Scenario 2** New Policies and Programs	**Scenario 3** Add Mandatory Requirements to Scenario 2	**Scenario 4** Add Upstream Policies to Scenario 2	**Scenario 5** Add Upstream Policies to Scenario 3 (Full Implementation of SWIRP)
No black bin processing		72%	79%	85%	80%	86%
B	MMP, Compost	91%	93%	95%	94%	95%
D	MMP, ATR	98%	98%	98%	98%	98%
E	MMP, ATB	90%	93%	94%	93%	94%
F	MM, ATT	95%	96%	97%	96%	97%

Source: City of Los Angeles Zero Waste Planning Model – Final Results, January 2013

4.4.4 Cost Estimates

Table 28 provides the estimated cost per ton for each of the facility types.

- Processing costs for most "blue bin" facilities are less than projected landfill costs
- Processing costs for some "green bin" facilities are comparable to projected landfill costs
- Processing costs for some "black bin" facilities are comparable to projected landfill costs
- Processing costs for Alternative Technology-biological are generally higher than projected landfill costs due to:
  - Feedstock preparation (preprocessing)
  - Emerging nature of the technology (technology for processing residual waste is still being piloted)
- Processing costs for thermal facilities are generally higher than projected landfill costs due to:
  - Cost of air pollution control technology
  - Purchase of emission reduction credits
  - Cost of operations and maintenance

Table 28: Facility Cost Estimates

"Blue Bin and Green Bin" Facilities	Cost per ton (net)	$/household per month increase
Clean MRF	Pays $10-30	--
Composting	$40-60	$1-3
Resource recovery center	$50-100	NA
C&D processing	$30-40	NA
"Black Bin" Processing Facilities	**Cost per ton (net)**	**$/household per month increase**
Preprocessing/composting	$50-80	$2-5
Anaerobic digestion	$100-130	$7-10
Gasification, pyrolysis, plasma arc	$120-200	$9-18
Advanced Thermal Recycling	$120-200	$9-18
Disposal Facilities	**Cost per ton (net)**	**$/household per month increase**
Local landfill	$35-50	$0-2
Remote landfill	$80-100	$5-7

Source: Los Angeles Facility Cost Estimates, HDR Engineering, March 2009.
Cost per ton estimate based on the Facility Descriptions in Attachment D-2 in *Appendix D Facility Analysis*, beginning on page D-2-1. Costs are estimated for residential curbside customers only.

To illustrate the potential cost per household per month, current costs for processing and disposal were compared to future costs of processing and disposal, based on each facility type. Currently, the City pays $30 to $40 per ton for processing yard trimmings, compared to $40 to $60 per ton for processing yard trimmings and food scraps (once the program is implemented citywide). These increased processing costs would have the effect of increasing the monthly household rate by $1 to $3 dollars per month.

Similarly, the costs for "black bin" processing facilities range from $50 to $200 per ton, depending on the technology. The City currently pays about $35 per ton to landfill locally. If all of the residential "black bin" tons were processed citywide, this could increase the monthly household rate by $2 to $18 per month depending on the technology.

4.5 Existing Facility Capacity and Expansion Potential

The total number of facilities required was determined assuming full build-out of all desired facilities and assuming that no facilities currently exist to process waste. This section discusses existing solid waste facilities in and around the City and discusses the existing available capacity and the potential for expansion capacity using published information and surveys of facility operators. This section does not address possible institutional obstacles and/or jurisdictional constraints for utilizing the available capacity,

but is intended to identify potential capacity realizing that additional research and more detailed analysis would be needed to confirm the possible use of the available capacity.

Detailed information on the facilities, their processing capacity, and the methods used to determine existing and potential expanded capacity is provided in *Appendix D Facility Analysis*. A summary of the results of the analysis is shown in Table 29, which gives a range of available processing capacity (as permitted) and expansion potential for different facility types. For purposes of evaluating the future facility needs citywide, the lower end of the range was used for the analysis.

Table 29: Available Processing Capacity and Expansion Capacity by Facility Type

Facility Type	Available Processing Capacity (tons per day)
MMP	1,750 - 3,600
Clean MRF	1,200 - 2,600
Composting	550 - 1,100
Chipping and Grinding	900 - 2,300
C&D Processing Facilities	2,300 - 4,850
Transfer Stations	4,800 - 8,150
Food scraps	150 - 300
Waste-to-Energy Facilities	Approx. 1,200
Landfills	25,000 - 28,000

Refer to *Appendix D Facility Analysis*, Table 15, Page D-30.
Source for waste-to-energy and landfills: County of Los Angeles Countywide Integrated Waste Management Plan: 2012 Annual Report

The actual number of additional Clean MRFs, which will be required to process recyclable materials, is shown in Table 30. This number takes into account the potential additional capacity at the existing Clean MRFs to be between 1,200 and 2,600 tpd. Assuming each facility operates six days per week, and using the conservative end of the range at 1,200 tpd, existing Clean MRFs could process about 360,000 tpy of source separated recyclables generated in the City. Table 30 details the expected number of Clean MRFs that will be required in the future assuming full implementation of programs.

Table 30: Blue Bin Facility Requirements by 2030

Facility Type	Number of blue bin facilities required				
	Scenario 1 No New Policies or Programs	**Scenario 2** New Policies and Programs	**Scenario 3** Add Mandatory Requirements to Scenario 2	**Scenario 4** Add Upstream Policies to Scenario 2	**Scenario 5** Add Upstream Policies to Scenario 3 (Full Implementation of SWIRP)
Projected Demand					
Clean MRF	2	4	6	4	5
Net New Facilities Needed					
Clean MRF	0	2	4	2	3

Refer to *Appendix D Facility Analysis*, Table 18, Page D-31.

The actual number of additional green bin facilities, which will be required to process green bin materials, is shown in Table 31. This number takes into account the potential additional capacity at the existing green bin facilities to be between 550 and 1,100 tpd. Assuming each facility operates six days per week, and using the conservative end of the range at 550 tpd, existing green bin facilities could process about 165,000 tpy. Table 31 details the expected number of green bin facilities that will be required by 2030, assuming full implementation of programs.

Table 31: Green Bin Facility Requirements by 2030

Facility Type	Number of green bin facilities required				
	Scenario 1 No New Policies or Programs	**Scenario 2** New Policies and Programs	**Scenario 3** Add Mandatory Requirements to Scenario 2	**Scenario 4** Add Upstream Policies to Scenario 2	**Scenario 5** Add Upstream Policies to Scenario 3 (Full Implementation of SWIRP)
Projected Demand					
Compost (large)	<1	1	2	1	2
Compost (small)	<1	4	9	4	9
Net New Facilities Needed					
Compost (large)	0	0	1	0	1
Compost (small)	0	1	6	1	6

Refer to *Appendix D Facility Analysis*, Table 17, Page D-31.
Note: Large compost facilities are assumed to handle 260,000 tpy or 1,000 tpd (based on 260 operating days per year). Small compost facilities are assumed to process 60,000 tpy or 230 tpd (based on 260 operating days per year).

Table 32 shows the projected number of MMP facilities that will be required to process all the black bin materials remaining after implementation of each policy and program scenario. This number takes into account the potential available capacity at existing black bin facilities which is estimated to be between 1,750 and 3,600 tpd. Assuming each facility with available capacity receives material 300 days per year, and using the conservative end of the range at 1,750 tpd of potential available capacity, existing MMP facilities could process about 525,000 tpy of black bin materials. Table 32 details the expected number of black bin facilities that will be required by 2030, assuming full implementation of programs.

Table 32: Black Bin Facility Requirements by 2030

Facility Type	Number of black bin facilities required				
	Scenario 1 No New Policies or Programs	**Scenario 2** New Policies and Programs	**Scenario 3** Add Mandatory Requirements to Scenario 2	**Scenario 4** Add Upstream Policies to Scenario 2	**Scenario 5** Add Upstream Policies to Scenario 3 (Full Implementation of SWIRP)
Projected Demand					
MMP	15	11	8	11	8
Net New Facilities Needed					
MMP	12	8	5	8	5

Refer to *Appendix D Facility Analysis*, Table 16, Page D-30

One Resource Recovery Center for convenient drop off of recyclable materials, bulky items, and hard to recycle materials is anticipated to be needed at full implementation of all of the policies and programs identified in SWIRP. Approximately 22,000 tpy of materials self-hauled by residents and commercial businesses would be managed through this facility. The ordinance requiring Resource Recovery Centers at landfills and transfer stations in the City may result in the development of more Resource Recovery Centers located throughout the City which will enhance convenience for self-haul generators.

Available C&D processing capacity is between 2,300 tpd and 4,850 tpd (717,600-1,513,200 tpy), but C&D generation is only expected to increase by about 62,000 tpy by 2030, including all the changes in policies and programs. Therefore, no net new C&D processing facilities are anticipated to be needed through 2030.

Table 33 summarizes the net number of Resource Recovery Centers, Clean MRFs (blue bin facilities), compost facilities (green bin facilities), and MMP facilities (black bin facilities) that would be required by the City for implementation of policy and program scenarios (assuming utilization of existing facility capacity takes place first).

Table 33: Net New Facilities Needed for SWIRP Implementation by 2030

Scenario	Anticipated Citywide Diversion	Number of Facilities Needed				
		Resource Recovery Centers	Blue Bin	Green Bin	Black Bin	Total
Scenario 1 No New Policies or Programs (2010 Baseline)	91 to 98%	0	0	0	12	12
Scenario 2 New Policies and Programs	93 to 98%	0	2	1 small	8	11
Scenario 3 Add Mandatory Requirements to Scenario 2	94 to 98%	1	4	1 large or 6 small	5	11-16
Scenario 4 Add Upstream Policies to Scenario 2	93 to 98%	0	2	1 small	8	11
Scenario 5 Add Upstream Policies to Scenario 3 (Full Implementation of SWIRP)	94 to 98%	1	3	1 large or 6 small	5	10-15

4.6 Facility Development

4.6.1 City's Role in Facility Development

The City's role in facility development has changed over the years. Prior to the closure of the City-owned landfills, the City managed the entire solid waste infrastructure for residential curbside customers. With the implementation of blue bin and green bin programs, the City has found it cost-effective to use some private sector infrastructure. Currently, the City uses a combination of public and private facilities:

- **Blue bin** – All facilities used by the City for processing of blue bin materials are provided through private contractors.
- **Green bin** – The City uses a combination of public and private facilities for composting and mulching of compostable materials and horse manure (brown bin) materials.
- **Black bin** – The City uses a combination of public and private facilities for the processing of black bin materials. The City owns no disposal facilities and contracts for disposal through privately owned landfills. Some black bin material is taken to the Southeast Resource Recovery Facility, owned by the City of Long Beach and the Sanitation Districts of Los Angeles County.

The recycling and solid waste infrastructure for commercial and C&D generator sectors is provided through private sector operators. As described in the facility surveys included in Attachments C-1 through C-6 of *Appendix C Infrastructure and Material Flows*, several of these operators are currently planning facility expansions to meet the demand for new diversion capacity. Many operators are also investing in new transfer station capacity, mixed material processing and new technology for treating residual waste.

The City has historically supported the development of private sector infrastructure through incentives (such as C&D and mixed debris diversion incentive payments and the restaurant food scraps program), policies and regulation. The private sector operators would also like the City's support in streamlining the siting and permitting process for new private sector facilities or facility expansions.

The stakeholders supported continued development of private sector infrastructure through new requirements (such as mandatory C&D diversion or commercial recycling).

Blue bin processing facilities (for both residential and commercial recycling) and C&D processing facilities are anticipated to be developed over time by the private sector based on market demand without the need for direct intervention by the City. Infrastructure for green bin and black bin processing capacity may require the involvement of the City, through long-term commitments of materials. The City currently directly controls only residential curbside material. Thus, the City is anticipated to have direct involvement in the development of only the facilities that will be needed for the residential green bin and black bin materials.

The City is currently procuring the first black bin processing facility for residential solid waste, which could include two facilities, a commercial scale facility (200 to 1,000 tpd) and an emerging scale facility (10 to 200 tpd). Depending on the throughput of the selected commercial scale facility and the potential of the selected emerging facility to scale up to commercial scale, these two facilities could be sufficient for most of the City's residential black bin processing needs through 2030 (about 2,000 tpd at full implementation of programs).

4.6.2 Facility Phasing

The phasing schedule shown in Table 34 was prepared based on the direction of the stakeholders at the March 2009 workshops. The phasing schedule takes into account the diversion and disposal tonnage projections that would result from implementation of the policies and programs, and identifies the

number and type of facilities that will be needed. The policy, program, and facility phasing approach achieves the City's goals of 75 percent diversion by 2013 and will achieve 90 percent diversion by 2025.

Table 34: Policy, Program and Facility Phasing[1]

2013	2020	2025	2030
New and expanded Programs	Additional new programs plus mandatory programs[3]	Continue new and mandatory programs	Continue new and mandatory programs
Upstream Advocacy	Continue upstream advocacy	Continue upstream advocacy	Continue upstream advocacy
1 large or 2 small compost facilities[2]	1 resource recovery center 1 recycling facility and 2 small compost facilities	1 recycling facility and 2 small composting facilities	1 recycling facility
	2 black bin processing facilities	1 black bin processing facility	2 black bin processing facilities
75%	**87%**	**90%**	**97%**

[1]Phasing assumed under SWIRP may not reflect actual implementation and/or roll-out of specific policies, programs and/or facilities.
[2]Facilities may be implemented by either the public or private sector, or by joint public-private partnerships, and may also include expansions to existing facilities.
[3]Statewide mandatory commercial recycling for commercial customers generating four cubic yards or greater of solid waste per week implemented in July 2012. Mandatory recycling and composting for all generators will be implemented locally by 2020.

4.7 Facility Aesthetics

It is important to integrate a facility into the community it serves, both functionally and aesthetically. Certain design and operational considerations can be applied to help integrate any structure into its neighborhood. Some communities, including the cities of Santa Barbara and Santa Monica, have established a set of aesthetic guidelines for new buildings to promote a sense of community and harmony among buildings. The following are typical design principles used to integrate solid waste facilities within the community and neighborhood they are to be built in:

- **Traffic** – Site location, off-site routes, and ingress and egress plans should be chosen to work with existing traffic patterns and limit the potential traffic burden. Facilities should also be designed to screen large scale operations from public view and to provide efficient design and operation to minimize the amount of vehicles waiting in queue and to ensure that queuing does not occur on public roadways.
- **Building size** – Solid waste facilities generally require a large clear floor space with a high roof clearance, so several design approaches are used to minimize or reduce the visual impact of the facility. These approaches can include designing the facility to blend in with nearby buildings,

identifying highways, roads and other important vantage points, and using landscape and other screens to protect the neighbors' view of the facilities.

- **Noise** – Sites should be arranged to minimize the time trucks spend idling in queue, to provide screens and landscaping that diffuse sound, and provide onsite parking as a buffer zone for sound. Operation and process noises that occur inside the facilities can be minimized by fully enclosing the building, orienting openings to face screens, and lining or insulating buildings to reduce sound.
- **Odor, dust, litter, and animal control** – Building design should include controls for reducing dust, while site design should consider prevailing wind conditions and sensitive neighbors. Proper material storage and cleaning can prevent odor and reduce the possibility of vermin (rodents and birds).
- **Community Involvement** – Projects can also increase their appeal to the community by including an education/information center, which would be capable of holding community meetings, educating citizens about recycling, and providing tours to schools. Providing a sustainable site, which may include LEED certification, may also help promote the facility in the community.

A discussion concerning aesthetics and community integration can be found in Section 5 of *Appendix D Facility Analysis* page D-45.

4.8 Market Development

Markets are a necessary component for any Zero Waste system. Intermediate and end markets provide the vehicle for beneficial use of the diverted materials by returning them to the manufacturing and production of new products. Markets also provide an important revenue source to help sustain diversion programs. Without sufficient markets even the best diversion programs will fail.

4.8.1 Commodities

The City's proximity to the ports of Los Angeles and Long Beach provides the City's processors and service-providers with the ability to readily market commodity grade materials, such as paper, plastics, and metals. Commodities are traded on the worldwide market and flow to manufacturing facilities in the U.S. and abroad. The City supports processing infrastructure through the Los Angeles Recycling Market Development Zone (LARMDZ) which provides low-interest loans to qualifying processors and manufacturers. The City can further expand local processing and manufacturing capacity by establishing local remanufacturing tax credits.

4.8.2 C&D

C&D debris is defined as materials generated through construction and demolition projects. C&D debris comprises a wide range of materials consisting of commodity recyclables (cardboard, plastic, and metals), inert materials, wood, gypsum, and wallboard. All of these materials have vibrant local markets for processing or reuse.

4.8.3 Yard Trimmings

Landfills in southern California have accepted yard trimmings for ADC at very low rates, which have had the effect of suppressing the markets for composting. City policy prohibits the use of yard trimmings for ADC, thus the LASAN has had to develop its own composting and mulching infrastructure to supplement private compost markets. Anticipated changes in State regulations regarding ADC and the closure of the Puente Hills Landfill (a large local market for ADC) will put pressure on the existing composting infrastructure in Southern California. Opportunities for development of markets for yard trimmings must include the following:

- **Reduce Contamination.** Increase outreach efforts to educate City residents about acceptable and unacceptable materials for the green bin program. This effort will lead to a reduction in contamination, improved handling of the material during processing, a better compost product, improved marketability, and lower production cost.
- **Support Ongoing Outreach Efforts.** CalRecycle held a number of workshops highlighting the benefits of recovered organics on agricultural soils. To support the ongoing outreach efforts, the City can work with CalRecycle, the local Resource Conservation Districts, and University Extension agents to support and expand these efforts.
- **Enhanced Organics Marketing Plan.** To enhance its marketing efforts, the City can undertake a written organics marketing plan that provides a detailed strategy for managing the increased volumes of organics to be diverted. The City can continue investigating how to access agricultural and horticultural markets for compost and mulch.
- **Adopt Compost Use Specifications.** The City can adopt or adapt existing CalTrans specifications for using compost and mulch in all City and/or City-contracted public works projects (such as erosion control and stormwater management).
- **Compost Use in New Development.** The City can also consider adopting a compost use requirement for any new residential or commercial development or re-development.
- **Increased use by residents.** Enhanced outreach and education of the residents of Los Angeles related to free pick-up of mulch and compost at mulch give-away sites throughout the City.

4.8.4 Food Scraps

Nearly 50 percent of the existing composting facilities in California are permitted to accept food scraps, and the number of facilities capable of handling food scraps is increasing rapidly. In addition, CalRecycle is currently examining the scientific basis for requiring food scraps to be processed at the highest tier-composting permit.[35] A number of Notification-tier facilities are successfully using a Research Notification to allow them to accept food scraps while they process the higher tier permit. The addition

[35] CalRecycle permits composting facilities according to different "tiers", based on the throughput of the facility and the types of materials processed. The lowest tier (requiring the least regulation) is the "Exempt" tier, followed (with increasing regulation) by the "Notification," "Registration," and "Full Solid Waste Facility Permit" tiers. "Research Notification" is a special designation for facilities permitted under the Notification tier that are testing composting methods. These provisions are described in the California Code of Regulations, Title 14, beginning with Section 17850.

of residential food scraps to residential yard trimmings is seen as a relatively easy collection program to implement with significant diversion potential (for the residential sector). The recommended market development strategies required to accommodate the addition of residential food scraps to residential yard trimmings collection are similar to those listed above for overall yard trimmings market development, with the following additions:

- If the addition of food scraps in the green bin is implemented citywide, the City must undertake a comprehensive outreach and education program to encourage residents to reduce contamination and increase participation. This will result in a cleaner feedstock material for processing and a better final product for the markets.
- The City should support efforts at the State level to allow all composting facilities to accept food scraps for composting (not only those permitted at the highest tier) without re-permitting the facilities. This will increase the options for City-collected organics.

4.8.5 Bulky Items

Based on route observations and estimates provided by LASAN crews, about 50 percent of the bulky items collected through the LASAN Bulky Item program could be reused or recycled if they were collected and delivered to an intermediate warehouse or delivered directly to end-use markets. Currently, LASAN is able to divert appliances, electronics, and some mattresses through special routing for these materials. All other bulky items are collected in compactor trucks which crush the items making them unsuitable for resale.





Bulky Items Collected in the City

There is a vibrant reuse and recycling market in the City. However, to access these markets, the materials should be collected in a stake-bed or box truck to preserve the quality of the materials. LASAN could partner with reuse organizations to provide separate pick-up of reusable items. Alternatively, the City could lease space adjacent to its District Yards or CLARTS for aggregating the materials for resale, reuse or recycling.

Appendix D Facility Analysis contains detailed information on both existing and emerging markets for traditional recyclables, compost, and other potential by-products from diversion programs. Attachment D-4 to the appendix also details information about developing markets for fuel, energy, and other possible by-products of Alternative Technologies.

Section 5 Alternatives to the Plan

This section describes the alternatives to SWIRP and addresses the infrastructure requirements of the status quo option (no new programs, residual waste is landfilled locally) and the long-haul options potentially available to the City. It also describes the transfer station capacity requirements, should the City or private sector operators be unsuccessful in developing sufficient local processing capacity.

5.1 Status Quo

The City has met and exceeded its regulatory requirements under State law to divert 50 percent of materials from disposal. The City achieved 72 percent diversion in 2010 and is the recycling leader among the ten largest cities in the U.S.[36] Under the "status quo" option, the City would continue its existing programs and maintain 72 percent diversion, based on the 2010 baseline data. City generators would continue to dispose of residual waste at local landfills.

Residential black bin materials from all residential curbside customers are collected by LASAN crews. This material (approx. 3,350 tpd in 2010) is direct-hauled to the Sunshine Canyon Landfill or the Calabasas Landfill for disposal; transferred at the Falcon Transfer Station or the Southern California Disposal Transfer Station for disposal at the Sunshine Canyon Landfill; or transferred at CLARTS for disposal at Sunshine Canyon Landfill or the El Sobrante Landfill. A small amount of black bin materials (approximately 100 tpd) from the Harbor wasteshed is also delivered to the Southeast Resource Recovery Facility for transformation.

The Sunshine Canyon Landfill has a permitted capacity of 12,100 tpd and a remaining life of over 20 years. The Calabasas Landfill has a permitted capacity of 3,500 tpd and a remaining life of 12 years. The El Sobrante Landfill has a permitted capacity of 16,054 tpd and a remaining life of 32 years.



Sunshine Canyon Landfill, Los Angeles

Multi-family, commercial, and C&D solid waste is collected by the private sector. This material (approximately 7,000 tpd) goes to a variety of transfer stations, and landfills throughout the region.

Approximately 425 tpd are self-hauled to landfills and transfer stations from residential and commercial sources.

[36] Waste & Recycling News, Municipal Recycling Survey 2010, February 15, 2010.

5.1.1 Projected Disposal Rates

Table 35 depicts the City's projected disposal tons through 2030 assuming that the City maintains its 2010 baseline diversion rate (72 percent) and does not implement any new diversion programs.

Table 35: Projected Annual Disposal Tons[1]

Sector	2010	2013	2020	2025	2030
Residential curbside	893,771	895,643	924,252	847,235	856,944
Multi-family	441,749	444,497	465,415	530,171	537,190
Commercial	1,441,790	1,501,553	1,584,306	1,621,493	1,649,062
C&D	71,927	73,565	76,977	77,643	78,741
Total	2,849,237	2,915,258	3,050,949	3,076,542	3,121,937

[1]Tonnage projections based on Southern California Association of Governments population and employment projections, Integrated Growth Forecast by Transportation Analysis Zone, 2010. Note that values may not sum to total due to rounding. Refer to *Appendix B Material Flow Model and Generation Projections*, Table 4, Page B-12.

Table 36 depicts the projected tons disposed per day for each generator sector, calculated based on five operating days per week (260 days per year). City generators currently dispose of nearly 11,000 tpd in area landfills and are projected to dispose of approximately 12,000 tpd by 2030 (assuming no new programs).

Table 36: Projected Daily[1] Disposal Tons

Sector	2010	2013	2020	2025	2030
Residential curbside[2]	3,438	3,445	3,555	3,259	3,296
Multi-family	1,699	1,710	1,790	2,039	2,066
Commercial	5,545	5,775	6,093	6,237	6,343
C&D	277	283	296	299	303
Total	10,959	11,213	11,734	11,833	12,007

[1]Based on 260 operating days per year.
[2]Residenital curbside and commercial sectors include self-hauled waste. LASAN collected 3,350 tpd of residential curbside black bin materials in 2010 (which does not include residential self-haul waste).

5.1.2 Existing Landfill Capacity

The permitted capacities of the landfills within the region are shown in Table 37. Even with the closure of the Puente Hills Landfill in October 2013, it appears that there will be sufficient landfill capacity in the area for years to come.

However, there is expected to be upward pressure on pricing when Puente Hills closes, which could encourage more diversion and thus, less demand for landfill disposal.

Table 37: Los Angeles Region Landfill Permitted Capacity[1]

Facility	Permitted Daily Capacity (Tons)	2012 Average Yearly/Daily Tonnage (Tons)[2]	Anticipated Closure Date
Antelope Valley Landfill	3,564	252,000/966	2042
Puente Hills Landfill	13,200	2,144,000/8,215	2013
Sunshine Canyon City/County Landfill	12,100	2,217,000/8,500	2037
Chiquita Canyon Landfill	5,000	906,000/3,470	2019
Calabasas Landfill	3,500	187,000/716	2025
Scholl Canyon Landfill	3,400	211,000/808	2030
Lancaster Landfill	1,700	208,000/800	2044
Savage Canyon Landfill	350	78,000/300	2048
City of Burbank Landfill	240	33,000/126	2053
Pebbly Beach Landfill	49	3,000/11	2020
San Clemente Landfill	10	400/1.5	2032
El Sobrante Landfill[3]	16,054	1,928,000/7,400	2045
Simi Valley Landfill[3]	9,250	663,000/2,500	2052
Frank R. Bowerman Sanitary Landfill[3]	11,500		2053
Olinda Alpha Sanitary Landfill[3]	8,000		2021
Mesquite Canyon Landfill[3]	20,000		2097

[1] Source: County of Los Angeles Countywide Integrated Waste Management Plan: 2012 Annual Report
[2] Based on 5-days/week landfill operation (261 days/year)
[3] Source: www.calrecycle.ca.gov/SWFacilities/Landfills/Tonnages/

5.2 Long Haul Options

Landfill capacity is potentially available to City generators through long-haul or rail-haul to remote landfills. However, there are challenges associated with both long-haul (using transfer trucks) and rail-haul (using railcars).

5.2.1 Long-Haul

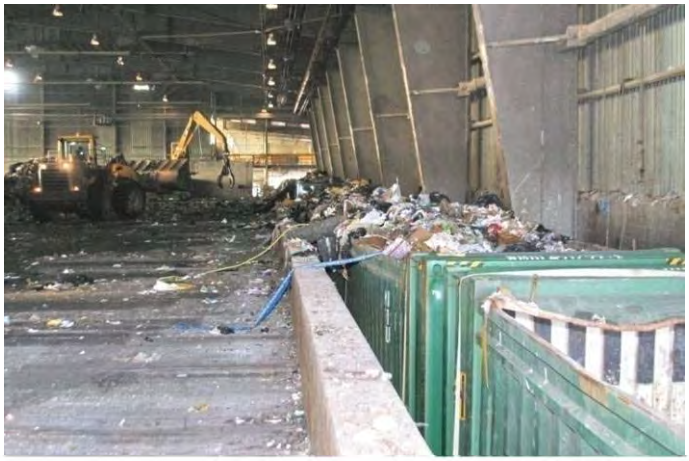
Depending on the area of the City, LASAN currently either hauls residual waste directly to local landfills in route trucks or transfers residual waste from route trucks to transfer trucks at transfer stations for hauling longer distances to landfills within the region. As capacity at local landfills decreases, there are

potential long-haul options for the City to remote landfills, as discussed later in this section. However, hauling residual waste to distant disposal facilities will impact the host communities (where the landfills are located), the communities along the routes to the landfills (that will be impacted by emissions from truck traffic), and other communities impacted by the threat of global warming (due to greenhouse gas emissions from truck traffic).

Long-haul trucking can also be costly to ratepayers, potentially off-setting the lower tipping fees associated with remote landfills. The transfer fee for using CLARTS is $8.01 per ton and the CLARTS trucking cost is approximately $2.30 per mile (based on July 2013 costs). Thus, the cost to send solid waste to a remote landfill 200 miles away would be over $50 per ton for the transfer and trucking alone (including the vehicle round trip).

5.2.2 Rail-Haul

The Sanitation Districts of Los Angeles County (LACSD) has been looking at rail based transport to distant landfills as part of its overall integrated solid waste management system for nearly twenty years. LACSD serves over 5 million residents living in 78 cities and unincorporated areas. Currently, most of the residual waste remaining after source reduction and recycling in Los Angeles County is transported by truck to disposal sites that are running out of space. As siting of new disposal facilities in populated areas has become more difficult, consideration has focused on more distant facilities. For several of these sites, rail transportation is seen as an attractive alternative to long-haul trucking. LACSD is moving forward with a plan that involves rail served facilities with capacity available to meet the needs of the County into the next century. The potential facility is the Mesquite Regional Landfill, in Imperial County, which was purchased in 2002 and constructed in 2008. This landfill is designed and permitted to receive waste via rail.



Loading Waste into Railcars, Bronx, New York

The planned system involves materials recovery facilities and transfer stations, where the residual waste resulting from the processing of the recyclables and solid waste requiring disposal is loaded into intermodal containers. These containers are then transported to intermodal yards, where they are loaded onto railcars. These cars are then joined together to form the unit trains that make the 200+ mile run to the remote landfills. One such facility, the Puente Hills MRF, began operation in July 2005. LACSD is pursuing the permitting and construction of a dedicated intermodal yard adjacent to the Puente Hills MRF. This addition will permit the loading of containers with more waste than would otherwise be permitted in a situation that requires transfer of the loaded containers from the containerization facility to the intermodal site over public roads, due to weight restrictions. While there are several privately run

intermodal yards in the region which could also serve as the transfer point for intermodal containers, congestion in these yards makes them less desirable.

A major part of the system is arranging for train transportation of the solid waste trains, which are expected to go to the remote landfill on existing rail lines. Each train would haul approximately 3,000 to 4,000 tons of waste. LACSD is negotiating with Union Pacific Railroad to arrange for use of the tracks for its waste-by-rail program.

5.2.2.1 Key Issues in Implementing a Rail Based Disposal System

A lot of track must be laid before a municipality decides that it is going to implement a rail based component of its long-term strategic plan. LACSD has been evaluating strategies for meeting its future landfill and transportation needs for many years. As far back as the early 1990s, rail haul was identified as a potential solution to the projected shortfall in local disposal capacity.

Among the key issues that must be addressed in implementing rail based disposal are:

- Where and how will the solid waste be loaded into rail capable containers?
- How will containers move from the loading site to the railhead, if they are not coterminous?
- How will the containers move from the origin to the destination?
- How is the waste transferred to the ultimate disposal site?

Key program decisions that must be made include:

- **Type and Size of Shipping Container** – It is important to maximize container density, as the railroads charge for moving the car independent of the weight of the contents.
- **Number of Cars and Containers** - The number of cars and containers required to meet the system requirements is very dependent on the turn time associated with moving the containers to the disposal site and returning the containers to the facility for loading. Rail haul will typically increase the number of containers required. This is due to the fact that individual containers may be en route for two weeks or more depending on the turn time from origin to destination. Turn time is a function of the distance to the disposal site, the railroads involved, and the nature of the routing plan and scheduling.
- **Routing** - Another issue is determining how the car moves from origin to destination, whether it is part of a dedicated train made up solely of solid waste, a unit train, or mixed in with other general merchandise and handled as part of the railroad's general freight. The impact can be significant. In examining alternative routing schemes, it is not unusual to find that turn times associated with unit trains can be half of the turn time associated with moving the cars as part of general freight.
- **Location of Transfer Station** - The best transfer station site is one located near existing rail lines or rail spurs. If construction of rail cannot occur on-site or immediately adjacent, then full containers will need to be trucked to a common intermodal facility for transfer to railcars.

- **Transfer of Solid Waste at Destination from Rail to Disposal Site** - The preferred alternative is to have direct rail access to the disposal location. This eliminates the issues related to road transport of solid waste containers. Special trailers with additional axles and over weight load permits may be required and increase hauling costs. Alternatively, an intermodal facility within a reasonable driving distance from the disposal location would be needed. Transport from the rail off-loading facility to the disposal facility may require road upgrades necessary to haul the heavily-loaded vehicles.
- **Own or Lease the Equipment** - Containers and railcars can either be owned or leased from the railroad or a number of available leasing companies. Another issue is ownership of the cars, whether owned by the public sponsor, the private supplier of the overall service or the railroads themselves. The railroad in most instances owns and provides the motive power, although there are instances in which the party operating a unit train is providing all the required equipment and in effect is simply renting track rights.
- **Terms of the Service Agreements** - The service agreements would need to address all of the issues related to a long-term public private partnership found in a waste transportation and disposal agreement. There are several aspects related to rail that add additional complexities to the agreement(s). First, there are typically more parties involved in providing the suite of services. In addition to the public participant needing processing/disposal services and the waste industry providing the service, there are short line and Class 1 railroads that are necessary participants in the transaction. Putting in place the required agreements among these parties requires significant effort on the part of the project team. Allocating various project risks is a balancing act trading off risk versus reward.
- **Contingency Plans** - An alternative plan is required in the event of disruption of the core transfer/transport and disposal system. Elements to be considered in establishing alternatives include establishing primary and secondary disposal locations, reachable via alternative routes, which in some instances will entail different service providers and potential shifting of the mode of transportation, on an emergency basis, if needed.

5.2.3 Remote Landfills

5.2.3.1 Mesquite Regional Landfill, Imperial County, California



Mesquite Regional Landfill, Imperial County

LACSD is developing a remote disposal system program that will provide disposal capacity for the communities of Los Angeles County to replace the capacity that will be lost when the Puente Hills Landfill closes in 2013 and local landfill capacity diminishes. The planned remote disposal system will be comprised of materials recovery/transfer stations, intermodal rail facilities, and remote out-of-county landfills. The materials recovery/transfer stations will process waste to remove recyclable materials, and the residual waste will be packed into sealed "intermodal containers," which will look like any other shipping containers. The containerized waste will be transported to intermodal rail facilities such as Puente Hills MRF, the Downy Area Recycling and Transfer facility, and the South Gate Transfer Station where the containers will be loaded onto rail cars for transport to the remote landfills. Containerized waste arriving at the remote landfill will be unloaded from the rail cars and transported to an operating area for disposal.

LACSD completed the purchase of the Mesquite Regional Landfill in December 2002. The Mesquite Regional Landfill encompasses approximately 4,200 acres, with a disposal area of approximately 2,300 acres. When fully operational, the landfill's daily disposal capacity will reach approximately 20,000 tons of refuse per day. A five-mile rail spur, to be constructed by the Districts on a Bureau of Land Management easement, will allow access to the site by trains hauling containerized waste. In early 2005, the Districts completed a master plan that addresses the integrated development of the site, provides geotechnical information, and includes a startup plan and a project implementation schedule. Construction of the infrastructure necessary to begin landfill operations began in 2006. The waste-by-rail infrastructure is scheduled to be completed in 2013.

5.2.3.2 Avenal Regional Landfill, Kings County, California

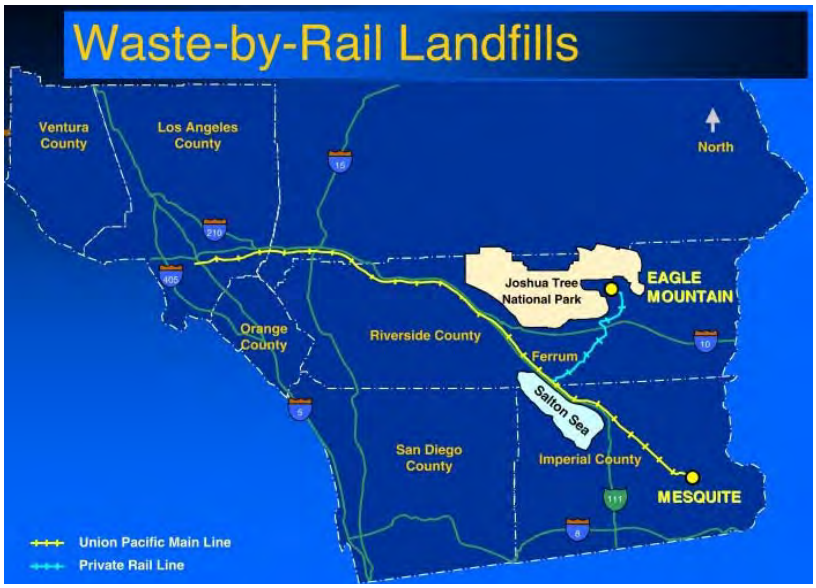
The Avenal Regional Landfill is located in Kings County, about 189 miles from the City of Los Angeles. The landfill is owned and operated by Madera Disposal Systems and is permitted to receive 6,000 tpd of solid waste. The estimated closure year for the landfill is 2020.

5.2.3.3 El Sobrante Landfill, Riverside County, California

The El Sobrante Landfill is located in Riverside County, about 59 miles from the City of Los Angeles. The landfill is owned and operated by USA Waste Services of California and is permitted to receive 16,054 tpd of solid waste. The estimated closure year for the landfill is 2045.

5.2.3.4 Eagle Mountain Landfill, Riverside County, California

The Eagle Mountain Landfill is located ten miles north of Desert Center in Riverside County, about 184 miles from the City of Los Angeles. The landfill is owned by Mine Reclamation Corporation and was permitted in 2000, but is not yet operational. The facility had been proposed as a waste-by-rail project for the LACSD, along with the Mesquite Regional Landfill, to replace the Puente Hills Landfill after its closure in October 2013 and once other regional landfills reach capacity. The Eagle Mountain Landfill is designed to receive 20,000 tpd of solid waste and would have a project life of approximately 100 years. Development of the Eagle Mountain Landfill has been controversial and on July 30, 2010, the 9th Circuit Court of Appeals denied motions for a re-hearing by project proponent Kaiser Eagle Mountain Inc., which hoped to reverse the court's November ruling against the project. On May 22, 2013, the LACSD Board determined that the agency will cease negotiations with Mine Reclamation Corporation.



LACSD Waste-by-Rail Landfills

5.2.3.5 Gregory Canyon Landfill, San Diego County, California

The Gregory Canyon Landfill is proposed for northern San Diego County and would accept solid waste, inert waste, and dewatered sewage sludge and would not be allowed to accept hazardous wastes for disposal. The proposed project site covers approximately 1,770 acres, with landfill activities occurring on approximately 183 acres. The landfill will have a design capacity of approximately 46 million cubic yards (or 31 million tons) of waste and an expected service life of approximately 30 years.

The solid waste facilities permit is being reviewed by the local Lead Enforcement Agency and CalRecycle. An updated Environmental Impact Report was circulated in early 2013.

5.2.3.6 Copper Mountain Landfill, Arizona

The Copper Mountain Landfill (CML) is located in Wellton, Arizona. CML accepts residential solid waste (including yard trimmings), white goods (void of CFCs), construction and demolition debris, tires (segregated and temporarily stored until they are shipped off-site), asbestos, wastewater treatment plant sludge, petroleum contaminated soil (PCS), fly ash and other non-hazardous waste. The Copper Mountain Landfill has a design capacity of approximately 2.8 million tons and a future lifespan of approximately 50 years.

5.2.3.7 ECDC Landfill, Utah

ECDC Environmental L.C. is a rail-served landfill facility, owned by Allied Waste Industries. Over 2,300,000 tons of waste has been shipped to ECDC by Waste By Rail, Inc., since ECDC landfill facility opened in 1992.

Located in East Carbon Utah, this facility is situated on 2,500 acres of private land and is permitted for the disposal of over 300 million cubic yards of non-RCRA wastes.

The ECDC facility can process over 30,000 tons of waste per day and contains over 10,000 feet of railroad track that is served by the Union Pacific Railroad. Southern California customers of ECDC include: Lockheed, the City of Los Angeles Department of Water and Power, the Port of Los Angeles, and the Sanitation Districts of Los Angeles County.

According to the Utah Solid Waste Plan Update, dated March 2002, ECDC has the capacity to dispose of all of the waste generated in Utah for the next 100 years.

5.2.3.8 Apex Regional Landfill, Clark County, Nevada

The Apex Regional landfill is owned by Republic Services and is located in Clark County, Nevada. The Apex landfill has a capacity of 865,000,000 cubic yards, and is projected to close in 2150. The landfill is Nevada's largest landfill, receives an average of over 11,000 tons of solid waste per day, and is open 24 hours a day, seven days a week. Although the Apex Landfill is not currently receiving imported waste, it is accessed by a rail line, making future importation from southern California a possibility. Apex's estimated life under the current permit is in excess of 40 years, and Republic owns additional acreage at the site that would allow for further expansion.

5.3 Transfer Station Capacity

This plan assumes that the City and private sector operators will be successful in siting the needed number of blue bin, green bin, and black bin facilities throughout the City and within each wasteshed. The stakeholders who participated in the SWIRP planning process supported the development of community scale facilities within each wasteshed to handle the materials generated within each wasteshed. However, because of the difficulties of siting new or expanding existing facilities, the City may need to transfer some materials between wastesheds for processing or transfer materials outside of the City for composting or ultimate disposal.

Citywide disposal is projected to be 1.5 million tpy at full implementation of SWIRP programs. This is the equivalent of 5,100 tpd (based on 300 operating days per year). Residents and businesses in the City are expected to generate up to 1.4 tpy or 4,600 tpd (based on 300 operating days per year) of green bin materials citywide in 2030 at full implementation of programs. If the City or private sector operators are unsuccessful in siting new green bin processing capacity, at least some additional transfer station capacity may need to be secured by 2030 in order to meet the City's needs. Up to 9,700 tpd of black bin and green bin materials generated citywide may need to be transferred between wastesheds or outside of the City if the City or private sector operators are unsuccessful in siting new MMP facilities and compost facilities within the City.

Attachment D-3 Existing Facility Capacity Analysis in *Appendix D Facility Analysis*, beginning on page D-3-1 describes the excess capacity currently available at existing transfer stations within the region used by City generators in 2006. The analysis concluded that there was between 4,800 and 8,150 tpd of available or planned capacity at existing transfer stations. Table 38 summarizes this analysis.

The additional transfer capacity was estimated using the information developed from the Facility Surveys included in Attachment C-1 in *Appendix C Infrastructure and Materials Flows*, beginning on page C-1-1. Each facility was asked about its current expansion plans and expansion potential.

- Several facilities, including Athens (Sun Valley), Community Recycling, Compton, Paramount, Southern California Disposal, and Waste Resources Recovery were actively engaged in pursuing permits for expansion. CLARTS developed a master plan to evaluate the feasibility of increasing its processing capacity.
- Several facilities were known to have some excess capacity or were operating at less than their permit limits including, American Waste, CLARTS, and the East Los Angeles Recycling & Transfer Station (ELARTS).
- The Falcon Refuse Transfer Station, located in the Harbor wasteshed, had no current plans to expand its facility. However, it reported that it has the physical capability of expanding from 1,850 tpd to 5,600 tpd. In addition, the Bradley Transfer Station (which was not operating in 2006 during the timeframe of the facility surveys) was pursuing an expansion to 5,000 tpd.

Based on this information, there is potentially as much as 15,400 tpd of excess or potential new transfer capacity in the region that could be available to generators in the City. LASAN may wish to secure long-term agreements for some transfer capacity. However, it appears that the private sector operators are investing in sufficient capacity to meet the needs of the generators in the City.

Table 38: Existing and Planned Transfer Station Capacity

Transfer Stations	Permitted Capacity (tpd)	Estimated Additional Transfer Capacity (tpd)
American Waste Transfer Station	2,225	100-200
Athens Services Transfer Station	5,000	--
Athens (Sun Valley)	1,500	500-1,000
Bel-Art Waste Transfer Station	1,500	--
Carson Transfer Station	5,300	--
Central Los Angeles Recycling & Transfer Station (CLARTS)	4,025	1,000-2,500
Community Recycling	1,700	500-800
Compton Recycling and Transfer Station (Browning Ferris Industries)	1,500	600-1,000
Downey Area Recycling and Transfer Station (DART)	5,000	--
East Los Angeles Recycling & Transfer Station (ELARTS)	700	100-150
Falcon Refuse	1,850	--
Innovative Waste Control	1,250	--
Mission Road Recycling and Transfer Station (Waste Management)	1,785	--
Paramount Resource Recycling Facility	2,400	200-500
South Gate Transfer Station – Los Angeles County Sanitation District	1,000	--
South Gate Transfer Station – Waste Management	2,000	--
Southern California Disposal	1,056	300-500
Waste Resources Recovery	500	1,500
Total	**40,291**	**4,800-8,150**

Data based on surveys conducted for SWIRP of facilities used by City generators in 2006.
Refer to *Appendix D Facility Analysis*, Table 19, page D-33.
Note: Falcon Refuse has the physical capability of expanding from 1,850 tpd to 5,600 tpd and Bradley Transfer Station (which was not operating in 2006 during the timeframe of the facility surveys) is pursuing an expansion to 5,000 tpd.

Section 6 Land Use

6.1 General/Community Plans

California State law requires every city and county to adopt a comprehensive General Plan to guide future development. The City's 35 community plans collectively comprise the Land Use Element of the General Plan. As part of the recently established New Community Plan Program, the Planning Department is studying the land use plans for nine of the City's 35 communities. The purpose of this ongoing program is to ensure that the plans are kept up-to-date so they can effectively guide growth and development in the City's neighborhoods. Community Plans guide the physical development of the City's neighborhoods by designating land for a range of uses such as housing, business, industry, and open space. The planning process involves community input to identify issues and opportunities and set goals for development.



Community Planning Areas

Planning for public infrastructure, including reserving space for recycling and solid waste infrastructure (such as S.A.F.E. Centers, Resource Recovery Centers, processing facilities and District Yards), is an important consideration in the development of the City's Community Plans. LASAN is working with the Planning Department to ensure that public infrastructure needs are being considered in the planning process and new facilities are identified in the solid waste section of the Community Plans.

6.2 Environmental Justice

Solid waste facilities have usually been sited in heavy industrial zones and residents living adjacent to these zones may be affected by cumulative impacts. When siting new solid waste facilities, the City must consider Environmental Justice concerns and take a precautionary approach. Environmental Justice is defined in California law[37] as "the fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation, and enforcement of environmental laws and policies." The California Environmental Protection Agency (Cal/EPA) has prepared an Environmental Justice Action Plan to develop guidance on Environmental Justice issues (such as "precautionary approaches" and "cumulative impacts") for State boards, commissions, and regulatory agencies to ensure that Environmental Justice concerns are integrated into the State's environmental programs. Working definitions include:[38]

- **Cumulative impacts** means exposures, public health or environmental effects from the combined emissions and discharges in a geographic area, including environmental pollution from all sources, whether single or multi-media, routinely, accidentally, or otherwise released. Impacts will take into account sensitive populations and socio-economic factors, where applicable and to the extent data are available.
- **Precautionary approach** means taking anticipatory action to protect public health or the environment if a reasonable threat of serious harm exists based upon the best available science and other relevant information, even if absolute and undisputed scientific evidence is not available to assess the exact nature and extent of risk.

6.3 Planning Code Amendments

To facilitate the siting of new technology facilities for treating residual waste and recognizing Environmental Justice concerns about impacted communities within industrial zones, RENEW LA sought to expand the number of locations within the City that could be considered for new technology facilities.

Based on this RENEW LA goal, LASAN worked with the Planning Department to amend the Zoning Ordinance to allow Alternative Technology facilities in the M3 (heavy industrial), M2 (commercial and light industrial) and PF (public facility) planning zones within the City. By increasing the number of potential sites for new technology, the City can identify potential locations that will not adversely affect already impacted Environmental Justice communities. The Solid Waste Alternative Technology Processing Facility Ordinance was adopted by the City Council on August 4, 2010.[39]

[37] California Government Code section 65040.12.
[38] California Environmental Protection Agency, EJ Action Plan, http://www.calepa.ca.gov/EnvJustice/ActionPlan/ (accessed October 1, 2013).
[39] Solid Waste Alternative Technology Processing Facility Ordinance, http://clkrep.lacity.org/onlinedocs/2008/08-0594_ord_181272.pdf (accessed October 1, 2013)

6.4 Siting Options

SWIRP stakeholders have affirmed the approach of siting facilities locally and sharing the benefits and impacts. In the context of the stakeholder guiding principle of "equity," stakeholders specifically directed that SWIRP:

- Promote equitable solutions that do not unfairly reward or penalize one community over another.
- Share the benefits and impacts fairly between each community.
- Will not burden other communities or environmentally sensitive natural or wilderness areas with waste generated in Los Angeles.

During Phase 1, stakeholders discussed both "neighborhood scale" and "regional scale facilities."

- **Neighborhood scale facilities** – including S.A.F.E. Centers, Resource Recovery Centers, small scale reuse and recycling operations and small scale composting operations should be sited in areas that are nearby generators to facilitate convenient access for drop-off and retail sales.
- **Regional scale facilities** – including large scale recycling, composting, C&D facilities, transfer stations and Alternative Technology facilities should be sited in areas that will reduce impacts on local communities.
- **All facilities** – should be designed to blend into the surrounding land uses and should include mitigation measures to reduce impacts, such as traffic, noise, odor, and emissions.

In evaluating sites for new solid waste facilities, the City must take into account siting criteria to reduce impacts to the surrounding community. The City is currently conducting a siting study to identify potential sites for Alternative Technology facilities. Siting criteria includes the following:

- **Parcel area** – the area required for a facility is dependent upon the technology and the throughput of the facility. However, a minimum of five acres would be needed, with larger areas preferred because this would provide more flexibility and buffer from adjacent landowners. The five acre minimum could be met by parcels that individually or combined total five or more acres in area; sites less than five acres will be included if they have adjacent sites, when combined would exceed five acres.
- **Parcel ownership** – the preferred scenario is to locate the facilities at a site owned by the City or other municipalities because land acquisition in this case should be easier.
- **Parcel access** – feedstock for the facilities would be delivered via collection or transfer trucks. Therefore, access to freeways and a major road will minimize traffic impacts on local streets.
- **Land use compatibility** – permitting and public support will be enhanced if the facility is located amongst other similar facilities in M2 (light industrial) and M3 (heavy industrial) and PF (public facility) zones.
- **Direct impact on people** – the goal for this project is to locate the facility as far removed from residential areas as is feasible.
- **Impact on local communities** – another goal is to locate the facility in areas that do not have sensitive land uses such as schools, medical facilities, historic buildings, or parks.

- **Environmental justice** – the goal is to locate this project without impacting low income communities or minority communities.

The City has screened over 20,000 parcels that could be potentially suitable for Alternative Technology with the goal of evaluating a short list of 20 sites for feasibility. Once a top ranked site or sites has been identified, the City will perform an extensive environmental review that will evaluate the environmental impacts, the potential mitigation measures, and alternatives to the project. Public outreach will continue throughout the process to ensure that the site and mitigation measures are appropriate for the host community.

Section 7 Conclusion

The Phase 2 planning process continued with development of the *Program Environmental Impact Report*, the *Financial Plan*, and the *Implementation Strategy*.

7.1 Next Steps

7.1.1 Environmental Review

The City is required by State law, the California Environmental Quality Act,[40] to conduct an environmental review of any plans or projects that could have a significant impact on the environment. The purpose of the environmental review is to identify potential environmental impacts of the proposed plan or project, analyze these potential impacts, and identify mitigation measures for reducing these impacts to less than significant levels.

The environmental review process also provides a forum for the public to hear about proposed projects, comment on their potential impacts, and provide input through the public hearing process.

The *Policy, Program, and Facility Plan* is not a specific "project" under State law. Therefore, the City conducted a Program Environmental Impact Report (EIR) to evaluate the potential impacts of the plan as a whole. Individual projects, such as any new facility development, would require additional site-specific environmental review and the development of separate environmental documentation.

7.1.2 Financial Plan

The SWIRP financial plan comprises an economic analysis of the SWIRP policies, programs, and facilities, a projection of capital and operating costs for the system, the impacts on the rate payers, and alternative fee mechanisms. It contains a detailed economic model that will be used to project the costs, revenues, and rate impacts of the plan through 2030, with:

- **Capital Project Cost** – including all stationary and mobile equipment, buildings, land, site preparation, utilities, start-up, development, environmental, design, and construction
- **Annual Operating Expenses** – including labor, maintenance, fuel, utilities, general and administrative, consumables, supplies, insurance, and if privately owned, taxes, overhead, and profit, and tip fees paid to privately owned recovery/disposal facilities
- **Transportation Cost** – including the cost associated with transporting materials to markets and residual waste to either Alternative Technology facilities or final disposal sites
- **Potential Revenues** – including assumptions on recoverable materials and associated market prices, energy sales revenue, interest on reserve funds, and tip fees paid to the City
- **Funding Sources** – including service fees, franchise fees, permit fees, producer fees, capital financing, federal, and State grants and loans

[40] Public Resources Code Section 21000 et seq.

7.1.3 Implementation Strategy

The SWIRP implementation strategy includes all of the tasks, including the decision points, and detailed implementation steps necessary to implement SWIRP, including all policies, programs, and facilities.

The implementation strategy is a comprehensive roadmap to the City's integrated resources management future and describes how all existing and planned policies, programs, and facilities will work together to achieve the City's goals. The implementation plan includes all of the analyses and information developed for Phase 2, including:

- Waste models, material flows, and generation projections
- Existing programs, facility analyses, and service voids
- Integrated resources management system components
- Integrated facilities/program plan summary
- EIR summary
- Financial plan summary
- Action plan and schedule

7.2 Phase 2 Stakeholder-Driven Planning Process

The stakeholder-process continued throughout Phase 2, with regional workshops and citywide conferences to ensure that the plan elements reflected the goals and visions of the SWIRP stakeholders and the guiding principles they established in Phase 1. Table 39 provides the Phase 2 schedule.

Table 39: SWIRP Phase 2 Schedule

2008-2009	2010-2014
Tasks Policy, Programs, and Facility Plan **Events** Regional workshops 4th Citywide conference	**Tasks** Environmental Impact Report Financing and funding plan Implementation strategy **Events** Public hearings on draft and final EIR Regional workshops 5th Citywide conference

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Appendix A

Policy and Program Analysis

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Section 1 Introduction

The City of Los Angeles (City) initiated Phase 1 of the Solid Waste Integrated Resources Plan (SWIRP) in the spring of 2007. The City is taking an innovative approach to developing SWIRP by engaging residents, businesses, and other stakeholder groups to provide input and guidance throughout the planning process. The goal of this process is the development of a master plan to achieve Zero Waste in Los Angeles. During Phase 1, stakeholders met with City staff to formulate the City's goals to provide sustainable solutions, resource conservation, source reduction and recycling, renewable energy, maximum material recovery, and environmental protection for solid waste management planning through 2030. Phase 1 culminated in the adoption of stakeholder guiding principles at a citywide conference held on May 3, 2008.

Phase 1 activity involved numerous meetings and brainstorming sessions with stakeholders, resulting in the identification of over 80 potential policies and programs that the City could implement and/or improve upon. During the Phase 2 process, the City conducted research and analysis of over 40 of those policy and program options which were identified as potential components of SWIRP and began the development of a material flow model to quantify the diversion potential associated with the options under consideration. The policies and programs include various options to address residential and non-residential waste streams to maximize citywide waste diversion.

The material flow model was developed to evaluate the effects of different Zero Waste strategies on disposal and diversion throughout the City. This spreadsheet-based model of the City's waste stream tracks materials as they originate from the generators of the materials and pass through various types of facilities, and are then directed to markets, transformation, or final disposal. The material flow model is described in detail in *Appendix B, Material Flow Model and Generation Projections*.

During Phase 2, the City's stakeholders provided input in the development of an integrated *Policy, Program, and Facility Plan*. This report addresses the policy and program components of that plan and provides an analysis of the policy and program options that were then selected for the material flow model.

Section 2 Policies and Programs Selected for Material Flow Model

The City conducted a workshop in December 2008 to review the various policy and program initiatives developed during SWIRP Phase 1 and to select those that would be included in the material flow model.

2.1 Criteria for Selection

The criteria used for making the policy and program selections were as follows:

- Quantifiable (e.g., can reasonably project increased tonnages of materials that will be diverted from disposal, based on the policy or program being fully implemented)
- Did not duplicate another policy or program already in place
- Did not duplicate facility analysis (e.g., alternative technology is included in facility analysis)
- Consistent with integrated waste management hierarchy (e.g., first reduce waste at the source, then pursue reuse and recycling to further divert waste from landfills) advocated by the California Department of Resources, Recycling, and Recovery (CalRecycle)
- Consistent with the following 12 guiding principles selected by stakeholders:
    1. Education to decrease consumption
    2. City leadership as a model for Zero Waste practices
    3. Education to increase recycling
    4. City leadership to increase recycling
    5. Manufacturer responsibility
    6. Consumer responsibility
    7. Convenience
    8. Incentives
    9. New, safe technology
    10. Protect public health and the environment
    11. Equity
    12. Economic efficiency

2.2 Policy and Program Initiatives Reviewed and Selected

The master list of policy and program initiatives identified by SWIRP stakeholders during Phase 1 is presented in Tables 1 through 6. For ease of review, and by using the criteria for selection described in Section 2.1, we have highlighted the policy and program initiatives that correspond to the scenarios described in Section 3 as follows:

- Scenario 2 – yellow (new programs)
- Scenario 3 – blue (mandatory requirements)
- Scenarios 4 and 5 – green (advocacy for upstream producer responsibility)

Table 1: Non-Residential Policies and Programs

Non-Residential Policies and Programs
1. Mandatory business recycling programs
a. Requiring all businesses to have recycling services (of any kind)
b. Requiring all businesses to separate specific materials for recycling (Santa Cruz County, CA; Seattle, WA)
c. Requiring all businesses to reach a specific diversion level (e.g., 50%)
d. Banning certain materials from disposal (cardboard, construction and demolition (C&D))
e. Mandating C&D recycling – 50% and above (current program – increased diversion rates)
f. Requiring all food service establishments to participate in the City's food scrap diversion program (current program – increased participation)
g. Rolling out recycling services to all public schools in the City (current program – increased participation)
h. Rolling out recycling services to all multi-family buildings in the City (current program – increased participation)
2. Requirements on commercial haulers
a. Requiring all commercial haulers to reach a specific diversion level
b. Requiring all commercial haulers to provide recycling services to all of their customers
c. Requiring preprocessing of all loads prior to disposal (MRF first)
d. Requiring processing of all C&D loads
e. Requiring processing of all roll-off loads
3. Commercial rate structure incentives
a. Modifying refuse and recycling rates to encourage diversion instead of disposal

Table 1: Non-Residential Policies and Programs (continued)

Non-Residential Policies and Programs
4. Increased outreach and technical assistance to commercial businesses to increase recycling
a. Direct technical assistance (City staff or contractors)
b. Large-scale media campaigns (e.g., Don't Mess with Texas, Flex Your Power)
c. Social marketing programs for specific generator types or districts (Business Improvement Districts or Building Owner and Manager Association or other)
5. Self-haul
a. Ordinance requiring Resource Recovery Centers at all transfer stations and landfills
b. Site Resource Recovery Centers in each collection district
c. Increased outreach and education

Table 2: Other Polices and Programs (Upstream)

Other Policies and Programs (Upstream)	
Extended producer responsibility (EPR)	
1.	EPR for toxics
2.	EPR for difficult-to-recycle materials
3.	EPR for easy-to-recycle materials
4.	Packaging legislation
5.	Single-use bag ban
6.	Advance disposal fees and takebacks
7.	Local product sales bans
8.	Local takeback requirements
9.	Local product bans from collection system
10.	Local product bans from transfer and disposal
11.	Voluntary local EPR programs
Environmentally preferable purchasing (EPP)	
12.	EPP for recyclables
13.	EPP for takebacks and less-toxics
14.	Precautionary principle (e.g., determine whether product/supply has negative impact before purchasing)
Product redesign	
15.	Product redesign for toxics
16.	Product redesign for difficult-to-recycle products

Table 3: Other Policies and Programs (Downstream)

Other Policies and Programs (Downstream)
17. City Department Mandatory Diversion
18. CLARTS Recycling
19. Residential Pay-As-You-Throw (PAYT)
20. Residential Blue Bin Ambassadors for additional capture
21. Residential textiles
22. Residential black bin to MRF
23. C&D plan
24. Mandatory C&D recycling – see non-residential above
25. Resource Recovery Centers
26. Bulky item reuse and refurbishment
27. Public area recycling
28. Multi-family recycling – see non-residential above
29. Source separation recycling (mandatory recycling separation policy)
30. Zero Waste at schools
31. Organics out of landfills
32. Restaurant food scrap recycling – see non-residential above
33. Other organics collection programs
34. Organics markets – Caltrans
35. Organics markets – City to farmers or local community gardens and nurseries
36. Organics markets – phase out ADC
37. Residential yard trimmings increase
38. Yard trimmings disposal ban
39. Residential food to green bin
40. Planning and zoning (help farmers, composters, reuse and recycling businesses obtain permits)
41. Focus on more business assistance – see non-residential above
42. Incentive rates and fees for commercial (see non-residential above) and residential
43. Waste hauling and landfill fees and surcharges
44. Franchises

Table 3: Other Policies and Programs (Downstream) (continued)

Other Policies and Programs (Downstream)
45. Non- or semi-exclusive franchises
46. Exclusive franchise
47. Mandatory commercial dirty MRF
48. Dirty MRF all residuals
49. Mandatory organics separation
50. Multi-family recycling
51. Multi-family green waste collection

Table 4: Change the Culture

Change the Culture
52. Education
53. Training and instructions
54. Inspiration
55. Messages
56. Signage
57. Feedback and contests

Table 5: Green Businesses and Jobs

Green Businesses and Jobs
58. Promote sustainability tools
59. City buys from green businesses and Zero Waste processors
60. Permit assistance
61. Zoning assistance
62. Zero Waste procurement practices
63. Local market development
64. Regional market development
65. State recycled-content legislation
66. Other State and federal market development initiatives
67. Residuals management
67. Zero Waste success matrix (R&D)
68. Fair share policy

Table 6: Residual Waste Management

Residual Waste Management
69. No put or pay
70. Phase out urban landfilling
71. MRF first
72. Digest non-source-separated materials
73. Digest residual waste after processing through dirty MRF
74. Digest biosolids
75. Alternative Technology
76. Support *Green LA Plan* goals

Additional policies and programs that cannot be quantified in the material flow model are included in SWIRP because they enhance the effectiveness of waste diversion policies and programs needed to meet Zero Waste goals. These programs are described in Section 5.

Section 3 Scenarios for Material Flow Model

3.1 Developing Scenarios

A number of the selected programs are logically related to each other because they provide new or enhanced services to residents and businesses, while many of the policy options would require the City to adopt ordinances or modify hauler requirements to place mandatory requirements on residents, businesses, and waste haulers. In addition, advocating for Extended Producer Responsibility (EPR) is distinct from other programs and policies because it focuses on changes in the production and distribution of packaging and products on a regional, national, or even international level. Many of the policies and programs will be developed over time through additional research, testing, and pilot programs before a full-scale rollout takes place.

The result of these workshop discussions was the development of the following five scenarios for the selected programs and policies:

1. No new policies or programs (Baseline)
2. New policies and programs
3. Add mandatory requirements to Scenario 2 (new policies and programs)
4. Add upstream policies to Scenario 2 (new policies and programs)
5. Add upstream policies to Scenario 3 (mandatory policies and programs)

These scenarios were presented to the SWIRP stakeholders at the regional workshops in March 2009. Scenario 5 is considered the full implementation of SWIRP, since it includes all new, mandatory and upstream policies and programs.

The policies and programs, including the waste generator sector targeted by the program, are described below.

3.1.1 Scenario 1: No New Policies or Programs (Baseline)

Scenario 1 assumes that the City does not implement any new policies or programs, in order to establish a base case for comparison with the other programs and policies selected for the material flow model. The City stays at 72 percent diversion.[1]

3.1.2 Scenario 2: New Policies and Programs

Table 7 presents Scenario 2 and includes programs selected from the master list (Section 2.2) of policies and programs.

[1] The 72 percent diversion rate is based on 2010 baseline year tonnage data.

Table 7: Scenario 2 New SWIRP Policies and Programs

Generator Sector	Initiative (Scenario 2)
Residential curbside	Modify refuse and recycling rates Recycling ambassador (education) Add textiles to blue bin or partner with a non-government organization to increase textile diversion Bulky item reuse Add food scraps to green bin Large scale media/social marketing
Multi-family	Modify refuse and recycling rates Multi-family recycling Recycling ambassador (education) Add textiles to blue bin or partner with a non-government organization to increase textile diversion Bulky item reuse Multi-family green bin Add food scraps to green bin Large scale media/social marketing
Commercial	Require all businesses to have recycling services Require all commercial haulers to provide recycling services to their customers Modify refuse and recycling rates Direct technical assistance Large scale media campaign-social marketing Provide more public recycling areas
C&D sites	Require all C&D loads to be processed Direct technical assistance

3.1.3 Scenario 3: Add Mandatory Requirements to Scenario 2

Table 8 presents Scenario 3 (Mandatory Policies and Programs), which includes programs selected from the master list of policies and programs added to Scenario 2 (New Policies and Programs).

Table 8: Scenario 3 Mandatory Policies and Programs

Generator Sector	Initiative (Scenario 3)
Residential curbside and multi-family	Mandatory recycling separation Mandatory organics separation Ordinance requiring Resource Recovery Centers at transfer stations and landfills Recycling ambassadors (enforcement)
Commercial	Mandatory C&D recycling Mandatory organics separation Ordinance requiring Resource Recovery Centers at transfer stations and landfills Direct technical assistance (enforcement)
C&D sites	Ordinance requiring Resource Recovery Centers at transfer stations and landfills Direct technical assistance (enforcement) Increase diversion requirements at C&D facilities

3.1.4 Scenario 4: Add Upstream Policies to Scenario 2

Scenario 4 includes upstream programs selected from the master list of policies and programs added to Scenario 2 (New Policies and Programs), including:

- Advocate for EPR for toxics
- Advocate for EPR for difficult-to-recycle materials
- Advocate for State packaging legislation
- Single-use bag ban
- Advocate for manufacturers to develop lifecycle analyses for products and packaging, taking into account all environmental impacts of the product from manufacturing to the end of its useful life
- Advocate for legislation to incentivize manufacturers to use local reuse and recycling markets for the products they manufacture

3.1.5 Scenario 5: Add Upstream Policies to Scenario 3

Scenario 5 (Full Implementation of SWIRP) includes upstream programs selected from the master list of policies and programs added to Scenario 3 (Mandatory Policies and Programs), including:

- Advocate for EPR for toxics
- Advocate for EPR for difficult-to-recycle materials
- Advocate for State packaging legislation
- Single-use bag ban
- Advocate for manufacturers to develop lifecycle analyses for products and packaging, taking into account all environmental impacts of the product from manufacturing to the end of its useful life
- Advocate for legislation to incentivize manufacturers to use local reuse and recycling markets for the products they manufacture

3.2 Analysis of Diversion Potential of Policies and Programs

Through research of comparable programs and policies selected for the material flow model (described in *Appendix B, Material Flow Model and Generation Projections*), reasonable assumptions were developed to calculate the waste diversion associated with each option. The assumptions regarding participation and efficiency associated with each program were developed to reflect diversion potential once the program is fully implemented, and has been in place for two to three years. This way, sustainable levels of diversion potential are reflected appropriately.

Tables 9 and 10 list the participation rates and efficiency rates developed for the model. "**Participation rates**" means the percentage of total generator sector tons available that are targeted by the program; "**efficiency rates**" means the percentage of the targeted tons that can be reasonably diverted by the program; and "**capture rate**" is the yield or product of the participation rate and efficiency rate which is used to estimate the net tons diverted. These participation and efficiency rates are inputs in the material flow model and are used to calculate the net additional tons that can be diverted for each program and policy implemented. For example, if the target generator sector produces 100 tons per year of aluminum cans, and the program has a 50 percent participation rate and 30 percent efficiency rate, then the total resulting capture rate would be 15 percent and the program would yield 15 additional tons of diversion (e.g., 100 tons available × (50 percent participation × 30 percent efficiency = 15 percent capture) = 15 tons).

3.2.1 Residential Policy and Program Assumptions

Table 9 provides the residential policy and program assumptions for the "participation rate," "efficiency rate," and the resulting "capture rate" for each program. The programs are grouped by scenario and are color-coded to match the scenario colors included in Tables 1 through 6.

Table 9: Residential Policy and Program Assumptions

	Policy		Materials	Participation	Efficiency	Capture Rate
Scenario 2	**21.**	Add textiles to residential blue bin	Textiles	50%	50%	25%
	39.	Add food scraps to green bin	Food, compostable paper	30%	30%	9%
	26.	Bulky item reuse, refurbishment, and recycling	Major appliances Bulky items	90% 90%	75% 23%	68% 21%
	19.	Pay-As-You-Throw	Recyclable materials[1] Compostable materials[2] All other materials[3]	100% 100% 100%	32% 18% 6%	32% 18% 6%
	20.	Recycling ambassador	Recyclable materials	15%	30%	5%
	4b/c.	Social marketing/media campaign	Recyclable materials, electronics, appliances, bulky items, tires, HHW	20%	25%	5%
	50.	Add multi-family recycling	Other ferrous Other nonferrous, recyclable film, mixed plastic reuse, textiles All other recyclable materials	35% 20% 50%	50% 50% 50%	18% 10% 25%
	51.	Add multi-family green waste collection	Green waste	20%	50%	10%
	3a.	Modify refuse and recycling rates (multi-family)	Recyclable materials Compostable materials All other materials	100% 100% 100%	8% 5% 1%	8% 5% 1%
Scenario 3						
	29.	Mandatory recycling separation policy	Paper Metal, glass All other recyclable materials	100% 100% 75%	75% 80% 75%	75% 80% 56%
	49.	Mandatory organics separation policy	Food, compostable paper Green waste	90% 95%	30% 90%	27% 86%
	5a.	Ordinance requiring Resource Recovery Centers	Recyclable materials, organics, selected C&D materials[4], bulky items, electronics Concrete, asphalt paving, tires Major appliances	50% 75% 75%	40% 50% 100%	30% 38% 75%
	4a/20.	Enforcement		10%	50%	5%

Table 9: Residential Policy and Program Assumptions (continued)

	Policy		Materials	Participation	Efficiency	Capture Rate
Upstream	**1 EPR**	Advocate for EPR for toxics	HHW	90%	90%	81%
	2 EPR	Advocate for EPR for difficult to recycle materials	Major appliances, mixed plastic non reuse, tires	80%	75%	60%
	4 EPR	State packaging legislation	EPS, mixed plastic non-reuse	90%	90%	81%
	5 EPR	Single-use bag ban	Paper bags, mixed waste paper, recyclable film	90%	90%	81%

[1]**Recyclable materials:** Cardboard, paper bags, newspaper, mixed waste paper, compostable paper, glass containers, tin/steel cans, other ferrous materials, aluminum cans, other nonferrous, plastic #2 containers, plastic #1 containers, expanded polystyrene, recyclable film, mixed plastic reusable/recyclable, textiles
[2]**Compostable materials:** Compostable paper, food, green waste
[3]**All other materials:** Remainder/composite paper, flat glass, remainder/composite glass, remainder/composite metal, electronics, major appliances, mixed plastic non reuse/recycle, manures, remainder/composite organic, concrete, asphalt paving, asphalt roofing, lumber, gypsum board, rock, soil and fines, remainder/composite construction and demolition, HHW, ash, sewage solids, bulky items, tires
[4]**Selected C&D Materials:** Asphalt roofing, lumber, gypsum board, rock, soil, fines

3.2.2 Commercial Policy and Program Assumptions

Table 10 provides the commercial policy and program assumptions for the "participation rate," "efficiency rate," and the resulting "capture rate" for each program. The programs are grouped by scenario and are color-coded to match the scenario colors included in Tables 1 through 6.

Table 10: Commercial Policy and Program Assumptions

	Policy		Materials	Participation	Efficiency	Capture Rate
Scenario 2	**1a.**	Requiring all businesses to have recycling services	Recyclable paper	100%	20%	20%
			Mixed plastic reusable/recyclable	100%	5%	5%
			All other recyclables	100%	15%	15%
	2b.	Requiring all commercial haulers to provide recycling services to all of their customers	Glass containers	20%	70%	14%
			Recyclable plastics	40%	90%	36%
			Recyclable paper and metal	20%	90%	18%

Table 10: Commercial Policy and Program Assumptions (continued)

		Policy	Materials	Participation	Efficiency	Capture Rate
	3a.	Modifying refuse and recycling rates	Recyclable materials	100%	32%	32%
			Compostable materials	100%	18%	18%
			All other materials	10%	6%	6%
	4a.	Direct technical assistance	Recyclable paper	20%	10%	2%
			Recyclable glass and metal	10%	10%	1%
			Recyclable plastics	5%	10%	1%
			Food, green waste	5%	1%	0%
			Lumber	10%	10%	1%
	4b/c.	Large-scale media campaign	Recyclable paper	5%	20%	1%
			Recyclable metal	20%	10%	2%
			Glass containers	5%	5%	0%
			Recyclable plastics, food, green waste	20%	20%	4%
	28.	Public area recycling	Recyclable paper, containers (metal and plastic)	1%	10%	0%
Scenario 3	**1d.**	Banning certain materials from disposal	Electronics, appliances, lumber, HHW, bulky items, tires	90%	90%	81%
	29.	Mandatory recycling separation policy	Recyclable paper	85%	80%	68%
			Glass containers	90%	95%	86%
			Recyclable metal	85%	70%	60%
			Recyclable plastics	85%	60%	51%
	52.	Mandatory organics separation policy	Organics	80%	50%	40%
	5a.	Ordinance requiring Resource Recovery Centers	Recyclable materials, organics, selected C&D materials[4], bulky items, electronics	50%	40%	20%
			Concrete, asphalt paving, tires	75%	50%	38%
			Major appliances	75%	100%	75%

Table 10: Commercial Policy and Program Assumptions (continued)

		Policy	Materials	Participation	Efficiency	Capture Rate
Upstream	**1 EPR**	Advocate for EPR for toxics	HHW	90%	90%	81%
	2 EPR	Advocate for EPR for difficult-to-recycle materials	Major appliances, mixed plastic non reuse, tires	80%	75%	60%
	4 EPR	State packaging legislation	EPS, mixed plastic non reuse	90%	90%	81%
	5 EPR	Single-use bag ban	Paper bags, mixed waste paper, recyclable film	90%	90%	81%

[1]**Recyclable materials:** Cardboard, paper bags, newspaper, mixed waste paper, compostable paper, glass containers, tin/steel cans, other ferrous materials, aluminum cans, other nonferrous, plastic #2 containers, plastic #1 containers, expanded polystyrene, recyclable film, mixed plastic reusable/recyclable, textiles
[2]**Compostable materials:** Compostable paper, food, green waste
[3]**All other materials:** Remainder/composite paper, flat glass, remainder/composite glass, remainder/composite metal, electronics, major appliances, mixed plastic non reuse/recycle, manures, remainder/composite organic, concrete, asphalt paving, asphalt roofing, lumber, gypsum board, rock, soil and fines, remainder/composite construction and demolition, HHW, ash, sewage solids, bulky Items, tires
[4]**Selected C&D Materials:** Asphalt roofing, lumber, gypsum board, rock, soil, fines

Section 4 Description of Policies and Programs

This section presents a brief description of each policy, program, and technical assistance initiatives including an analysis of how the City would most likely implement the program, a brief description of City-initiated pilot studies (if applicable), waste generator sectors targeted by the program, and the material types that would be diverted once the program is fully implemented. The descriptions are grouped by program, policy or technical assistance and are further grouped by whether the City will implement or whether they will be implemented through the Exclusive Franchise System to address multi-family and commercial generators. In addition, the corresponding number on the master list in Section 3 is referenced. Table11 lists all of the programs, policies, and technical assistance initiatives.

Table 11: SWIRP Policies, Programs, and Technical Assistance

No.	Name	Name Corresponding to Policy/Program List	Number Corresponding to Policy/Program List
SWIRP Policies, Programs, and Technical Assistance Implemented by the City			
Programs			
1	Increase textile diversion	Add textiles to residential blue bin	21
2	Bulky item reuse and recycling	Bulky item reuse, refurbishment, and recycling	26
3	Residential curbside food scraps	Add food scraps to green bin	39
4	Social marketing/media campaign	Large-scale media campaign	4b/4c combined
5	Modify residential collection rates	Pay-As-You-Throw	19
6	Community beautification grants	N/A	Added to policy/program list based on stakeholder comments at Phase 2 workshops
7	LAUSD Zero Waste curriculum	Rolling out recycling services to all public schools in the City (current program--increased participation) & Zero Waste at schools	1g, 30
8	Increase diversion at C&D facilities	Requiring processing of all C&D loads	2d
Policies			
9	Mandatory recycling separation for residential curbside	Source separation recycling (mandatory recycling separation policy)	29
10	Mandatory organics recycling for residential curbside	Mandatory organics separation policy	49
11	Resource Recovery Center ordinance	Ordinance requiring Resource Recovery Centers	5a

Table 11: SWIRP Policies, Programs, and Technical Assistance (continued)

No.	Name	Name Corresponding to Policy/Program List	Number Corresponding to Policy/Program List
12	EPR and packaging reduction	Advocate for EPR for toxics, Advocate for EPR for difficult-to-recycle materials, State packaging legislation, and single-use bag ban	EPR 1, 2, 4, & 5
13	Ban certain material from disposal	Banning certain materials from disposal	1d
Technical Assistance			
14	Expand Recycling Ambassador program for residential curbside	Direct technical assistance and Recycling Ambassador	4a, 20
15	Recycling Ambassador program for residential curbside (reinforcement)	Recycling Ambassador	20
SWIRP Policies, Programs, and Technical Assistance Implemented through the Exclusive Franchise System Addressing Multi-Family and Commercial Generators			
Programs			
16	Multi-family recycling	Add multi-family recycling	50
17	Multi-family yard trimmings	Add multi-family green waste collection	51
18	Multi-family food scraps	N/A	N/A
19	Modify multi-family and commercial collection rates	Modify refuse and recycling rates (multi-family)	3a
20	Require all commercial haulers to provide recycling services to their customers	Require all commercial haulers to provide recycling services to all of their customers	2b
21	Request all businesses to have recycling services	Require all businesses to have recycling services	1a
22	Provide more public area recycling	Public area recycling	27
Policies			
23	Mandatory recycling separation for multi-family and commercial sectors	Source separation recycling (mandatory recycling separation policy)	29
24	Mandatory organics recycling for multi-family and commercial sectors	Mandatory organics separation policy	49
Technical Assistance			
25	Multi-family Recycling Ambassador program	Direct technical assistance	4a
26	Expand commercial technical assistance	Direct technical assistance	4a
27	Recycling Ambassador program for multi-family and commercial (reinforcement)	Direct technical assistance	4a

4.1 SWIRP Programs, Policies, and Technical Assistance Implemented by the City

The first 15 programs listed in Table 11 are programs that will be implemented by the City. Each of these programs is described in this section.

4.1.1 Program 1: Increase Textile Diversion

This program gives the Bureau of Sanitation (LASAN) the ability to add textiles to the existing list of materials that residents can place in the blue bin for curbside collection. Alternatively, the City could collaborate with nonprofit or other private organizations (such as USAgain, Planet Aid, GAIA, or Campus California), to increase the network of textile recycling drop-off centers throughout the City. This would require that the City's contracted recycling processors identify viable long-term markets to ensure that textiles are recovered to the maximum extent feasible and have a positive market value. Some textiles are better suited for recovery and processing, while other textiles do not have viable markets or processors to accept them. In our research for textile programs, we found that the curbside recycling program in San Jose, California includes textiles in the materials collected, and residents are requested to place clean textiles inside a clear plastic bag and place the bag in the recycling cart. The San Jose program accepts the following materials:

- Clean cotton, linen, polyester, rayon and wool fabrics
- Blankets and sheets
- Clothes

The San Jose program does not accept boots and shoes, carpets and rugs, nylon, pillows, rubber, stuffed animals, vinyl, or electric blankets as acceptable materials for recycling, and asks residents to discard or donate those items as appropriate. Residents must supply their own plastic bags, as they are not provided for the program.

LASAN staff will continue its ongoing discussions with its curbside processors and representatives of the textile industry to identify market opportunities in the Los Angeles region for various textiles that could be recycled through the curbside program. Once appropriate program parameters are established, the City will need to provide appropriate public outreach so that residents can easily identify the acceptable textile items for recycling.

Adding textiles to the City's recycling program would be an added convenience for residents; however, residents should still be encouraged to utilize existing "reuse" organizations (Goodwill Industries, Salvation Army, thrift stores, etc.) to donate usable clothes or other types of textile items.

Although this program is geared to textiles, it could very readily include additional materials over time if markets and collection/sorting procedures for them are developed.

Targeted generators include all residential curbside customers serviced by LASAN collection crews.

Table 12: List of Materials Targeted through Textile Diversion

	Material	Check if Applies		Material	Check if Applies
1	Cardboard, paper bags		23	Food	
2	Newspaper		24	Green waste	
3	Mixed waste paper		25	Manures	
4	Compostable paper		26	Textiles	X
5	Remainder/composite paper		27	Remainder/composite organic	
6	Glass containers		28	Concrete	
7	Flat glass		29	Asphalt paving	
8	Remainder/composite glass		30	Asphalt roofing	
9	Tin/steel cans		31	Lumber	
10	Other ferrous		32	Gypsum board	
11	Aluminum cans		33	Rock, soil, and fines	
12	Other nonferrous		34	Remainder/composite construction and demolition	
13	Remainder/composite metal		35	HHW	
14	Electronics		36	Ash	
15	Major appliances		37	Sewage solids	
16	Plastic #2 containers		38	Bulky items	
17	Plastic #1 containers		39	Tires	
18	Other containers		40	Remainder/composite special	
19	Expanded polystyrene		41	Mixed residue	
20	Recyclable film				
21	Mixed plastic reusable/recyclable				
22	Mixed plastic non-reuse/recycle				

4.1.2 Program 2: Bulky Item Reuse and Recycling

LASAN currently picks up large or bulky household items such as mattresses, couches, carpet and other furniture from all residences serviced by the City of Los Angeles. Residents are required to request this service at least one day in advance, and the City collects the bulky items on the day of regular solid waste collection. In one of the City's wastesheds (Valley Collection District), LASAN crews have begun separating mattresses by collecting them in a dedicated truck, then having a contractor recycle the wood, metal, foam, and fabric. The City also collects large metal items and household appliances (white goods) such as refrigerators, washers, and dryers from residences serviced by the City. Most of these materials are returned to the City's yard and put into roll-off containers to be picked up by a vendor to be processed for scrap metals. Most of the other bulky items collected by the City are landfilled, although some scavenging does take place prior to collection.

Under this program, the City would partner with a number of reuse entities (thrift stores, repair shops, and nonprofits such as L.A. SHARES, Goodwill Industries, and Salvation Army) to repair, reuse, and resell appropriate bulky items that are currently being set out for collection by LASAN crews and landfilled. The City would enter into service contracts with reuse partners to define operating procedures, service requirements, and performance standards, and to establish program parameters to ensure that the bulky-item reuse program is closely coordinated with the bulky-item collection program operated by the City and does not impede City operations. Under this approach, it is likely the City would provide its bulky-item daily route sheets or service addresses to its reuse partners, who would then proceed ahead of the City collection crews and collect all the items it considers to be reusable or repairable. An alternative could be to have the customer contact the reuse partner directly to arrange its own separate collection of the reusable items, which would eliminate some of the scavenging of materials set out for collection and reduce the workload for the City program.

To enhance the effectiveness of the reuse program, the City could modify its bulky-item collection service request form (on the LASAN website) to ask residents to indicate which items they selected for collection are in good shape and reusable, and have the City customer service representatives ask callers for the same information when they request service over the phone.

The City should continue to encourage residents to recycle bulky items through charitable organizations and thrift stores. This message could be conveyed through the City's Bulky-Item Collection web page, on all printed program materials, and through the Customer Service call center. An additional component of this program would include City sponsorship or promotion for neighborhood and/or apartment complex swap meets or garage sales to encourage residents to donate, rather than discard, reusable bulky items.

Targeted generators include all residential curbside customers and all multi-family complexes.

Table 13: List of Materials Targeted through Bulky Item Reuse and Recycling

	Material	Check if Applies		Material	Check if Applies
1	Cardboard, paper bags		23	Food	
2	Newspaper		24	Green waste	
3	Mixed waste paper		25	Manures	
4	Compostable paper		26	Textiles	
5	Remainder/composite paper		27	Remainder/composite organic	
6	Glass containers		28	Concrete	
7	Flat glass		29	Asphalt paving	
8	Remainder/composite glass		30	Asphalt roofing	
9	Tin/steel cans		31	Lumber	
10	Other ferrous		32	Gypsum board	
11	Aluminum cans		33	Rock, soil, and fines	
12	Other nonferrous		34	Remainder/composite construction and demolition	
13	Remainder/composite metal		35	HHW	
14	Electronics		36	Ash	
15	Major appliances	X	37	Sewage solids	
16	Plastic #2 containers		38	Bulky items	X
17	Plastic #1 containers		39	Tires	
18	Other containers		40	Remainder/composite special	
19	Expanded polystyrene		41	Mixed residue	
20	Recyclable film				
21	Mixed plastic reusable/recyclable				
22	Mixed plastic non-reuse/recycle				

4.1.3 Program 3: Residential Curbside Food Scraps

In September 2008 the City launched a pilot program for residential food-scrap collection aimed at diverting food scraps and food-soiled paper products from landfills. The pilot involves 8,700 residential curbside customers in five neighborhoods within the South Los Angeles and North Central wastesheds. Residents in the pilot areas are asked to separate their food scraps and food-soiled paper in their homes, and place these materials into the green bins they already have for yard trimmings for weekly curbside collection. For convenience, the residents were given a 2-gallon covered kitchen pail to collect food scraps. The combined yard trimmings and food-scrap material is taken to CLARTS, a City-owned transfer station, where it is transferred into long-haul trucks and transported to the American Organics facility in Victorville for composting.

The expansion of the pilot program is contingent upon the availability of permitted organic-material-processing facilities within the Southern California region capable of handling food scraps with sufficient processing capacity to accommodate the increased organics tonnages that would be collected through the expanded green bin program. LASAN issued a Request for Proposals (RFP) to solicit proposals for the processing of residential organics including yard trimmings, food scraps, and horse manure. The selected contractors are to provide organic material processing operations consisting of, but not limited to, chipping, grinding, and mulching; biological processing such as composting, co-composting, anaerobic digestion/co-digestion, and fermentation for the conversion of material into reusable products and energy recovery. It is projected that new contracts for organics processing will be executed in late 2013.

Targeted generators include all residential curbside customers serviced by LASAN collection crews.

Table 14: List of Materials Targeted through Residential Curbside Food Scraps

	Material	Check if Applies		Material	Check if Applies
1	Cardboard, paper bags		23	Food	X
2	Newspaper		24	Green waste	
3	Mixed waste paper		25	Manures	
4	Compostable paper	X	26	Textiles	
5	Remainder/composite paper		27	Remainder/composite organic	
6	Glass containers		28	Concrete	
7	Flat glass		29	Asphalt paving	
8	Remainder/composite glass		30	Asphalt roofing	
9	Tin/steel cans		31	Lumber	
10	Other ferrous		32	Gypsum board	
11	Aluminum cans		33	Rock, soil, and fines	
12	Other nonferrous		34	Remainder/composite construction and demolition	
13	Remainder/composite metal		35	HHW	
14	Electronics		36	Ash	
15	Major appliances		37	Sewage solids	
16	Plastic #2 containers		38	Bulky items	
17	Plastic #1 containers		39	Tires	
18	Other containers		40	Remainder/composite special	
19	Expanded polystyrene		41	Mixed residue	
20	Recyclable film				
21	Mixed plastic reusable/recyclable				
22	Mixed plastic non-reuse/recycle				

4.1.4 Program 4: Social Marketing/Media Campaign

A community-based social marketing program could be implemented to help change the culture of wasting and increase Zero Waste behavior in the City, with different messages targeted to different demographics using a wide assortment of tools. The City would work closely with electronic and print media to encourage their coverage of the City's goals, plans, and project implementation, and to challenge them to help engage the public in creative new ways. Funding programs on an ongoing basis (over multiple five-year campaign periods) to educate target audiences about the new rules and changes is an important part of implementing Zero Waste. This program would greatly enhance public awareness about where to reuse, recycle, and compost materials to keep them out of landfills, and encourage residents, businesses, workers, and visitors to fully participate in achieving a Zero Waste future.

The goal of this program is to create a culture change using social marketing and media campaign strategies. These strategies require efforts beyond a typical large-scale recycling campaign. Behavior change on this magnitude will require significant investment in outreach to have a powerful impact at the beginning and then remain consistently potent over each five-year campaign. It will be essential to command the attention of the public and gradually increase their participation in the many new behaviors that will be required to get to Zero Waste.

For the media and outreach campaign, the first step in this multi-year effort would be the development of a strategic outreach plan to determine exactly which segments of the population would be targeted, and identify specific messages, and tactics. The proposed strategy is to penetrate all three major aspects of each individual's life (home, work, and play) with a Zero Waste message. This would not take the form of three separate campaigns, but rather would be an "integrated lifestyle" campaign. In terms of overall strategic framework, the first year would be a large-scale **Awareness** campaign, employing mostly mass media tactics with media buys. The media campaign would shift more towards the **Persuasion** phase, which typically requires more hands-on, community-based work. The campaign would then go back to a media focus during the **Implementation** (how-to) phase. Finally, the **Confirmation** phase would focus on publicity for the success stories, awards ceremonies, and other positive benefits.

An example of this phased approach would be as follows:

> **Year 1: Awareness** campaign with minimal **Persuasion** (mass-media-focused)
>
> **Year 2-3: Persuasion** campaign with minimal decision making and **Implementation** (experiential/community-focused)
>
> **Year 4-5: Implementation** campaign with minimal **Confirmation** (combination of focus on hands-on and mass media)
>
> **Year 5: Confirmation** with publicity for successes, and beginning **Awareness** of the next stage, becoming a circular process getting the public closer to Zero Waste behavior (mass media-focused, again)

Targeted generators include all residential curbside customers, multi-family complexes, and commercial generators.

Table 15: List of Materials Targeted through Social Marketing/Media Campaign

	Material	Check if Applies		Material	Check if Applies
1	Cardboard, paper bags	X	23	Food	X
2	Newspaper	X	24	Green waste	X
3	Mixed waste paper	X	25	Manures	
4	Compostable paper	X	26	Textiles	X
5	Remainder/composite paper		27	Remainder/composite organic	
6	Glass containers	X	28	Concrete	
7	Flat glass	X	29	Asphalt paving	
8	Remainder/composite glass		30	Asphalt roofing	
9	Tin/steel cans	X	31	Lumber	
10	Other ferrous	X	32	Gypsum board	
11	Aluminum cans	X	33	Rock, soil, and fines	
12	Other nonferrous	X	34	Remainder/composite construction and demolition	
13	Remainder/composite metal		35	HHW	X
14	Electronics	X	36	Ash	
15	Major appliances	X	37	Sewage solids	
16	Plastic #2 containers	X	38	Bulky items	X
17	Plastic #1 containers	X	39	Tires	X
18	Other containers	X	40	Remainder/composite special	
19	Expanded polystyrene	X	41	Mixed residue	
20	Recyclable film	X			
21	Mixed plastic reusable/recyclable	X			
22	Mixed plastic non-reuse/recycle	X			

Note: Materials targeted by the residential curbside recycling program include all cartons - refrigerated, shelf-stable, aseptic packaging. These materials were not separately categorized in the *City of Los Angeles Waste Characterization and Quantification Study Year 2000*, July 2002. For a list of materials targeted by the residential curbside recycling program, refer to the LASAN website: http://www.lacitysan.org/solid_resources/recycling/curbside/what_is_recyclable.htm (accessed October 1, 2013).

4.1.5 Program 5: Modify Residential Collection Rates

This policy is a variable-unit pricing system where residents are charged for solid waste collection services based on the volume or weight of solid waste they set out for collection. Under a volume-based program, residents are charged rates based on the number and size of containers the resident subscribes to for solid waste collection. The volume-based program would entail offering various sized residual waste "black bin" containers to encourage residents to subscribe for a container that meets their basic household disposal needs while at the same time provides the correct price incentive to reduce waste. Residents who use a smaller cart would be charged less than residents using a larger cart. Under a weight-based program, residents are charged rates based on the weight of solid waste set out rather than the size of cart used. The fee structure under either type of a Pay As You Throw (PAYT) program requires the application of a universal fee structure, assuming a fixed cost to determine the base rate for standard costs such as equipment, labor and service, and a tiered cost for the amount of material collected.

A PAYT program would provide pricing incentives for residents to select a smaller container for solid waste, or reduce the weight of disposed waste, and thereby encourage them to separate their recyclables and yard trimmings more consistently. Depending on the level of pricing incentives to reduce waste, some customers will likely practice source reduction in addition to recycling in order to reduce their fees for solid waste service. This PAYT rate policy could be conveyed through modification of the existing rate structure that the City uses to charge residents for solid waste management services.

Targeted generators include all residential curbside customers serviced by LASAN collection crews.

Table 16: List of Materials Targeted through Residential Collection Rates

	Material	Check if Applies		Material	Check if Applies
1	Cardboard, paper bags	X	23	Food	X
2	Newspaper	X	24	Green waste	X
3	Mixed waste paper	X	25	Manures	X
4	Compostable paper	X	26	Textiles	X
5	Remainder/composite paper	X	27	Remainder/composite organic	X
6	Glass containers	X	28	Concrete	X
7	Flat glass	X	29	Asphalt paving	X
8	Remainder/composite glass	X	30	Asphalt roofing	X
9	Tin/steel cans	X	31	Lumber	X
10	Other ferrous	X	32	Gypsum board	X
11	Aluminum cans	X	33	Rock, soil, and fines	X
12	Other nonferrous	X	34	Remainder/composite construction and demolition	X
13	Remainder/composite metal	X	35	HHW	X
14	Electronics	X	36	Ash	X
15	Major appliances	X	37	Sewage solids	X
16	Plastic #2 containers	X	38	Bulky items	X
17	Plastic #1 containers	X	39	Tires	X
18	Other containers	X	40	Remainder/composite special	X
19	Expanded polystyrene	X	41	Mixed residue	X
20	Recyclable film	X			
21	Mixed plastic reusable/recyclable	X			
22	Mixed plastic non-reuse/recycle	X			

Note: Materials targeted by the residential curbside recycling program include all cartons - refrigerated, shelf-stable, aseptic packaging. These materials were not separately categorized in the *City of Los Angeles Waste Characterization and Quantification Study Year 2000*, July 2002. For a list of materials targeted by the residential curbside recycling program, refer to the LASAN website: http://www.lacitysan.org/solid_resources/recycling/curbside/what_is_recyclable.htm (accessed October 1, 2013).

4.1.6 Program 6: Community Beautification Grants

The Office of Community Beautification provides cash grants of up to $10,000 to community groups for physical improvements to neighborhoods. Examples of projects may include community gardens, landscaping, murals, pedestrian furniture, or whatever else the community can imagine for its neighborhood. The Office of Community Beautification is funded through the City's General Fund and, in addition, receives some community development grants.

The Office of Community Beautification contracts with 14 geographically diverse, nonprofit, community-based organizations to provide clean-up and beautification services in the City of Los Angeles. In 2007-08, these contractors removed 31,748,959 square feet of graffiti from 653,520 locations citywide, and collected 130,622 bags of trash, litter, and weeds from along the public right-of-way.

Data are not available for purposes of quantifying diversion for this program. Materials targeted are already accounted for in other policies and programs in the material flow model.

Targeted generators include community groups throughout the 15 Council Districts.

4.1.7 Program 7: LAUSD Zero Waste Curriculum

Supporting the development and implementation of a Zero Waste curriculum would supplement the City's current outreach to Los Angeles Unified School District (LAUSD) schools. Curriculum resources aligned to the California Academic Content Standards are available through CalRecycle.[2] The existing curriculum resources, *Closing the Loop*, targets students in kindergarten through sixth grade. *Closing the Loop* is a compilation of 50 lessons to help students discover and nurture an environmental ethic and stewardship of natural resources. The activities focus on solid waste and environmental awareness topics including landfills, recycling, packaging, resource conservation, waste prevention, worm composting, and more. Each lesson encourages students to explore their natural environment, identify waste management issues, and engage in personal and community action projects.

LASAN support of the curriculum through *Closing the Loop* and the Education and the Environment Initiative (EEI) will require program outreach and support to the individual schools and teachers through Service Learning workshops modeled on the Los Angeles Department of Water and Power (LADWP) workshop series.

LADWP annually holds 50 workshop sessions, most in conjunction with LAUSD. Some sessions are also held jointly with UCLA and other organizations.

Nearly 1,000 teachers participate in the sessions annually. The workshops emphasize science and technology related to water supply, conservation, and quality, energy sources, generation, transmission, and distribution, basic electricity and electrical safety, and also "Green LA" subjects including energy efficiency, solar power, renewable energy or green power, tree planting, electric transportation, recycling, and air quality. Most workshops emphasize hands-on instruction to assist teachers in helping students

[2] *Closing the Loop* Curriculum http://www.calrecycle.ca.gov/Education/curriculum/CTL/ (accessed August 30, 2013)

learn by doing. The sessions include hands-on kits and other lesson materials available to teachers at no cost.

The workshops are held to assist teachers with covering subjects related to water, energy, and the environment. Credentialed LAUSD teachers experienced in staff development lead the workshop sessions. LADWP staff also assists in making presentations to teachers at several workshop sessions. The workshops demonstrate methods to incorporate water, energy, and environmental subjects into the curriculum and model instructional methodologies.

The City provides a recycling program for public schools within the LAUSD. Program staffing includes one full-time and two part-time City employees. The program offers education and recycling services to the schools. The recycling services include equipment (school blue bins for recycling) so participating schools can receive weekly recycling service. By January 2013, 722 schools (out of 796 in the City) had received blue bin recycling services.[3]

The City also provides education materials and recycling presentations for elementary schools, targeting 3rd, 4th, and 5th grade students. Since the program's inception, City staff have presented to over 120,000 students, approximately 20,000 students each year. The number of annual school presentations has increased since the program started in 2006, as indicated in the summary below:

- 2006 - 332 Presentations
- 2007 - 447 Presentations
- 2008 - 562 Presentations
- 2009 - 873 Presentations
- 2010 - 750 Presentations
- 2011 - 709 Presentations
- 2012 – 650 Presentations

While the City program currently cannot provide recycling service to private schools, it does offer recycling presentations at all schools.

The City's program currently does not provide any curriculum resources other than the presentations. Providing a Zero Waste curriculum at the LAUSD schools was a key program priority for SWIRP stakeholders. Supporting the development and implementation of a Zero Waste curriculum will supplement the City's current outreach to LAUSD schools. Curriculum resources aligned to the California Academic Content Standards are available through CalRecycle.[4] In addition to its existing curriculum resources, the California Environmental Protection Agency (Cal/EPA) and CalRecycle are actively engaged in developing the Education and the Environment Initiative (EEI) pursuant to AB 1548

[3]City of Los Angeles/ LAUSD Recycling Program

[4]*Closing the Loop* Curriculum http://www.calrecycle.ca.gov/Education/curriculum/CTL/ (accessed August 30, 2013)

(Pavley, Chapter 665, Statutes of 2003) and AB 1721 (Pavley, Chapter 581, Statutes of 2005).[5] These landmark laws mandate the development of a unified education strategy to bring education about the environment into California's primary and secondary schools.

Key elements of EEI include:

- Development of California's Environmental Principles & Concepts, (EP&Cs)
- Alignment of the EP&Cs to California's Academic Content Standards
- Development of a model curriculum to teach the EP&Cs to California's K-12 students; incorporation of the EP&Cs into criteria for instructional materials for science, history/social science, English/language arts, and mathematics
- Alignment of the State's diverse environmental education programs and materials with the EP&Cs

The development and implementation of the EEI mandates has seven phases, the first four of which have been completed. Phase 5 and 6 are currently in process and Phase 7 is on-going.

Phase One: Environmental Principles & Concepts (completed)
Phase Two: Alignment of the EP&Cs to California's Academic Content Standards (completed)
Phase Three: Development of Model Curriculum Plan (completed)
Phase Four: Development of Model Curriculum (completed)
Phase Five: Disseminate Model Curriculum and Professional Development (in process)
Phase Six: Assessment of Model Curriculum (in process)
Phase Seven: Ongoing Operation and Outreach of EEI Implementation (ongoing)

The EEI Curriculum, which was approved by the State Board of Education in early 2010, was developed and vetted in a lengthy and highly transparent public process. The EEI Curriculum received final unanimous approval by the State Board of Education on January 7th, 2010.

Data are not available for quantifying diversion for this program. Materials targeted are already accounted for in other policies and programs in the material flow model.

Targeted generators include public and private schools within the City.

[5]Education and the Environment Initiative http://www.californiaeei.org/ (accessed August 30, 2013)

4.1.8 Program 8: Increase Diversion at C&D Facilities

This policy would modify the C&D Ordinance by increasing the minimum diversion requirements of the Certified Processor Program.

Effective January 2011, the existing C&D Ordinance requires Certified Processors to maintain the following minimum diversion rates: Year One 50 percent, Year Two 60 percent and Year Three 70 percent. This program would increase those minimum requirements in future years.

This program would increase the minimum diversion requirements to 90 percent for inert debris and 75 percent of all remaining debris. An amendment to the C&D Ordinance would be required to implement the increased diversion requirements.

The ordinance amendment would result in significantly increased waste diversion of the target C&D materials, particularly during times of increased economic activity when more construction and renovation projects are undertaken.

Targeted generators include applicants who seek a City permit for construction and demolition projects.

Table 17: List of Materials Targeted through Diversion at C&D Facilities

	Material	Check if Applies		Material	Check if Applies
1	Cardboard, paper bags		23	Food	
2	Newspaper		24	Green waste	
3	Mixed waste paper		25	Manures	
4	Compostable paper		26	Textiles	
5	Remainder/composite paper		27	Remainder/composite organic	
6	Glass containers		28	Concrete	X
7	Flat glass		29	Asphalt paving	X
8	Remainder/composite glass		30	Asphalt roofing	X
9	Tin/steel cans		31	Lumber	X
10	Other ferrous	X	32	Gypsum board	X
11	Aluminum cans		33	Rock, soil, and fines	X
12	Other nonferrous	X	34	Remainder/composite construction and demolition	X
13	Remainder/composite metal		35	HHW	
14	Electronics		36	Ash	
15	Major appliances		37	Sewage solids	
16	Plastic #2 containers		38	Bulky items	
17	Plastic #1 containers		39	Tires	
18	Other containers		40	Remainder/composite special	
19	Expanded polystyrene		41	Mixed residue	
20	Recyclable film				
21	Mixed plastic reusable/recyclable				
22	Mixed plastic non-reuse/recycle				

4.1.9 Program 9: Mandatory Recycling Separation for Residential Curbside

This policy presents a major shift from voluntary to mandatory participation in recycling collection programs. It is intended to motivate residential waste generators for which the City provides services to separate recyclable materials from the waste they generate and place it in the appropriate blue bin on a regular basis for collection.

To effect this change, the City would need to establish "Mandatory Recycling" for residential curbside customers that requires waste generators to separate recyclables from other waste, and set the recyclables out for collection as appropriate for the recycling programs and services available through LASAN.

This initiative would need to be carefully developed based on a consideration of legitimate concerns raised by various stakeholder groups while being consistent with City policy directives. It would also need to be adequately publicized to inform all residents of the intent and purpose.

Targeted generators include all residential curbside customers serviced by LASAN collection crews.

Table 18: List of Materials Targeted through Mandatory Recycling Separation for Residential Curbside

	Material	Check if Applies		Material	Check if Applies
1	Cardboard, paper bags	X	23	Food	
2	Newspaper	X	24	Green waste	
3	Mixed waste paper	X	25	Manures	
4	Compostable paper		26	Textiles	X
5	Remainder/composite paper		27	Remainder/composite organic	
6	Glass containers	X	28	Concrete	
7	Flat glass		29	Asphalt paving	
8	Remainder/composite glass		30	Asphalt roofing	
9	Tin/steel cans	X	31	Lumber	
10	Other ferrous	X	32	Gypsum board	
11	Aluminum cans	X	33	Rock, soil, and fines	
12	Other nonferrous	X	34	Remainder/composite construction and demolition	
13	Remainder/composite metal		35	HHW	
14	Electronics		36	Ash	
15	Major appliances		37	Sewage solids	
16	Plastic #2 containers	X	38	Bulky items	
17	Plastic #1 containers	X	39	Tires	
18	Other containers	X	40	Remainder/composite special	
19	Expanded polystyrene	X	41	Mixed residue	
20	Recyclable film	X			
21	Mixed plastic reusable/recyclable	X			
22	Mixed plastic non-reuse/recycle				

Note: Materials targeted by the residential curbside recycling program include all cartons - refrigerated, shelf-stable, aseptic packaging. These materials were not separately categorized in the *City of Los Angeles Waste Characterization and Quantification Study Year 2000*, July 2002. For a list of materials targeted by the residential curbside recycling program, refer to the LASAN website: http://www.lacitysan.org/solid_resources/recycling/curbside/what_is_recyclable.htm (accessed October 1, 2013).

4.1.10 Program 10: Mandatory Organics Recycling for Residential Curbside

This policy represents a major shift from voluntary to mandatory participation in organics collection programs. It is intended to motivate residential curbside customers within the City to separate organic materials from the waste they generate at their home and place it in the green bin on a regular basis for collection. To effect this change, the City would need to require residential curbside customers to separate organics from other waste, and set the organics out for collection.

This initiative would need to be carefully developed based on consideration of legitimate concerns raised by the City stakeholders and be consistent with City policy directives, as well as being adequately publicized to inform all residents of the intent and purpose.

Targeted generators include all residential curbside customers serviced by LASAN collection crews.

Table 19: List of Materials Targeted through Mandatory Organics Recycling for Residential Curbside

	Material	Check if Applies		Material	Check if Applies
1	Cardboard, paper bags		23	Food	X
2	Newspaper		24	Green waste	X
3	Mixed waste paper		25	Manures	X
4	Compostable paper	X	26	Textiles	
5	Remainder/composite paper		27	Remainder/composite organic	
6	Glass containers		28	Concrete	
7	Flat glass		29	Asphalt paving	
8	Remainder/composite glass		30	Asphalt roofing	
9	Tin/steel cans		31	Lumber	
10	Other ferrous		32	Gypsum board	
11	Aluminum cans		33	Rock, soil, and fines	
12	Other nonferrous		34	Remainder/composite construction and demolition	
13	Remainder/composite metal		35	HHW	
14	Electronics		36	Ash	
15	Major appliances		37	Sewage solids	
16	Plastic #2 containers		38	Bulky items	
17	Plastic #1 containers		39	Tires	
18	Other containers		40	Remainder/composite special	
19	Expanded polystyrene		41	Mixed residue	
20	Recyclable film				
21	Mixed plastic reusable/recyclable				
22	Mixed plastic non-reuse/recycle				

4.1.11 Program 11: Resource Recovery Center Ordinance

This policy calls for establishing Resource Recovery Centers (RRCs), which would need to be co-located or in close proximity to any transfer station or landfill located within the City. A Resource Recovery Center is a facility open to the public that would receive certain recoverable materials that are typically brought to a disposal site by residents or businesses in self-hauled loads.

The intent of this ordinance is to ensure that materials that are recyclable or reusable would be diverted from the other waste that is self-hauled for disposal. The materials received at the RRC would be processed and marketed as recyclables, or made available for reuse/resale (either at the RRC or elsewhere within the City). If the City adopted this ordinance, it would likely result in local disposal sites (local transfer stations and landfills or other designated Public Works areas) redesigning their sites to provide for a separate drop-off and staging area where the public would be able to drop off their recoverable materials for free before proceeding to the designated disposal area. At some facilities, the diversion activity would take place after the fee gate and the public would be required to separate materials for recycling and reuse. If they would like to proceed directly to the disposal area, they would be required to pay an extra fee. Tipping fees at RRCs can provide a significant incentive to users. Most provide drop-off or buyback options for revenue-generating recyclables; some charge lower rates for certain items (yard trimmings, clean fill). For example, the Resource Recovery Center at the Cold Canyon Landfill in San Luis Obispo charges a flat rate for all small vehicles, and then an extra fee if the generator does not want to separate out materials. Cold Canyon reports that 97 percent of users elect to separate their materials.

This ordinance would only apply to landfills and transfer stations operating within the City limits. However, the majority of self-haul tons are disposed within the City limits.

In 2006, approximately 132,000 tons of self-haul waste was disposed by residential and commercial generators in the City. Of the 132,000 tons disposed, approximately 102,000 tons were disposed at landfills and transfer stations within the City limits and approximately 30,000 tons were disposed at landfills and transfer stations outside of the City limits.

Diversion levels and costs at RRCs can vary widely depending on the extent of the diversion activities. These activities can include public area drop-off for traditional recyclables (cans, bottles, and paper), salvaging materials from the tipping area at a transfer station or landfill (large pieces of metal, cardboard or wood), diverting reusable items (furniture, building materials, and household goods), and providing retail sales on site. Some activities may be co-located at a transfer station or landfill, but others may be off-site. The concept of using off-site facilities has been described as a "serial MRF," where multiple salvage, processing and sales activities happen in a variety of locations in close proximity to each other that are cross-promoted.

RRCs provide one of the very few opportunities to divert self-hauled materials. Requiring landfills and transfer stations to provide drop-off areas for recycling and reuse is a low-cost, low-impact method of diverting some potentially recyclable material prior to disposal. Proper signage to direct self-haulers to the drop-off area, and signs designating the materials accepted at each storage bin or off-loading area, are

typically sufficient to educate the public about the recycling options available at the facility. Processing self-hauled materials for recycling or providing salvage operations at landfills or transfer stations can also increase diversion, but requires increased costs.

Facility operators may have concerns about traffic flow and space for recycling. The ordinance could specify that the RRC be implemented when the facility is undergoing a major redesign or is applying for a Conditional Use Permit. The ordinance could also identify desired features (such as increased processing and salvaging from self-haul loads) and minimum requirements (such as staged bins for traditional recyclables).

The ordinance could allow facilities to develop additional collection and processing capacity within one-half mile if there is not enough room on site to include those additional activities.

City staff would be in charge of providing an RRC at CLARTS, since it is a City-owned facility. Privately owned facilities are required to provide RRCs per the ordinance on their own.

Targeted generators include self-haul residential and commercial generators.

Table 20: List of Materials Targeted through Resource Recovery Center Ordinance

	Material	Check if Applies		Material	Check if Applies
1	Cardboard, paper bags	X	23	Food	X
2	Newspaper	X	24	Green waste	X
3	Mixed waste paper	X	25	Manures	
4	Compostable paper	X	26	Textiles	X
5	Remainder/composite paper		27	Remainder/composite organic	
6	Glass containers	X	28	Concrete	X
7	Flat glass		29	Asphalt paving	X
8	Remainder/composite glass		30	Asphalt roofing	X
9	Tin/steel cans	X	31	Lumber	X
10	Other ferrous	X	32	Gypsum board	X
11	Aluminum cans	X	33	Rock, soil, and fines	X
12	Other nonferrous	X	34	Remainder/composite construction and demolition	X
13	Remainder/composite metal		35	HHW	
14	Electronics	X	36	Ash	
15	Major appliances	X	37	Sewage solids	
16	Plastic #2 containers	X	38	Bulky items	X
17	Plastic #1 containers	X	39	Tires	X
18	Other containers	X	40	Remainder/composite special	
19	Expanded polystyrene	X	41	Mixed residue	
20	Recyclable film	X			
21	Mixed plastic reusable/recyclable	X			
22	Mixed plastic non-reuse/recycle				

4.1.12 Program 12: EPR and Packaging Reduction

The upstream extended producer responsibility (EPR) initiatives call for the City to take an active role in advocating for legislation that requires product manufacturers, retail establishments, wholesale distributors and other appropriate entities to take back certain products or packaging that currently are difficult to recycle, contain toxics, or otherwise pose problems when they are discarded as waste. The City would work with various federal, State and regional agencies and community groups to ensure that effective take-back programs are enacted into law, thereby enhancing the City's goals to reduce the volume and toxicity of the materials entering the City's waste stream.

The following are the priorities the City would focus on under this program:

- Advocacy for legislation making businesses responsible for their products that contain **toxics** such as pharmaceuticals, fluorescent lights, household batteries, treated wood, and other materials banned from disposal statewide
- Advocacy for legislation making businesses responsible for their products that are **difficult-to-recycle materials**, such as disposable diapers, composite materials, tires, white goods, durable goods, plastic, and food packaging
- Advocacy for **packaging legislation** making businesses responsible for their packaging, including alternatives to expanded polystyrene (expanded polystyrene containers, "peanuts" and "blocks") and plastic bags (statewide); and support for reusable shipping containers
- Adoption of a **citywide reusable bag policy** at designated supermarkets and retail establishments (local policy approved by the City Council May 23, 2012)[6]
- Advocacy for businesses to develop **life-cycle analyses for products and packaging**, taking into account all environmental impacts of the product from manufacturing to the end of its useful life
- Advocacy for legislation to incentivize manufacturers to use **local reuse and recycling markets** for the products they manufacture

Manufacturers marketing products in Europe, Canada, and Japan have voluntarily implemented the "Green Dot" program.[7] Packaging is labeled with a Green Dot symbol to indicate that the manufacturer has paid into the Green Dot program based on the weight and composition of the package. Funds raised through this program are used to provide supplemental recycling collection services.

City staff has developed the concept of the "Blue Dot" program. Similar to the Green Dot program, manufacturers would voluntarily label their products and packaging to indicate whether they are recyclable or compostable. Stakeholders have expressed confusion about which materials should be

[6]The Council Action on the single-use bag policy is available through the City of Los Angeles Council File 11-1531. The effective date of the ordinance was August 1, 2013 and will apply to specified retail stores on January 1, 2014.

[7]Description of Duales System Deutschland http://www.gruener-punkt.de/?L=1 (accessed August 30, 2013)

placed in the blue bin and which should be placed in the green bin. This program would make it easier for residents and businesses to recycle and compost.

Advocacy for this approach is best accomplished at the State level, as it may be difficult for manufacturers to comply at the municipal level. For example, the Province of Ontario, Canada is considering a similar system in conjunction with its 70 percent recycling goal.[8] Products and packaging would be labeled with a blue, green or black dot to indicate whether the material was recyclable, compostable or required disposal. This requirement would also encourage producer responsibility by incentivizing manufacturers to make their products and packaging more recyclable and compostable.

The Blue Dot/Green Dot program could also be implemented on a local level as a business recognition program, by providing Blue Dot/Green Dot symbols to commercial businesses that recycle or restaurants that divert food scraps.

Targeted generators include all residential curbside customers, multi-family complexes, and commercial generators.

[8]Interview with Craig Bartlett, Manager of Waste Operations, the Regional Municipality of Durham, Ontario, October 22, 2009.

Table 21: List of Materials Targeted through EPR and Packaging Reduction

	Material	Check if Applies		Material	Check if Applies
1	Cardboard, paper bags	X	23	Food	
2	Newspaper		24	Green waste	
3	Mixed waste paper	X	25	Manures	
4	Compostable paper		26	Textiles	
5	Remainder/composite paper		27	Remainder/composite organic	
6	Glass containers		28	Concrete	
7	Flat glass		29	Asphalt paving	
8	Remainder/composite glass		30	Asphalt roofing	
9	Tin/steel cans		31	Lumber	
10	Other ferrous		32	Gypsum board	
11	Aluminum cans		33	Rock, soil, and fines	
12	Other nonferrous		34	Remainder/composite construction and demolition	
13	Remainder/composite metal		35	HHW	X
14	Electronics	X	36	Ash	
15	Major appliances	X	37	Sewage solids	
16	Plastic #2 containers		38	Bulky items	
17	Plastic #1 containers		39	Tires	X
18	Other containers		40	Remainder/composite special	
19	Expanded polystyrene	X	41	Mixed residue	
20	Recyclable film	X			
21	Mixed plastic reusable/recyclable				
22	Mixed plastic non-reuse/recycle	X			

4.1.13 Program 13: Ban Certain Material from Disposal

Communities across the U.S. have increased participation in recycling and composting programs through the implementation of disposal bans. Most of the focus on disposal bans has been on toxic materials, electronic waste, appliances, and yard trimmings. Over half of the states in the U.S. have a disposal ban for yard trimmings. State bans are also supplemented by local bans and enforcement. For example, Mecklenburg County, North Carolina is reinforcing the state ban on plastic beverage containers, aluminum cans, wood pallets and appliances through implementation of local bans and enforcement. The City of Seattle, Washington has achieved a 70-percent diversion rate in its residential programs through implementation of a local disposal ban of recyclable materials and yard trimmings, where residents may not place recyclable materials or yard trimming in their collection containers for solid waste. Metro Vancouver, British Columbia is also considering implementation of a food scrap ban by 2015.

This program would include a feasibility study to identify materials to target for landfill bans including electronics, appliances, lumber, and bulky items. The bans would then be implemented in conjunction with new programs for diverting banned materials and mandatory recycling requirements.

4.1.14 Program 14: Expand Recycling Ambassador Program for Residential Curbside

This program focuses on improving recycling habits, reducing contamination of the blue bins, and decreasing the amount of waste entering landfills. By hiring additional Recycling Ambassadors within LASAN, the City would expand public education and outreach services and encourage residents to participate more consistently in the existing blue bin recycling program. Ambassadors would conduct field surveys, monitor participation patterns, and spot-check containers to identify problem areas (i.e., neighborhoods with low participation, contamination problems, broken or missing containers). They would work with the collection crews to resolve service issues, and contact residents to discuss areas of concern. The program is geared towards increasing public education on the benefits of participating in the curbside recycling program, and resolving service problems and/or obstacles to participation.

This program supports the implementation and the effectiveness of other Zero Waste efforts, such as Increase Textile Diversion, Bulky Items Reuse and Recycling, and Residential Curbside Food Scraps.

Targeted generators include all residential curbside customers serviced by LASAN collection crews.

Table 22: List of Materials Targeted through Recycling Ambassador Program for Residential Curbside

	Material	Check if Applies		Material	Check if Applies
1	Cardboard, paper bags	X	23	Food	X
2	Newspaper	X	24	Green waste	X
3	Mixed waste paper	X	25	Manures	
4	Compostable paper	X	26	Textiles	X
5	Remainder/composite paper		27	Remainder/composite organic	
6	Glass containers	X	28	Concrete	
7	Flat glass		29	Asphalt paving	
8	Remainder/composite glass		30	Asphalt roofing	
9	Tin/steel cans	X	31	Lumber	
10	Other ferrous	X	32	Gypsum board	
11	Aluminum cans	X	33	Rock, soil, and fines	
12	Other nonferrous	X	34	Remainder/composite construction and demolition	
13	Remainder/composite metal		35	HHW	X
14	Electronics	X	36	Ash	
15	Major appliances		37	Sewage solids	
16	Plastic #2 containers	X	38	Bulky items	X
17	Plastic #1 containers	X	39	Tires	
18	Other containers	X	40	Remainder/composite special	
19	Expanded polystyrene	X	41	Mixed residue	
20	Recyclable film	X			
21	Mixed plastic reusable/recyclable	X			
22	Mixed plastic non-reuse/recycle				

Note: Materials targeted by the residential curbside recycling program include all cartons - refrigerated, shelf-stable, aseptic packaging. These materials were not separately categorized in the *City of Los Angeles Waste Characterization and Quantification Study Year 2000*, July 2002. For a list of materials targeted by the residential curbside recycling program, refer to the LASAN website: http://www.lacitysan.org/solid_resources/recycling/curbside/what_is_recyclable.htm (accessed October 1, 2013).

4.1.15 Program 15: Recycling Ambassador Program for Residential Curbside (Reinforcement)

The mandatory programs are assumed to have been in place for some time prior to implementing reinforcement. Implementing reinforcement would shift the focus from education efforts to education combined with enforcement efforts. The intent of this program would be to include code enforcement to secure consistent participation in the established recycling and organics collection programs available to waste generators (and mandated by various City policies designed to increase the City's waste diversion).

Code violations would likely be discovered by Recycling Ambassadors working in neighborhoods and commercial districts, while monitoring recycling programs, or through complaints registered by concerned residents, businesses, waste haulers, recyclers or other parties. In either case, information regarding code violations would be followed up by LASAN code enforcement staff and/or staff from the City's Code Enforcement department, to ensure the violations are corrected by the appropriate party. In cases where the party refuses to correct the problems or is unwilling to cooperate with the City to find a resolution, City staff would be able to take appropriate actions, which could include imposition of fines, penalties, or other sanctions that are consistent with City code enforcement.

Targeted generators include all residential curbside customers serviced by LASAN collection crews.

Table 23: List of Materials Targeted through Recycling Ambassador Program for Residential Curbside (Reinforcement)

	Material	Check if Applies		Material	Check if Applies
1	Cardboard, paper bags	X	23	Food	X
2	Newspaper	X	24	Green waste	X
3	Mixed waste paper	X	25	Manures	
4	Compostable paper	X	26	Textiles	X
5	Remainder/composite paper		27	Remainder/composite organic	
6	Glass containers	X	28	Concrete	X
7	Flat glass		29	Asphalt paving	X
8	Remainder/composite glass		30	Asphalt roofing	X
9	Tin/steel cans	X	31	Lumber	X
10	Other ferrous	X	32	Gypsum board	X
11	Aluminum cans	X	33	Rock, soil, and fines	X
12	Other nonferrous	X	34	Remainder/composite construction and demolition	X
13	Remainder/composite metal		35	HHW	X
14	Electronics	X	36	Ash	
15	Major appliances		37	Sewage solids	
16	Plastic #2 containers	X	38	Bulky items	
17	Plastic #1 containers	X	39	Tires	
18	Other containers	X	40	Remainder/composite special	
19	Expanded polystyrene	X	41	Mixed residue	
20	Recyclable film	X			
21	Mixed plastic reusable/recyclable	X			
22	Mixed plastic non-reuse/recycle				

Note: Materials targeted by the residential curbside recycling program include all cartons - refrigerated, shelf-stable, aseptic packaging. These materials were not separately categorized in the *City of Los Angeles Waste Characterization and Quantification Study Year 2000*, July 2002. For a list of materials targeted by the residential curbside recycling program, refer to the LASAN website: http://www.lacitysan.org/solid_resources/recycling/curbside/what_is_recyclable.htm (accessed October 1, 2013).

4.2 SWIRP Policies, Programs, and Technical Assistance Implemented through the Exclusive Franchise System

SWIRP identified 12 programs that apply specifically to multi-family and commercial sectors. These include Program 16 to Program 27, as listed in Table 11. Each of these SWIRP programs could be implemented using various regulatory mechanisms, including ordinances and permits through exclusive franchises.

On November 14, 2012 the Los Angeles City Council directed LASAN to pursue exclusive franchises for multi-family and commercial sectors. Thus, these SWIRP programs will be implemented in the context of an exclusive franchise system (where one service provider is authorized to provide collection services for all customers within a specific geographical area within the City). This section provides a description of the programs to be implemented as part of the exclusive franchise system.

The new exclusive franchises will be designed to maximize diversion from multi-family and commercial sectors. Future planning and procurement activities will specify the requirements of the franchisees, which may include source-separated recycling and organics collection (three bins for recycling, organics and solid waste); wet/dry collection (two bins for recycling and organics with no separate collection for solid waste); or a one-bin system (one bin with solid waste collected for mixed waste processing), as appropriate.

LASAN anticipates creating eleven exclusive franchise areas/zones, two areas/zones for five of the six wastesheds of the City (East Valley, West Valley, North Central, West LA, and South LA) and one area/zone for the smaller Harbor wasteshed.

4.2.1 Program 16: Multi-Family Recycling

The City conducted a pilot program in 2004 and, based on the results of the program, the City implemented a multi-family recycling program in 2007 that offered the same voluntary blue bin recycling service being provided to residential curbside customers. This recycling service consists of City provision of blue bins and weekly collection service. The program was structured to keep multi-family accounts in an open market for refuse collection by permitted private haulers. The City contracts with selected haulers to provide recycling services only to multi-family complexes. The service areas of the City are divided into separate zones or wastesheds for the purpose of awarding the collection contracts. Contracted haulers provide recycling service at all multi-family complexes requesting the service in their specific service area, with the City providing outreach and training, and the contractors providing containers and collection/recycling services.

The multi-family recycling program implemented by the City presented a smooth transition from pilot to permanent program, and also ensured that City staff has the required control to implement and monitor an effective citywide multi-family program. Specific standards were written into the service contracts and are being monitored by City staff to ensure that all required services are being provided. Multi-family complex owners and/or managers, not the residents, need to request the free service by contacting the City. Tenants can provide the owner/manager with their contact information, and City staff follow up on the information to encourage the responsible parties to participate.

Multi-family residential buildings with five units or more are eligible for recycling service. Multi-family residential buildings can be apartment buildings, condominiums, cooperatives, mobile home parks, and other properties zoned for multiple residential units. Buildings that are formally registered into the program are offered free recycling services once a week, blue bins to store recyclables, and educational information about the types of materials accepted in blue bins. There is no cost to property owners or residents that participate in the program. The program is funded through AB 939 Compliance Fees paid by haulers servicing buildings in the City.

Under the new franchise system, the City will require that recycling services be provided to all multi-family complexes.

Targeted generators include multi-family complexes with five units or more.

Table 24: List of Materials Targeted through Multi-Family Recycling

	Material	Check if Applies		Material	Check if Applies
1	Cardboard, paper bags	X	23	Food	
2	Newspaper	X	24	Green waste	
3	Mixed waste paper	X	25	Manures	
4	Compostable paper	X	26	Textiles	X
5	Remainder/composite paper		27	Remainder/composite organic	
6	Glass containers	X	28	Concrete	
7	Flat glass		29	Asphalt paving	
8	Remainder/composite glass		30	Asphalt roofing	
9	Tin/steel cans	X	31	Lumber	
10	Other ferrous	X	32	Gypsum board	
11	Aluminum cans	X	33	Rock, soil, and fines	
12	Other nonferrous	X	34	Remainder/composite construction and demolition	
13	Remainder/composite metal		35	HHW	
14	Electronics		36	Ash	
15	Major appliances		37	Sewage solids	
16	Plastic #2 containers	X	38	Bulky items	
17	Plastic #1 containers	X	39	Tires	
18	Other containers	X	40	Remainder/composite special	
19	Expanded polystyrene	X	41	Mixed residue	
20	Recyclable film	X			
21	Mixed plastic reusable/recyclable	X			
22	Mixed plastic non-reuse/recycle				

4.2.2 Program 17: Multi-Family Yard Trimmings

This program expands the multi-family recycling program implemented by the City in 2007 by including the addition of green bin collection service for yard trimmings using the same parameters to ensure an effective citywide multi-family green bin program.

The multi-family green bin program could be designed to have program features that would be consistent with, and complement, the multi-family blue bin recycling program. For example, multi-family residential buildings of five units or more would be eligible for green bin service. Buildings that are formally registered into the program would be offered green bin services once a week, green bins to store yard trimmings and similar materials, and educational information about the types of materials accepted in green bins.

The City and its franchised haulers would likely implement a pilot prior to full implementation of a citywide multi-family green bin program in order to better assess collection methods and cost, demand for service, program constraints, and overall effectiveness. Many multi-family complexes employ contractors to maintain landscaped areas and remove yard trimmings, and others have limited outdoor space and/or generate minimal amounts of yard trimmings, so it would be difficult to assess the program's diversion potential and effectiveness without conducting a pilot study prior to launching a full-scale program.

Under the new franchise system, the City may require that yard trimmings collection services be provided to all multi-family complexes.

Targeted generators include multi-family complexes with five units or more.

Table 25: List of Materials Targeted through Multi-Family Yard Trimmings

	Material	Check if Applies		Material	Check if Applies
1	Cardboard, paper bags		23	Food	
2	Newspaper		24	Green waste	X
3	Mixed waste paper		25	Manures	
4	Compostable paper		26	Textiles	
5	Remainder/composite paper		27	Remainder/composite organic	
6	Glass containers		28	Concrete	
7	Flat glass		29	Asphalt paving	
8	Remainder/composite glass		30	Asphalt roofing	
9	Tin/steel cans		31	Lumber	
10	Other ferrous		32	Gypsum board	
11	Aluminum cans		33	Rock, soil, and fines	
12	Other nonferrous		34	Remainder/composite construction and demolition	
13	Remainder/composite metal		35	HHW	
14	Electronics		36	Ash	
15	Major appliances		37	Sewage solids	
16	Plastic #2 containers		38	Bulky items	
17	Plastic #1 containers		39	Tires	
18	Other containers		40	Remainder/composite special	
19	Expanded polystyrene		41	Mixed residue	
20	Recyclable film				
21	Mixed plastic reusable/recyclable				
22	Mixed plastic non-reuse/recycle				

4.2.3 Program 18: Multi-Family Food Scraps

This program expands the multi-family recycling program implemented by the City and includes the addition of green bin collection service for food scraps. The multi-family green bin program could be designed to have program features that would be consistent with, and complement, the multi-family blue bin recycling program. Under the new franchise agreements, the City may require that food scrap collection services be provided to all multi-family complexes.

Targeted generators include multi-family complexes with five units or more.

Table 26: List of Materials Targeted through Multi-Family Food Scraps

	Material	Check if Applies		Material	Check if Applies
1	Cardboard, paper bags		23	Food	X
2	Newspaper		24	Green waste	
3	Mixed waste paper		25	Manures	
4	Compostable paper	X	26	Textiles	
5	Remainder/composite paper		27	Remainder/composite organic	
6	Glass containers		28	Concrete	
7	Flat glass		29	Asphalt paving	
8	Remainder/composite glass		30	Asphalt roofing	
9	Tin/steel cans		31	Lumber	
10	Other ferrous		32	Gypsum board	
11	Aluminum cans		33	Rock, soil, and fines	
12	Other nonferrous		34	Remainder/composite construction and demolition	
13	Remainder/composite metal		35	HHW	
14	Electronics		36	Ash	
15	Major appliances		37	Sewage solids	
16	Plastic #2 containers		38	Bulky items	
17	Plastic #1 containers		39	Tires	
18	Other containers		40	Remainder/composite special	
19	Expanded polystyrene		41	Mixed residue	
20	Recyclable film				
21	Mixed plastic reusable/recyclable				
22	Mixed plastic non-reuse/recycle				

4.2.4 Program 19: Modify Multi-Family and Commercial Collection Rates

This is similar to the PAYT policy for residential curbside customers serviced by LASAN, except it is applicable to customer rates charged by the commercial haulers operating within the City. The goal of the program is to establish sufficient customer rate incentives for commercial and multi-family solid waste customers to increase recycling and decrease solid waste service. This policy would help to minimize the common industry practice of offering price incentives based on volume discounts to customers that subscribe for higher levels of solid waste service, thereby creating pricing incentives for customers to shift to increased recycling services.

The City would approve any new rate structure as a component of the new franchise system and would seek to ensure that rates are fair and equitable across all of the service areas and generator types.

Targeted generators include commercial generators and multi-family complexes with five units or more.

Table 27: List of Materials Targeted through Multi-Family and Commercial Collection Rates

	Material	Check if Applies		Material	Check if Applies
1	Cardboard, paper bags	X	23	Food	X
2	Newspaper	X	24	Green waste	X
3	Mixed waste paper	X	25	Manures	X
4	Compostable paper	X	26	Textiles	X
5	Remainder/composite paper	X	27	Remainder/composite organic	X
6	Glass containers	X	28	Concrete	X
7	Flat glass	X	29	Asphalt paving	X
8	Remainder/composite glass	X	30	Asphalt roofing	X
9	Tin/steel cans	X	31	Lumber	X
10	Other ferrous	X	32	Gypsum board	X
11	Aluminum cans	X	33	Rock, soil, and fines	X
12	Other nonferrous	X	34	Remainder/composite construction and demolition	X
13	Remainder/composite metal	X	35	HHW	X
14	Electronics	X	36	Ash	X
15	Major appliances	X	37	Sewage solids	X
16	Plastic #2 containers	X	38	Bulky items	X
17	Plastic #1 containers	X	39	Tires	X
18	Other containers	X	40	Remainder/composite special	X
19	Expanded polystyrene	X	41	Mixed residue	X
20	Recyclable film	X			
21	Mixed plastic reusable/recyclable	X			
22	Mixed plastic non-reuse/recycle	X			

4.2.5 Program 20: Require all Commercial Haulers to Provide Recycling Services to their Customers

Under the new franchise system, all franchisees would be required to provide recycling services to commercial waste generators. Depending on the design of the franchise system, the franchisees may be allowed to implement whatever programs work best in terms of collection efficiency and handling methods, but reporting requirements would be necessary to enable the City to monitor the program to ensure it is offered consistently throughout the commercial sector. This program would require City staff to conduct periodic monitoring (in the field) and to respond to customer complaints to ensure that maximum feasible recycling services are provided to all commercial customers.

The City would revise the existing permitting system and direct all franchised haulers in the City to provide recycling services to commercial customers citywide. The requirement for recycling service under this program would specify that recycling must be provided to customers (note that this program does not require customers to recycle, which is addressed in Program 23: Mandatory Recycling Separation for Multi-Family and Commercial Sectors), and depending on the design of the franchise system, would allow the hauler to determine the collection methodology, provision of customer containers, processing arrangements, and other components of the recycling services the hauler offers to its customers. The City would specify in the requirements which materials must be included in the recycling program to ensure that customers have a reasonable level of service for recycling the types of materials they generate.

In communities that have exclusive franchise agreements with haulers for commercial solid waste service, commercial recycling service is often included in the scope of services to ensure that customers have the option to recycle through their hauler. This program would allow commercial customers to arrange recycling service with their waste collector, rather than making arrangements with third-party recycling companies. Many recycling firms require special conditions to be met (minimum quantities of materials, source separation by type or material grade, on-call arrangements) before they agree to provide service, which often discourages commercial customers from recycling.

Targeted generators include commercial generators and multi-family complexes with five units or more.

Table 28: List of Materials Targeted through all Commercial Haulers to Provide Recycling Services to their Customers

	Material	Check if Applies		Material	Check if Applies
1	Cardboard, paper bags	X	23	Food	
2	Newspaper	X	24	Green waste	
3	Mixed waste paper	X	25	Manures	
4	Compostable paper		26	Textiles	X
5	Remainder/composite paper		27	Remainder/composite organic	
6	Glass containers	X	28	Concrete	
7	Flat glass		29	Asphalt paving	
8	Remainder/composite glass		30	Asphalt roofing	
9	Tin/steel cans	X	31	Lumber	
10	Other ferrous	X	32	Gypsum board	
11	Aluminum cans	X	33	Rock, soil, and fines	
12	Other nonferrous	X	34	Remainder/composite construction and demolition	
13	Remainder/composite metal		35	HHW	
14	Electronics		36	Ash	
15	Major appliances		37	Sewage solids	
16	Plastic #2 containers	X	38	Bulky items	
17	Plastic #1 containers	X	39	Tires	
18	Other containers	X	40	Remainder/composite special	
19	Expanded polystyrene	X	41	Mixed residue	
20	Recyclable film	X			
21	Mixed plastic reusable/recyclable	X			
22	Mixed plastic non-reuse/recycle				

4.2.6 Program 21: Request all Businesses to Have Recycling Services

This program would request that all commercial establishments have access to recycling services through their building owners and managers. The intent of the program would be to ensure that each business establishment within the City that subscribes for solid waste collection service also implements some type of recycling program to help reduce the amount of waste generated by that business.

Table 29: List of Materials Targeted through all Businesses to Have Recycling Services

	Material	Check if Applies		Material	Check if Applies
1	Cardboard, paper bags	X	23	Food	
2	Newspaper	X	24	Green waste	
3	Mixed waste paper	X	25	Manures	
4	Compostable paper		26	Textiles	X
5	Remainder/composite paper		27	Remainder/composite organic	
6	Glass containers	X	28	Concrete	
7	Flat glass		29	Asphalt paving	
8	Remainder/composite glass		30	Asphalt roofing	
9	Tin/steel cans	X	31	Lumber	
10	Other ferrous	X	32	Gypsum board	
11	Aluminum cans	X	33	Rock, soil, and fines	
12	Other nonferrous	X	34	Remainder/composite construction and demolition	
13	Remainder/composite metal		35	HHW	
14	Electronics		36	Ash	
15	Major appliances		37	Sewage solids	
16	Plastic #2 containers	X	38	Bulky items	
17	Plastic #1 containers	X	39	Tires	
18	Other containers	X	40	Remainder/composite special	
19	Expanded polystyrene	X	41	Mixed residue	
20	Recyclable film	X			
21	Mixed plastic reusable/recyclable	X			
22	Mixed plastic non-reuse/recycle				

4.2.7 Program 22: Provide More Public Area Recycling

This program would require placement and servicing of recycling containers wherever litter cans are located in all public locations. This would provide convenient opportunities for the general public and visitors to the City to recycle a variety of materials such as beverage containers, newspaper, mixed paper, and other materials that are included in the curbside program, and would increase opportunities for the public to recycle when shopping, visiting parks, public buildings, and other City facilities. Placement of recycling containers in public areas is a popular service advocated by the public. Revenues from the sale of the commingled materials, coupled with potential funding from the State Department of Conservation and other agencies that offer equipment grants for recycling and litter reduction, could help offset program costs.

The Bureau of Street Services (BSS) maintains approximately 2,900 "white" litter receptacles located along public streets. Under the City's Adopt-A-Basket program, another 1,200 "green" receptacles are maintained by constituents or businesses, and about 1,000 receptacles located at bus shelters are maintained by the Norman Bench contractor. In addition, the Department of Recreation and Parks maintains a significant (but not quantified) number of litter receptacles at the more than 400 facilities it manages. LASAN manages the City facility recycling program and provides receptacles for commingled recyclables next to the litter receptacles at City facilities, including City Hall and the Public Works Building.

Before implementing this program, the City would most likely conduct pilot studies to determine the type of recycling containers that are best suited for various locations (commercial strips, bus shelters, downtown sidewalks, parks, senior centers). In addition, the City should explore the feasibility of using the Adopt-A-Park partners for servicing the recycling containers, or explore contracting with other nonprofits such as the Los Angeles Conservation Corps for collecting recyclables. The Los Angeles Conservation Corps is a nonprofit organization that provides at-risk young adults and school-aged youth with opportunities for success through job skills training, education, and work experience with an emphasis on conservation and service projects that benefit the community. It operates a program sponsored by the California Department of Conservation, Division of Recycling to teach Conservation Corps young people how to provide recycling education to the public. This program is known as Recycling Across Los Angeles (RACLA) and teaches corps members how to develop and service recycling accounts, and promote recycling through a comprehensive education program. They help set up recycling campaigns and drives at elementary schools and set up mechanisms for ongoing recycling, including delivery of recyclable materials to nearby recycling centers. To the extent the City can partner with community groups and nonprofits such as the Conservation Corps, the cost of this program can be minimized. The pilot program could explore opportunities for partnering with existing community programs and sponsors.

The materials for diversion in public areas targeted by this program are classified as originating from the commercial (non-residential) sector and some public area recycling may be provided through the City's franchised haulers.

Targeted generators include the general public (residents, workers on lunch breaks, out-of-town visitors) visiting public areas throughout the City, as well as attendees at major public attractions.

Table 30: List of Materials Targeted through More Public Area Recycling

	Material	Check if Applies		Material	Check if Applies
1	Cardboard, paper bags	X	23	Food	
2	Newspaper	X	24	Green waste	
3	Mixed waste paper	X	25	Manures	
4	Compostable paper		26	Textiles	
5	Remainder/composite paper		27	Remainder/composite organic	
6	Glass containers	X	28	Concrete	
7	Flat glass		29	Asphalt paving	
8	Remainder/composite glass		30	Asphalt roofing	
9	Tin/steel cans	X	31	Lumber	
10	Other ferrous		32	Gypsum board	
11	Aluminum cans	X	33	Rock, soil, and fines	
12	Other nonferrous		34	Remainder/composite construction and demolition	
13	Remainder/composite metal		35	HHW	
14	Electronics		36	Ash	
15	Major appliances		37	Sewage solids	
16	Plastic #2 containers	X	38	Bulky items	
17	Plastic #1 containers	X	39	Tires	
18	Other containers	X	40	Remainder/composite special	
19	Expanded polystyrene	X	41	Mixed residue	
20	Recyclable film	X			
21	Mixed plastic reusable/recyclable				
22	Mixed plastic non-reuse/recycle				

4.2.8 Program 23: Mandatory Recycling Separation for Multi-Family and Commercial Sectors

This policy presents a major shift from voluntary to mandatory participation in recycling collection programs. It is intended to motivate multi-family and commercial waste sectors within the City to separate recyclable material from the waste they generate at their home or business and place it in the appropriate blue bin or recycling collection container on a regular basis for collection.

To effect this change, the City and its franchised haulers would need to establish "Mandatory Recycling" that requires waste generators to separate recyclables from other waste, and set the recyclables out for collection as appropriate for the recycling programs and services available through their service provider.

This initiative would need to be carefully developed based on consideration of legitimate concerns raised by various stakeholder groups and be consistent with City policy directives. It would need to be publicized adequately to inform all multi-family residents, businesses, service providers, and others of the intent and purpose of the initiative.

Assembly Bill 341 (adopted by the California legislature in 2011) established a statewide goal of 75 percent by 2020 and requires commercial generators (with more than four cubic yards per week of solid waste) and multi-family complexes (with five units or more) to recycle. However, it does not specify the materials to be collected or the level of recycling services received. It does not require generators to participate in programs offered by their buildings.

Targeted generators include commercial generators and multi-family complexes with five units or more.

Table 31: List of Materials Targeted through Mandatory Recycling Separation for Multi-Family and Commercial Sectors

	Material	Check if Applies		Material	Check if Applies
1	Cardboard, paper bags	X	23	Food	
2	Newspaper	X	24	Green waste	
3	Mixed waste paper	X	25	Manures	
4	Compostable paper		26	Textiles	X
5	Remainder/composite paper		27	Remainder/composite organic	
6	Glass containers	X	28	Concrete	
7	Flat glass		29	Asphalt paving	
8	Remainder/composite glass		30	Asphalt roofing	
9	Tin/steel cans	X	31	Lumber	
10	Other ferrous	X	32	Gypsum board	
11	Aluminum cans	X	33	Rock, soil, and fines	
12	Other nonferrous	X	34	Remainder/composite construction and demolition	
13	Remainder/composite metal		35	HHW	
14	Electronics		36	Ash	
15	Major appliances		37	Sewage solids	
16	Plastic #2 containers	X	38	Bulky items	
17	Plastic #1 containers	X	39	Tires	
18	Other containers	X	40	Remainder/composite special	
19	Expanded polystyrene	X	41	Mixed residue	
20	Recyclable film	X			
21	Mixed plastic reusable/recyclable	X			
22	Mixed plastic non-reuse/recycle				

4.2.9 Program 24: Mandatory Organics Recycling for Multi-Family and Commercial Sectors

This policy presents a major shift from voluntary to mandatory participation in organics recycling collection programs. It is intended to motivate multi-family and commercial waste sectors within the City to separate recyclable materials from the waste they generate at their home or business, and place it in the appropriate bin or organics recycling collection container on a regular basis for collection.

To effect this change, the City and its franchised haulers would need to establish "Mandatory Organics Recycling" that requires waste generators to separate organics from other waste, and set the organics out for collection as appropriate for the organics recycling programs and services available through their service provider.

This initiative would need to be carefully developed based on consideration of legitimate concerns raised by various stakeholder groups and be consistent with City policy directives. It would need to be publicized adequately to inform all multi-family residents, businesses, service providers, and others of the intent and purpose.

Assembly Bill 341 (adopted by the California legislature in 2011) established a statewide goal of 75 percent by 2020 and requires commercial generators (with more than four cubic yard per week of solid waste) and multi-family complexes (with five units or more) to recycle. However, it does not address organic materials and does not require generators to participate in programs offered by their buildings.

Targeted generators include commercial generators and multi-family complexes with five units or more.

Table 32: List of Materials Targeted through Mandatory Organics Recycling for Multi-Family and Commercial Sectors

	Material	Check if Applies		Material	Check if Applies
1	Cardboard, paper bags		23	Food	X
2	Newspaper		24	Green waste	X
3	Mixed waste paper		25	Manures	X
4	Compostable paper	X	26	Textiles	
5	Remainder/composite paper		27	Remainder/composite organic	
6	Glass containers		28	Concrete	
7	Flat glass		29	Asphalt paving	
8	Remainder/composite glass		30	Asphalt roofing	
9	Tin/steel cans		31	Lumber	
10	Other ferrous		32	Gypsum board	
11	Aluminum cans		33	Rock, soil, and fines	
12	Other nonferrous		34	Remainder/composite construction and demolition	
13	Remainder/composite metal		35	HHW	
14	Electronics		36	Ash	
15	Major appliances		37	Sewage solids	
16	Plastic #2 containers		38	Bulky items	
17	Plastic #1 containers		39	Tires	
18	Other containers		40	Remainder/composite special	
19	Expanded polystyrene		41	Mixed residue	
20	Recyclable film				
21	Mixed plastic reusable/recyclable				
22	Mixed plastic non-reuse/recycle				

4.2.10 Program 25: Multi-Family Recycling Ambassador Program

This program will provide education and assistance to multi-family customers in order to encourage them to initiate or expand recycling and waste reduction practices. The focus of the program is on improving recycling habits, reducing contamination of the recycling bins, and decreasing the amount of waste entering landfills. By hiring recycling ambassadors or providing these services through its franchised haulers, the City would expand public education and outreach services and encourage multi-family customers to participate more consistently in the recycling programs being offered by the franchisees. Recycling Ambassadors would conduct field surveys, monitor participation patterns, and spot-check containers to identify problem areas (i.e., neighborhoods with low participation, contamination problems, broken or missing containers).

The City and its franchised haulers would publicize the Recycling Ambassador Program and encourage multi-family customers to use this free service to increase recycling wherever feasible.

Under the new franchise system, the City could require that the franchisees provide dedicated staff to encourage multi-family customers to expand recycling and waste reduction practices.

Targeted generators include multi-family complexes with five units or more.

Table 33: List of Materials Targeted through Multi-Family Recycling Ambassador Program

	Material	Check if Applies		Material	Check if Applies
1	Cardboard, paper bags	X	23	Food	X
2	Newspaper	X	24	Green waste	X
3	Mixed waste paper	X	25	Manures	
4	Compostable paper	X	26	Textiles	X
5	Remainder/composite paper		27	Remainder/composite organic	
6	Glass containers	X	28	Concrete	X
7	Flat glass		29	Asphalt paving	X
8	Remainder/composite glass		30	Asphalt roofing	X
9	Tin/steel cans	X	31	Lumber	X
10	Other ferrous	X	32	Gypsum board	X
11	Aluminum cans	X	33	Rock, soil, and fines	X
12	Other nonferrous	X	34	Remainder/composite construction and demolition	X
13	Remainder/composite metal		35	HHW	X
14	Electronics	X	36	Ash	
15	Major appliances		37	Sewage solids	
16	Plastic #2 containers	X	38	Bulky items	
17	Plastic #1 containers	X	39	Tires	
18	Other containers	X	40	Remainder/composite special	
19	Expanded polystyrene	X	41	Mixed residue	
20	Recyclable film	X			
21	Mixed plastic reusable/recyclable	X			
22	Mixed plastic non-reuse/recycle				

4.2.11 Program 26: Expand Commercial Technical Assistance

This program will provide enhanced technical assistance to commercial customers to encourage them to initiate or expand recycling and waste reduction practices at their place of business. The City and its franchised haulers would publicize the technical assistance program and encourage businesses to use this free service to increase recycling wherever feasible and at the same time lower their disposal costs.

Technical assistance would include conducting on-site waste assessments to identify target materials for recycling and waste reduction, providing contact information for securing recycling services, and distributing appropriate outreach materials describing best practices for setting up or expanding recycling services for different types of businesses. Technical assistance would help to minimize or overcome various obstacles to recycling faced by commercial customers (space constraints, labor and sorting requirements, lack of information or training, etc.). Technical assistance would encourage more commercial customers to set up an effective recycling program that is suited to the customer's site, whether it be a large office complex, bar, restaurant, factory, warehouse, shopping center, small retail business or other type of commercial site.

Under the new franchise system, the City could require that the franchisees provide dedicated staff to encourage commercial customers to expand recycling and waste reduction practices.

Targeted generators include commercial generators.

Table 34: List of Materials Targeted through Commercial Technical Assistance

	Material	Check if Applies		Material	Check if Applies
1	Cardboard, paper bags	X	23	Food	X
2	Newspaper	X	24	Green waste	X
3	Mixed waste paper	X	25	Manures	
4	Compostable paper	X	26	Textiles	X
5	Remainder/composite paper		27	Remainder/composite organic	
6	Glass containers	X	28	Concrete	
7	Flat glass		29	Asphalt paving	
8	Remainder/composite glass		30	Asphalt roofing	
9	Tin/steel cans	X	31	Lumber	
10	Other ferrous	X	32	Gypsum board	
11	Aluminum cans	X	33	Rock, soil, and fines	
12	Other nonferrous	X	34	Remainder/composite construction and demolition	
13	Remainder/composite metal		35	HHW	
14	Electronics		36	Ash	
15	Major appliances		37	Sewage solids	
16	Plastic #2 containers	X	38	Bulky items	
17	Plastic #1 containers	X	39	Tires	
18	Other containers	X	40	Remainder/composite special	
19	Expanded polystyrene	X	41	Mixed residue	
20	Recyclable film	X			
21	Mixed plastic reusable/recyclable	X			
22	Mixed plastic non-reuse/recycle				

4.2.12 Program 27: Recycling Ambassador Program for Multi-Family and Commercial (Reinforcement)

The mandatory programs are assumed to have been in place for some time prior to implementation of reinforcement, which would shift the focus from education efforts to education combined with enforcement efforts. The intent of this program would be to include code enforcement to secure consistent participation by multi-family residents and businesses in the established recycling and organics collection programs available to waste generators (and mandated by various City policies designed to increase the City's waste diversion).

Mandatory programs may be administered by franchised haulers with potential enforcement efforts supported through City staff.

Code enforcement would rely on coordinated efforts between hauler and City staff working in the Multi-Family Recycling Ambassador and Commercial Technical Assistance Programs and other LASAN staff, as appropriate, to ensure violators of the City code are aware of and take appropriate actions to comply with the recycling and other waste diversion requirements established by the relevant City ordinances. Code violations would likely be discovered by commercial technical assistance staff or Recycling Ambassadors working in neighborhoods and commercial districts, while monitoring recycling programs, or through complaints registered by concerned residents, businesses, waste haulers, recyclers or other parties. In either case, information regarding code violations would be followed up by LASAN code enforcement staff and/or staff from the City's Code Enforcement department, to ensure the violations are corrected by the appropriate party. In cases where the party refuses to correct the problems or is unwilling to cooperate with the City to find a resolution, City staff would be able to take appropriate actions, which could include imposition of fines, penalties, or other sanctions that are consistent with City code enforcement.

Targeted generators include commercial generators and multi-family complexes with five units or more.

Table 35: List of Materials Targeted through Recycling Ambassador Program for Multi-Family and Commercial (Reinforcement)

	Material	Check if Applies		Material	Check if Applies
1	Cardboard, paper bags	X	23	Food	X
2	Newspaper	X	24	Green waste	X
3	Mixed waste paper	X	25	Manures	
4	Compostable paper	X	26	Textiles	X
5	Remainder/composite paper		27	Remainder/composite organic	
6	Glass containers	X	28	Concrete	X
7	Flat glass		29	Asphalt paving	X
8	Remainder/composite glass		30	Asphalt roofing	X
9	Tin/steel cans	X	31	Lumber	X
10	Other ferrous	X	32	Gypsum board	X
11	Aluminum cans	X	33	Rock, soil, and fines	X
12	Other nonferrous	X	34	Remainder/composite construction and demolition	X
13	Remainder/composite metal		35	HHW	X
14	Electronics	X	36	Ash	
15	Major appliances		37	Sewage solids	
16	Plastic #2 containers	X	38	Bulky items	
17	Plastic #1 containers	X	39	Tires	
18	Other containers	X	40	Remainder/composite special	
19	Expanded polystyrene	X	41	Mixed residue	
20	Recyclable film	X			
21	Mixed plastic reusable/recyclable	X			
22	Mixed plastic non-reuse/recycle				

Section 5 Additional SWIRP Policies and Programs Not Included in Material Flow Model

Additional policies and programs that cannot be quantified in the material flow model will be included in SWIRP because they enhance the effectiveness of waste diversion policies and programs needed to meet Zero Waste goals. Table 36 lists policies and programs that were identified by SWIRP stakeholders during Phase 1 and are recommended for inclusion in the SWIRP plan.

Table 36: Additional SWIRP Policies and Programs Not included in Material Flow Model

Program	Number corresponding to Policy/Program list
Recycling Market Development Zone (RMDZ)	63
Environmentally Preferable Purchasing (EPP) Ordinance	EPP 11 and 12

5.1 Recycling Market Development Zone (RMDZ)

In January 2003, the California Integrated Waste Management Board (CIWMB)[9] reauthorized Los Angeles' Citywide Recycling Market Development Zone (LARMDZ) designation to include the boundaries of the entire City of Los Angeles. The RMDZ program was established by the CIWMB to stimulate recycling based manufacturing businesses and create jobs. The LARMDZ program is a collaborative effort between the City of Los Angeles, the Los Angeles business community, and the CalRecycle to enable Los Angeles to continue to contribute towards meeting statewide waste diversion goals while promoting positive economic development at the local level.

Since the designation of the Los Angeles RMDZ, a total of 15 loans worth over $11.5 million have been funded. As a result of the approved RMDZ loans, over 170 new jobs were created and approximately 142,000 tons per year of secondary material were recycled into new products. The RMDZ program has made loans for the following material types: e-waste (i.e., computer processors, telecommunication equipment), paper, construction, and demolition debris (asphalt, wood, cement, and drywall), plastic, used textiles, used tires, and yard trimmings.

In addition to the RMDZ Revolving Loan program, the City of Los Angeles RMDZ program offers a wide range of support mechanisms applicable to manufacturers that use secondary materials including tax incentives, low-interest financing, 35 percent electric rate reduction, work source centers, employment training and business assistance.

[9] CIWMB was the predecessor agency to CalRecycle.

Additional financial incentives may include Industrial Development Bond Financing; Small Business Financing; and State Enterprise Zone, Federal Empowerment Zone, and Renewal Community tax incentives.

Data are not available for purposes of quantifying diversion for this program. Materials targeted are already accounted for in other policies and programs in the material flow model.

Targeted generators include candidates for recycling market development projects.

5.2 Environmentally Preferred Purchasing Ordinance

This policy focuses on implementation of the Environmentally Preferred (EPP) Purchasing Ordinance that was adopted by the City Council on June 12, 2009.[10] The policy directs City Departments that need supplies to always purchase the available and appropriate product choices that are environmentally friendly, rather than choosing products based solely on a low-bid criteria. The goal of this policy is to select products that are recyclable and/or less toxic, and therefore minimize negative environmental impacts and reduce the amount of waste generated by the City's activities. In implementing this policy, the City conducts outreach and education of EPP principles to all City staff, especially those on the purchasing staff or making the decisions on purchases. The policy is intended to be broad enough so that even in atypical situations, City staff will be able to apply the EPP principles to make informed decisions.

Data are not available for purposes of quantifying diversion for this policy. Materials targeted are already accounted for in other policies and programs in the material flow model.

Targeted generators include City staff making purchasing decisions.

[10] City of Los Angeles Environmentally Preferred Purchasing Ordinance http://www.environmentla.org/pdf/2010/EPP_Ordinance.pdf (accessed August 30, 2013)

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Appendix B

Material Flow Model and Generation Projections

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Section 1 Overview

1.1 Purpose of the Model

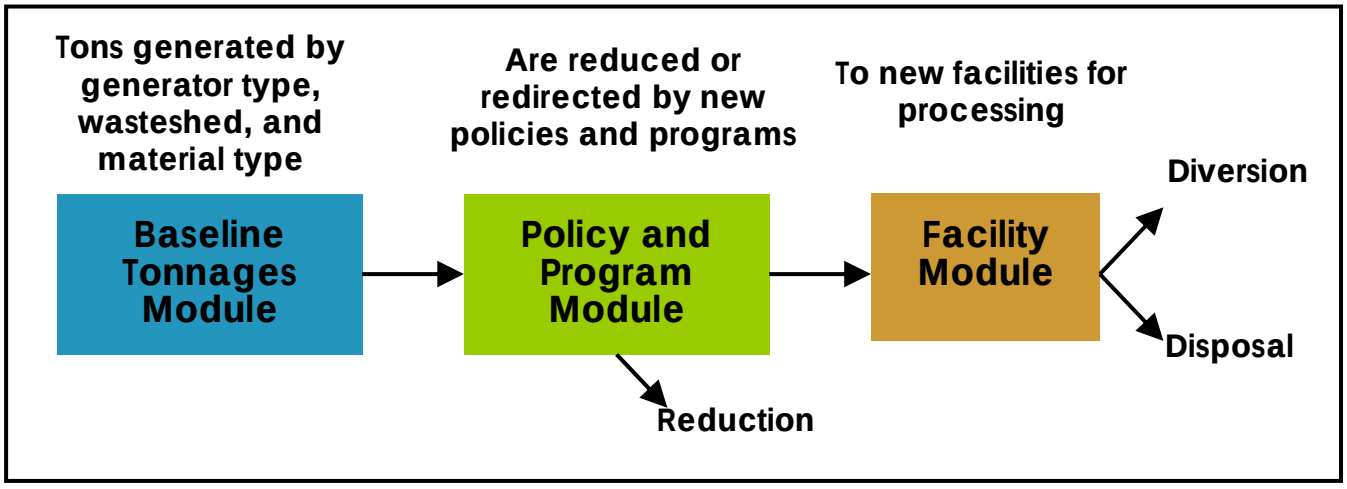
The Los Angeles Zero Waste Planning Model was developed to evaluate the effects of different Zero Waste strategies on disposal and diversion throughout the City of Los Angeles (City). The model includes a material flow analysis and generation projections that are critical for evaluating and selecting programs to be included in the Solid Waste Integrated Resources Plan (SWIRP) *Phase 2 Policy, Program, and Facility Plan*.

The spreadsheet-based model tracks the flow of materials in the waste stream as they originate from four generator types[1] in the City's six wastesheds;[2] are processed through various types of facilities; and are directed to commodity markets, transformation facilities, or final disposal in landfills. The model allows a trained user to program in diverse scenarios using a baseline case of the discarded materials; the expected effects of policies and programs on material generation and destinations; and the expected effects of various types of processing facilities and technologies on the discarded materials. Based on these inputs, the model calculates the overall disposal and diversion results.

1.2 Model Structure

The model is built in three separate modules in order to facilitate evaluation of the waste stream at different points in the material management process. The modules include the Baseline Tonnages Module, the Policy and Program Module, and the Facility Module. The user may review the inputs, revise the assumptions, and view the results in any individual module. Figure 1 presents an overview of the structure of the model.

Figure 1: Structure of the City of Los Angeles Zero Waste Planning Model



[1] Residential curbside, multi-family, commercial, and construction and demolition (C&D) sites. Residential curbside customers include generators in single-family residences and some multi-family residences, primarily with four units or less, serviced by the Bureau of Sanitation (LASAN).

[2] East Valley, Harbor, North Central, South LA, Western, and West Valley.

The Baseline Tonnages Module reports the amount of materials generated in the City in 2010 and projects the generation of discarded materials through 2030. For each year, the model estimates the tons of material disposed by four different types of generators: residential curbside, multi-family, commercial, and construction and demolition (C&D) sites. The materials are modeled based on the method of collection (i.e., whether they are commercially hauled, City-hauled, or self-hauled) and whether they are disposed or diverted. Finally, the tons are divided among the six wastesheds in the City (based on population and employment): East Valley, Harbor, North Central, South LA, Western, and West Valley. A map of the City's wastesheds is provided in Figure 2.

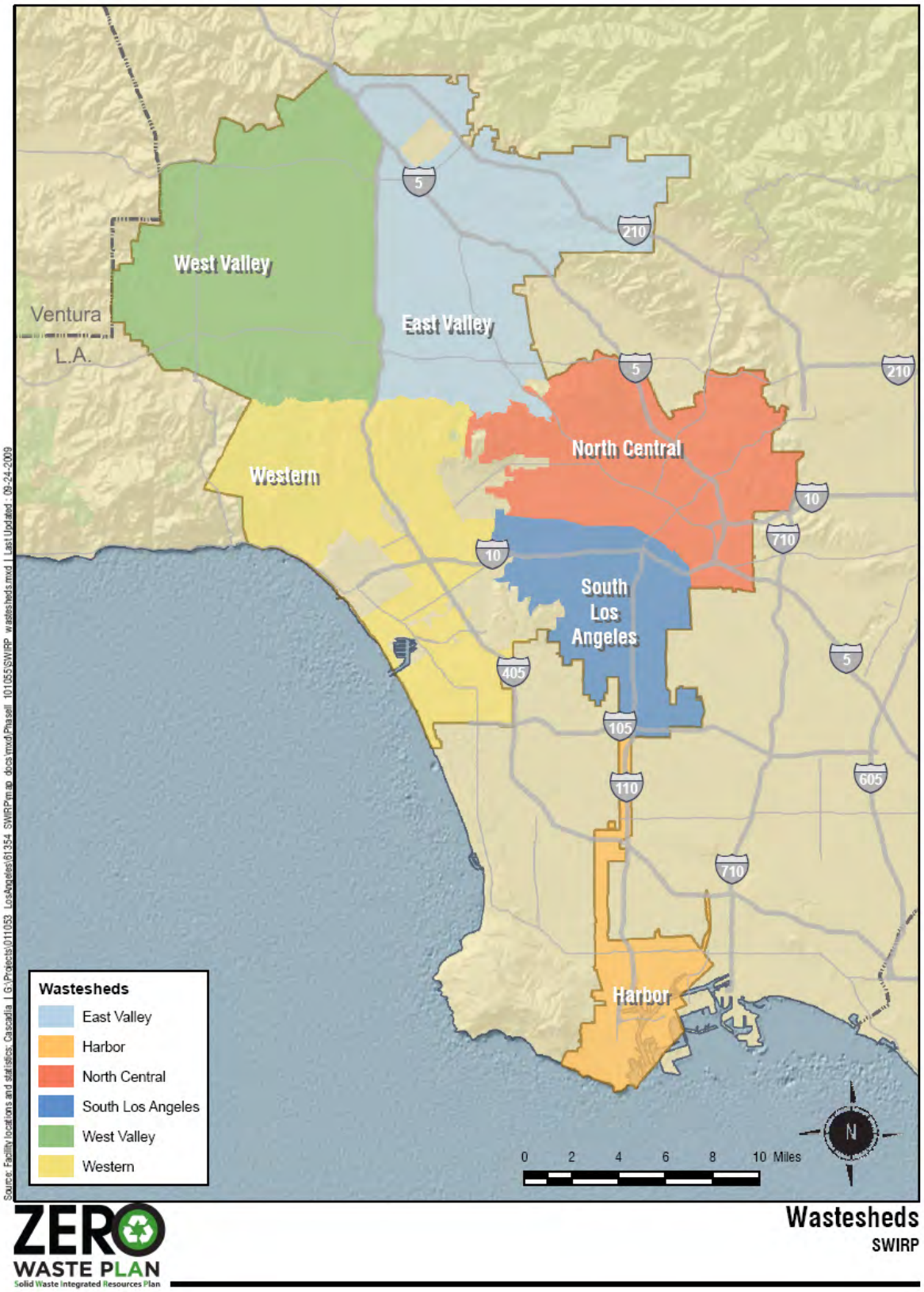
The Policy and Program Module reports the resulting tons of material in each generator sector after the implementation of each policy or program. The module also reports the change in tons of each material type sent to disposal, as well as the overall diversion rate for the generator.

In the Policy and Program Module, the user selects a year (within the planning period through 2030) and one of the four generator types to evaluate. Based on the selection, the Policy and Program Module references the appropriate data from the Baseline Tonnages Module. Next, the user selects policies and programs to apply to the generator sector in each of the six wastesheds. Each policy or program moves tons of material from one output stream to another. The user can view and adjust the underlying participation and efficiency assumptions for each policy or program.

The Facility Module allows the user to direct the tons from each generator sector to various types of facilities. The user can select a waste stream for a given year and has the option to model the processing of the materials at an initial facility. The user can also send the outputs from the first facility to additional facilities for subsequent processing to be modeled. The results of the output are based on facility profiles that can be viewed and modified in the module.

Sections 2 through 4 of this appendix describe the three modules in greater detail. Each section explains the inputs, user steps, outputs, and data sources for the relevant module. The Baseline Tonnages Module section also includes the generation, disposal, and diversion projections for the planning period through 2030.

Figure 2: Map of the City's Six Wastesheds



Section 2 Baseline Tonnages Module

This section describes the Baseline Tonnages Module, the first module of the City of Los Angeles Zero Waste Planning Model. It documents the methodology for estimating the baseline tonnages, composition, and projections in the module and reports the projected baseline tonnages in each waste stream for 2010 through 2030.

2.1 Using the Baseline Tonnages Module

In the Baseline Tonnages Module, the user can view the tons of each material type that flow out of a generator sector in a given waste stream from 2010 through 2030. For any given year, the user can view the tons that originate from residential curbside, multi-family, commercial, and C&D generators. The tons disposed by each generator type are tracked in the model based on: 1) the method of collection, (i.e., commercially hauled, City-hauled, or self-hauled); and 2) whether they are disposed or diverted.

The user can modify the data in this module as updated information becomes available. However, because of the level of detail required, it is recommended that the user avoid changing the data in this module unless the user has access to the fully detailed and accurate information.

The user can view the data for each generator sector citywide, or evaluate a specific wasteshed. Overall tonnage data, as well as detailed tonnage data within the 41 different material types, are provided as well. Table 1 provides a list of the 41 material types included in the model.

Table 1: Materials Tracked by the City of Los Angeles Zero Waste Planning Model

Cardboard, Paper Bags	Major Appliances	Asphalt Paving
Newspaper	Plastic #2 Containers	Asphalt Roofing
Mixed waste paper	Plastic #1 Containers	Lumber
Compostable paper	Other Containers	Gypsum Board
Remainder/Composite Paper	Expanded polystyrene	Rock, Soil, and Fines
Glass containers	Recyclable film	Remainder/Composite C&D
Flat Glass	Mixed plastic reusable/recyclable	HHW (Household Hazardous Waste)
Remainder/Composite Glass	Mixed plastic non reuse/recycle	Ash
Tin/Steel Cans	Food	Sewage Solids
Other Ferrous	Green Waste	Bulky Items
Aluminum Cans	Manures	Tires
Other Non-Ferrous	Textiles	Mixed Residue
Remainder/Composite Metal	Remainder/Composite Organic	Remainder/Composite Special
Electronics	Concrete	

2.2 Methodology

The following data sets were used in the analysis; at the time of the model development, they represented the best known information upon which to calculate the disposal and diversion estimates.

Documented Disposal

- Total 2010 solid waste disposed:[3] 2,849,237 tons
- Total 2010 residential curbside solid waste disposed:[4] 870,286 tons

Estimated Disposal

- Average amount of solid waste disposed per multi-family unit:[5] 0.9303 tons per multi-family unit per year
- Average amount of solid waste disposed per employee annually for each of nine industry groups,[6] excluding the construction industry: refer to Table 2
- Total self-hauled solid waste in 2006[7] and adjusted for 2010 disposal levels: 111,499 tons

Documented Diversion

- Total 2010 residential curbside yard trimmings composted or beneficially used:[8] 457,302 tons
- Total 2010 residential curbside recycling:[9] 209,535 tons
- Total 2010 multi-family residential recycling:[10] 14,366 tons

Estimated Diversion

- Total 2010 citywide diversion:[11] 7,223,809 tons
- Total commercial yard trimmings composted or beneficially used during 2006[12] and adjusted for 2010 diversion levels: 205,713 tons
- Total 2000 commercial recycling:[13] 2,260,000 tons

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[3] California Department of Resources Recycling and Recovery (CalRecycle), Disposal Reporting System.

[4] City of Los Angeles Bureau of Sanitation (LASAN),"Sanitation Refuse and Transfer Tonnage Calendar Year 2010."

[5] Department of Public Works, LASAN, Solid Resources Citywide Recycling Division, *City of Los Angeles Waste Characterization and Quantification Study Year 2000*, July 2002.

[6] Industry groups correspond to all of the top-level designations in the Standard Industrial Classification (SIC) system.

[7] Calculated from facility surveys in Attachments C-1 and C-2 of Appendix C, page C-1-1 and page C-2-1.

[8] Based on information from City database "Sanitation Commodities 2010."

[9] As reported by LASAN.

[10] As reported by LASAN.

[11] Derived from 2010 CalRecycle Senate Bill 1016 Per Capita Disposal Equivalent Draft Calculator.

[12] Documented in the facility surveys in Attachment C-5 of Appendix C, page C-5-1.

[13] City of Los Angeles LASAN, *City of Los Angeles Year 2000 AB 939 Annual Report*, August 2001.

- Total C&D materials recycled or beneficially used during 2006,[14] adjusted for 2010 diversion levels and estimated based on tons delivered to City-certified C&D facilities in 2010: 2,202,282 tons
- Total self-hauled yard trimmings composted or beneficially used during 2006:[15] 251,962 tons

Table 2 shows the average amount of materials disposed per employee annually for each of nine industry groups, corresponding to the industry groupings identified by the Standard Industrial Classification (SIC) system, excluding the construction industry.[16]

Table 2: Average Disposal per Employee by Industry Group

SIC Industry Group	Tons Disposed per Employee
Agriculture	4.49
Mining	0.59
Manufacturing	1.05
Transportation, Communication, and Utilities	0.54
Wholesale	1.58
Retail	1.91
Finance, Insurance, Real Estate	0.50
Services	0.61
Government	0.68

Source: CalRecycle *Statewide Waste Characterization Study,* December 2004

Population, housing, and employment figures were used to estimate the growth in disposal and recycling of discarded materials. More detailed figures were obtained from the Southern California Association of Governments (SCAG) at the level of individual Transportation Analysis Zones (TAZs);[17] these figures were aggregated to areas corresponding to the six wastesheds using Geographic Information System (GIS) maps.

[14] Documented in the facility surveys in Attachment C-4 of Appendix C, page C-4-1.

[15] Documented in the facility surveys in Attachment C-5 of Appendix C, page C-5-1.

[16] The construction industry group was not included, since nearly all discarded materials from that industry group appear as "construction and demolition" materials, which were quantified separately.

[17] SCAG, *Integrated Growth Forecast by Transportation Analysis Zone*, 2010.

2.3 Disposal: Solid Waste

This section summarizes the sources and methodology for estimating the quantity, projections, and composition of residential and commercial solid waste, as well as C&D materials. The results of the 2010-2030 projections are also included.

2.3.1 Residential

2.3.1.1 Quantities

The citywide baseline estimate of City-hauled residential curbside disposal for the year 2010 was taken to be the sum of reported residential curbside disposed tons, as reflected in the City's database.

The citywide baseline estimate of self-hauled residential curbside disposal for the year 2010 was estimated by taking the ratio of residential self-haul to total self-haul, as calculated in the CalRecycle *Statewide Waste Characterization Study,* December 2004, to the total amount of self-hauled solid waste from the City of Los Angeles in 2010.[18] This calculation can be expressed by the equation:

City residential self-hauled tons = City total self-hauled tons x (Statewide residential self-hauled tons/ Statewide total self-hauled tons)

It was assumed that there is no multi-family self-haul; therefore, all of the residential self-haul tons were allocated to the residential curbside disposal.

The citywide baseline estimate of the multi-family commercially-hauled disposal was calculated for the year 2000 using the per-household disposal rate, multiplied by the number of occupied multi-family units that existed citywide in 2000. A disposal figure for the year 2010 was then estimated by projecting the 2000 estimate proportionate to the growth in multi-family population between 2000 and 2010.

The multi-family population was estimated as the total residential population multiplied by the ratio of multi-family households to all households. Similarly, the residential curbside population was estimated as the total population multiplied by the ratio of residential curbside households to all households.

Residential curbside and multi-family tons, associated with each of the City's six wastesheds, for each year were calculated based on the fraction of the City's total residential curbside or multi-family population that is projected to reside within each wasteshed based on data from SCAG.

2.3.1.2 Projections

For the years 2010 through 2030, residential curbside and multi-family disposal were projected to increase or decrease at the same per capita rate as the increases or decreases in residential curbside and multi-family population, based on the projections of population from SCAG.

[18] Residential self-hauled solid waste represents 18.9 percent total self-hauled solid waste statewide according to the CalRecycle *Statewide Waste Characterization Study,* December 2004, Table ES-1, page 3.

In the absence of per capita disposal projection estimates, the most feasible approach was to assume a constant per capita disposal rate. This per capita disposal rate is multiplied by the residential curbside and multi-family population projections to calculate the total disposal for each sector. Note that for the residential curbside sector, solid waste disposal is projected to decline beginning in 2025. This is because the population projections provided by SCAG predict a decline in single-family households in certain areas of Los Angeles beginning in 2025.

2.3.1.3 Composition

For residential curbside and multi-family sectors, it was assumed that the composition of disposed waste remains constant between 2010 and 2030. Only the quantity of each material type is projected to change during this period of time. The composition profiles of City-hauled residential curbside waste and multi-family waste were obtained from findings reported in the *City of Los Angeles Waste Characterization and Quantification Study Year 2000*, July 2002. The composition profiles of self-hauled solid waste from residential curbside customers were based on results from the CalRecycle *Statewide Waste Characterization Study,* December 2004.

2.3.2 Commercial

2.3.2.1 Quantities

Estimates from the *City of Los Angeles Waste Characterization and Quantification Study Year 2000*, July 2002, reflecting annual per-employee disposal rates for each of 39 industry groups,[19] were aggregated to match the nine industry groups described in employment figures provided by SCAG. The nine aggregated industry groups corresponded to the major divisions of the SIC system and include the following:

1. Agriculture
2. Mining
3. Manufacturing
4. Transportation, Communication, and Utilities
5. Wholesale
6. Retail
7. Finance, Insurance, Real Estate
8. Services
9. Government

The construction industry group was not included, since nearly all discarded materials from that industry group appear as "construction and demolition" materials, which were quantified separately.

For each year, an estimate of commercially-hauled disposal for each of the nine remaining industry groups in each of the six wastesheds was calculated by multiplying the per-employee disposal figure for the group by

[19] Industry groups were defined based on SIC codes. For each industry group, disposal composition data and per-employee disposal quantity data were obtained from the CalRecycle *Statewide Waste Characterization Study,* December 2004; *City of Los Angeles Waste Characterization and Quantification Study Year 2000,* July 2002; or the CalRecycle *Waste Disposal and Diversion Findings for Selected Industry Groups,* June 2006.

the estimated number of employees in the industry group of the wasteshed. The total citywide commercially-hauled solid waste disposed annually was calculated as the sum of solid waste disposed for each industry group citywide.

2.3.2.2 Projections

For the years 2010 through 2030, commercial disposal was projected to increase or decrease at the same rate as the increase or decrease in the number of employees in each industry group, based on the projections in employment from SCAG.

2.3.2.3 Composition

The composition of commercially-hauled solid waste was projected through a process that relied on a composition profile of discarded materials from each of 39 industry groups that collectively represent the population of employees working within the City, excluding the construction industry. The composition profile and average tons of disposed solid waste per employee per year was determined for each industry group.[20] The basis of the projected changes in commercial solid waste composition, between 2010 and 2030, include the number of employees in each industry group and for each wasteshed.

The citywide baseline estimate of self-hauled commercial disposal was calculated as a fraction of the total self-hauled solid waste in 2010. The total citywide commercial self-hauled solid waste was calculated based on the following equation:[21]

City commercial self-hauled tons = City total self-hauled tons x (Statewide commercial self-hauled tons/ Statewide total self-hauled tons)

The total self-hauled commercial disposal amount was segregated into the nine industry groups based on the percentage of commercially-hauled commercial disposal among the industry groups. Within each industry group, the self-hauled commercial disposal tons were separated into the six wastesheds, based on the estimated number of employees.

The composition of self-hauled commercial solid waste was calculated using the results of the CalRecycle *Statewide Waste Characterization Study,* December 2004. CalRecycle's waste composition profile for self-hauled commercial solid waste was applied to the overall amount of self-hauled commercial disposal described above.

[20] Department of Public Works, LASAN, Solid Resources Citywide Recycling Division, *City of Los Angeles Waste Characterization and Quantification Study Year 2000,* July 2002.

[21] Commercial self-hauled solid waste represents 81.1 percent total self-hauled solid waste statewide according to the CalRecycle *Statewide Waste Characterization Study,* December 2004, Table ES-1, page 3.

2.3.3 Construction & Demolition

2.3.3.1 Quantities

For 2010, the amount of C&D materials disposed were calculated by subtracting the figures for residential and commercial solid waste from the total tons of disposed solid waste during that year. This calculation can be expressed by the following equation:

C&D disposed tons = Total disposed tons – (Residential disposed tons + Commercial disposed tons)

Those tons were further divided between commercially-hauled C&D and self-hauled C&D, based on proportions that were derived from surveys of 17 transfer stations, 15 solid waste landfills, and eight C&D and inert landfills conducted in 2006. The detailed information for these calculations is available in the transfer station and landfill facility surveys included in Attachments C-1 and C-2 in *Appendix C Infrastructure and Material Flows*, beginning on page C-1-1.

2.3.3.2 Projections

For the years 2010 through 2030, the increases or decreases in disposed C&D materials were projected using the same rate of increase or decrease as the combined residential and commercial projections.

2.3.3.3 Composition

The composition of disposed C&D material was assumed to remain constant between 2010 and 2030, but the quantity of each material is expected to increase in proportion to the projections of the total disposed C&D materials. The composition of C&D materials were calculated based on the findings reported in CalRecycle's C&D waste characterization study.[22]

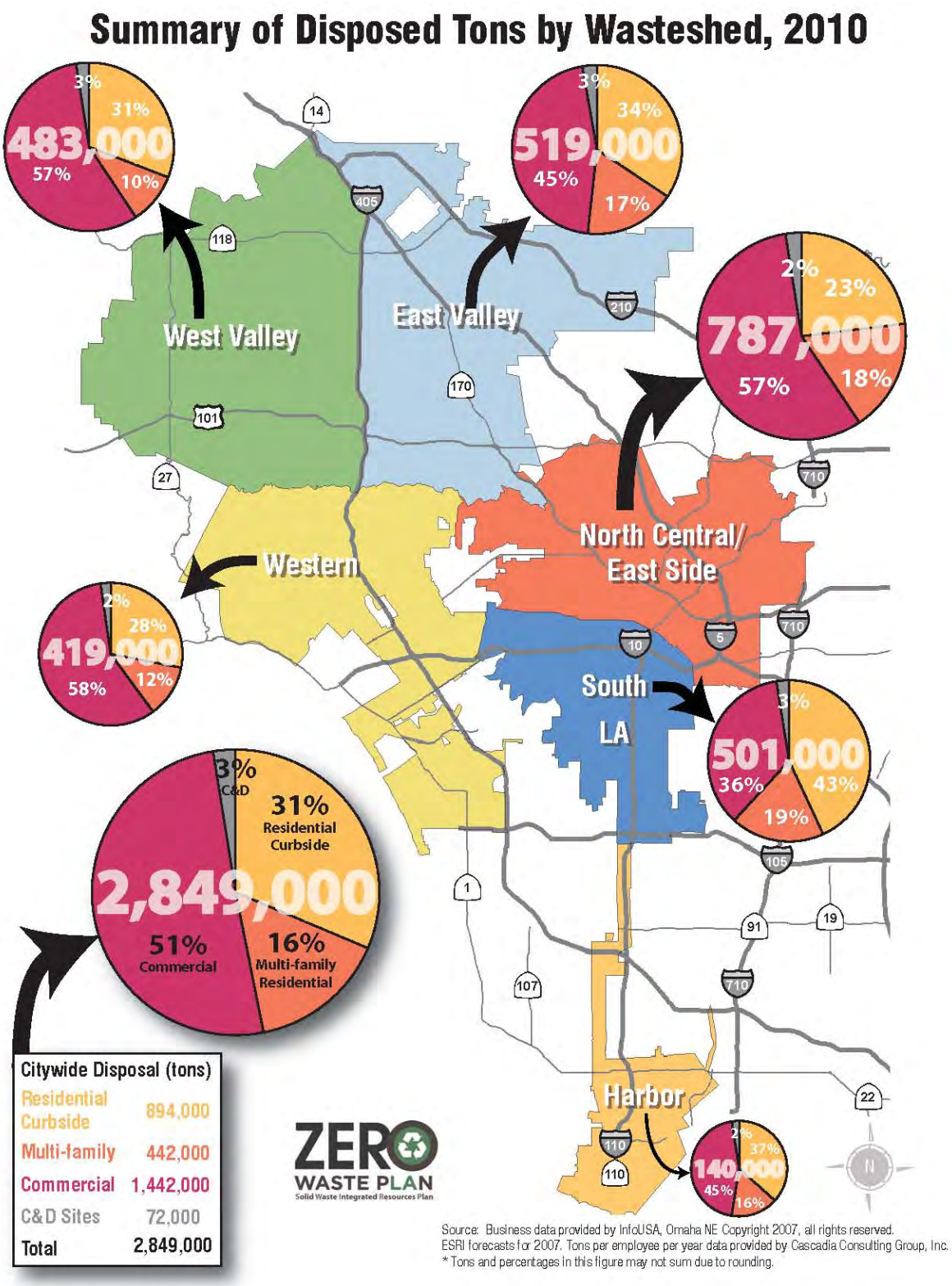
2.3.4 Projected Disposal Quantities by Sector

Based on the projection model described in Section 2, and assuming a continuation of the current level of diversion and waste reduction, the overall disposed solid waste from the City is expected to increase at an average rate of 1 percent annually between 2010 and 2030. The amount of disposed commercial solid waste is expected to increase at a higher rate than the amount of residential solid waste, which is driven largely by an expected increase in the number of service-sector employees.

A summary of the disposed tons by sector and wasteshed in 2010 is shown in Figure 3 and Table 3. The projected disposal quantities for each generator sector – residential curbside, multi-family, commercial, and C&D – are shown in Figure 4 and Table 4.

[22] CalRecycle *Detailed Characterization of Construction and Demolition Waste*, June 2006.

Figure 3: Summary of Disposed Tons by Wasteshed in 2010



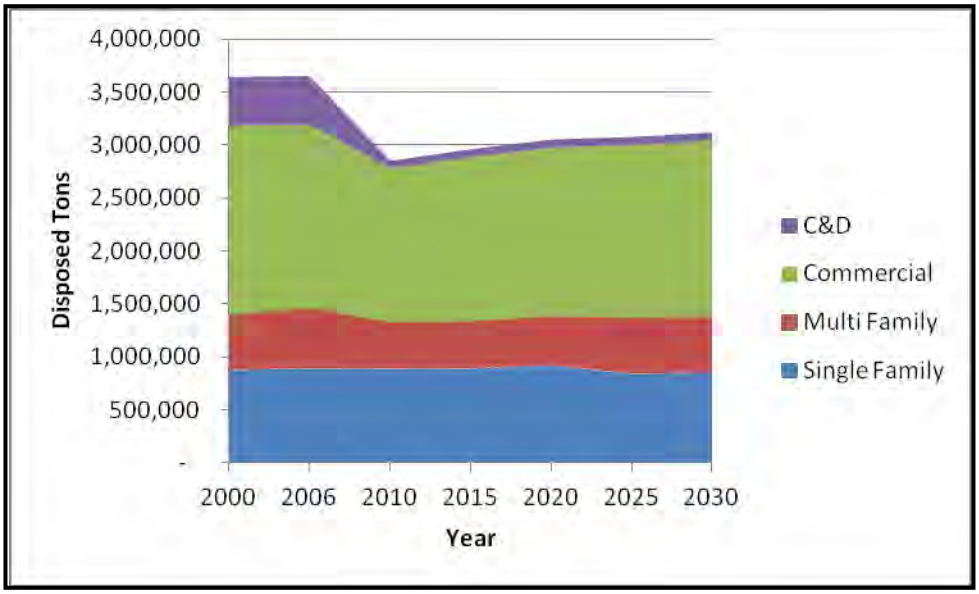
Source: City of Los Angeles Generation Projection Model, January 2013

Table 3: Annual Disposed Tons by Wasteshed and Sector (2010)

	Residential Curbside	Multi Family	Commercial	C&D	Totals
East Valley	178,465	90,254	236,253	14,408	**519,379**
Harbor	51,318	22,321	63,097	3,470	**140,205**
North Central	181,512	138,094	447,502	19,634	**786,742**
South Los Angeles	215,769	93,877	178,294	12,772	**500,712**
West Valley	149,179	47,422	274,385	12,105	**483,090**
Western	117,526	49,781	242,261	9,539	**419,107**
Totals	**893,769**	**441,749**	**1,441,792**	**71,928**	**2,849,237**

Source: City of Los Angeles Generation Projection Model, January 2013.
Totals may not sum due to rounding.

Figure 4: Anticipated Solid Waste Disposal, by Sector, Projected through 2030



Source: City of Los Angeles Generation Projection Model, January 2013

Table 4: Projected Annual Solid Waste Disposal by Generator Sector (Tons)

Year	Residential curbside	Multi-family	Commercial	C&D	Total
2010	893,771	441,749	1,441,790	71,927	2,849,237
2013	895,643	444,497	1,501,553	73,565	2,915,258
2020	924,252	465,415	1,584,306	76,977	3,050,949
2025	847,235	530,171	1,621,493	77,643	3,076,542
2030	856,944	537,190	1,649,062	78,741	3,121,937

Source: City of Los Angeles Generation Projection Model, January 2013. Tonnage projections based on SCAG population and employment projections, *Integrated Growth Forecast by Transportation Analysis Zone*, 2010.
Totals may not sum due to rounding.

2.3.5 Projected Disposal Composition by Sector

The solid waste composition was estimated for each generator sector and each wasteshed for the years 2010 and 2030. The differences in composition estimates between the two years are predominantly influenced by the following:

- Changes in residential population
- Changes in the population of residential curbside and multi-family households
- Changes in employment within each industry group

The original sources for the waste composition data that is included in the model were:

- Department of Public Works, LASAN, Solid Resources Citywide Recycling Division, *City of Los Angeles Waste Characterization and Quantification Study Year 2000,* July 2002
- CalRecycle, *Statewide Waste Characterization Study,* December 2004
- CalRecycle, *Waste Disposal and Diversion Findings for Selected Industry Groups,* June 2006
- CalRecycle, *Detailed Characterization of Construction and Demolition Waste*, June 2006

Table 5: 2010 Projected Solid Waste Composition, by Sector and Material Category

Category	Residential curbside		Multi-family		Commercial		C&D		Overall	
	Tons	Percent	Tons	Percent	Tons	Percent	Tons	Percent	Tons	Percent
Paper	194,599	21.8	142,742	32.3	499,782	34.7	2,244	3.1	839,367	29.5
Glass	18,445	2.1	24,364	5.5	30,298	2.1	885	1.2	73,992	2.6
Metal	38,550	4.3	17,367	3.9	54,760	3.8	4,063	5.6	114,741	4.0
Electronics	4,129	0.5	7,743	1.8	2,838	0.2	169	0.2	14,879	0.5
Plastic	86,257	9.7	42,677	9.7	166,124	11.5	567	0.8	295,624	10.4
Organics	400,684	44.8	179,778	40.7	525,578	36.5	2,142	3.0	1,108,182	38.9
C&D	91,367	10.2	9,533	2.2	131,213	9.1	60,841	84.6	292,954	10.3
Special[1]	59,738	6.7	17,545	4.0	31,197	2.2	1,017	1.4	109,496	3.8
Total	**893,769**	**100.0**	**441,749**	**100.0**	**1,441,790**	**100.0**	**71,927**	**100.0**	**2,849,235**	**100.0**

Source: City of Los Angeles Generation Projection Model, January 2013
[1]The category Special Waste includes household hazardous waste, ash, bulky items, tires, and mixed residue.
Totals may not sum due to rounding.

Table 6: 2030 Projected Solid Waste Composition, by Sector and Material Category

Category	Residential curbside		Multi-family		Commercial		C&D		Overall	
	Tons	Percent	Tons	Percent	Tons	Percent	Tons	Percent	Tons	Percent
Paper	186,309	21.7	173,582	32.3	567,331	34.4	2,456	3.1	929,678	29.8
Glass	17,678	2.1	29,628	5.5	34,426	2.1	968	1.2	82,700	2.6
Metal	37,008	4.3	21,119	3.9	62,231	3.8	4,448	5.6	124,807	4.0
Electronics	3,975	0.5	9,416	1.8	3,238	0.2	185	0.2	16,814	0.5
Plastic	82,608	9.6	51,897	9.7	187,455	11.4	621	0.8	322,581	10.3
Organics	383,628	44.8	218,620	40.7	610,266	37.0	2,345	3.0	1,214,860	38.9
C&D	88,258	10.3	11,592	2.2	148,855	9.0	66,605	84.6	315,310	10.1
Special	57,480	6.7	21,335	4.0	35,259	2.1	1,113	1.4	115,187	3.7
Total	**856,944**	**100.0**	**537,190**	**100.0**	**1,649,062**	**100.0**	**78,741**	**100.0**	**3,121,937**	**100.0**

Source: City of Los Angeles Generation Projection Model, January 2013
Totals may not sum due to rounding.

2.4 Diversion: Yard Trimmings, Recyclable Materials, and C&D

The following section describes the diversion estimates in the Baseline Tonnages Module. The materials diverted include the following categories: yard trimmings, recyclable materials, and diverted C&D.

2.4.1 Yard Trimmings

The sources and methodology for estimating the quantity, composition, and projections of residential and commercial yard trimmings are described in this section.

2.4.1.1 Residential

For 2010, the amount of City-hauled yard trimmings from residential curbside sources was estimated based on wasteshed-specific data provided by LASAN. For more details on the methodology, refer to *Appendix C Infrastructure and Material Flows*, page C-36.

The total amount of self-hauled yard trimmings was estimated based on surveys of 17 transfer stations, 15 solid waste landfills, and eight yard trimmings processors conducted in 2006. For more detailed results from the facility surveys, refer to Attachments C-1, C-2 and C-5 of *Appendix C Infrastructure and Material Flows*. Self-hauled yard trimmings originating from residential generators were split out from the total amount of self-hauled yard trimmings based on the ratio of residential to commercial yard trimmings in the waste stream from the *City of Los Angeles Waste Characterization and Quantification Study Year 2000,* July 2002. It was assumed that all residential self-hauled yard trimmings come from residential curbside households; no self-hauled yard trimmings were assigned to multi-family households.

The amount of City-hauled and self-hauled yard trimmings from residential curbside generators was calculated based on the 2006 figures for self-haul and 2010 figures for residential curbside, and the growth in subsequent years was projected at the same rate as overall residential curbside disposed solid waste, as described earlier in this report.

2.4.1.2 Commercial

For the year 2010, the amount of yard trimmings that originated in the commercial sector and was hauled by commercial haulers was estimated based on facility surveys of 17 transfer stations, 15 solid waste landfills, and eight yard trimmings processors conducted in 2006. For more details on the methodology, refer to Section 3.3 "Yard Trimmings Composting and Beneficial Use" in *Appendix C Infrastructure and Material Flows*, page C-34.

The total amount of self-hauled yard trimmings were estimated based on the facility surveys Attachments C-1, C-2, and C-5 in *Appendix C Infrastructure and Material Flows*. Self-hauled yard trimmings from commercial generators were derived from the total amount of self-hauled yard trimmings based on the ratio of residential to commercial yard trimmings in the waste stream from the *City of Los Angeles Waste Characterization and Quantification Study Year 2000,* July 2002.

The amount of commercial yard trimmings was calculated based on the 2006 surveys. The projected growth in subsequent years, due to new commercial development, was projected at the same rate as overall commercial disposed waste.

2.4.1.3 Projected Diverted Yard Trimmings by Sector

Assuming a continuation of the current level of diversion and waste reduction, the overall quantity of composted or beneficially used yard trimmings from the City is expected to increase by nearly 26,000 tons between 2010 and 2030.[23] Note that for the residential curbside sector, yard trimmings diversion is projected to decline beginning in 2025. This is because the population projections provided by SCAG predict a decline in single-family households across Los Angeles beginning in 2025.

The projected quantities of diverted (i.e., composted or beneficially used) yard trimmings from residential curbside and commercial sectors are shown in Table 7, with estimates provided in planning-year increments.

Table 7: Projected Annual Diverted Yard Trimmings Quantities by Sector (Tons)

Year	Residential curbside	Commercial	Total
2010	629,320	205,713	835,033
2013	650,266	213,614	863,880
2020	670,951	226,098	897,049
2025	619,557	232,053	851,610
2030	624,106	236,602	860,708

Source: City of Los Angeles Generation Projection Model, January 2013

2.4.2 Recyclable Materials

This section summarizes the sources and methodology for estimating the quantity, composition, and projections of residential and commercial recycling.

2.4.2.1 Residential

For 2010, the amount of curbside recycling from the residential curbside sector and the multi-family residential sector serviced by LASAN recycling contractors was documented based on wasteshed-specific data provided by LASAN. For more details on the methodology, refer to Section 3.1 "Commodity Recycling" in *Appendix C Infrastructure and Material Flows*, page C-17.

The amount of self-hauled recycling was estimated based on the amount of California Redemption Value (CRV) materials recycled in 2006 from data provided by the Division of Recycling at the California Department of Conservation (now part of CalRecycle). These 130,056 tons of CRV materials were assigned to the residential self-hauled recycling stream. It was assumed that none of this self-hauled recycling originated from multi-family generators.

[23] Based on projections using SCAG, *Integrated Growth Forecast by Transportation Analysis Zone,* 2010.

The amounts of City-hauled and self-hauled residential curbside recycling were calculated based on the 2006 and 2010 figures. The increase or decrease in subsequent years was projected at the same rate as overall residential curbside disposed solid waste. The amount of multi-family residential recycling in 2010 was provided by LASAN and its growth in subsequent years was projected at the same rate as overall multi-family disposed solid waste.

For residential curbside and multi-family sectors, it was assumed that the composition of recycling will be constant between 2010 and 2030; only the quantity in each material type is projected to change over this time span. The composition of City-hauled recycling from the residential curbside sector was estimated based on data provided by LASAN. The data included quantities of individual materials collected in each wasteshed's curbside recycling in 2010.

2.4.2.2 Commercial

For 2000, the amount of recycling that originated from the commercial sector was estimated based on the *City of Los Angeles Year 2000 AB 939 Report,* August 2001. For 2010, the estimated quantity of recyclable materials was calculated based on the assumption that it increased at the same rate as the commercial disposed solid waste. For subsequent years, the amount of commercial recycling was estimated based on the 2010 figure, with an assumption that the growth in commercial recycling will be the same as the growth of the commercial disposed solid waste. For more details on the methodology, refer to Section 3.1.3, "Overview of Commercial Recycling," in *Appendix C Infrastructure and Material Flows*, page C-21.

2.4.2.3 Projected Recycling by Sector

Assuming the current level of diversion and waste reduction continues, the overall quantity of recycling from the City is expected to increase by approximately 340,000 tons between 2010 and 2030. Commercial recycling is expected to grow by 328,000 tons, while residential recycling is expected to grow by 12,500 tons. Note that for the residential curbside sector, recycling is projected to decline beginning in 2025. This is because the population projections provided by SCAG predict a decline in single-family households in certain areas of Los Angeles beginning in 2025.

The projected recycling quantities for the residential curbside, multi-family, and commercial sectors are shown in Table 8, with estimates provided in planning year increments.

Table 8: Projected Annual Recycling Quantities by Sector (Tons)

Year	Residential curbside[1]	Multi-family	Commercial	Total
2010	339,591	14,366	2,260,000	2,613,957
2013	361,955	14,606	2,352,203	2,728,764
2020	373,520	15,317	2,488,242	2,877,079
2025	346,376	17,216	2,543,723	2,907,315
2030	348,992	17,447	2,587,974	2,954,412

Source: City of Los Angeles Generation Projection Model, January 2013
[1]Includes City-hauled recycling and self-hauled recycling from the residential curbside sector.

2.4.3 Diverted Construction and Demolition Materials

This section summarizes the sources and methodology for estimating the quantity, projections, and composition of diverted C&D materials.

2.4.3.1 Quantities

For 2006, the amount of C&D materials hauled and diverted by commercial haulers was estimated based on surveys of 17 transfer stations and 15 solid waste landfills. For more details on the methodology, refer to Section 3.2 "C&D Recycling and Beneficial Use" of *Appendix C Infrastructure and Material Flows*, page C-24. For purposes of modeling, the diverted C&D materials documented in Appendix C were adjusted to reflect additional materials recovered through C&D processing. However, C&D tons sent to inert landfills were not included in the model.

The total tons of diverted C&D materials were divided between the commercially-hauled and self-hauled sectors, based on proportions that were estimated from data reported by the transfer stations and landfills surveyed; refer to Attachments C-1 and C-2 of *Appendix C Infrastructure and Material Flows* beginning on page C-1-1.

2.4.3.2 Projections

The amount of commercial C&D materials diverted was calculated based on 2010 figures. The growth in subsequent years was estimated to be the same rate as the projected growth for overall C&D materials disposed.[24]

Note that the City's mandatory C&D ordinance was adopted by the City Council on December 17, 2010. All mixed C&D waste generated within City limits must be taken to City certified C&D waste processors.[25] The model takes this program into consideration in the diversion projections.

2.4.3.3 Composition

The composition of disposed C&D materials was assumed to remain constant between 2010 and 2030. The quantity of each material is expected to increase in proportion to the projected amount of C&D materials disposed. The C&D waste composition was calculated based on data from CalRecycle.[26]

2.4.3.4 Projected Diverted C&D by Sector

Assuming the current level of diversion and waste reduction continues, the quantity of C&D materials diverted within the City is expected to increase by more than 248,000 tons between 2010 and 2030. The projected diverted quantities are shown in Table 9, with estimates provided in planning year increments.

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[24] C&D materials are expected to increase based on growth population and new development projections identified in SCAG, *Integrated Growth Forecast by Transportation Analysis Zone*, 2010.

[25] Link to C&D ordinance, http://san.lacity.org/solid_resources/recycling/c&d.htm (accessed October 1, 2013).

[26] CalRecycle *Detailed Characterization of Construction and Demolition Waste,* June 2006.

Table 9: Projected Annual Diverted C&D Material Quantities (Tons)

Year	Total
2010	2,623,400[27]
2013	2,683,292
2020	2,809,048
2025	2,833,340
2030	2,871,920

Source: City of Los Angeles Generation Projection Model, January 2013

2.5 Total Generation

This section summarizes the total generation by sector. It combines materials from disposal, yard trimmings, recycling, and C&D. The total generation is expected to grow by over one million tons between 2010 and 2030. The projected generation tonnages are shown in Table 10, with estimates provided in planning year increments.

Table 10: Projected Total Annual Generation by Sector (Tons)

Year	Residential curbside	Multi-family	Commercial	C&D	Total
2010	2,164,991	573,058	4,639,669	2,695,327	10,073,047
2013	2,223,328	576,664	4,860,091	2,756,861	10,396,944
2020	2,304,402	603,980	5,105,464	2,886,065	10,899,911
2025	2,124,682	688,532	5,220,783	2,911,024	10,945,021
2030	2,141,329	696,846	5,311,109	2,950,661	11,099,945

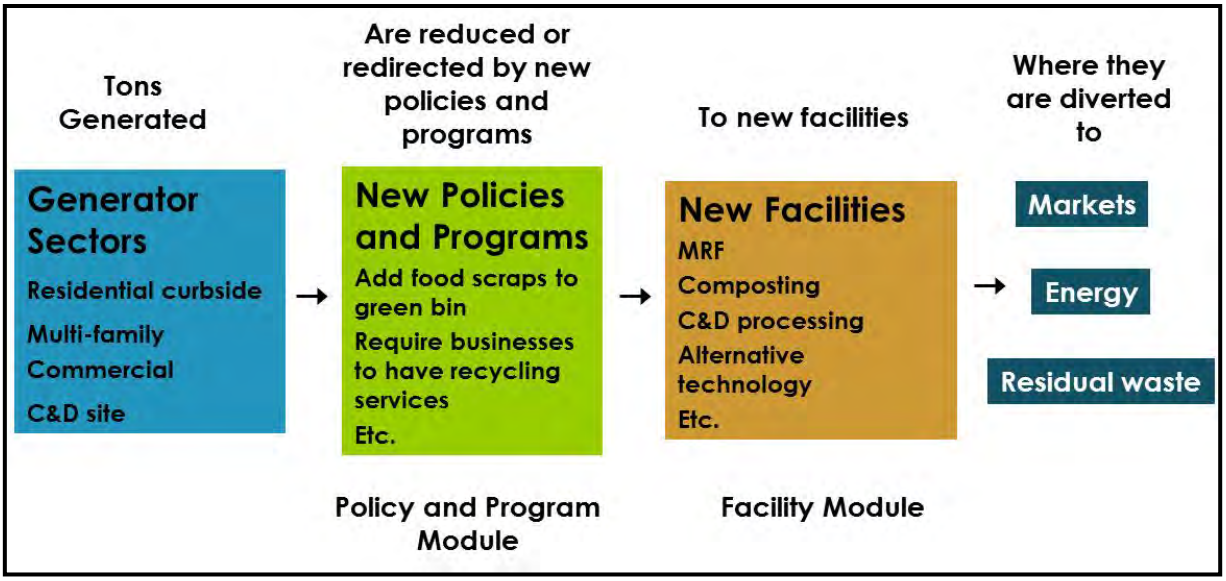
Source: City of Los Angeles Generation Projection Model, January 2013. Tonnage projections based on SCAG population and employment projections, *Integrated Growth Forecast by Transportation Analysis Zone*, 2010.
Totals may not sum due to rounding.

[27] This total varies from the total calculated in *Appendix C Infrastructure and Material Flows* due to adjustments reflecting tons handled by processing facilities and inert landfills. For purposes of modeling, the amount of diverted C&D materials documented in *Appendix C Infrastructure and Material Flows* was adjusted to reflect additional materials recovered through C&D processing. However, C&D tons sent to inert landfills were not included in the model.

Section 3 Policy and Program Module

The Policy and Program Module allows the user to evaluate how different policies and programs affect the baseline tons. The Policy and Program Module is based on data from the Baseline Tonnages Module and provides input to the New Facilities Module. Figure 5 illustrates how materials flow through the Policy and Program Module to the Facility Module.

Figure 5: Overview of the Policy and Program Module



To use the Policy and Program Module, the user first selects one of the four generator sectors to evaluate (i.e., residential curbside, multi-family, commercial, C&D), then chooses a year. Based on these two selections, the module imports the corresponding baseline tonnages into the model.

Next, the user can create or modify the programs or policy assumptions. Each program or policy is described in terms of participation and efficiency rates. The participation rate represents the fraction of households (for residential programs) or employees (for non-residential programs) expected to participate in the program. The efficiency rate represents the fraction of each material that is diverted from disposal by a program participant. The product of the participation rate and the efficiency rate results in the capture rate.

Participation and efficiency rates are specified for each material addressed by a program. The program assumptions also specify whether the material is diverted from disposal to recycling, organics, or another waste stream.

The module for each generator type contains policies and programs for which assumptions have been pre-populated. These program assumptions, and the process by which they were created, are discussed in more detail in *Appendix A Policy and Program Analysis*. The user can select an existing program as it appears in the

model; use an existing program and modify assumptions; or create a new program. The module has the capacity for up to 14 different policies and programs.

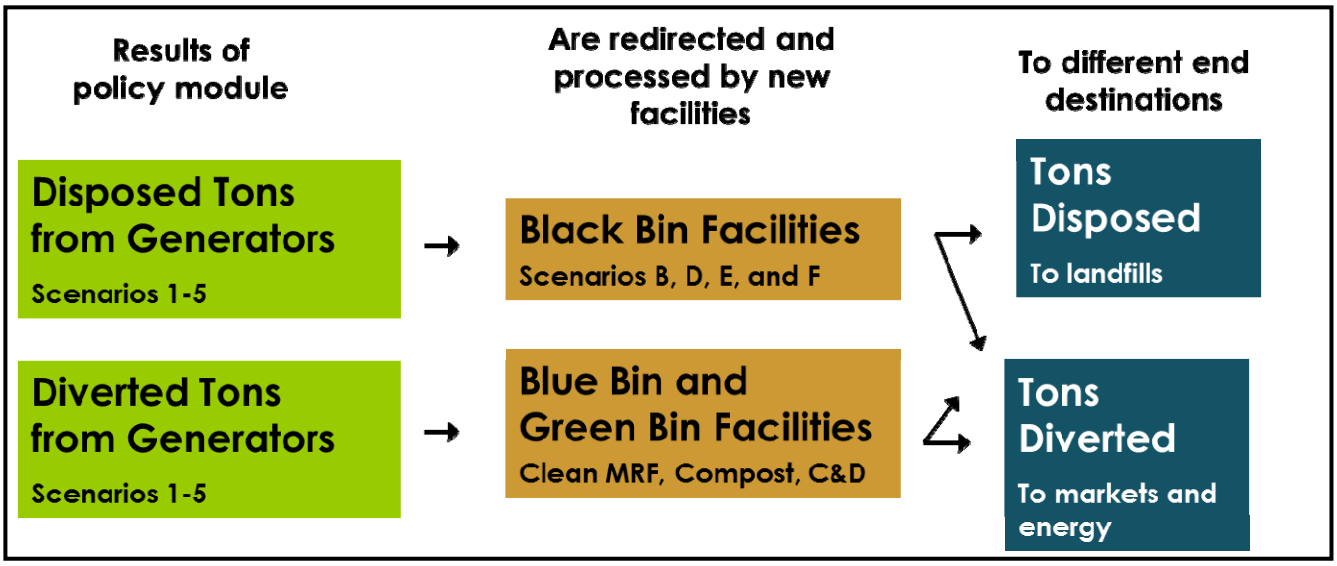
After the user has viewed or changed assumptions about the programs and policies, the user may select up to 14 policies and programs to apply to the generator sector in each of the wastesheds. The user can also apply the same set of policies and programs to all wastesheds, if applicable. Each program is run sequentially, therefore the resulting tonnage from one program becomes the input to the next program in the series. For example, Program 1 takes the entire baseline tons from the generator and diverts a certain amount of tons into City-hauled recycling. Then, Program 2 will run its calculations based on the tonnage results from Program 1.

The Policy and Program Module compiles the data from the Baseline Tonnages Module and the user's selections of policies and programs. The output of the model presents the tonnages that result from the selection of policies and programs. The user can view the number of tons of each material in a wasteshed that remain from each generator sector after each of the selected programs is implemented. The model aggregates the detailed data into the total tons and diversion rates that each program diverts as well as cumulatively, for the entire scenario.

Section 4 Facility Module

The Facility Module allows the user to view the diversion effects that a set of facilities has on the waste stream. Figure 6 illustrates how tons flow from the Policy and Program Module to the Facility Module.

Figure 6: Overview of the Facility Module

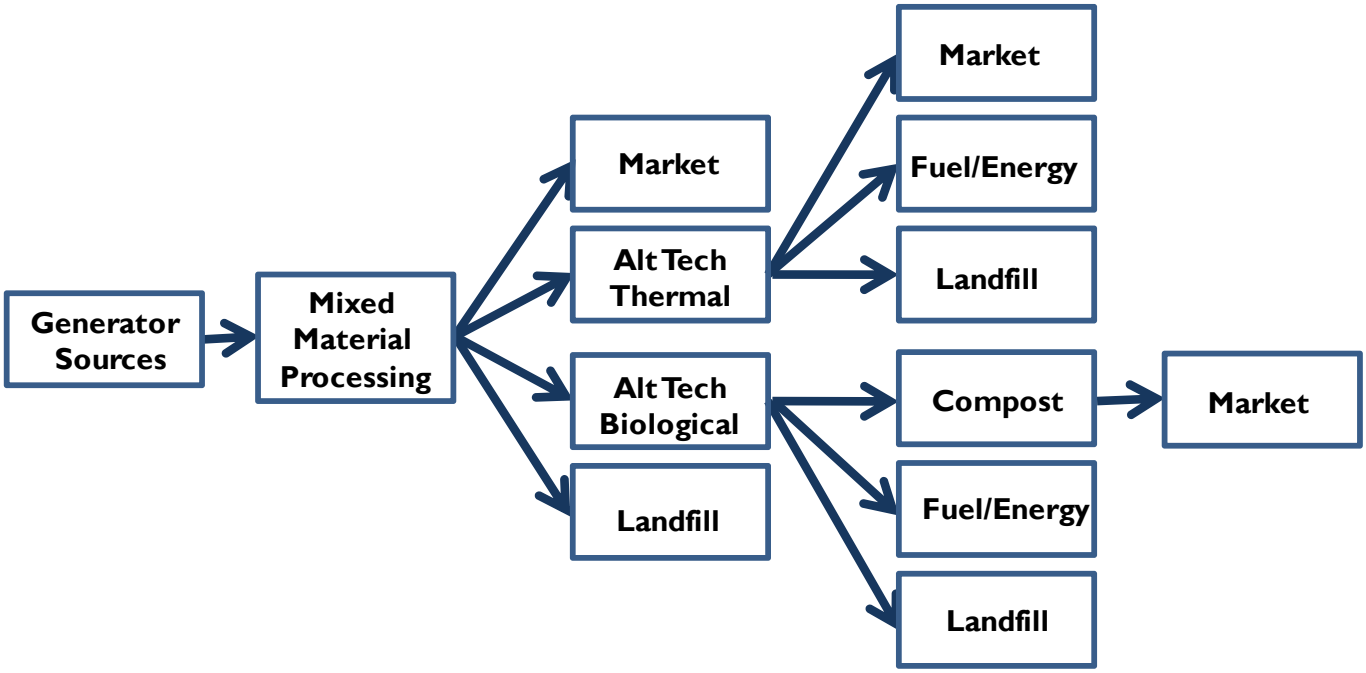


First, the user enters the tonnages from each generator into the input tables in the Facility Module. The user can copy and paste these tonnages either from the table at the end of the Policy and Program Module or from the Baseline Tonnages Module.

Next, the user can create or modify facility profiles. Each facility is described in terms of where it sends material and the quantity of each material type sent to each output destination. The module contains some facilities for which profiles have already been created. These pre-loaded profiles, and the process by which they were created, are documented in Attachment D-2 Facility Descriptions in *Appendix D Facility Analysis,* beginning on page D-2-1. The user can select an existing facility profile as it appears in the model; use an existing facility profile, but modify assumptions; or create a new facility profile. The module has the capacity for up to 20 different facility profiles.

After the facilities assumptions have been confirmed or modified, the user selects which waste streams (or portions of the waste streams) to send to each facility. The model has the capacity to build different scenarios by directing material up to three different facilities (layers) for processing. Figure 7 illustrates an example of a facility scenario.

Figure 7: Example of Facility Scenario Analyzed using the Facility Module



In Figure 7, all of the residual waste that came out of one of the scenarios in the Policy and Program Module were sent to a Mixed Materials Processing facility. The user can direct one or more of the output streams that come out of the Mixed Materials Processing facility to other facilities. Other facilities can include a thermal alternative technology (Alt Tech Thermal) facility, a biological alternative technology (Alt Tech Biological) facility, or a landfill.

The model has the capacity to evaluate three facilities that accept materials directly from generator sources (the first layer), five facilities that accept materials from facilities (second layer), and five facilities that accept materials from facilities (third layer).

Once the selections are made, the user can view the overall tons that are sent to landfill and the overall tons that are diverted as a result of the chosen facility scenario. The module reports the tons by material type in each facility layer that are sent to each output stream. The user can then combine the results from the Facility Module with the results from the Policy and Program Module to calculate the overall diversion results from the entire scenario.

The Facility Module was used to evaluate seven different facility scenarios, as described in Section 2 "Facility Scenarios" in *Appendix D Facility Analysis*, beginning on page D-17.

Appendix C

Infrastructure and Material Flows

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Section 1 Introduction and Overview

An understanding of the private and public materials management infrastructure and services used by generators in the City of Los Angeles (City) is essential to inform the planning and future development of the City's infrastructure. This report documents the flows of disposed materials, diverted materials, and household hazardous waste and electronics among all generators, transfer stations, processing and handling facilities, and landfills used by the City's businesses and residents.

This comprehensive inventory of the City's waste management system incorporates findings from interviews with personnel from transfer stations and landfills, and from recycling, construction and demolition (C&D) materials, yard trimmings, household hazardous waste, and electronics processing facilities that accept materials from City sources. The report also includes data from the California Department of Resources Recycling and Recovery (CalRecycle), the City Bureau of Sanitation (LASAN), and multiple City reports including the following:

- Department of Public Works, LASAN, Solid Resources Citywide Recycling Division, *City of Los Angeles Year 2000 AB 939 Annual Report*, August 2001
- Department of Public Works, LASAN, Solid Resources Citywide Recycling Division, *City of Los Angeles Waste Characterization and Quantification Study Year 2000*, July 2002
- *City of Los Angeles Solid Waste Planning Background Studies Summary Report*, January 2006
- CalRecycle *Statewide Waste Characterization Study*, December 2004
- CalRecycle *Detailed Characterization of Construction and Demolition Waste*, June 2006

Please note that when the facility surveys were conducted for this report, 2006 was the most recent year that complete waste management data were available. Consequently, nearly all data cited in this report are from 2006 with the exception of commercial recycling and C&D processor data from 2007.

This report covers details and flows of three major material streams, as follows:

Section 2: Materials Disposed describes material that was collected for disposal in the City, including overall quantities of waste disposed by three major substreams (residential curbside, commercial/multi-family, and self-haul/other) and four generator types (residential curbside, multi-family, commercial, and C&D).

Section 3: Materials Diverted from Landfill contains details regarding three major substreams:

- **Commodity Recycling**, which comprises paper, plastic, glass, and metal materials collected for recycling from residents and businesses within the City
- **C&D Recycling and Beneficial Use**, which comprises the material, including inert material, that was generated by C&D activities
- **Yard Trimmings Composting and Beneficial Use**, which comprises the collection of yard trimmings from residential curbside, commercial, and self-hauled sources within the City

Section 4: Household Hazardous Waste and Electronics contains information on the household hazardous waste and electronics that are collected from sources within the City.

Section 2 Materials Disposed

This section provides details on the disposed material management and infrastructure of the City of Los Angeles. This information is organized as follows:

- An overview of the City's disposed material system and waste flows, including overall quantities of disposed material generated by residential curbside, commercial/multi-family, and self-haul/other substreams (e.g., C&D)
- The overall quantities of disposed material that flowed through transfer stations and flowed to landfills
- The origins of disposed materials by generator type and wasteshed
- Maps and lists of the transfer stations and landfills that received disposed material from City sources
- Detailed descriptions of the services offered at each solid waste facility, as well as facility tonnage flows, by type and by substream, in 2006

2.1 Overview of Materials Disposed

Approximately 3.65[1] million tons of material were generated in 2006 by residents and businesses within the City.

In order to track the generation and ultimate disposal of these materials, waste flows were tracked according to who brought the materials to the disposal facility, as follows:

- **Residential curbside material** is defined as disposed material collected by LASAN from residential curbside customers, including single-family residences and some multi-family complexes.
- **Commercial/multi-family material** is defined as disposed material collected by a private hauling company from businesses, institutions, public venues, and multi-family buildings such as apartments and condominiums.
- **Self-haul/other material** is defined as all disposed material that is brought to solid waste facilities by the resident or business that generated it. This includes all material other than that brought to the facility by LASAN or by commercial haulers whose primary business is hauling waste that is bound for disposal.

Existing data were used to distribute these 3.65 million tons of disposed material among the three substreams, as shown in Table 1. LASAN provided tonnages for the residential curbside substream. Estimates for the disposed material from commercial/multi-family and self-haul/other substreams were developed based on total 2006 tonnage figures from CalRecycle Disposal Reporting System, as well as on commercial per-employee and multi-family per-household disposal rates calculated in the *City of Los Angeles Waste Characterization and Quantification Study Year 2000*, July 2002.

[1] The total disposed tonnage for the City of Los Angeles was derived from the 2006 CalRecycle Disposal Reporting System.

Table 1: Estimated Disposed Material by Substream, City of Los Angeles 2006

Source	Disposed Material (tons)	Percentage
Residential curbside (LASAN)	963,000	26.4
Commercial/multi-family	2,183,000	59.7
Self-haul/other	508,000	13.9
Total	**3,655,000**	**100**

Sources: City of Los Angeles, Bureau of Sanitation and CalRecycle Disposal Reporting System, 2006
Assumptions: *City of Los Angeles Waste Characterization and Quantification Study Year 2000,* July 2002
Quantities may not sum due to rounding.

These 3.65 million tons of waste were transported by LASAN, commercial haulers, and self-haulers. Haulers brought material either directly to a landfill for final disposal or to an intermediary facility, such as a transfer station or waste processing facility, where the waste material was consolidated in transfer trailers and taken to the landfill for final disposal. The self-haul substream included residents and businesses bringing their own material for disposal to either a transfer station or landfill.

Figure 1 below depicts the relative size of the flows of disposed material from the City and presents the flow of material by major substream, through an intermediate facility (if applicable), to the site of final disposal.

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Figure 1: Solid Waste Flows by Substream, City of Los Angeles 2006[2]

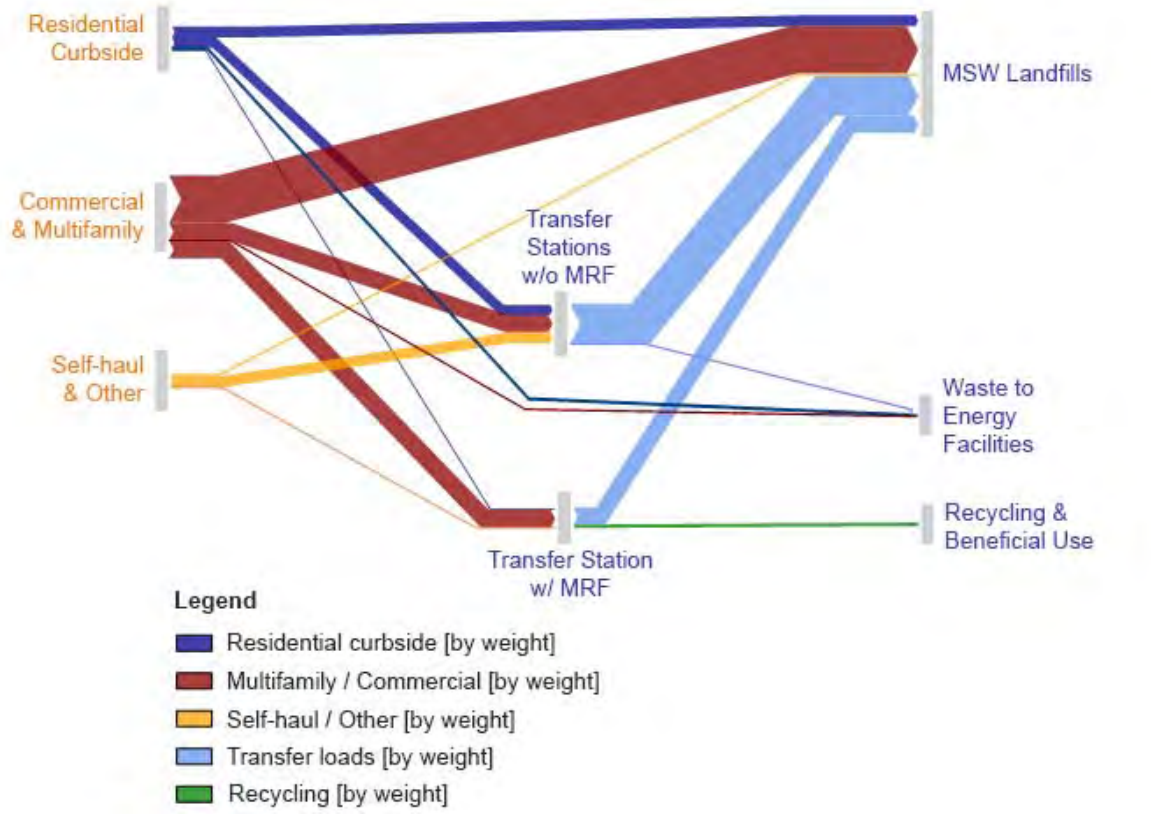


Figure 1 depicts the flow of solid waste from generators to the transfer stations and disposal facilities. This information was obtained by surveying the 17 transfer stations and 15 solid waste disposal facilities that receive material from City sources,[3] combined with data from LASAN[4] regarding residential curbside collection routes. Each facility's reported numbers were verified and calibrated using data from the CalRecycle Disposal Reporting System and quantity data documented in *Appendix B Material Flow Model and Generation Projections*. Facility-specific data can be found in Attachments C-1 and C-2 of this report. Survey forms used to collect data on solid waste facilities can be found in Attachment C-7.

2.2 Origins by Generator Type and Wasteshed

As described in Section 2.1, disposal tonnages are tracked by the three ***substreams*** based on who brought the materials to the processing facility or disposal facility (i.e., residential curbside, commercial/ multifamily, and self-haul/other substreams). For planning purposes, tonnage information can also be allocated by ***generator type*** (who generated the materials) and ***wasteshed*** (where the materials were generated within the City).

[2] MSW refers to Municipal Solid Waste facilities; MRF refers to Materials Recovery Facilities.
[3] The list of facilities is from the *City of Los Angeles Solid Waste Planning Background Studies Summary Report*, January 2006.
[4] LASAN provided 2006 tonnage of solid waste collected from residential curbside customers.

2.2.1 Estimating Tons by Generator Type

The ***generator types*** are:

- **Residential curbside** including residential curbside customers in detached homes and duplex, triplex, and four-unit dwellings and some multi-family complexes
- **Multi-family residential** including apartments, condominiums, mobile home parks, and townhouses with more than four units receiving commercial collection service
- **Commercial businesses** including small and large businesses, institutional and industrial generators, and public venues, all of which generate waste that is collected by a permitted private hauling company
- **Construction and demolition (C&D) sites** located throughout the City that are permitted for construction or demolition activities, including new developments and remodels

In addition, the residential and commercial generator types were divided into commercially hauled vs. self-hauled. Likewise, C&D was divided between disposal from C&D sites (transported by a commercial hauler) and self-haul. The detailed methodology for estimating tonnage by generator type is described in *Appendix B Material Flow Model and Generation Projections* (Section 2.2). In summary:

- Residential curbside tonnage was provided by LASAN
- Commercial and multi-family tonnages were based on employee and multi-family household disposal rates from *City of Los Angeles Solid Waste Planning Background Studies Summary Report,* January 2006
- C&D and self-haul estimates were based on facility interviews conducted with 17 transfer stations, 15 solid waste disposal facilities, and CalRecycle *Statewide Waste Characterization Study,* December 2004

Table 2 summarizes the estimated quantities from each substream that were assigned to each generator type.

Table 2: Estimated Disposed Material by Generator Type, City of Los Angeles 2006

Generator	Substream (see Table 1)	Tonnage
Residential curbside (LASAN)	Equal to residential curbside	963,000
Self-hauled from residents	Included in self-haul/other	25,000
Total residential curbside		988,000
Multi-family	Included in commercial/multi-family	542,000
Commercially hauled from businesses	Included in commercial/multi-family	1,641,000
Self-hauled from businesses	Included in self-haul/other	107,000
Total commercial		1,748,000
C&D sites	Included in self-haul/other	376,000
Total		**3,655,000**

Source: LASAN Database "Sanitation Refuse and Transfer Tonnage Calendar Year 2006" and CalRecycle Disposal Reporting System, 2006
Quantities may not sum due to rounding.

2.2.2 Allocating Tons to Wastesheds

Disposed material estimates presented in Table 2 were divided among the six ***wastesheds*** within the City:

- West Valley
- East Valley
- Western
- North Central/East Side
- South LA
- Harbor

The detailed methodology and background data for dividing the disposal from generator types among the six wastesheds is described in *Appendix B, Material Flow Model and Generation Projections* in Section 2 (page B-5).

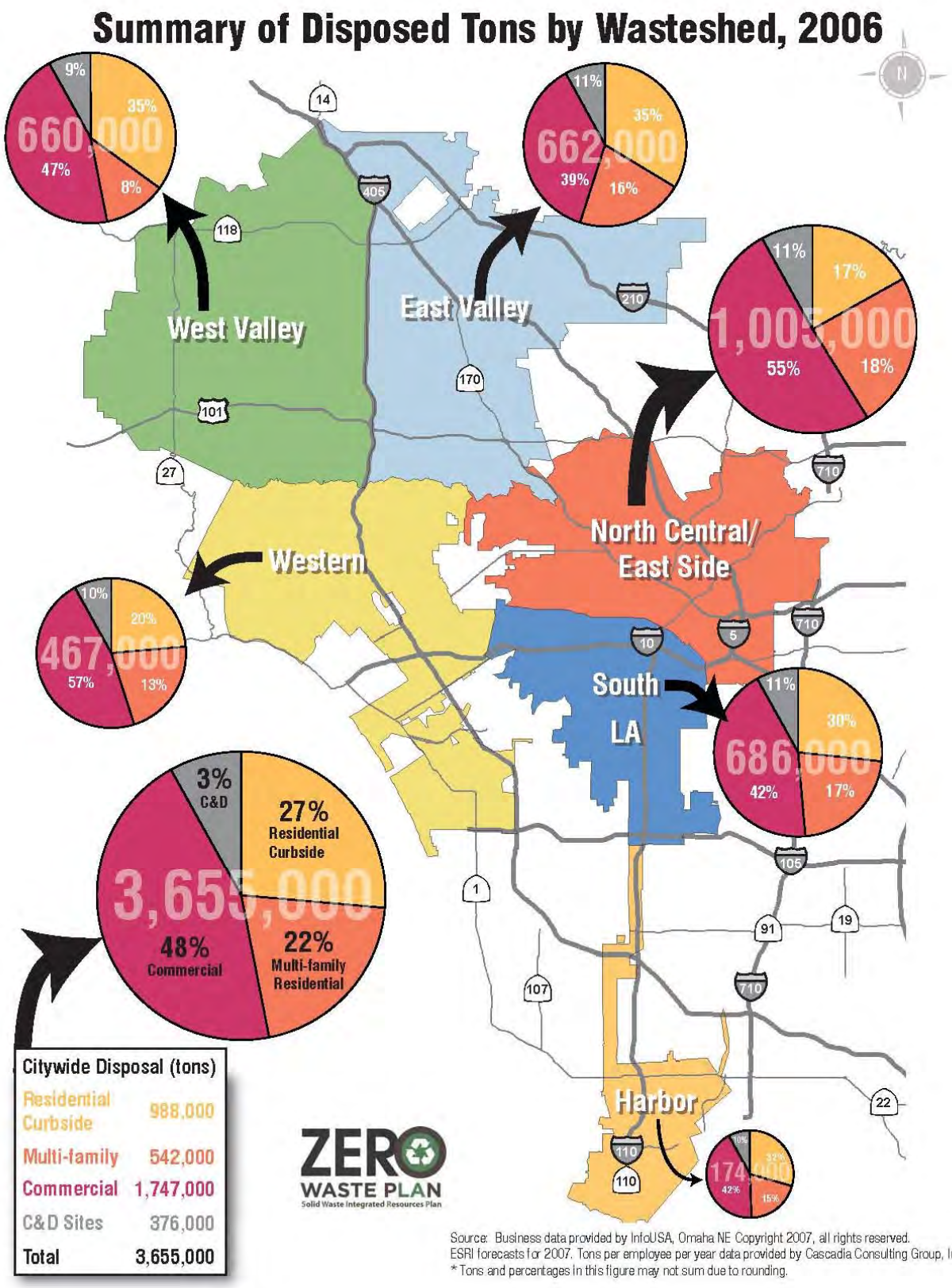
In summary, this distribution was based on each wasteshed's population in single-family households, population in multi-family households, and the number of employees in each wasteshed, belonging to each of nine aggregate employment categories, excluding the construction employment category. The employment categories were created by grouping Standard Industrial Codes to match employment categories for which waste composition profiles were available. Employment categories used are:

- Agriculture
- Mining
- Manufacturing
- Transportation, Communication, Utilities
- Wholesale
- Retail
- Financial, Insurance, Real Estate
- Services
- Government

The Harbor wasteshed generated the smallest amount of material among these wastesheds, approximately 175,000 tons. The North Central wasteshed generated the most material of all the wastesheds at just over 1.0 million tons, most of which was from commercial sources.

Figure 2 shows the estimated breakdown of waste by generator type and wasteshed.

Figure 2: Disposed Material by Generator Type and Wasteshed, City of Los Angeles 2006



2.3 Flow of Disposed Material

In 2006, over half of the disposed material from City sources was taken to a transfer station before reaching its final point of disposal. Figure 3 shows the general flows of material through local waste facilities. A few transfer stations that handle waste from City sources have sorting capabilities and were able to extract and divert an estimated 50,000 tons of material from the waste stream for recycling.

Flow quantities presented in Figure 3 were obtained from a survey of landfills and transfer stations that accepted solid waste from City sources in 2006, as well as data from the CalRecycle Disposal Reporting System.

Figure 3: Flow of Disposed Material, City of Los Angeles 2006



2.4 Disposal Facility Overview

This section includes information on the transfer stations, landfills, and waste-to-energy facilities that receive disposed material from City sources.

2.4.1 Transfer Stations

The locations of transfer stations that received disposed material from City sources in 2006 are shown in Figure 4. These facilities and their self-reported incoming tonnage for 2006 are listed in Table 3. As shown in Table 3, transfer stations handled over two million tons of the City's total disposed solid waste. This means that approximately 59 percent of the City's waste is transferred from collection trucks to larger transfer vehicles for delivery to final landfill disposal sites. In 2006, the Central Los Angeles Recycling & Transfer Station (CLARTS) accepted the largest quantities of residential curbside waste and self-hauled waste, as well as the most material overall from City sources (totaling 683,752 tons). American Waste Transfer Station received the largest quantity of commercial/multi-family waste from City sources in 2006 (totaling 274,291 tons).

The combined total estimated annual permitted capacity of these 17 transfer stations, based on a six-day week, one shift per day, is 12 million tons per year. Generators within the City used approximately 18 percent of the capacity of these facilities, and much of the remaining capacity is used by surrounding communities. Two of these facilities[5] were the process of expansion, and two were in the planning phase,[6] which would increase the available capacity by approximately 2,300 tons per day or 720,000 tons per year. One facility reported that it hoped to expand capacity by an additional 1,000 tons per day.[7] A full listing of expansion plans for transfer stations receiving material from City sources in 2006 is shown in Table 4.

[5] Community Recycling and Waste Resources Recovery
[6] Paramount Resource Recycling Facility and Southern California Disposal
[7] Compton Recycling and Transfer Station (Browning Ferris Industries)

Table 3: Disposed Material Received by Transfer Stations, City of Los Angeles 2006

Transfer Station	Disposed Material (tons)	Percentage
American Waste Transfer Station	274,291	12.8
Athens Services Transfer Station	112	0.0
Bel-Art Waste Transfer Station	54,005	2.5
Carson Transfer Station	76,468	3.6
Central Los Angeles Recycling & Transfer Station (CLARTS)	683,752	31.8
Community Recycling	270,004	12.6
Compton Recycling and Transfer Station (Browning Ferris Industries)	112,883	5.3
Downey Area Recycling and Transfer Station (DART)	26,604	1.2
East Los Angeles Recycling & Transfer Station (ELARTS)	48,531	2.3
Falcon Refuse	48,000	2.2
Innovative Waste Control	203,028	9.5
Mission Road Recycling and Transfer Station (Waste Management)	191,985	8.9
Paramount Resource Recycling Facility	6,000	0.3
South Gate Transfer Station – Los Angeles County Sanitation District	30,764	1.4
South Gate Transfer Station – Waste Management	19,433	0.9
Southern California Disposal	97,594	4.5
Waste Resources Recovery	3,696	0.2
Total	2,147,150	100

Source: Attachment C-1Transfer Stations – Facility Surveys, 2007

The tip fees[8] for solid waste at these transfer stations ranged from $31 per ton to $73 per ton, with an average tip fee of about $49 in 2006. The weighted average tip fee, based on the tons that each facility received, was about $38 per ton.

[8] "Tip fee" or "tipping fee" is the price charged to deliver materials to a solid waste or recycling facility.

Figure 4: Transfer Stations Receiving Disposed Material, City of Los Angeles 2006

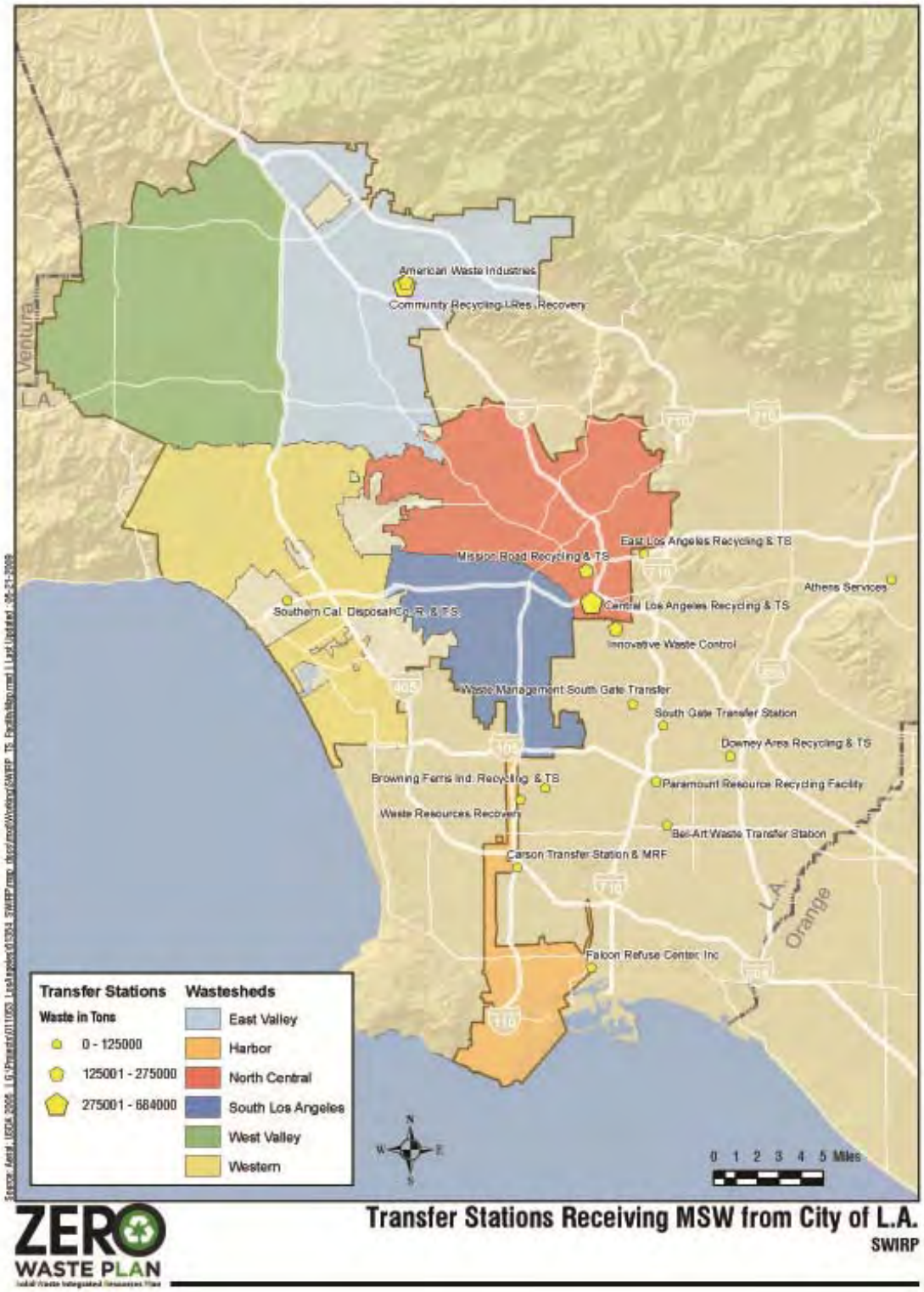


Table 4: Expansion Plans for Transfer Stations Receiving Disposed Material, City of Los Angeles 2006

Company	Plans to Expand?	Expansion Amount or Method of Expansion
American Waste Transfer Station	NO	
Athens Services Transfer Station	NO	Permitted capacity expanded significantly in 2007 from 1,920 to 4,000 tons per day.
Bel-Art Waste Transfer Station	NO	Has space to expand.
Carson Transfer Station	NO	
Central Los Angeles Recycling & Transfer Station	NO	Has the option of purchasing adjacent lands if needed to retrofit and improve the facility to serve rail haul and/or recycling.
Community Recycling	YES	The new permit would total 6,700 tons per day (adding 800 tons per day of solid waste). Expansion of infrastructure, including adding yard trimmings and food scraps processing.
Compton Recycling and Transfer Station (Browning Ferris Industries)	YES	Expanding up to 2,100-2,500 tons of waste per day. Plans to expand both permitted and infrastructure capacity.
Downey Area Recycling and Transfer Station	NO	
East Los Angeles Recycling &Transfer Station	NO	
Falcon Refuse Center, Inc.	NO	
Innovative Waste Control	NO	
Mission Road Recycling and Transfer Station (Waste Management)	NO	
Paramount Resource Recycling Facility	YES	Expansion will not exceed current permit for 2,400 tons per day. Plans to construct a separate MRF building on same acreage.
South Gate Transfer Station—Los Angeles County Sanitation Districts	NO	
South Gate Transfer Station—Waste Management	NO	
Southern California Disposal	YES	Working with the City of Santa Monica on footprint expansion with space for future material handling and recovery.
Waste Resources Recovery	YES	Increasing capacity from 500 to 2,000 tons per day, adding 5 acres of land, and possibly implementing conversion technology.

Source: Attachment C-1 Transfer Stations – Facility Surveys, 2007

2.4.2 Landfills and Waste-to-Energy Facilities

The locations of landfills and waste-to-energy facilities that received disposed material from City sources in 2006 are shown in Figure 5. These facilities and their self-reported incoming tonnage for 2006 are listed in Table 5. Sunshine Canyon accepted more solid waste than any other landfill or waste-to-energy facility receiving waste from City sources (totaling 1,599,344 tons in 2006). While Sunshine accepted the most residential curbside and commercial/multi-family waste from City sources, Bradley Landfill accepted the most self-haul/other waste (approximately 19,000 tons at Bradley compared to about 10,000 tons at Sunshine in 2006).[9] In 2006, Chiquita received more transfer tons than the other landfills.

The total estimated annual permitted capacity of these 15 disposal facilities, based on a six-day week, one shift per day, is 24.4 million tons. Generators within the City used approximately 15 percent of the capacity of these facilities. Six landfills were in the process of planning or requesting permits for expansions.[10] A full listing of expansion plans for landfills and waste-to-energy facilities receiving solid waste from City sources in 2006 is shown in Table 6.

Table 5: Disposed Material Received by Landfills and Waste-to-Energy Facilities, City of Los Angeles 2006

Landfill or Waste-to-Energy Facility	Disposed Material (tons)	Percentage
Antelope Valley Public Landfill	8,483	0.2
Bradley Landfill	350,059	9.6
Calabasas Sanitary Landfill	321,147	8.8
Chiquita Canyon Sanitary Landfill	764,300	20.9
El Sobrante Sanitary Landfill	85,235	2.3
Frank R. Bowerman Sanitary Landfill	41,173	1.1
Lancaster Landfill	133,433	3.7
Olinda Alpha Sanitary Landfill	130,473	3.6
Prima Deshecha Sanitary Landfill	24,047	0.7
Puente Hills Landfill	96,414	2.6
Scholl Canyon Sanitary Landfill	3,553	0.1
Simi Valley Landfill-Recycling Center	62,376	1.7
Sunshine Canyon Landfill	1,599,344	43.8
Commerce Refuse-to-Energy Facility	7,140	0.2
Southeast Resource Recovery Facility	27,380	0.7
Total	**3,654,557**	**100**

Source: Attachment C-2 Landfills and Waste-to-Energy Facilities – Facility Surveys, 2007

[9] As of April 2007, the Bradley facility ceased landfill operations and operated as a limited-volume transfer station accepting clean fill and yard trimmings.

[10] Antelope Valley Public Landfill, Chiquita Canyon Sanitary Landfill, Frank R. Bowerman Sanitary Landfill, Lancaster Landfill, Scholl Canyon Sanitary Landfill, and Simi Valley Landfill-Recycling Center.

The tip fees for solid waste at these landfills ranged from $26 per ton to $55 per ton, with an average tip fee of approximately $43 in 2006. The tip fees for solid waste at the waste-to-energy facilities ranged from $45 to $61. The weighted average tip fee for both landfills and waste-to-energy facilities, based on the tons that each facility received, was about $42 per ton.

Figure 5: Landfills and Waste-to-Energy Facilities Receiving Disposed Material, City of Los Angeles 2006

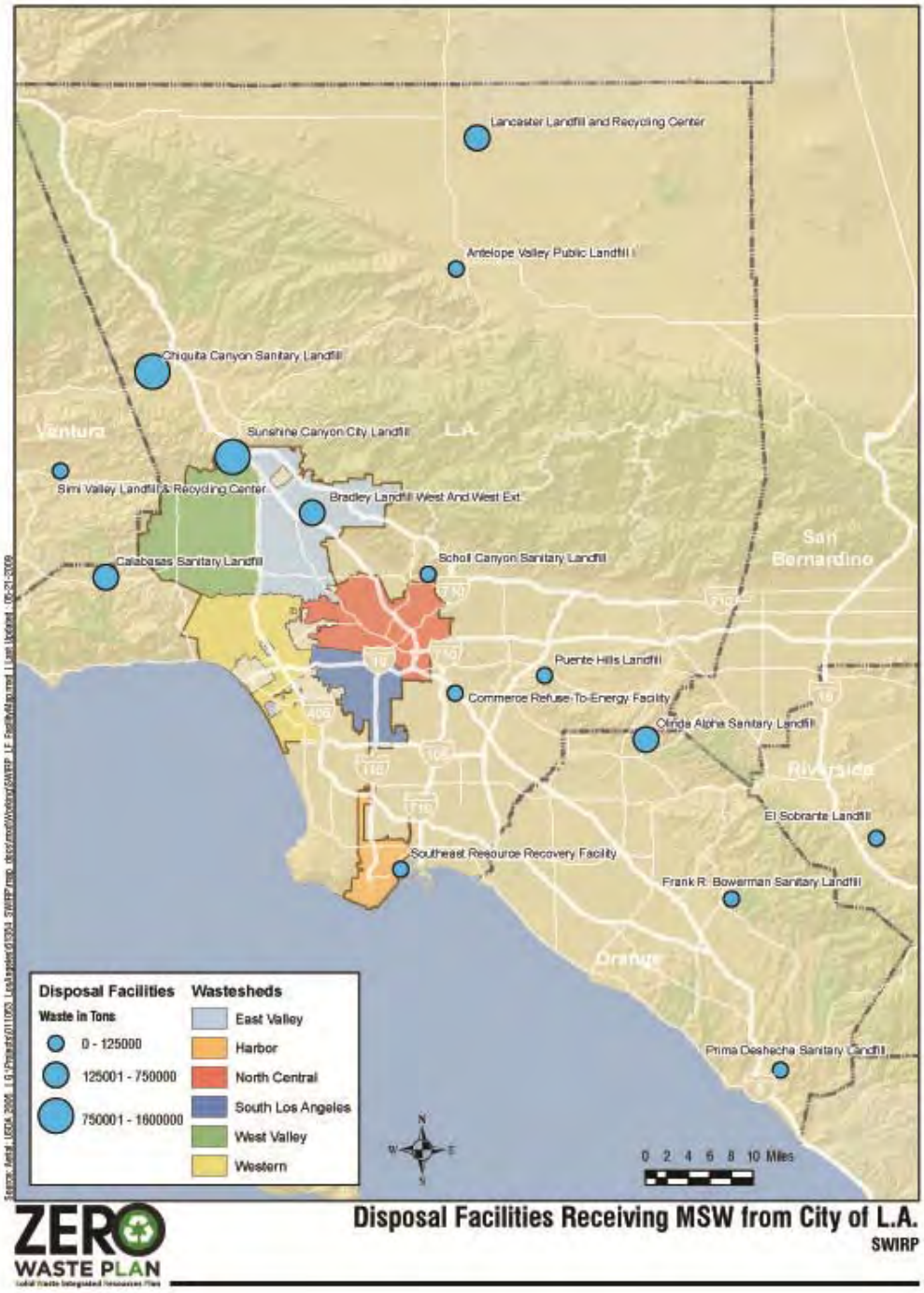


Table 6: Expansion Plans for Landfills and Waste-to-Energy Facilities Receiving Disposed Material, City of Los Angeles 2006

Company	Plans to Expand?	Expansion Amount or Method of Expansion
Antelope Valley Public Landfill	YES	Plans to double capacity. City of Palmdale to explore two different expansion scenarios either through a land purchase or a wedge expansion.
Bradley Landfill	NO	As of April 2007, the Bradley facility ceased landfill operations and operated as a limited-volume transfer station accepting clean fill and yard trimmings. WM was permitting a MRF/transfer station at the Bradley Landfill to handle up to 5,000 tons per day.
Calabasas Sanitary Landfill	NO	Is scheduled to close in 2028.
Chiquita Canyon Sanitary Landfill	YES	Is scheduled to close in November 2019. Filed a Notice of Preparation and applied for a Conditional Use Permit several years ago for a master plan revision to increase in both the volume and tenure of the landfill.
El Sobrante Sanitary Landfill	NO	
Frank R. Bowerman Sanitary Landfill	YES	In 2008, received a permit for a planned expansion to an increased permitted capacity of 11,500 tons per day. Scheduled to close in 2053.
Lancaster Landfill	YES	Has applied for a permit to expand daily capacity to 3,000 tons per day. The facility was projected to close in August 2012.
Olinda Alpha Sanitary Landfill	NO	
Prima Deshecha Sanitary Landfill	NO	
Puente Hills Landfill	NO	Is scheduled to close in 2013.
Scholl Canyon Sanitary Landfill	YES	Plans for two scenarios to add 12 to15 years to landfill life. Option of a vertical-only scenario or a vertical-horizontal scenario.
Simi Valley Landfill-Recycling Center	YES	Increasing capacity to 80 million cubic yards.[11]
Sunshine Canyon Landfill	NO	Sunshine Canyon has approximately 70 million tons of permitted capacity. While the potential exists for future facility expansion, there are no plans to do so at this time. Sunshine Canyon is scheduled to close in 2037.
Commerce Refuse-to-Energy	NO	
Southeast Resource Recovery Facility	NO	

Source: Attachment C-2 Landfills and Waste-to-Energy Facilities – Facility Surveys, 2007

[11] 24 million tons, using a conversion factor of 600 pounds per cubic yard

Section 3 Materials Diverted from Disposal

This section discusses major flows of materials that are diverted from disposal in landfills and waste-to-energy facilities. These flows include commodity recycling, C&D recycling and beneficial use, and yard trimming composting and beneficial use.

- **Commodity recycling** includes paper, plastic, glass, and metal collected from residential curbside, multi-family residential, and commercial sources.
- **C&D recycling and beneficial use** includes materials generated by construction and demolition activities that are recycled or put to beneficial use. Materials include concrete, asphalt, wood, metals, and drywall.
- **Yard trimming composting and beneficial use** includes yard trimmings and food scraps that are composted, mulched or put to beneficial use.

The estimated tonnage associated with each of these flows is presented in Table 7.

Table 7: Estimated Quantities of Diverted Materials, City of Los Angeles 2006

Generator	Tonnage
Commodity Recycling	2,457,000
C&D Recycling and Beneficial Use[12]	2,621,000
Yard Trimmings Composting and Beneficial Use	899,000
Total	**5,977,000**

Source: City of Los Angeles, Bureau of Sanitation and CalRecycle Disposal Reporting System, 2006 and *City of Los Angeles Year 2000 AB939 Report*, August 2001 and Attachments C-1 through C-5 – Facility Surveys 2007-2008

This section, describing the recycling infrastructure of the City, is organized as follows:

- An overview of the City's residential curbside recycling system and recycling flows
- The breakdown of curbside recyclables generated by residential curbside customers
- The overall quantities of residential curbside recyclables that flowed through material recovery facilities
- Maps and lists of the material recovery facilities that received residential curbside recyclables from City sources
- An overview of the City's multi-family recycling program
- An overview of the City's commercial recyclables hauled to major processors, including materials that are self-hauled
- Maps and lists of the major processors that received commercial recyclables from the City, including a table showing plans for expansion at these facilities

[12] Includes approximately 370,000 tons processed or disposed at inert landfills.

3.1 Commodity Recycling

Approximately 2.46 million tons of recyclable materials were collected from residential curbside customers and commercial generators within the City in 2006. As shown in Table 8, the 2.46 million tons of recyclables were divided into tonnages generated by each substream. LASAN provided tonnages for the residential curbside recycling. Estimates for commercial recycling were developed based on tonnages from a generator study reported in the *City of Los Angeles Year 2000 AB939 Report*, August 2001, scaled up by growth in employment.

Table 8: Estimated Recyclable Materials by Generator, City of Los Angeles 2006[13]

Generator	Tons	Percentage
Residential curbside (LASAN)	184,000	7.5
Multi-family	13,000	0.5
Commercial	2,260,000	92.0
Total	**2,457,000**	**100**

Sources: LASAN Database "Sanitation Commodities 2006", CalRecycle Disposal Reporting System, 2006 and *City of Los Angeles Year 2000 AB939 Report*, August 2001
Quantities may not sum due to rounding.

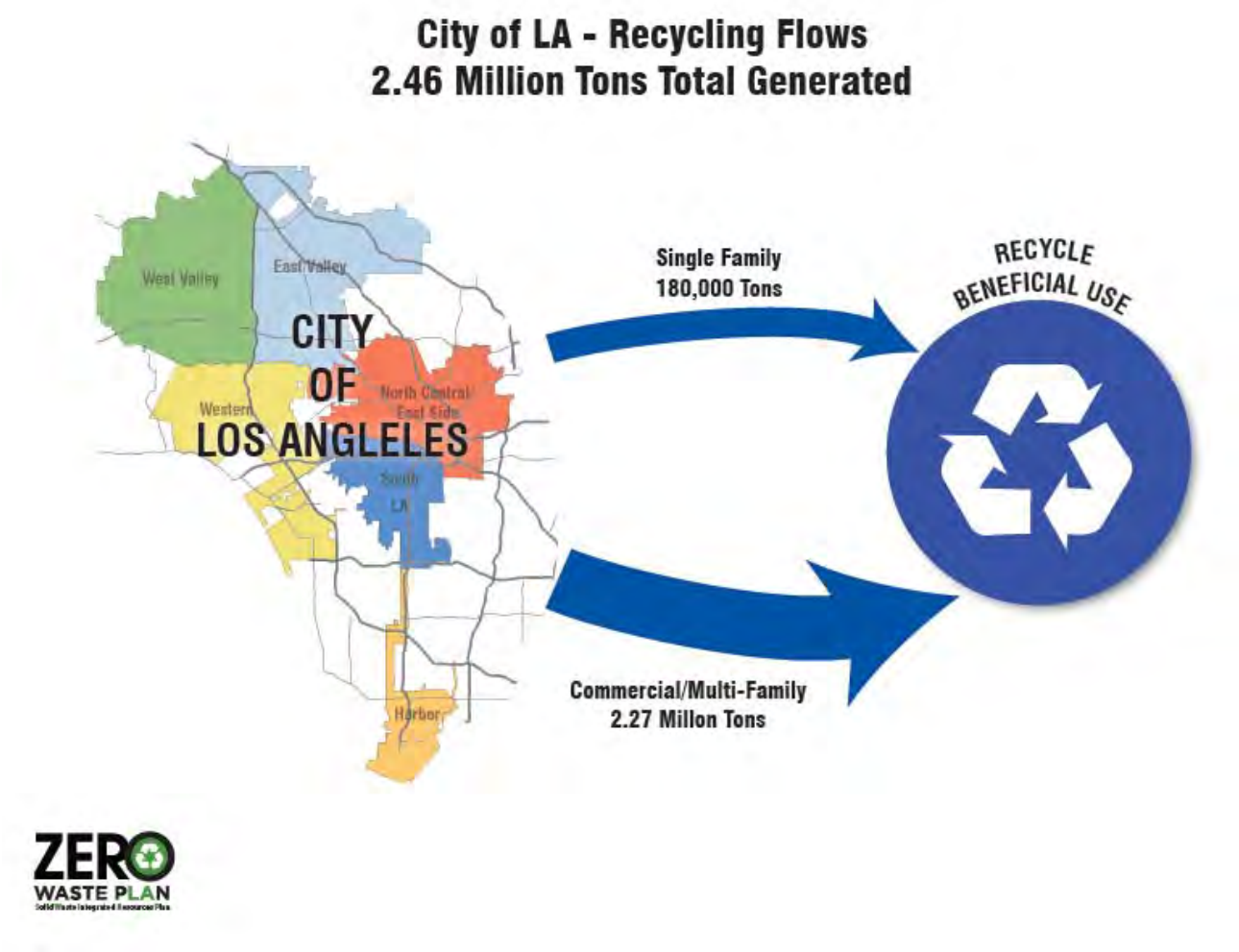
Recyclable materials from residential curbside customers were transported to processors by LASAN. Commercial recyclables were delivered by private recyclers.

The term "commercial recycling" refers to the recycling of materials originating from commercial and C&D activities. These materials are generally processed by private entities, and the materials are diverted from the landfill for economic reasons (e.g., saving tip fee costs). Approximately 2.27 million tons of material are generated through commercial/multi-family and C&D recycling; however, data are not available to proportion these 2.27 million tons between businesses and C&D activities. Thus, the estimates for commercial commodity recycling and for C&D recycling and beneficial use make up an unknown portion of these 2.27 million tons.

Figure 6 shows the general flows of recyclable materials in Los Angeles.

[13]The commercial substream may also include some unknown amount of source reduction, reuse (including food donations), and C&D diversion.

Figure 6: Recycling Flows to Recycling/Beneficial Use, City of Los Angeles 2006



3.1.1 Overview of Residential Curbside Recycling

Residential curbside recyclable materials are collected by LASAN from residential curbside customers in blue bins.

3.1.1.1 Origins by Wasteshed

In 2006, over 180,000 tons of materials were collected for recycling (excluding contamination) in blue bins from residential curbside customers.[14] Tonnages by wasteshed are presented in Table 9 with data for South Los Angeles and North Central wastesheds collected together. The Harbor wasteshed generated approximately 11,000 tons, the smallest amount of recyclables among these wastesheds. The West Valley generated the largest quantity of recyclables at over 50,000 tons.

[14] Data reported by the Los Angeles Bureau of Sanitation, 2006.

Table 9: Residential Curbside Recycling by Wasteshed, Excluding Contamination, City of Los Angeles 2006

Wasteshed	Tons	Percentage
South Los Angeles & North Central	37,508	20.4
West LA	42,259	23.0
East Valley	43,168	23.5
Harbor	10,874	5.9
West Valley	50,093	27.2
Total	**183,902**	**100**

Source: LASAN Database "Sanitation Commodities 2006"

The net tons of recyclables (excluding contamination) are presented by material category in Table 10.

Table 10: Residential Curbside Recycling by Commodity, City of Los Angeles 2006

Material Category	Tons Recycled	Percentage
Paper	**144,522**	**77.0**
Cardboard, Paper Bags	31,921	17.4
Newspaper	75,516	41.1
Mixed Waste Paper	34,085	18.5
Plastics	**9,760**	**5.3**
PET Containers	5,374	2.9
HDPE Containers	2,824	1.5
Other Containers	241	0.1
Recyclable Film	1,012	0.6
Mixed Plastic Reusable/Recyclable	309	0.2
Metal	**7,486**	**4.1**
Tin/Steel Cans	3,101	1.7
Aluminum Cans	680	0.4
Other Nonferrous	3,705	2.0
Glass	**25,120**	**13.7**
Glass Container	22,956	12.5
Flat Glass	2,164	1.2
Electronics	**14**	**0.0**
Total	**183,902**	**100.0**

Source: LASAN Database "Sanitation Commodities 2006"
Quantities may not sum due to rounding.

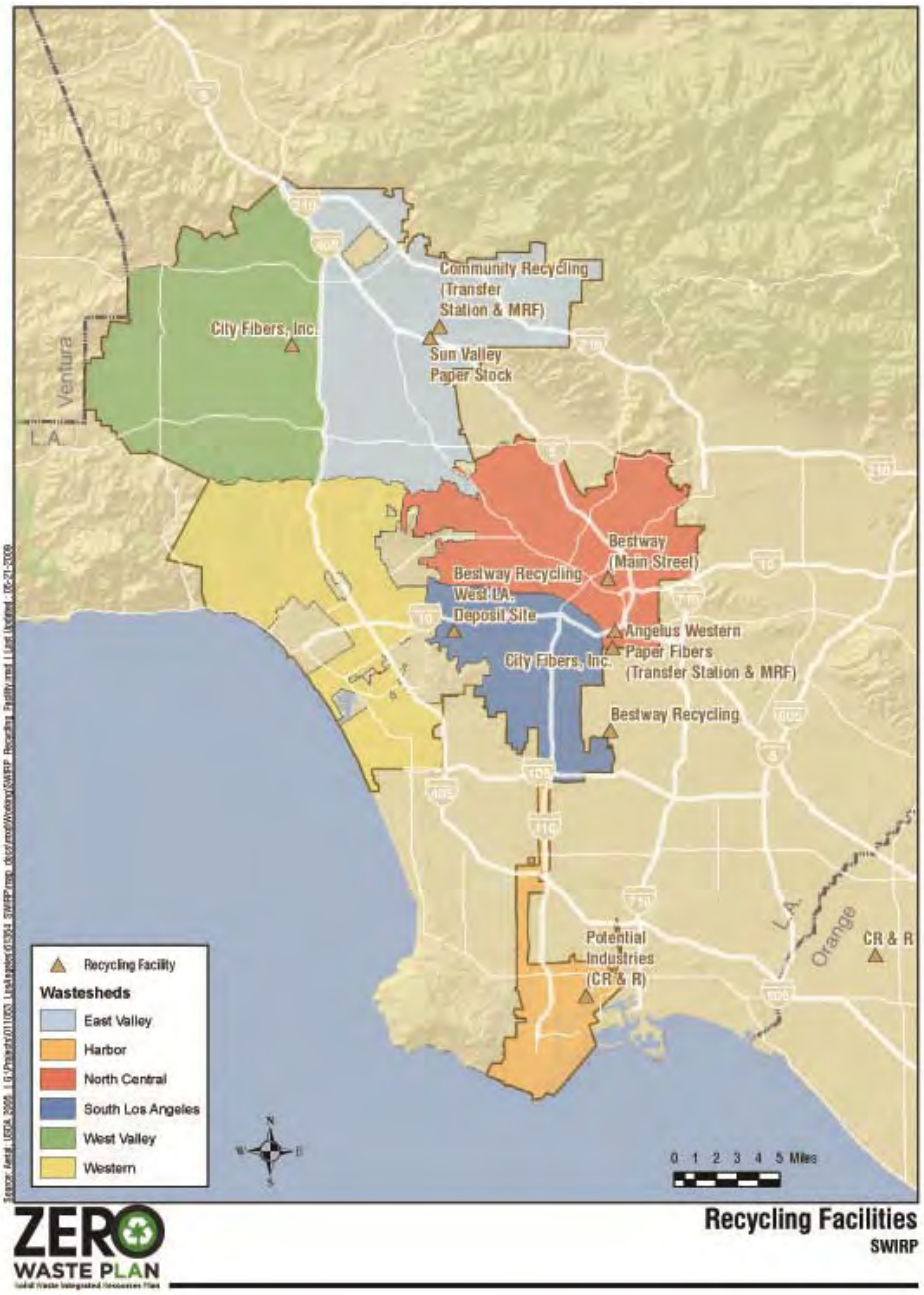
3.1.1.2 Recycling Facility Overview

This section includes information on the processing facilities that receive residential curbside recycling from City sources.

Processing Facilities

The locations of MRFs that receive residential curbside recycling from City sources are shown in Figure 7. These facilities include Angelus Western Paper Fibers, Bestway (Main St.), Bestway Recycling (Jefferson Blvd.), Bestway Recycling (Firestone Blvd.), City Fibers (Schoenborn St.), City Fibers, Inc. (Santa Fe Ave.), Community Recycling, Potential Industries (a CR&R subcontractor), and Sun Valley Paper Stock.[15]

Figure 7: Material Recovery Facilities Receiving Curbside Recycling, City of Los Angeles 2006



[15] *City of Los Angeles Solid Waste Planning Background Studies Summary Report.* January, 2006. p. 30, Table 3-6

3.1.2 Overview of Multi-Family Recycling

The City of Los Angeles initiated a pilot multi-family recycling program in 2004 and implemented a citywide multi-family recycling program in 2007. The program enrolls multi-family residential buildings of five units or more, and provides blue bins and weekly collection service at no cost to the property owners or residents. The program is funded through AB 939 Compliance Fees paid by haulers serving commercial generators in the City. In 2008, the multi-family recycling program diverted 13,095 tons of recyclable materials.

3.1.3 Overview of Commercial Recycling

Commercial recycling is all recycling that occurs in the private sector and is economically driven. Commercial recycling includes tonnages generated by businesses, institutions, and public venues that is collected and processed by private companies. It also includes the recycling of materials generated by C&D activities. Overall commercial recycling tonnages amounted to approximately 2.27 million tons in 2006.[16] This report includes a survey of eleven of the major commercial recycling processors, listed in Table 12, conducted mainly to understand present and future capacity. These processors receive approximately 472,000 of the 2.27 million tons. The remainder of the 2.27 million tons was processed by facilities that were not surveyed within the scope of this research.[17] This study does not attempt to document all recycling activities in the City. The last comprehensive diversion study was completed for the *City of Los Angeles Year 2000 Report,* August 2001. For that study over 1,200 facilities within the region were surveyed.

Flows were separated into two major substreams: commercially hauled and self-hauled. Tonnages by substream from surveyed processors are shown in Table 11.

- **Commercially hauled** is defined as recyclable material collected by a private hauling company from businesses (including some multi-family apartment complexes), institutions, and public venues. It typically arrives at the processing facility in packer trucks (e.g., front loaders) or in roll-off containers or compactor units.
- **Self-haul** is defined as recyclable material brought to processing facilities by the commercial establishment that generated it. This includes all commercial recycling other than that brought to the facility by private recycling companies.

Table 11: Estimated Recycling Quantities by Substream, City of Los Angeles 2007

Source	Recycling (tons)	Percentage
Commercially hauled	206,750	43.8
Self-hauled	203,125	43.0
Unspecified[18]	62,400	13.2
Total	**472,275**	**100**

Source: Attachment C-3 Recycling Facilities – Facility Surveys, 2008

[16] *City of Los Angeles Year 2000 AB939 Report*, August 2001, data extrapolated to 2006. This substream may also include some unknown amount of reuse, including food waste, and C&D diversion.
[17] Major processors were derived from a list provided by Clements Environmental Corporation of all recyclers serving Los Angeles County, with a focus on the larger fiber processers serving the City.
[18] Recycle America Alliance reported receiving 200 tons of recycled material per day from City sources (approximately 62,400 tons per year). However, they were not able to break out the tons by substream.

3.1.3.1 Recycling Facility Overview

The locations of major processors that received recyclable materials from sources within the City in 2007 are shown in Figure 8. These facilities and their self-reported incoming tonnage for 2007 are listed in Table 12. In 2007, Angelus Western Paper Fibers received the largest amount of recyclable material at an estimated 187,200 tons. All of Angelus' reported tons were generated by commercial establishments. Burbank Recycling received the smallest quantity of recyclables in 2007 at about 800 tons. All of those tons were generated by commercial establishments and hauled by private collectors.

Generators within the City used approximately 14 percent of the 2.88 million tons[19] of processing capacity at these facilities, based on the combined reported processing capacities of the facilities listed in Table 12 and based on a six-day work week with one shift per day. Much of the remaining capacity is used by surrounding communities. Four of these facilities reported being in the process of expanding, adding at least 888,000 tons per year of processing capacity.[20] Another three facilities reported excess capacity using existing facilities and equipment, though not specifying the exact amount of that excess capacity.[21] An additional two facilities reported having excess capacity if additional equipment is purchased.[22] A listing of expansion plans for all 11 facilities is shown in Table 13.

Table 12: Commercial Recycling Received by Major Processors, City of Los Angeles 2007

Processing Facility	Recycling (tons)	Percentage
The Allan Company (Santa Monica)	12,600	2.7
Angelus Western Paper Fibers	187,200	39.6
Bestway Recycling Co. Inc. (Firestone Facility)	3,600	0.8
Burbank Recycling	800	0.2
Los Angeles Recycling Center	17,700	3.7
Potential Industries	42,800	9.1
Recycle America Alliance	62,400	13.2
Smurfit Recycling	10,575	2.2
South Coast Recycling	104,000	22.0
Sun Valley Paper Stock Inc.	1,740	0.4
West Valley Fibres	28,860	6.1
Total	**472,275**	**100**

Source: Attachment C-3 Recycling Facilities – Facility Surveys, 2008

[19] As documented in the facility surveys included in Attachment C-3 Recycling Facilities. In 2007, 472,275 tons out of 2.27 million tons generated in the City were processed at the 11 surveyed facilities. These facilities have the capability of processing 2.88 million tons per year. Most of this remaining capacity is used by surrounding communities.

[20] The Allan Company, Angelus Western Paper Fibers, Potential Industries, and West Valley Fibres

[21] Recycle America Alliance, South Coast Recycling, and Sun Valley Paper Stock Inc.

[22] Bestway Recycling Co. Inc and Los Angeles Recycling Center

Figure 8: Major Processors Receiving Commercial Recycling, City of Los Angeles 2007

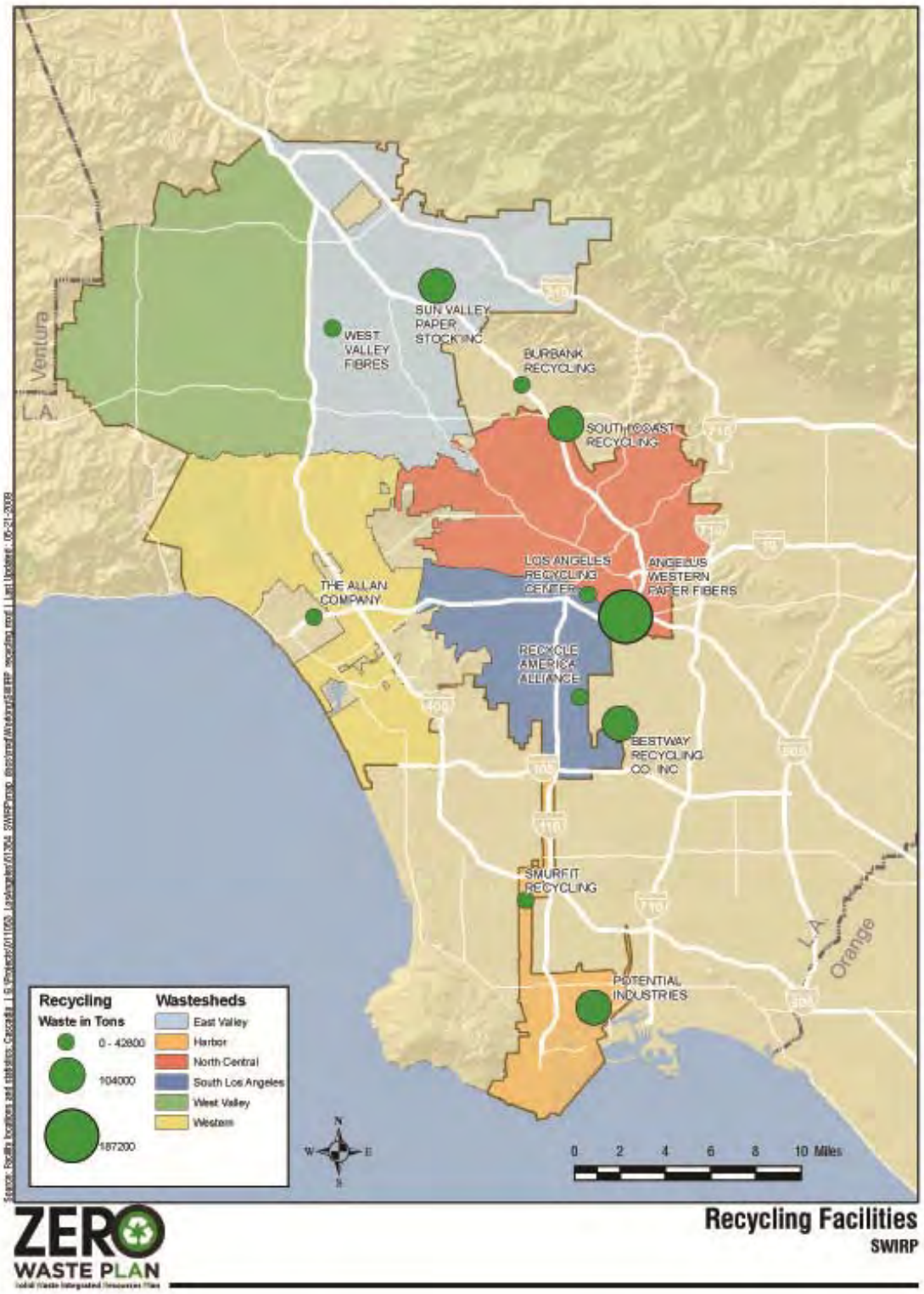


Table 13: Expansion Plans for Major Processing Facilities Receiving Recyclable Materials, City of Los Angeles 2007[23]

Company	Plans to Expand?	Expansion Amount or Method of Expansion
The Allan Company (Santa Monica)	YES	Additional capacity for 2,500-4,000 tons per month. Doubling of existing footprint. With expanded space anticipating more material and possibly more shifts.
Angelus Western Paper Fibers	YES	Additional capacity for 78,000 tons per year.[24]
Bestway Recycling Co. Inc. (Firestone Facility)	NO	Has capacity for additional 124,800 tons per year if additional equipment is purchased.
Burbank Recycling	NO	
Los Angeles Recycling Center	NO	Has capacity for additional 312,000 tons per year if additional equipment is purchased.
Potential Industries	YES	Additional capacity of 780,000 tons per year will be added. A permit application was submitted in September 2008 for this expansion.
Recycle America Alliance	NO	Has unspecified amount of additional capacity.
Smurfit Recycling	NO	
South Coast Recycling	NO	Has unspecified amount of additional capacity.
Sun Valley Paper Stock, Inc.	NO	Has unspecified amount of additional capacity.
West Valley Fibers	YES	Adding transloading capabilities – assessing adjacent sites for this expansion.

Source: Attachment C-3 Recycling Facilities – Facility Surveys, 2008

3.2 C&D Recycling and Beneficial Use

This section, which describes the C&D materials infrastructure of the City, is organized as follows:

- An overview of the City's C&D materials including the quantities of waste produced by the City in 2006, divided into commercial and self-haul/other substreams
- C&D materials flow from major substreams to ultimate destination
- The overall quantities of C&D materials received by transfer stations, waste-to-energy facilities, and landfills in 2006
- The overall C&D tonnages that major processors received from City sources in 2007, and plans for expansion at these major processing facilities

[23] See each facility's individual profile in Attachment C-3 for more details. Attachment C-8 shows survey forms used to collect data.

[24] Based on a 6-day work week.

3.2.1 Overview of C&D Materials

Approximately 2.62 million tons of C&D materials originating from residents and businesses within the City are beneficially used in solid waste landfills, disposed in inert landfills, or recycled each year.[25] Beneficial use of C&D materials includes using the material for on-site access roads, as alternative daily cover (ADC), or to construct wet-weather decking. In order to better analyze the generation and ultimate destination of these C&D materials, waste flows were separated into substreams, according to who brought the materials to the disposal facility. The two major substreams are commercially hauled and self-haul/other.

- **Commercially hauled** is defined as C&D materials collected by a private hauling company from businesses, institutions, and residences.
- **Self-haul/other** is defined as all C&D materials that are brought to solid waste or C&D facilities by the resident or business that generated them. This includes all C&D materials other than those brought to the facility by C&D haulers whose primary business is hauling, not construction or demolition.

The 2.62 million tons of C&D waste were divided into tonnages generated by each of these two waste substreams in 2006, as shown in Table 14. These materials are processed by transfer stations, solid waste landfills, inert landfills, and other processors, including those certified by the City. Estimates for the C&D materials from commercially hauled and self-haul/other substreams were based on interviews with personnel at the major solid waste landfills, inert landfills, and transfer stations that receive C&D materials from the City of Los Angeles.

Table 14: Estimated C&D Material Quantities by Substream, City of Los Angeles 2006

Source	C&D Materials (tons)	Percentage
Commercially hauled	2,303,000	87.9
Self-haul/other	319,000	12.1
Total	**2,622,000**	**100**

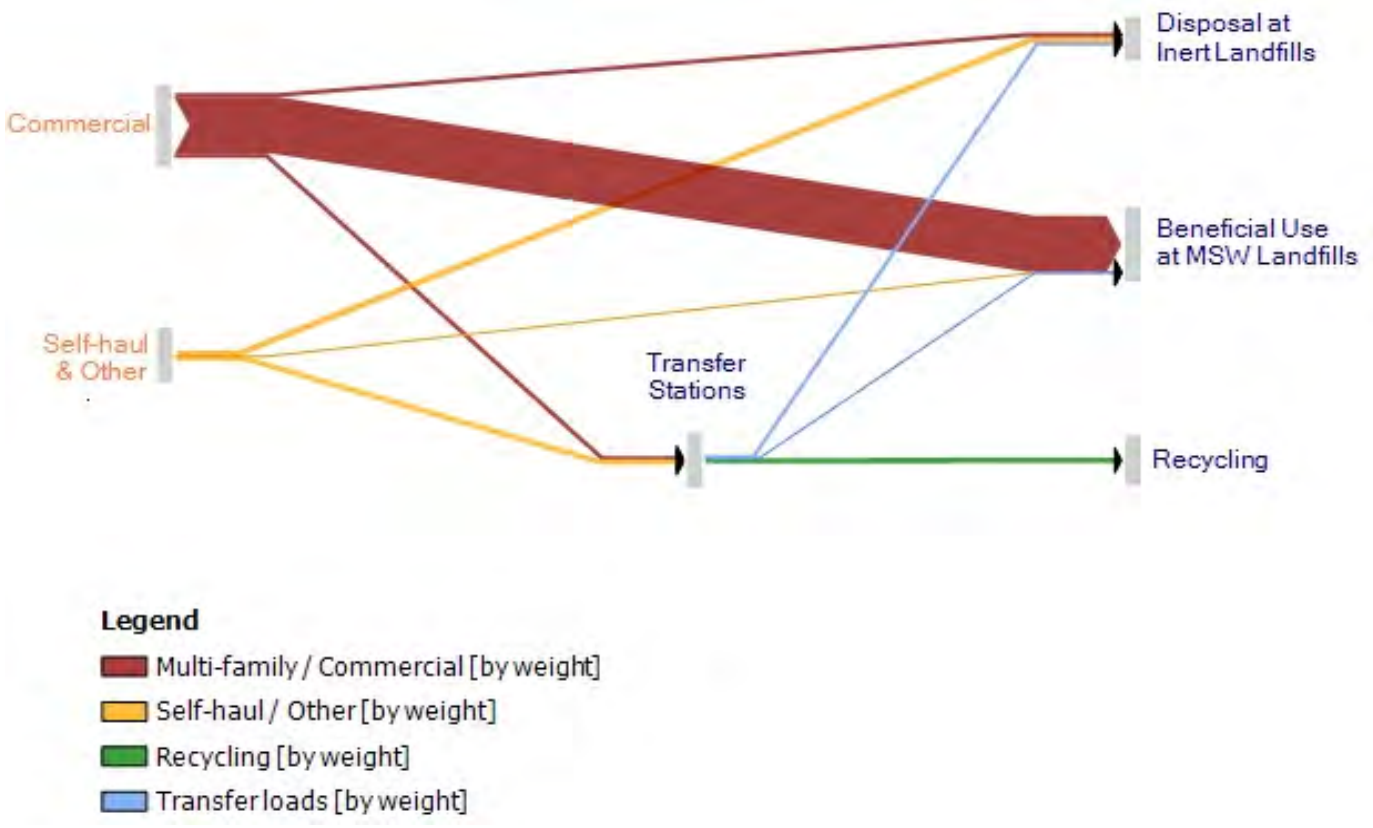
Source: Attachments C-1 Transfer Stations, C-2 Landfills and Waste-to-Energy Facilities and C-4 C&D Materials Processing Facilities – Facility Surveys, 2007-2008

Figure 9 shows the flow of C&D and inert materials by substream. The diagram presents the flow of C&D from its original source, through an intermediate facility if applicable, and to its ultimate destination. Most C&D materials, an estimated 2.06 million tons, were beneficially used at solid waste landfills. The remaining tons were disposed or processed at inert landfills (360,000 tons) or recycled (190,000 tons). Data for this diagram were collected by surveying the nine transfer stations, eight solid waste disposal facilities, and seven inert landfills that received C&D materials from City sources.[26]

[25] Based on surveys of nine transfer stations, eight solid waste disposal facilities, and seven inert landfills that reported receiving C&D materials from City sources. Tonnage information was not available from one landfill that is known to accept C&D materials. Personnel at the Lower Azusa facility estimated that it accepted between 60,000 and 100,000 tons of C&D and inert materials in 2006, but were unable to estimate the fraction that came from City sources.

[26] Tonnage information was not available from one landfill, Lower Azusa, which is known to accept C&D materials.

Figure 9: C&D Materials Flow, City of Los Angeles 2006



3.2.2 C&D Material Flows

Figure 10 depicts the general flow of C&D materials through local waste facilities, including the reported amount of C&D materials that are transported from the point of origin directly to a landfill or a transfer station and from a transfer facility to the final destination, a landfill or recycling facility.

Flow quantities presented in Figure 10 were obtained from a survey of solid waste landfills, inert landfills, and transfer stations that accepted C&D materials from City sources in 2006.

Please note that Figure 10 also includes an estimated 2.27 million tons of commercially recycled material, which contains some amount of recyclable material collected from C&D sites. The exact proportion of C&D materials was not documented in this analysis. Overall flows and quantities of privately collected commercial recyclables are more fully described in Section 3.1.

Figure 10: C&D Material Flow to Recycling, Beneficial Use, and Disposal in Inert Landfills, City of Los Angeles 2006



3.2.3 C&D Materials Facility Overview

This section includes information on the transfer stations, landfills, and four of the major C&D processing facilities that receive C&D materials from City sources.

3.2.3.1 Transfer Stations

The locations of transfer stations that received C&D materials from City sources in 2006 are shown in Figure 4. These facilities and their self-reported incoming tonnages for 2006 are listed in Table 15. In 2006, Community Recycling accepted the largest quantity of C&D materials from City sources, approximately 235,000 tons. Material received by transfer stations primarily came from the commercial substream, and most (approximately 250,000 tons) is processed for recycling or beneficial use at landfills.

The tip fees for C&D materials at these transfer stations ranged from $33 per ton to $58 per ton, with an average tip fee of about $43 in 2006. The weighted average tip fee, based on the tons that each facility received, was about $41 per ton.

Table 15: C&D Materials Received by Transfer Stations, City of Los Angeles 2006

Transfer Station	C&D and Inert Materials (tons)	Percentage
American Waste Transfer Station	2,075	0.8
Athens Services Transfer Station	22	0.0
Bel-Art Waste Transfer Station	283	0.1
Carson Transfer Station	5,281	2.1
Community Recycling	234,841	91.8
East Los Angeles Recycling &Transfer Station (ELARTS)	2,485	1.0
Falcon Refuse	10,000	3.9
Mission Road Recycling and Transfer Station (Waste Management)	202	0.1
Waste Resources Recovery	720	0.3
Total	**255,909**	**100**

Source: Attachment C-1 Transfer Stations – Facility Surveys, 2007
Quantities may not sum due to rounding.

3.2.3.2 Solid Waste Landfills

The locations of solid waste landfills that received C&D materials from City sources in 2006 are shown in Figure 5. These facilities and their self-reported incoming tonnages for 2006 are listed in Table 16. Virtually all of these C&D tons were beneficially used at the receiving landfills. In 2006, Puente Hills Landfill accepted more C&D materials from City sources than any other landfill, receiving a little less than 1.84 million tons, primarily comprised of soil and dirt, which were put to beneficial use.

The tip fees for C&D materials at these landfills ranged from $26 per ton to $62 per ton, with an average tip fee of about $44 in 2006. The weighted average tip fee, based on the tons that each facility received, was about $28 per ton.[27]

Table 16: C&D Materials Received by Solid Waste Landfills for Beneficial Reuse, City of Los Angeles 2006

Solid Waste Landfill	C&D and Inert Materials (tons)	Percentage
Antelope Valley Public Landfill	6	0.0
Bradley Landfill	64	0.0
Calabasas Sanitary Landfill	35,271	1.7
Chiquita Canyon Sanitary Landfill	6,800	0.3
Lancaster Landfill	50,455	2.4
Puente Hills Landfill	1,838,071	89.2
Scholl Canyon Sanitary Landfill	87,765	4.3
Sunshine Canyon Landfill	42,262	2.1
Total	**2,060,694**	**100**

Source: Attachment C-2 Landfills and Waste-to-Energy Facilities – Facility Surveys, 2007

[27] The weighted average is low because the tip fee at Puente Hills Landfill, which accepted the vast majority of C&D materials, is $26.21 for C&D materials.

3.2.3.3 Inert Landfills

The locations of inert landfills that received waste from City sources in 2006 are shown in Figure 11. These facilities and their self-reported incoming tonnage for 2006 are listed in Table 17. Overall, inert landfills reported that they accepted approximately 363,000 tons of C&D materials from City sources in 2006.[28] Most of these inert materials were disposed, but about 32,000 tons were reused or recycled. Sun Valley Landfill accepted more C&D materials from City sources than any other inert landfill receiving materials from within the City. Most inert landfills are classified as "Inert Debris Engineered Fill Operations" under state regulations[29] and inert materials disposed at an inert landfill are considered beneficially reused and are not considered disposed as solid waste. Several of these facilities are mine reclamation projects, where former mines are in the process of being filled with inert materials so that the land can be returned to a useful purpose.

The combined estimated annual permitted capacity of these inert C&D landfills, based on a six-day work week, is about 5.94 million tons.[30] Generators within the City used approximately six percent of the capacity of these facilities. None of the inert landfills are in the process of planning or obtaining permits for expansions. Only one of the inert landfills, Sun Valley, reported the possibility to expand capacity in the future.

The tip fees for C&D and inert materials at these inert landfills were typically assessed per load rather than per ton and ranged from no charge to $345 per load in 2006.

Table 17: C&D Materials Received by Inert Landfills, City of Los Angeles 2006

Inert Landfill	C&D and Inert Materials (tons)	Percentage
Azusa Landfill	43,499	12.0
Peck Road	25,659	7.1
Chandler's Landfill	12,679	3.5
Hanson Aggregates	916	0.3
Nu Way Arrow	85,950	23.7
Reliance Pit #2	625	0.2
Sun Valley Landfill	193,313	53.3
Total	**362,641**	**100**

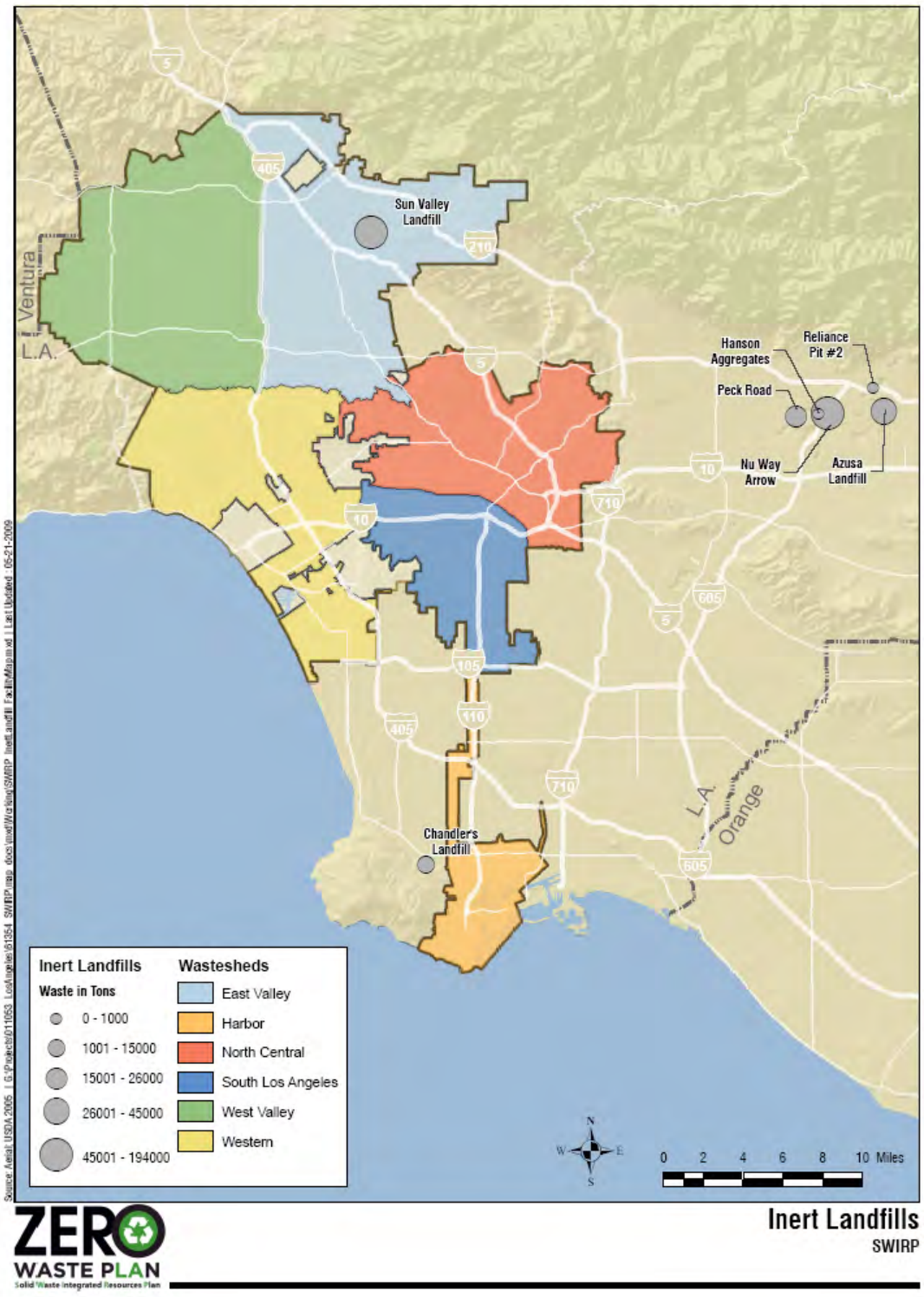
Source: Attachment C-2 Landfills and Waste-to-Energy Facilities – Facility Surveys, 2007
Quantities may not sum due to rounding.

[28] Tonnage information was not available from one landfill that is known to accept C&D materials. Personnel at Lower Azusa estimated that it accepted 60,000-100,000 tons of C&D and inert materials in 2006, but were unable to estimate the fraction that came from City sources. Transfer stations also reported sending an additional 10,000 tons to inert landfills.

[29] California Code of Regulations Title 14, Natural Resources-Division 7, Article 5.95, Section 17388 (l)

[30] Two landfills, Chandler and Reliance Pit #2, are mine reclamation projects, so they do not have a permitted capacity limit. Lower Azusa's capacity is included in this figure.

Figure 11: Inert Landfills Receiving C&D and Inert Materials, City of Los Angeles 2006



3.2.3.4 Processing Facilities

The locations of major processors that received C&D materials from commercial establishments in the City in 2007 are shown in Figure 12. These facilities and their self-reported incoming tonnage for 2007 are listed in Table 18. C&D materials are processed at these facilities and transferred to end-use markets including recycling markets (for cardboard, metal, and plastic), composting facilities (for yard trimmings and some wood waste), biomass-to-energy facilities (for some wood waste), reuse markets (for some reground aggregate materials,) inert landfills (for some clean soils, concrete, and asphalt), and solid waste landfills (for beneficial reuse of concrete and asphalt for roads and winter pads).

The tons reported in Table 18 represent only those tons received by the four major C&D processors surveyed for this report. Additional C&D processors likely receive C&D materials from the City of Los Angeles, including the other seven certified mixed-debris processors listed in Table 19. As previously mentioned, the transfer stations listed in Table 15, such as Community Recycling, also process C&D materials from the City. Note that tonnage information for transfer stations that also serve as C&D materials processing facilities is included in the transfer station section.

The 718,000 tons listed in Table 18 represent a portion of the total C&D recycling, which is included in the 2.27 million tons of commercially recycled C&D materials depicted in Figure 10 and also included in the privately collected commercial tonnage described in Section 3.1 above.

Generators within the City used approximately 58 percent of the 1.23 million tons of processing capacity at these facilities, based on a six-day work week with one shift per day. Much of the remaining capacity is used by surrounding communities. Two facilities reported that they have plans to expand their capacity[31]. The other two facilities reported that they do not have room to expand their operations, but do have at least 93,600 tons of excess capacity with existing operations.[32] A full listing of expansion plans for major C&D processing facilities receiving solid waste from the City of Los Angeles in 2006 is shown in Table 20.

Table 18: Major Processors Receiving C&D Materials, City of Los Angeles 2007[33]

Processing Facility	C&D Materials (tons)	Percentage
Athens Sun Valley	344,331	47.9
Downtown Diversion	360,000	50.1
Construction and Demolition Recycling	13,590	1.9
Madison Materials	250	0.0
Total	**718,171**	**100**

Source: Attachment C-4 Materials Processing Facilities – Facility Surveys, 2008
Quantities may not sum due to rounding.

[31] Athens Sun Valley and Madison Materials
[32] Downtown Diversion and Construction and Demolition Recycling
[33] Note that only four major processors were surveyed for this report. Madison Materials is a major processor operating in the region, but did not receive a significant number of tons from City sources in 2007.

Please see each facility's individual profile in Attachment C-4 for more details on per-ton fees or payments, individual expansion plans, and end markets. Attachment C-8 shows survey forms used to collect data.

Table 19: Other Certified Mixed Debris Processors Receiving C&D Materials, City of Los Angeles 2007

Processing Facility
Allied-Falcon Refuse Center
American Waste Pendleton Facility
California Waste Services
City Terrace Recycling
Community Recycling & Resource Recovery
Direct Disposal
Looney Bins/East Valley Diversion

Source: City of Los Angeles, Bureau of Sanitation – List of Certified Processors 2008

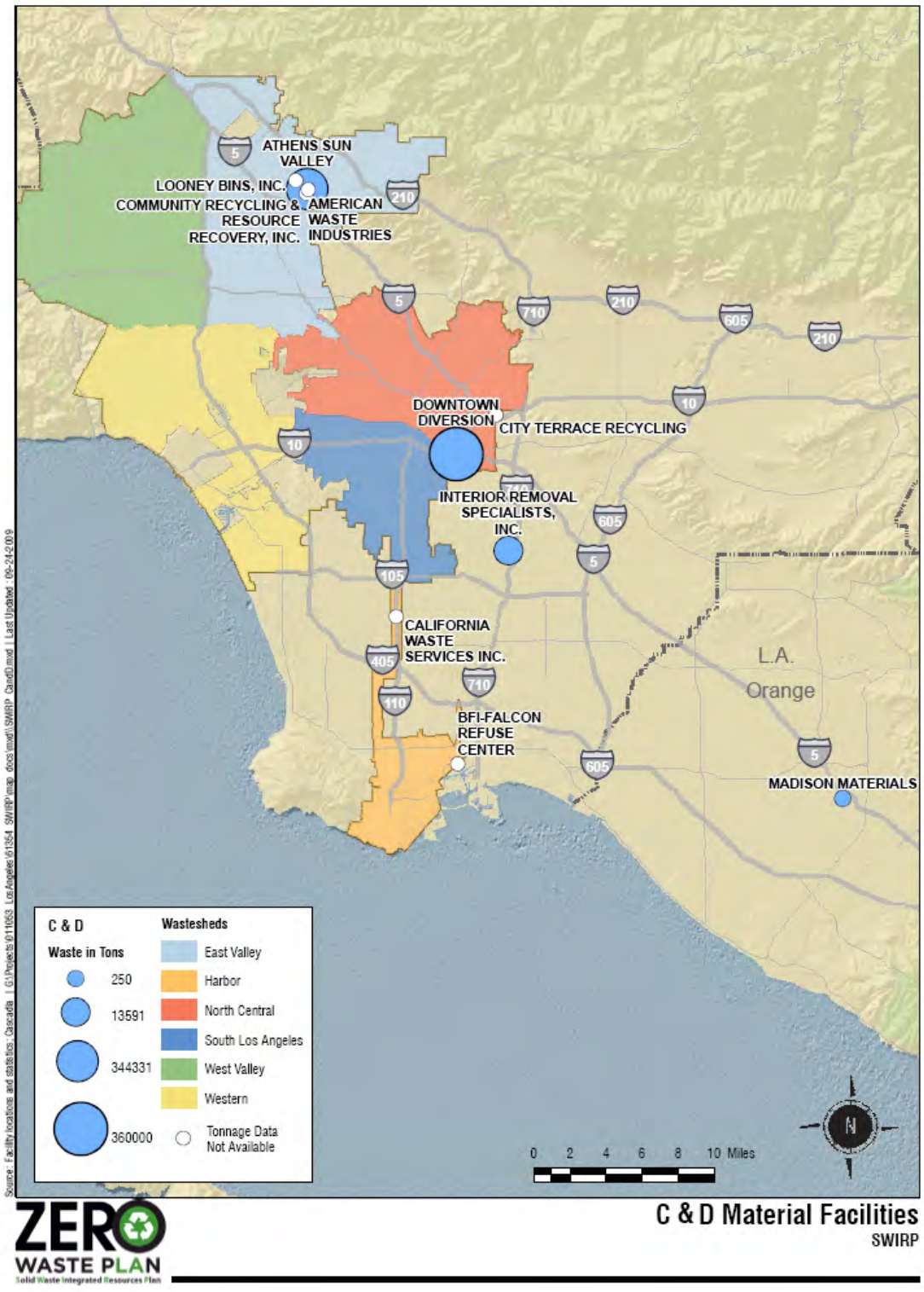
Table 20: Expansion Plans for Major Processing Facilities Receiving C&D Materials, City of Los Angeles 2007[34]

Company	Plans to Expand?	Expansion Amount or Method of Expansion
Athens Sun Valley	YES	Plans to increase by 156,000 tons per year. Expansion permit is being reviewed. Final environmental review was completed in 2009.
Downtown Diversion	NO	Has 93,600 tons per year excess capacity.
Construction and Demolition Recycling	NO	Has unspecified amount of additional capacity.
Madison Materials	YES	Could increase to 1,400 tons per day with a second shift. Looking into new conversion technology; would not impact processing throughput, but would minimize residual waste to disposal. Also working on installing a fueling station for compressed natural gas.

Source: Attachment C-4 Materials Processing Facilities – Facility Surveys, 2008

[34] Note that information for transfer stations that also serve as C&D materials processing facilities (including Community Recycling) is included in the transfer station section.

Figure 12: Major Processors Receiving C&D Materials, City of Los Angeles 2007



3.3 Yard Trimmings, Composting, and Beneficial Use

This section describes the yard trimmings infrastructure of the City and is organized as follows:

- An overview of the City's yard trimmings system and yard trimmings flows, including overall quantities of yard trimmings generated by three major substreams
- The origins of residential curbside yard trimmings by wasteshed
- Lists of the transfer stations and landfills that received yard trimmings from City sources
- The overall quantities of yard trimmings that flow through yard trimmings processing facilities

3.3.1 Overview of Yard Trimmings

Approximately 900,000 tons of yard trimmings are generated per year by residents and businesses within the City.[35] Organic flows were separated into multiple substreams, according to who generated the yard trimmings and who brought the materials to the processing facility. The three major substreams are residential curbside, commercial/multi-family, and self-haul/other.

- **Residential curbside** is defined as yard trimmings[36] collected by LASAN from residential curbside customers, including single-family residences and some multi-family complexes.
- **Commercial/multi-family** is defined as yard trimmings collected by a private hauling company from businesses, institutions, public venues, and multi-family buildings, with five units or more, such as apartments and condominiums.
- **Self-haul/other** is defined as all yard trimmings brought to processing facilities by the resident or business that generated it, including landscapers. This includes all yard trimmings other than that brought to the facility by LASAN or by private hauling companies.

The approximately 900,000 tons of yard trimmings were distributed among these three substreams. In Table 21 below, self-haul tons are apportioned to the residential curbside customers and commercial generators. LASAN provided tonnages for the residential curbside substream. Estimates for the yard trimmings from commercial/multi-family and self-haul/other substreams were developed based on surveys of landfills, transfer stations, and yard trimmings processors.

[35]Tonnage information was not available from two facilities, Greencycle and Norwalk Industries, which are known to accept yard trimmings from City sources.

[36] A portion of the residential yard trimmings collected from the East Valley, West Valley, and Western wastesheds contains horse manure (including bedding). Horse manure is either collected separately or commingled with yard trimmings. Horse manure collected in the East Valley and West Valley wastesheds is sent to contracted yard trimmings processors while in the Western wasteshed, the collected horse manure is brought to a non-profit community garden in Mar Vista, California.

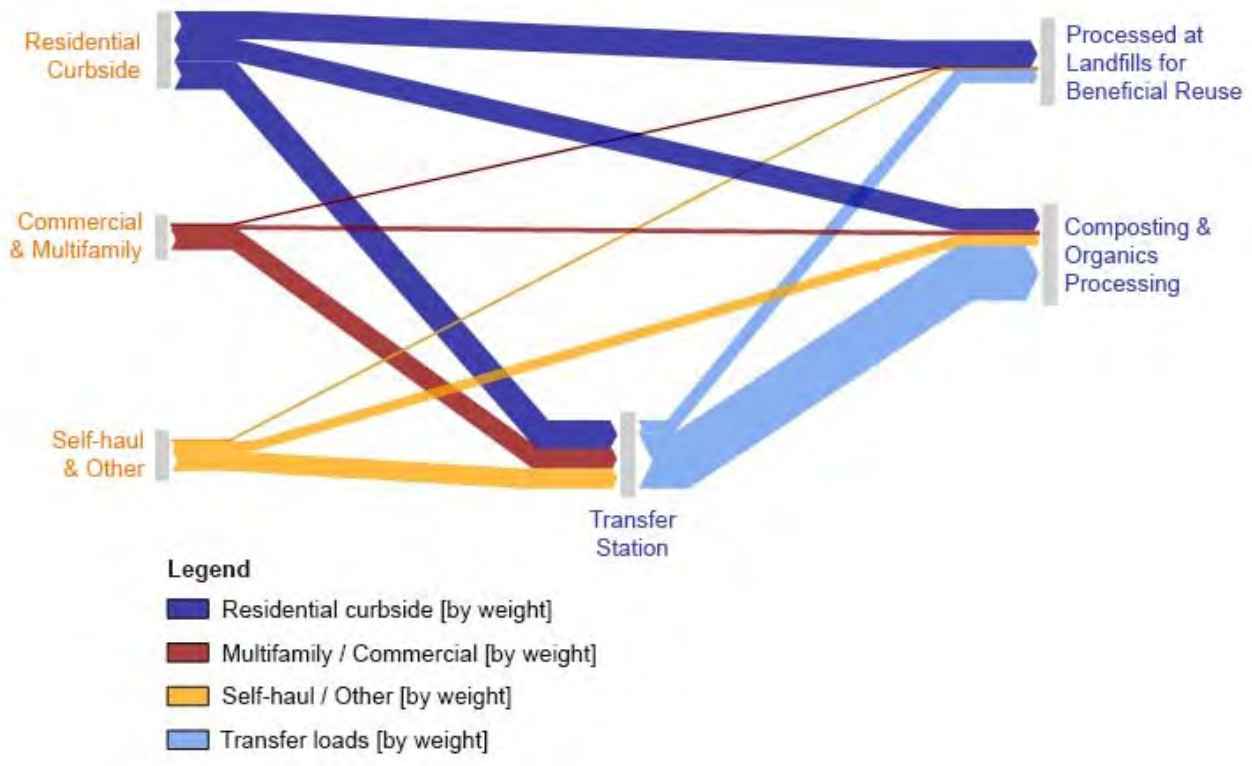
Table 21: Estimated Yard Trimming Quantities by Substream, City of Los Angeles 2006[37]

Source	Yard Trimmings (tons)	Percentage
Residential curbside (LASAN)	521,000	58.0
Residential (self-haul)	141,000	15.7
Commercial	171,000	19.0
Commercial (self-haul)	66,000	7.3
Total	**899,000**	**100**

Source: Attachments C-1 Transfer Stations, C-2 Landfills and Waste-to-Energy Facilities and C-5 Yard Trimmings Processing Facilities – Facility Surveys, 2007

In almost all cases, yard trimmings are beneficially used at a landfill for ADC, are composted, or are used to make organic products such as mulch. Figure 13, below, shows the flow of yard trimmings generated in the City. The diagram presents the flow of yard trimmings from its original source, through an intermediate facility if applicable, to processing or end-use.

Figure 13: Yard Trimmings Flow, City of Los Angeles 2006



[37] Tonnage information was not available from two facilities that are known to accept yard trimmings from City sources.

Information for this diagram was collected by surveying the eleven transfer stations,[38] seven solid waste disposal facilities,[39] and six yard trimmings processors[40] that received yard trimmings from City sources. LASAN data for collection from residential curbside customers were also used in this analysis.

3.3.2 Origins by Wasteshed

Table 22 displays estimated yard trimmings tons collected from residential curbside customers through the LASAN curbside program in each of the six wastesheds in the City in 2006: South LA, Harbor, North Central, Western, West Valley, and East Valley. The Harbor wasteshed generated the smallest amount, approximately 20,000 tons, of yard trimmings among these wastesheds. The East and West Valley wastesheds generated the most yard trimmings, approximately 147,000 and 144,000 tons, respectively.

Table 22: Residential Curbside Yard Trimmings, City of Los Angeles 2006

Wasteshed	Yard Trimmings (tons)	Percentage
South LA	54,010	10.4
North Central	63,249	12.1
Western	92,741	17.8
East Valley	147,366	28.3
Harbor	19,725	3.8
West Valley	144,114	27.6
Total	**521,205**	**100**

Source: LASAN Database "Sanitation Commodities 2006"

3.3.3 Yard Trimmings Flows

In 2006, about half of the yard trimmings generated in the City were taken to a transfer station before reaching a final destination. Ultimately, most of the yard trimmings generated in the City were transformed into products or beneficially used. City policy[41] requires that yard trimmings collected by LASAN should not be used as ADC at landfills. However, the City has no control over privately hauled yard trimmings delivered for beneficial reuse at landfills.

Figure 14 shows the general flow of yard trimmings through local processing facilities.

Flow quantities presented in Figure 14 were obtained from a survey of transfer stations, disposal facilities, and yard trimmings processors that accepted organic material from City sources in 2006, as well as from LASAN data that summarized residential curbside collection routes. This figure depicts the reported amount of yard trimmings that were transported from the City directly to a landfill, transfer station, or yard trimmings processor.

[38] American Waste Transfer Station, Bel-Art Waste Transfer Station, Central Los Angeles Recycling & Transfer Station, Community Recycling, Compton Recycling and Transfer Station (Browning Ferris Ind.), Downey Area Recycling and Transfer Station, East Los Angeles Recycling & Transfer Station, Falcon Refuse, Mission Road Recycling and Transfer Station (Waste Management), Southern California Disposal, Waste Resources Recovery

[39] Bradley Landfill, Calabasas Sanitary Landfill, Chiquita Canyon Sanitary Landfill, Puente Hills Landfill, Scholl Canyon, Sanitary Landfill, Sunshine Canyon Landfill, Southeast Resource Recovery Facility

[40] Eco-Logics, Griffith Park, Lopez Canyon (Lake View Terrace), North Hills, Harbor Mulching (San Pedro), Van Norman

[41] Public Works Board Report on Green Waste Processing Contingency Plan adopted on September 22, 2006.

Figure 14: Yard Trimmings Flow to Recycling/Beneficial Use, City of Los Angeles 2006[42]



3.3.4 Yard Trimmings Facility Overview

This section includes information on the transfer stations, landfills, and processing facilities that receive yard trimmings from City sources.

3.3.4.1 Transfer Stations

Transfer stations that received yard trimmings from City sources in 2006, along with their self-reported incoming tonnages, are listed in Table 23. Overall, transfer stations handled approximately 450,000 tons of yard trimmings in 2006. Community Recycling accepted the largest overall quantity, over 360,000 tons of yard trimmings.

The tip fees for yard trimmings at these transfer stations ranged from $28 per ton to $58 per ton, with an average tip fee of about $42 in 2006. LASAN pays approximately $37.50 per ton for organics processing at Community Recycling.

Several transfer stations did not have a specific tip fee for yard trimmings. Including the general tip fees at these transfer stations, an average tip fee was about $43 per ton.[43]

[42] Note that "organic processors" include both mulching and composting facilities.

Figure 4shows the location of these transfer stations. More information about these transfer stations can be found in Attachment C-1.

Table 23: Yard Trimmings Received by Transfer Stations, City of Los Angeles 2006

Transfer Station	Yard Trimmings (tons)	Percentage
American Waste Transfer Station	280	0.1
Bel-Art Waste Transfer Station	35	0.0
Central Los Angeles Recycling & Transfer Station	917	0.2
Community Recycling	363,652	80.0
Compton Recycling and Transfer Station (Browning Ferris Ind.)	283	0.1
Downey Area Recycling and Transfer Station	32	0.0
East Los Angeles Recycling & Transfer Station	296	0.1
Falcon Refuse	6,012	1.3
Mission Road Recycling and Transfer Station (Waste Management)	81,304	17.9
Southern California Disposal	1,088	0.2
Waste Resources Recovery	384	0.1
Total	**454,283**	**100**

Source: Attachment C-1 Transfer Stations – Facility Surveys, 2007

3.3.4.2 Landfills and Waste-to-Energy Facilities

Solid waste landfills that received yard trimmings from City sources in 2006, along with their self-reported incoming tonnages, are listed in Table 24. Overall, landfills directly received about 200,000 tons of organic materials from City sources in 2006. Bradley Landfill accepted the largest overall quantity of yard trimmings, approximately 180,000 tons, primarily from residential curbside customers, which was delivered by LASAN and was processed and delivered to farmers as mulch.[44] Chiquita Canyon Sanitary Landfill primarily accepted yard trimmings from transfer loads. Calabasas Sanitary Landfill accepted the largest quantity of yard trimmings from the commercial/multi-family substream.

Under state law,[45] materials such as yard trimmings are considered diverted from disposal if used as ADC in landfill operations, and count toward the diversion goals mandated by AB 939. City policy[46] does not allow yard trimmings collected by LASAN to be used as ADC. However, private haulers in the City can bring yard trimmings to landfills for use as ADC.

The tip fees for yard trimmings at these landfills ranged from $12 per ton to $35 per ton, with an average tip fee of about $20 in 2006. Southeast Resource Recovery Facility did not have a separate yard trimmings tip fee. Including the general tip fee at this facility, the average tip fee was approximately $24 per ton.

Figure 5 shows the location of these landfills and waste-to-energy facilities.

[43] Not all transfer stations provided tip fees.
[44] As of April 2007, the Bradley facility ceased landfill operations and operated as a limited-volume transfer station accepting clean fill and yard trimmings.
[45] California Public Resources Code Section 41781.3
[46] Public Works Board Report on Green Waste Processing Contingency Plan adopted on September 22, 2006.

Table 24: Yard Trimmings Received by Solid Waste Landfills and Waste-to-Energy Facilities, City of Los Angeles 2006

Landfill or Waste-to-Energy Facility	Yard Trimmings (tons)	Percentage
Bradley Landfill	179,542	72.1
Calabasas Sanitary Landfill	15,602	6.3
Chiquita Canyon Sanitary Landfill	52,600	21.1
Puente Hills Landfill	63	0.0
Scholl Canyon Sanitary Landfill	2	0.0
Sunshine Canyon Landfill	1,287	0.5
Southeast Resource Recovery Facility	57	0.0
Total	**249,153**	**100**

Source: Attachment C-2 Landfills and Waste-to-Energy Facilities – Facility Surveys, 2007

3.3.4.3 Yard Trimmings Processing Facilities

The locations of yard trimmings processing facilities that received yard trimmings from City sources in 2006 are shown in Figure 15. Additionally, there are six composting facilities in Southern California permitted to accept food scraps, which are also shown in Figure 15.[47] The yard trimmings processing facilities and their self-reported incoming tonnages in 2006 are listed in Table 25. North Hills accepted the largest quantity of yard trimmings from City sources in 2006, at 80,000 tons. North Hills also accepted the largest quantities of yard trimmings from the commercial/multi-family and self-haul/other substreams. Eco-Logics accepted the largest quantity of yard trimmings from LASAN collected residential curbside materials in 2006. However, LASAN terminated its contract with Eco-Logics in 2007 and does not deliver residential curbside yard trimmings to the facility. The Griffith Park Compost Facility receives yard trimmings from City parks only, not residential curbside customers. None of the yard trimmings processing facilities interviewed have any plans for expansion. Most yard trimmings processors surveyed (including Griffith Park, Lopez Canyon, Harbor Mulching, and Van Norman) are owned and operated by LASAN and do not receive material from sources other than LASAN or other City-hauled sources. They do not charge a tip fee for City-hauled loads. North Hills reported charging $25 to $45 per ton.

Table 25: Yard Trimmings Received by Processing Facilities, City of Los Angeles 2006[48]

Yard Trimmings Processing Facility	Yard Trimmings (tons)	Percentage
Eco-Logics	48,820	18.2
Griffith Park	39,685	14.8
Lopez Canyon (Lake View Terrace)	31,301	11.7
North Hills	80,000	29.8
Harbor Mulching (San Pedro)	20,521	7.7
Van Norman	47,734	17.8
Total	**268,061**	**100**

Source: Attachment C-5 Yard Trimmings Processing Facilities – Facility Surveys, 2007
Note that tonnage information for transfer stations that also serve as yard trimmings processing facilities (including Community Recycling and Mission Road-Waste Management) is included in the transfer station section, Table 23.

[47] California Biomass Compost Facility, Community Recycling Lamont Compost Facility, Kochergan Farms Composting, Victor Valley Regional Composting Facility, Liberty Composting, and Miramar Greenery.

[48] Tonnage information was not available from two facilities, Greencycle and Norwalk Industries, which are known to accept green waste from City of Los Angeles sources.

Figure 15: Yard Trimmings Processing Facilities Receiving Organic Waste, City of Los Angeles 2006, and Compost Facilities in Southern California Permitted to Accept Food Scraps



Section 4 Household Hazardous Waste and Electronics

This section describes the household hazardous waste and electronics infrastructure of the City and is organized as follows:

- An overview of the City's household hazardous waste and electronics infrastructure
- The breakdown of household hazardous waste and electronics generated
- Information on tonnages received in 2006 by permanent hazardous waste collection facilities, collection and on-call collection programs, and tonnages received in 2007 by major electronics processors

4.1 Overview of Household Hazardous Waste and Electronics Collection

In total, approximately 3,600 tons of household hazardous waste were collected through the City's hazardous waste collection programs in 2006. As shown in Table 26, about 45 percent of these materials were electronics.

Table 26: Household Hazardous Waste and Electronics Collected for Processing and Disposal, City of Los Angeles 2006

Substream	Tons	Percentage
Electronics	1,599	44.8
Household hazardous waste (not electronics)	1,974	55.2
Total	**3,573**	**100**

Source: City of Los Angeles Lead Agency Form CalRecycle 303a Household Hazardous Waste Collection Information for Fiscal Year 2006-2007

Household hazardous waste and electronics are discussed separately due to the unique nature and collection methods of these materials. Nearly 2,500 tons of household hazardous waste and electronics were collected in 2006 at permanent hazardous waste collection facilities in and around the City. In addition, approximately 525 tons of household hazardous waste and electronics were collected through mobile collection events and an additional 575 tons of electronics were collected through an on-call collection program.

There are six permanent collection facilities for household hazardous waste, known as S.A.F.E. (Solvents, Automotive, Flammables, and Electronics) centers. They include:

- Gaffey S.A.F.E. Center (San Pedro)
- Hyperion S.A.F.E. Center (Playa del Rey)
- Los Angeles-Glendale S.A.F.E. Center (East Los Angeles)
- UCLA S.A.F.E. Center (West Los Angeles)
- Washington S.A.F.E. Center (South Los Angeles)
- Randall S.A.F.E. Center (Sun Valley)
- Nicole Bernson S.A.F.E. Center (Northridge)

The City also holds mobile collection events on Saturdays and Sundays in areas not served by S.A.F.E. centers. Each event is scheduled for one day (Saturday) from 9:00 a.m. to 3:00 p.m. A flyer is mailed to neighboring communities informing them of the event and the event is posted on the LASAN website. No reservation or appointment is required. All Los Angeles County residents can bring their household hazardous waste, free of charge, to the City's "Hazmobile" collection sites.

Additionally, the City collects electronics through an on-call collection program. City residents may contact the call center and request a pickup.

Total tonnages from these three sources in 2006 are shown in Table 27. For more detailed information about the quantities and types of materials collected at the permanent facilities, mobile events, and through on-call collection, refer to Attachment C-9.

Table 27: Household Hazardous Waste and Electronics Collection Methods, City of Los Angeles 2006

Collection Site	Tons	Percentage
Permanent hazardous waste collection facilities	2,473	69.2
Mobile collection events	525	14.7
On-call collection	575	16.1
Total	**3,573**	**100**

Source: City of Los Angeles Lead Agency Form CalRecycle 303a Household Hazardous Waste Collection Information for Fiscal Year 2006-2007

4.2 Major Electronics Collectors and Processors

In addition to the information provided by LASAN, the major electronics collectors and processors were also surveyed. Major processors provided information on electronics collected and processed from Los Angeles sources in 2007. The central collection sites are shown in Figure 16, and the tons collected by source, as reported by the processors, are listed in Table 28. The Randall S.A.F.E. Center in Sun Valley accepted the largest quantity of electronics from City sources in 2007 at nearly 200 tons.

Figure 16: Central Collection Sites Receiving HHW & Electronics, City of Los Angeles 2007

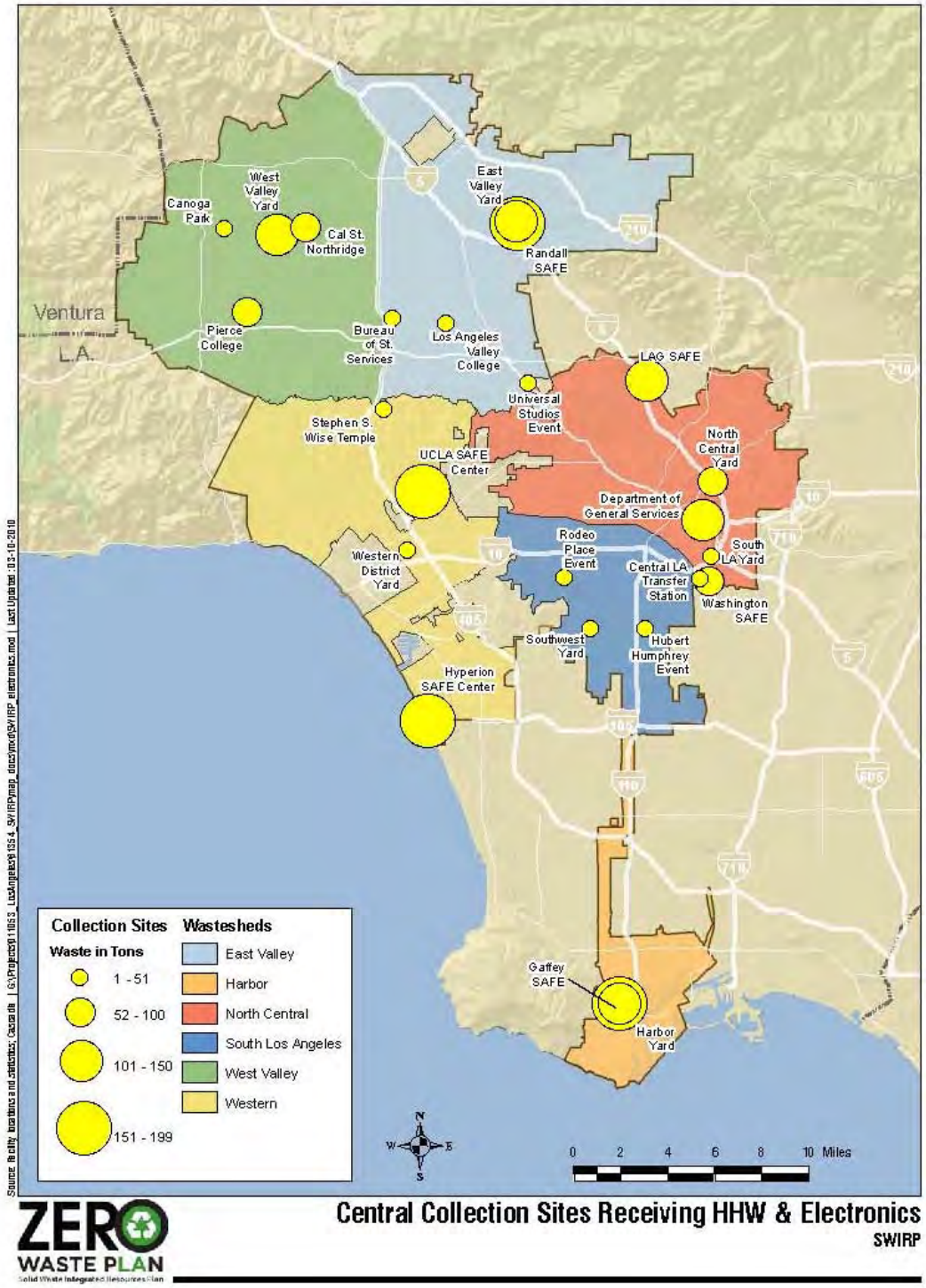


Table 28: Electronics Tonnages Collected by Source, City of Los Angeles 2007

Central Collection Site	Electronics (tons)	Percentage
West Valley Yard	115	6.3
East Valley Yard	123	6.7
Western Yard	41	2.2
Bureau of Street Services	13	0.7
Cal State Northridge	70	3.8
Canoga Park	37	2.0
Central LA Transfer Station	9	0.5
Department of General Services	119	6.5
Gaffey S.A.F.E. Center	110	6.0
Hubert Humphrey Event	8	0.4
Hyperion S.A.F.E. Center	156	8.5
IMS electronics collection[49]	49	2.7
Los Angeles Valley College	36	2.0
North Central Yard	79	4.3
Pierce College	51	2.8
Randall S.A.F.E. Center	199	10.9
Rodeo Place Event	14	0.8
Harbor Yard	151	8.2
South LA Yard	45	2.5
Southwest Yard	1	0.1
Stephen S. Wise Collection Event	1	0.1
UCLA S.A.F.E. Center	157	8.6
Universal Studios Event	21	1.1
Washington S.A.F.E. Center	84	4.6
LA Glendale S.A.F.E. Center	143	7.8
Total	**1,832**	**100**

Source: Attachment C-6: Electronics Processing Facilities – Facility Surveys, 2008
Quantities may not sum due to rounding.

The three largest major processors of electronics from City sources for 2007 are listed in Table 29 with self-reported incoming tonnages. Electronic Recyclers of America (ERA) processed 1,707 tons of electronics from the City, E-Recycling of California (ERC) processed 76.1 tons of electronics, and IMS Electronics Recycling processed 49 tons

[49] Due to scale of map, IMS is not included in Figure 16. For location refer to map in Figure 17.

of electronics in 2007.[50] The combined total estimated annual permitted capacity of these processors, based on a six-day work week with one shift per day, is 72,000 tons per year. Generators within the City used approximately three percent of the capacity of these facilities. Most of the remaining capacity is used by other Southern California communities. Each of the processors is interested in and able to expand its existing operations, as detailed in Table 30. For more detailed information about the electronics processing facilities, refer to Attachment C-6.

Table 29: Electronics Tonnages by Major Processor, City of Los Angeles 2007

Processing Facility	Electronics (tons)	Percentage
Electronics Recyclers of America	1,707	93.2
E-Recycling of California	76	4.2
IMS Electronics Recycling	49	2.7
Total	**1,832**	**100**

Source: Attachment C-6: Electronics Processing Facilities – Facility Surveys, 2008
Quantities may not sum due to rounding.

Table 30: Expansion Plans for Major Processing Facilities Receiving Electronics, City of Los Angeles 2007

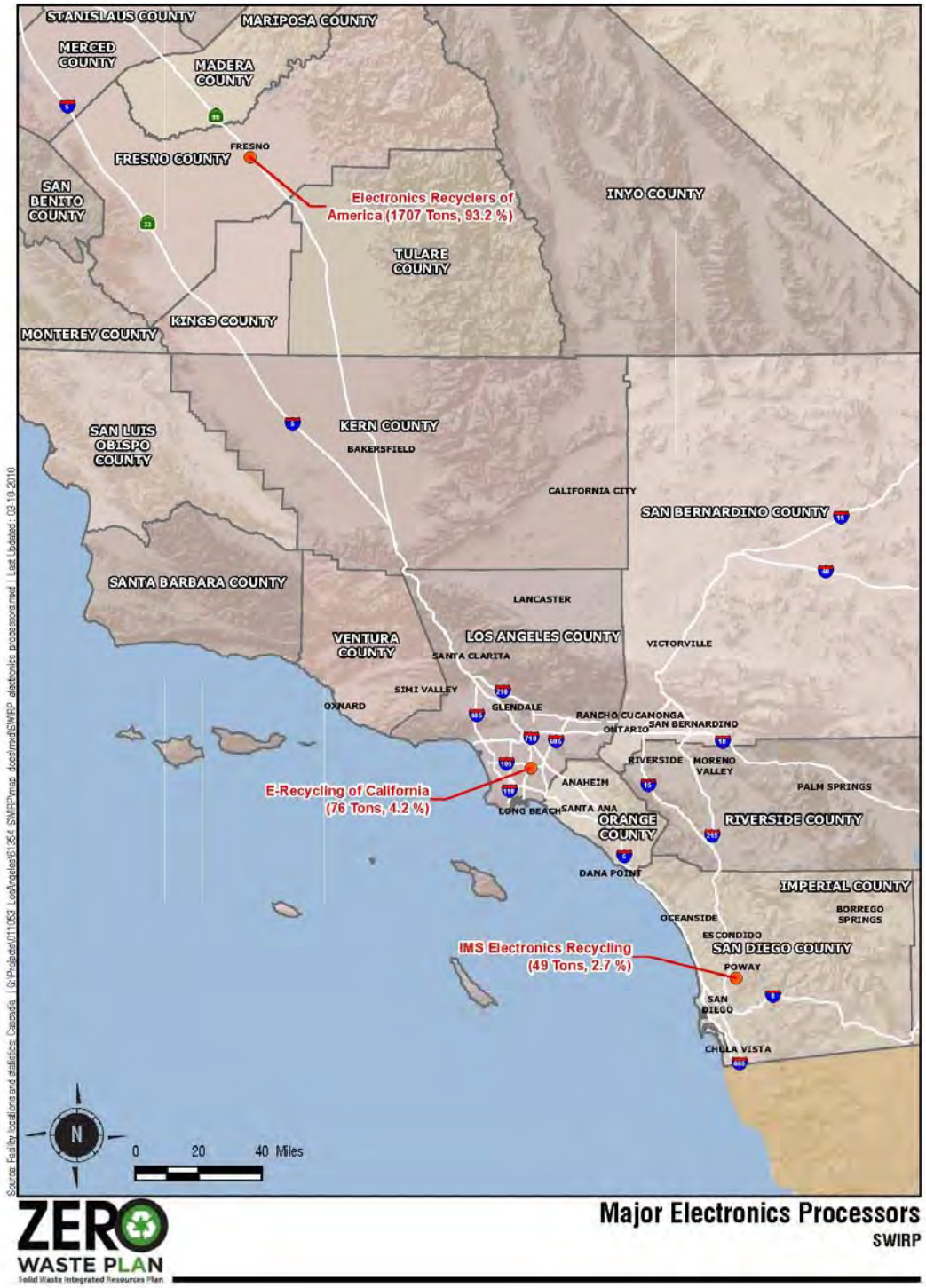
Company	Plans to Expand?	Expansion Amount or Expansion Method
Electronics Recyclers of America	YES	Additional 108,000 tons per year. Add more sophisticated processing equipment.
E-Recycling of California	YES	"Unlimited" additional capacity available at Paramount and Orange County facilities
IMS Electronics Recycling	YES	Additional 21,000 tons per year

Source: Attachment C-6: Electronics Processing Facilities – Facility Surveys, 2008

Each of the major processors operates a dismantling facility where electronics are disassembled and the component parts, including plastic, glass, and metal, are diverted for recycling. All of these processors are certified by the Basel Action Network as "e-Stewards" and are committed to the highest standard for globally responsible electronics recycling. The locations of major electronics processing facilities that received electronics from City sources in 2007 are shown in Figure 17.

[50] ERA processed 1,707 tons and ERC processed 76.1 tons collected at the central collection sites listed in Table 27. IMS accepts electronics from three major collection companies that service the City of Los Angeles. This company does not have permanent collection sites.

Figure 17: Major Electronics Processors Receiving Electronics, City of Los Angeles 2007



Attachment C-1: Transfer Stations[51]

American Waste Transfer Station

Overview

American Waste is a transfer facility located in the City of Gardena which, in 2006, received solid waste, yard trimmings, and C&D materials from the South Los Angeles wasteshed. The facility is permitted to accept up to 2,225 tons of waste per day, or 694,200 tons per year. In 2006, the facility received 274,291 tons of solid waste from Los Angeles, representing about eight percent of the City's 3.65 million tons of disposed solid waste.

Incoming City Tonnages by Generator Type

Both commercial haulers and self-haulers bring solid waste into the facility. Commercial haulers were the only source of yard trimmings and C&D materials.

Incoming Tonnages from the City of Los Angeles, 2006

Generator Type	Solid Waste (tons)	Yard Trimmings (tons)	C&D (tons)
Commercial/multi-family	273,834	280	2,075
Residential curbside (LASAN)	-	-	-
Self-haul	457	-	-
Transfer	-	-	-
Total Tons	**274,291**	**280**	**2,075**

Tip Fees

The tip fees in 2006 for solid waste and C&D materials were $33 per ton, while the fee for yard trimmings was $35 per ton.

Ultimate Disposal

In 2006, American Waste sent 255,630 tons of the City's solid waste to Chiquita Canyon for disposal. The remaining 18,660 tons were sent either to the CVT Regional MRF and Transfer Station in Anaheim or the Southeast Resource Recovery Facility, depending on contract requirements with specific customers.

All 2,075 tons of C&D materials were sent to the Nu Way Arrow Inert Landfill. Under state regulations, materials sent to Inert Debris Engineered Fill Operations[52] are considered beneficially reused. The 280 tons of yard trimmings were composted on site.

Daily/Annual Capacity

American Waste has a total permitted capacity of 2,225 tons per day or 694,200 tons per year, assuming the facility is open six days a week.

Expansion Plans/Opportunities

American Waste reports that while it is possible to expand the facility, there are no plans to do so.

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[51] Note that the facility surveys were conducted in 2007 and 2008 and reflect the circumstances at the time of the survey. The information presented in these surveys, including tons and tip fees, was self-reported by the facility operators.

[52] California Code of Regulations Title 14, Natural Resources-Division 7, Article 5.95, Section 17388 (l)

Athens Services Transfer Station

Overview

Athens Services Transfer Station is a transfer facility located in the City of Industry. It is permitted to accept up to 5,000 tons of solid waste per day, or 1.56 million tons per year. Athens received a very small amount of waste from City sources in 2006—112 tons—all of which was from the North Central Los Angeles wasteshed.

Incoming City Tonnages by Generator Type

In 2006, commercial haulers brought a small quantity of solid waste from City sources to Athens.

Incoming Tonnages from the City of Los Angeles, 2006

Generator Type	Solid Waste (tons)	Yard Trimmings (tons)	C&D (tons)
Commercial/multi-family	112	-	22
Residential curbside (LASAN)	-	-	-
Self-haul	-	-	-
Transfer	-	-	-
Total Tons	**112**	**-**	**22**

Tip Fees

Tip fees in 2006 for both solid waste and C&D materials were $49.25 per ton.

Ultimate Disposal

In 2006, all 134 tons received from Los Angeles at Athens were sent to Bradley Landfill for disposal. Athens operates a mixed-material recovery facility and any residual waste remaining after processing is disposed. In 2006, this residual waste was disposed at Bradley Landfill. After Bradley Landfill ceased landfill operations in April 2007, residual waste from Athens was disposed at El Sobrante Landfill in Riverside County.

Daily/Annual Capacity

Athens has a total permitted capacity of 5,000 tons per day, or 1.56 million tons per year, assuming the facility is open six days a week.

Expansion Plans/Opportunities

Athens' permitted capacity expanded significantly in 2007 from 1,920 tons per day to 5,000 tons per day. This growth has allowed them to expand both their processing and their transfer capabilities. Thus, by the end of 2007, Athens was accepting close to 130,000 tons of solid waste per year from City sources, a dramatic increase from the figures reported in 2006.

Bel-Art Waste Transfer Station

Overview

Bel-Art Waste Transfer Station is a transfer facility located in Long Beach that received 54,005 tons of solid waste from City sources in 2006, representing less than two percent of the City's solid waste. All solid waste received by Bel-Art came from the South Los Angeles wasteshed. Bel-Art is permitted to accept 1,500 tons per day, or 468,000 tons per year. The facility also received yard trimmings and C&D materials from City sources.

Incoming City Tonnages by Generator Type

Bel-Art received solid waste predominately from commercial sources in the South Los Angeles wasteshed. The facility received yard trimmings and C&D materials from both commercial haulers and self-haulers.

Incoming Tonnages from the City of Los Angeles, 2006

Generator Type	Solid Waste (tons)	Yard Trimmings (tons)	C&D (tons)
Commercial/multi-family	54,005	3	216
Residential curbside (LASAN)	-	-	-
Self-haul	-	32	67
Transfer	-	-	-
Total Tons	**54,005**	**35**	**283**

Tip Fees

Tip fees at Bel-Art in 2006 were $31 per ton of solid waste, $53 per ton of yard trimmings, and $38 per ton of C&D materials.

Ultimate Disposal

In 2006, Bel-Art sent 29,163 tons of solid waste from City sources to the Chiquita Canyon Landfill and 24,842 tons to the Olinda Alpha Landfill. All 35 tons of yard trimmings were composted. The 67 tons of self-hauled C&D materials were sent to the Nu Way Arrow Inert Landfill, while the 216 tons of commercially hauled C&D materials were sent to a C&D processor.

Daily/Annual Capacity

Bel-Art Waste Transfer Station has a total permitted capacity of 1,500 tons per day, or 468,000 tons per year, assuming the facility is open six days a week.

Expansion Plans/Opportunities

Bel-Art reports that while they have space to expand, they have no expansion plans.

Carson Transfer Station

Overview

Carson Transfer Station, located just outside the Harbor wasteshed, is a transfer facility that is permitted to receive 5,300 tons per day, or 1.65 million tons per year. It handles solid waste and C&D materials from City sources. In 2006, Carson handled 76,468 tons of solid waste from Los Angeles, approximately two percent of the City's total solid waste.

Incoming City Tonnages by Generator Type

Both commercial haulers and self-haulers brought solid waste and C&D materials from City sources to the Carson facility.

Incoming Tonnages from the City of Los Angeles, 2006

Generator Type	Solid Waste (tons)	Yard Trimmings (tons)	C&D (tons)
Commercial/multi-family	71,928	-	4,686
Residential curbside (LASAN)	-	-	-
Self-haul	4,540	-	595
Transfer	-	-	-
Total Tons	**76,468**	**-**	**5,281**

Tip Fees

The tip fee at Carson in 2006 was $73 per ton for solid waste and $37 per ton for C&D materials.

Ultimate Disposal

All the solid waste entering Carson Transfer Station in 2006 from Los Angeles was sent to regional landfills, including El Sobrante (68,621 tons), Lancaster, (4,173 tons), Bradley (2,271 tons), and Simi (1,220 tons).[53]

Carson sent 3,018 tons of the City's C&D material to the Nu Way Arrow Landfill, and 2,207 tons to Downtown Diversion, for a total of 5,225 tons.[54]

Daily/Annual Capacity

The facility has a total permitted capacity of 5,300 tons per day, or 1.65 million tons per year, assuming the facility is open six days a week.

Expansion Plans/Opportunities

There is no possibility for expansion at Carson Transfer Station.

[53] The reported outgoing solid waste tons are slightly less than the reported incoming tons.
[54] The reported outgoing C&D tons are slightly less than the reported incoming tons.

Central Los Angeles Recycling Center & Transfer Station (CLARTS)

Overview

CLARTS is a transfer facility operated by LASAN, located in the North Central wasteshed. CLARTS is permitted to receive up to 4,025 tons of waste per day, or 1.26 million tons per year. In 2006, CLARTS received 683,752 tons of solid waste from Los Angeles, representing nearly 20 percent of the City's solid waste stream. The facility also accepted a small amount of yard trimmings.

Incoming City Tonnages by Generator Type

The CLARTS facility received solid waste and a small amount of yard trimmings from City sources in 2006. Approximately two-thirds of this waste was collected from residential curbside routes. CLARTS also received over 71,000 tons of solid waste from self-haulers.

Incoming Tonnages from the City of Los Angeles, 2006

Generator Type	Solid Waste (tons)	Yard Trimmings (tons)	C&D (tons)
Commercial/multi-family	201,793	-	-
Residential curbside (LASAN)	410,199	917	-
Self-haul	71,760	-	-
Transfer	-	-	-
Total Tons	**683,752**	**917**	**-**

Tip Fees

The tip fee in 2006 for solid waste at CLARTS was $44 per ton.

Ultimate Disposal

All the solid waste entering CLARTS from City sources was sent to regional landfills for disposal, including Sunshine Canyon (442,758 tons), El Sobrante (4,067 tons), Lancaster (70,788 tons), and Chiquita Canyon (137,525 tons).[55]

Daily/Annual Capacity

The facility is permitted to receive 4,025 tons of waste per day, or 1.26 million tons per year, assuming the facility is open six days a week.

Expansion Plans/Opportunities

While CLARTS was originally designed for a capacity of 5,500 tons per day, managers doubt that capacity could actually be reached. CLARTS has prepared a master plan to retrofit the facility for potential future reconfiguration and expansion.

[55] The reported outgoing solid waste tons are less than the reported incoming tons. This was partially due to two factors. First, when Lancaster is closed for the day, CLARTS sends waste to other facilities, which is not always recorded. Second, some items like electronics, tires, and scrap metal are picked from the waste and diverted for recycling or reuse.

Community Recycling

Overview

Community Recycling is a transfer facility located in Sun Valley in the East Valley wasteshed of Los Angeles that received solid waste, yard trimmings, and C&D materials from City sources in 2006. They are permitted to receive 1,700 tons per day of solid waste, 1,200 tons per day of C&D recycling, and 1,900 tons per day of yard trimmings and other organics. This totals to 4,800 tons of materials per day of permitted capacity, or 1.50 million tons per year, including solid waste, yard trimmings and other organics, and C&D materials.

Community Recycling accepted 270,004 tons of solid waste from City sources in 2006, representing approximately seven percent of the City's solid waste. In 2006, Community Recycling also accepted 363,652 tons of yard trimmings and 234,841 tons of C&D materials from Los Angeles.

Incoming City Tonnages by Generator Type

Community Recycling received solid waste from commercial haulers, and yard trimmings, other organics, and C&D materials from commercial and self-haulers as well as LASAN.

Incoming Tonnages from the City of Los Angeles, 2006

Generator Type	Solid Waste (tons)	Yard Trimmings/ Organics (tons)	C&D (tons)
Commercial/multi-family	225,003[56]	62,000[57]	126,453
Residential curbside (LASAN)	45,001	153,701	-
Self-haul	-	147,951	108,388
Transfer	-	-	-
Total Tons	**270,004**	**363,652**	**234,841**

Tip Fees

LASAN pays approximately $37.50 per ton for organics processing at Community Recycling.

Ultimate Disposal

Community Recycling received 270,004 tons of solid waste in 2006 from City sources, all of which were run through a mixed-materials MRF for processing. Of the total 270,000 tons of solid waste received, 32,000 tons were separated for recycling. The remaining disposed tons were sent to the Bradley, Sunshine Canyon, and Chiquita Canyon landfills.[58]

Community Recycling grinds incoming yard trimmings and, in 2006, sent it to the Community Recycling Lamont Compost Facility and the Bradley, Sunshine Canyon, and Chiquita Canyon landfills to be reused.[59] They process

[56] Data were provided for all substreams combined; split based on estimates from industry experts.
[57] Data were provided for all substreams combined; tons reported by LASAN for residential curbside were subtracted from this total; remaining tons were assigned to commercial/multi-family and self-haul based on estimates from industry experts
[58] Data for the tons of waste sent to each landfill were not provided.
[59] Data for the tons of waste sent to each facility were not provided.

much of the C&D materials that they receive on site, and in 2006, diverted nearly 200,000 tons for recycling. In 2006, the remaining C&D materials were sent to the Bradley, Sunshine Canyon, and Chiquita Canyon landfills.

Daily/Annual Capacity

Community Recycling is permitted to process 1,700 tons of solid waste per day (530,400 tons per year). In addition, they receive up to 1,200 tons of C&D materials per day (374,400 tons per year) for recycling, and 1,900 tons of yard trimmings and other organics per day (592,800 tons per year) for beneficial reuse and composting from City sources and surrounding jurisdictions. Of the yard trimmings and other organics, 1,200 tons per day are allotted for yard trimmings (374,400 tons per year), 350 tons per day for food scraps (109,200 tons per year), and 150 tons per day for wood waste (46,800 tons per year). Annual figures are based on the assumption that the facility is open six days per week.

Expansion Plans/Opportunities

Community Recycling is working to expand their infrastructure and daily tonnage capacity. They have applied for a permit to consolidate all material recovery operations under one comprehensive permit with the following maximum daily capacities:

- Solid waste: 2,500 tons per day
- C&D materials: 2,000 tons per day
- Yard trimmings: 1,500 tons per day
- Food scraps: 500 tons per day
- Wood waste: 200 tons per day

The new permit would total 6,700 tons per day.

In addition, they plan to construct a 100,000-square-foot building over the receiving area for yard trimmings and other organics and construct a partial building or canopies over other areas to provide greater environmental control.

Compton Recycling and Transfer Station (Browning Ferris Industries)

Overview

Compton Recycling and Transfer Station, operated by Browning Ferris Industries (now merged with Republic Services, Inc.), is located just east of the Harbor wasteshed in the City of Compton. Compton is permitted to accept up to 1,500 tons of material per day, or 468,000 tons per year. In 2006, Compton received solid waste and yard trimmings from City sources. This facility handled an estimated 112,883 tons of solid waste from Los Angeles, or approximately three percent of the City's solid waste.

Incoming City Tonnages by Generator Type

Both commercial haulers and self-haulers brought waste from City sources to the Compton facility.

Incoming Tonnages from the City of Los Angeles, 2006

Generator Type	Solid Waste (tons)	Yard Trimmings (tons)	C&D (tons)
Commercial/multi-family	107,239	212	-
Residential curbside (LASAN)	-	-	-
Self-haul	5,644	71	-
Transfer	-	-	-
Total Tons	**112,883**	**283**	**-**

Tip Fees

Compton's tip fees in 2006 were $59 per ton for solid waste and $40 per ton for yard trimmings.

Ultimate Disposal

In 2006, Compton sent all 112,883 tons of the City's solid waste to Sunshine Canyon Landfill. All 283 tons of yard trimmings received from City sources were sent to Puente Hills Landfill to be ground and used for ADC.

Daily/Annual Capacity

The facility's total permitted capacity is 1,500 tons per day or 468,000 tons per year, assuming the facility is open six days a week.

Expansion Plans/Opportunities

Compton operates at capacity on most days, and facility managers plan to expand both permitted and infrastructure capacity to be able to accept 2,100 to 2,500 tons of waste per day.

Downey Area Recycling and Transfer Station (DART)

Overview

Downey Area Recycling and Transfer Station (DART) is a transfer facility operated by the Los Angeles County Sanitation Districts, located approximately 10 miles east of the South LA wasteshed in the city of Downey. The facility is permitted to accept up to 5,000 tons of waste per day, or 1.56 million tons per year, and received solid waste and a small amount of yard trimmings from City sources in 2006. DART handled less than one percent of the City's total solid waste in 2006.

Incoming City Tonnages by Generator Type

In 2006, commercial haulers brought yard trimmings and solid waste to the DART facility from City sources. The DART facility also received solid waste from LASAN-hauled residential curbside sources.

Incoming Tonnages from the City of Los Angeles, 2006

Generator Type	Solid Waste (tons)	Yard Trimmings (tons)	C&D (tons)
Commercial/multi-family	25,903	32	-
Residential curbside (LASAN)	701	-	-
Self-haul	-	-	-
Transfer		-	-
Total Tons	**26,604**	**32**	-

Tip Fees

DART's tip fee in 2006 for solid waste was $40.32 per ton; the fee for yard trimmings was $28.10 per ton.

Ultimate Disposal

While DART recycled 2,259 tons of solid waste received from City sources, the remaining solid waste and yard trimmings from City sources were sent to other facilities. DART transferred wastes to Puente Hills Landfill (24 tons of solid waste, 32 tons of yard trimmings used as ADC), Bowerman Landfill (19,161 tons of solid waste), and Prima Deshecha Landfill (828 tons of solid waste). Commerce Refuse-to-Energy received the remaining 4,332 tons of DART's Los Angeles solid waste, which were processed to produce energy.

Daily/Annual Capacity

DART has a total permitted capacity of 5,000 tons per day, or 1.56 million tons per year, assuming the facility is open six days a week.

Expansion Plans/Opportunities

DART reports that it is not feasible to expand the facility.

East Los Angeles Recycling &Transfer Station (ELARTS)

Overview

East Los Angeles Recycling & Transfer Station (ELARTS) is located in City Terrace just east of the North Central wasteshed in unincorporated Los Angeles County. It is permitted to receive up to 700 tons of waste per day, or 218,400 tons per year. ELARTS accepted 48,531 tons of solid waste from City sources in 2006, representing approximately one percent of the City's solid waste. All of the solid waste, yard trimmings, and C&D materials accepted at ELARTS were from the North Central wasteshed of Los Angeles.

Incoming City Tonnages by Generator Type

ELARTS received commercially hauled solid waste from residential curbside and commercial sources as well as yard trimmings and C&D materials from commercially hauled industrial sources.

Incoming Tonnages from the City of Los Angeles, 2006

Generator Type	Solid Waste (tons)	Yard Trimmings (tons)	C&D (tons)
Commercial/multi-family	48,522	296	2,485
Residential curbside (LASAN)	9	-	-
Self-haul	-	-	-
Transfer	-	-	-
Total Tons	**48,531**	**296**	**2,485**

Tip Fees

Tip fees in 2006 were $41 per ton for solid waste or yard trimmings and $38 per ton of C&D materials.

Ultimate Disposal

ELARTS sent all 48,531 tons of solid waste to the Chiquita Canyon Landfill. They sent most of the C&D materials to Nu Way Landfill for disposal and less than 100 tons to a C&D processor. ELARTS sent all 296 tons of yard trimmings from City sources to the Falcon Refuse Center. In 2006, yard trimmings delivered to Falcon were transferred to the Bradley Landfill where the materials were ground and used as mulch for farmers.

Daily/Annual Capacity

ELARTS has a total permitted capacity of 700 tons per day, or 218,400 tons per year, assuming that the facility is open six days per week.

Expansion Plans/Opportunities

ELARTS reports that while it is possible to expand the facility, there are no plans to do so.

Falcon Refuse Center, Inc.

Overview

Falcon Refuse Center is located in Wilmington, which lies within the Harbor wasteshed of Los Angeles. Falcon Refuse is a transfer facility able to receive up to 1,850 tons of waste per day, or 577,200 tons per year. They received solid waste, yard trimmings, and C&D materials from City sources in 2006. This facility accepted 48,000 tons of solid waste from City sources in 2006, representing approximately one percent of the City's solid waste stream. Falcon Refuse also accepted 6,012 tons of yard trimmings and 10,000 tons of C&D materials from City sources.

Incoming City Tonnages by Generator Type

In 2006, Falcon Refuse received solid waste and a small amount of yard trimmings and C&D from the City of Los Angeles.

Incoming Tonnages from the City of Los Angeles, 2006

Generator Type	Solid Waste (tons)	Yard Trimmings (tons)	C&D (tons)
Commercial/multi-family	9,568	3,055	10,000
Residential curbside (LASAN)	38,432	2,957	-
Self-haul	-	-	-
Transfer	-	-	-
Total Tons	**48,000**	**6,012**	**10,000**

Tip Fees

Falcon Refuse's tip fees in 2006 were $55 per ton of solid waste, $39 per ton of yard trimmings, and $45 per ton of C&D materials.

Ultimate Disposal

In 2006, Falcon Refuse sent all 48,000 tons of solid waste from City sources to Sunshine Canyon Landfill. They sent the 6,012 tons of yard trimmings waste to Bradley Landfill where it was ground and used as mulch for farmers. Falcon Refuse sorts C&D materials on site, sending concrete to Agua Mansa Landfill, scrap metal to Ecology Auto Parts, and wood to Colmac Energy.

Daily/Annual Capacity

Falcon Refuse has a total daily permitted capacity of 1,850 tons, or 577,200 tons per year, but has the physical capability of expanding to up to 5,600 tons per day.

Expansion Plans/Opportunities

Falcon Refuse has no plans to expand or increase their capacity.

Innovative Waste Control

Overview

Innovative Waste Control is a transfer facility located in the city of Vernon, just south of downtown Los Angeles. They can handle up to 1,250 tons of waste per day, or 390,000 tons per year, and received 203,028 tons of solid waste from City sources in 2006, representing approximately six percent of the City's solid waste stream.

Incoming City Tonnages by Generator Type

In 2006, Innovative Waste received solid waste from self-haulers and other transfer stations.

Incoming Tonnages from the City of Los Angeles, 2006

Generator Type	Solid Waste (tons)	Yard Trimmings (tons)	C&D (tons)
Commercial/multi-family	-	-	-
Residential curbside (LASAN)	-	-	-
Self-haul	13,619	-	-
Transfer	189,409	-	-
Total Tons	**203,028**	**-**	**-**

Tip Fees

The tip fee for solid waste at Innovative Waste Control in 2006 was $43 per ton.

Ultimate Disposal

Innovative Waste Control sent 684 tons of the City's solid waste to Commerce Refuse to Energy, which converts the waste to energy. A total of 122,016 tons were sent to Chiquita Canyon Landfill, 62,405 tons to Olinda Alpha Landfill, and 17,270 tons to Sunshine Canyon Landfill.[60]

Daily/Annual Capacity

The total permitted capacity is 1,250 tons per day, or 390,000 tons per year, assuming that the facility is open six days per week.

Expansion Plans/Opportunities

The facility operates at capacity and does not appear to be planning an expansion.

[60] The reported outgoing solid waste tons are slightly less than the reported incoming tons.

Mission Road Recycling and Transfer Station (Waste Management)

Overview

Mission Road Recycling and Transfer Station is a transfer facility located in the North Central wasteshed. Mission Road is permitted to receive up to 1,785 tons of waste per day, or 556,920 tons per year. In 2006, the facility accepted a total of 191,985 tons of solid waste, 81,304 tons of yard trimmings, and 202 tons of C&D materials from City sources, representing approximately five percent of the City's solid waste stream.

Incoming City Tonnages by Generator Type

Commercially hauled solid waste, yard trimmings, and C&D materials were sent from City sources to Mission Road Recycling and Transfer Station.

Incoming Tonnages from the City of Los Angeles, 2006

Generator Type	Solid Waste (tons)	Yard Trimmings (tons)	C&D (tons)
Commercial/multi-family	191,985	81,304	202
Residential curbside (LASAN)	-	-	-
Self-haul	-	-	-
Transfer	-	-	-
Total Tons	**191,985**	**81,304**	**202**

Tip Fees

In 2006, Mission Road charged tip fees of $58 for solid waste, yard trimmings, and C&D materials.

Ultimate Disposal

Mission Road sent all solid waste generated in the City to regional landfills, including Bradley (152,577 tons), Lancaster (30,856 tons), Antelope Valley (2,610 tons), and Simi Valley (5,994 tons).[61] 9,612 tons of waste were separated from the yard trimmings and largely disposed of as solid waste to the Bradley, Lancaster, Antelope Valley, and Simi Valley landfills. The remaining 71,692 tons of yard trimmings were sent to Bradley Landfill as ADC. The 202 tons of incoming C&D materials from City sources, reportedly composed of 173 tons of cardboard and 29 tons of nonferrous metal, were recycled.

Daily/Annual Capacity

Mission Road has a total permitted capacity of 1,785 tons per day, or 556,920 tons per year, assuming the facility is open six days per week.

Expansion Plans/Opportunities

Mission Road reports that it is not feasible to expand the facility.

[61] The reported outgoing solid waste tons are slightly more than the reported incoming tons.

Paramount Resource Recycling Facility

Overview

Paramount Resource Recycling Facility is a transfer facility, permitted to receive up to 2,400 tons of waste per day, or 748,800 tons per year. Paramount is located approximately 10 miles south of Central Los Angeles and handles a very small portion of the City's solid waste; less than one percent.

Incoming City Tonnages by Generator Type

Paramount Resource Transfer Station received solid waste from commercial haulers and self-haulers in 2006.

Incoming Tonnages from the City of Los Angeles, 2006

Generator Type	Solid Waste (tons)	Yard Trimmings (tons)	C&D (tons)
Commercial/multi-family	300	-	-
Residential curbside (LASAN)	-	-	-
Self-haul	5,700	-	-
Transfer	-	-	-
Total Tons	**6,000**	**-**	**-**

Tip Fees

Paramount's tip fee in 2006 was $53 per ton for solid waste.

Ultimate Disposal

Paramount sent all 6,000 tons of solid waste received from City sources to the Prima Deshecha Landfill.

Daily/Annual Capacity

Paramount has a total permitted capacity of 2,400 tons per day, or 748,800 tons per year, assuming the facility is open six days per week.

Expansion Plans/Opportunities

Paramount plans to expand their MRF capacity, including constructing a separate MRF building. The facility's 4 acres and permitted 2,400 tons per day are adequate to support this planned growth.

South Gate Transfer Station—Los Angeles County Sanitation Districts

Overview

South Gate Transfer Station, operated by the Los Angeles Sanitation Districts, is in the City of South Gate, approximately six miles southeast of downtown Los Angeles. This transfer facility is permitted to accept 1,000 tons of solid waste per day, or 312,000 tons per year. The facility receives less than one percent of the City's solid waste.

Incoming City Tonnages by Generator Type

Commercial haulers brought solid waste originating from City sources to the facility in 2006.

Incoming Tonnages from the City of Los Angeles, 2006

Generator Type	Solid Waste (tons)	Yard Trimmings (tons)	C&D (tons)
Commercial/multi-family	30,567	-	-
Residential curbside (LASAN)	197	-	-
Self-haul	-	-	-
Transfer	-	-	-
Total Tons	**30,764**	**-**	**-**

Tip Fees

The tip fee in 2006 for solid waste was $36.55 per ton.

Ultimate Disposal

The Sanitation Districts' South Gate Transfer Station reports sending 14,317 tons of solid waste to Puente Hills Landfill and 18,708 tons to Frank R. Bowerman Landfill.[62]

Daily/Annual Capacity

The Sanitation Districts' South Gate facility has a total permitted capacity of 1,000 tons per day, or 312,000 tons per year, assuming that the facility is open six days per week.

Expansion Plans/Opportunities

It is not possible to expand the Sanitation Districts' South Gate Transfer Station.

[62] The reported outgoing solid waste tons are slightly less than the reported incoming tons.

South Gate Transfer Station—Waste Management

Overview

Waste Management's South Gate Transfer Station is a transfer facility located in the City of South Gate approximately 6 miles southeast of downtown Los Angeles that received solid waste from City sources in 2006. The facility can handle up to 2,600 tons of waste per day, or 811,200 tons per year, and received a small portion (less than one percent) of solid waste from City sources.

Incoming City Tonnages by Generator Type

Commercial haulers and self-haulers transported solid waste from City sources to the Waste Management South Gate Transfer Station in 2006.

Incoming Tonnages from the City of Los Angeles, 2006

Generator Type	Solid Waste (tons)	Yard Trimmings (tons)	C&D (tons)
Commercial/multi-family	19,145	-	-
Residential curbside (LASAN)	-	-	-
Self-haul	288	-	-
Transfer	-	-	-
Total Tons	**19,433**	**-**	**-**

Tip Fees

The tip fee in 2006 for solid waste was approximately $73 per ton.

Ultimate Disposal

Waste Management's South Gate Transfer Station sent solid waste from City sources to El Sobrante Landfill (13,091 tons), Olinda Alpha Landfill (6,900 tons), and Bradley Landfill (830 tons).[63]

Daily/Annual Capacity

Waste Management' South Gate Transfer Station has a total permitted capacity of 2,600 tons per day, or 811,200 tons per year, assuming that the facility is open six days per week.

Expansion Plans/Opportunities

Waste Management's South Gate Transfer Station reports that it is not possible to expand the facility.

[63] The reported outgoing solid waste tons are slightly more than the reported incoming tons.

Southern California Disposal

Overview

Southern California Disposal Transfer Station is located in the City of Santa Monica, just west of the West LA wasteshed. It accepts residential curbside and commercial waste from the West LA wasteshed. The facility is permitted to accept 1,056 tons of solid waste per day, or 329,472 tons per year. Southern California Disposal handled 97,594 tons of solid waste from City sources, representing approximately three percent of the City's solid waste in 2006. The facility also accepted a small amount of yard trimmings from City sources.

Incoming City Tonnages by Generator Type

Data on residential curbside tonnages were obtained from LASAN.

Incoming Tonnages from the City of Los Angeles, 2006

Generator Type	Solid Waste (tons)	Yard Trimmings (tons)	C&D (tons)
Commercial/multi-family	25,697	-	-
Residential curbside (LASAN)	71,897	1,088	-
Self-haul	-	-	-
Transfer	-	-	-
Total Tons	**97,594**	**1,088**	**-**

Tip Fees

LASAN pays approximately $24 per ton for solid waste transfer and disposal at Southern California Disposal.

Ultimate Disposal

Southern California Disposal sent all solid waste to Sunshine Canyon. Of the material that was brought in as waste, approximately 1,310 tons were diverted for recycling, including 64 tons of cardboard, 52 tons of ferrous metal, and 1,194 tons of mixed C&D. An additional 1,088 tons of yard trimmings were sent to North Hills Recycling.

Daily/Annual Capacity

Southern California Disposal is permitted to accept 1,056 tons of solid waste per day, or 329,472 tons per year, assuming a six-day week.

Expansion Plans/Opportunities

Southern California Disposal is working in partnership with the City of Santa Monica on an expansion of the facility that would provide more space for future material handling and recovery.

Waste Resources Recovery

Overview

Waste Resources Recovery is a transfer facility located in Gardena that receives a small portion of solid waste (less than one percent of the City's total), yard trimmings, and C&D materials from City sources. The facility is permitted to receive 500 tons per day, or 156,000 tons per year.

Incoming City Tonnages by Generator Type

Commercially hauled and self-hauled solid waste, yard trimmings, and C&D materials originating from City sources were brought to Waste Resources Recovery in 2006. The breakdown among the different substreams was not provided.

Incoming Tonnages from the City of Los Angeles, 2006

Generator Type	Solid Waste (tons)	Yard Trimmings (tons)	C&D (tons)
Commercial/multi-family	3,696[64]	384[65]	720[66]
Residential curbside (LASAN)	-	-	-
Self-haul	-	-	-
Transfer	-	-	-
Total Tons	**3,696**	**384**	**720**

Tip Fees

The tip fee in 2006 for all materials was $48.96 per ton.

Ultimate Disposal

Waste Resources Recovery sent approximately 3,141 tons of solid waste, 384 tons of yard trimmings, and 180 tons of C&D residuals to Sunshine Canyon Landfill in 2006. The remaining 555 tons of solid waste and 540 tons of C&D materials were diverted into various recycling streams.

Daily/Annual Capacity

Waste Resources Recovery has a total permitted capacity of 500 tons per day, or 156,000 tons per year, assuming that the facility is open six days per week.

Expansion Plans/Opportunities

The facility is in the process of expanding operations and will increase incoming capacity from 500 to 2,000 tons per day. They will be adding an additional 5 acres of active land to their existing 2.5 acres. As part of the expansion, Waste Resources Recovery is looking into the implementation of various conversion technology strategies.

[64] Data were provided for all substreams combined.
[65] Data were provided for all substreams combined.
[66] Data were provided for all substreams combined.

Attachment C-2: Landfills and Waste-to-Energy Facilities[67]

Municipal Solid Waste Landfills

Antelope Valley Public Landfill

Overview

Antelope Valley Public Landfill is a disposal facility in Palmdale, California, approximately 50 miles north of the City in the Antelope Valley. The landfill is permitted to receive 1,400 tons daily or 436,800 tons per year, yet only a small portion of that comes from City sources.

Incoming City Tonnages by Generator Type

In 2006, all solid waste brought to Antelope Valley that originated in the City of Los Angeles was brought in via transfer trailer from intermediary facilities. Small quantities of yard trimmings were delivered to Antelope Valley; however, the facility was unable to provide tonnages attributed to Los Angeles.

Incoming Tonnages from the City of Los Angeles, 2006

Generator Type	Solid Waste (tons)	Yard Trimmings (tons)	C&D (tons)
Commercial/multi-family	-	-	-
Residential curbside (LASAN)	-	-	-
Self-haul	-	-	6
Transfer	8,483	-	-
Total Tons	**8,483**	**-**	**6**

Tip Fees

Tip fees in 2006 were $48 per ton for C&D or solid waste and $34 per ton for yard trimmings.

Ultimate Disposal

All solid waste received from City sources was landfilled as disposed waste. Limited amounts of yard trimmings were accepted, and all yard trimmings were converted to boiler fuel. Antelope Valley put the City's 6 tons of C&D materials to use as ADC.

Daily/Annual Capacity

The facility has a total permitted capacity of 1,400 tons per day, or 436,800 tons per year, assuming that the facility is open six days a week.

Expansion Plans/Opportunities

Antelope Valley is working with the City of Palmdale to explore two different expansion scenarios to double capacity and increase the life of the landfill. Additional capacity will likely occur either through a land purchase or an expansion of the existing disposal capacity.

[67] Note that the facility surveys were conducted in 2007 and 2008 and reflect the circumstances at the time of the survey. The information presented in these surveys, including tons and tip fees, was self-reported by the facility operators.

Bradley Landfill

Overview

Bradley Landfill was a disposal facility in Sun Valley, in the East Valley wasteshed of Los Angeles. As of April 2007, the Bradley facility ceased landfill operations and operated as a limited-volume transfer station accepting clean fill and yard trimmings. In 2006, the landfill received 350,059 tons of solid waste from City sources, an amount representing about 10 percent of the City's waste stream. The facility also accepted nearly 180,000 tons of yard trimmings from City sources in 2006.

Incoming City Tonnages by Generator Type

In 2006, Bradley Landfill received solid waste from both direct and transfer sources. Bradley also received yard trimmings and a small amount of C&D materials from City sources.

Incoming Tonnages from the City of Los Angeles, 2006

Generator Type	Solid Waste (tons)	Yard Trimmings (tons)	C&D (tons)
Commercial/multi-family	190,725	-	-
Residential curbside (LASAN)	197	157,842	-
Self-haul	19,113	21,700	64
Transfer	140,024	-	-
Total Tons	**350,059**	**179,542**	**64**

Tip Fees

Not applicable.

Ultimate Disposal

In 2006, all 350,059 tons of solid waste received at Bradley Landfill was landfilled as disposed waste. C&D waste was processed to produce wood chips, and yard trimmings were used to produce a mulch product.

Daily/Annual Capacity

This facility is closed.

Expansion Plans/Opportunities

Waste Management, operator of this facility, is in the process of permitting a MRF/transfer station at Bradley Landfill to handle up to 5,000 tons per day.

Calabasas Sanitary Landfill

Overview

Calabasas Landfill is a disposal facility located just west of the West Valley wasteshed of the City. Calabasas is permitted to handle up to 3,500 tons of waste per day, or 1,092,000 tons per year. The facility receives solid waste, yard trimmings, and C&D materials from City sources. In 2006, Calabasas accepted over 320,000 tons of solid waste from City sources, representing almost 10 percent of the City's solid waste.

Incoming City Tonnages by Generator Type

Calabasas Landfill received solid waste from City sources from commercial haulers and residential curbside customers, as well as transfer loads from intermediary facilities. They also received large quantities of yard trimmings and C&D materials from commercial haulers.

Incoming Tonnages from the City of Los Angeles, 2006

Generator Type	Solid Waste (tons)	Yard Trimmings (tons)	C&D (tons)
Commercial/multi-family	281,944	15,599	35,271
Residential curbside (LASAN)	2,260	-	-
Self-haul	-	-	-
Transfer	36,943	3	-
Total Tons	**321,147**	**15,602**	**35,271**

Tip Fees

In 2006, the fee for solid waste and C&D/inert at Calabasas was $33.38 per ton; the fee for yard trimmings was $13.20 per ton.

Ultimate Disposal

All solid waste received from City sources were landfilled as disposed waste; the yard trimmings and C&D materials (asphalt) were used as ADC.

Daily/Annual Capacity

The total permitted daily capacity at Calabasas is 3,500 tons per day, or 1,092,000 tons per year, assuming a six-day week.

Expansion Plans/Opportunities

Calabasas Landfill is scheduled to close in 2028 and has no plans for expansion.

Chiquita Canyon Sanitary Landfill

Overview

Chiquita Canyon Landfill is a disposal facility located just north of the City boundary. The landfill is permitted to handle as much as 6,000 tons of waste per day, or 1,872,000 tons per year. In 2006, the landfill received 764,300 tons of solid waste originating in the City, representing approximately 21 percent of the City's waste stream. Chiquita Canyon also accepted 52,600 tons of yard trimmings and 6,800 tons of C&D materials from City sources.

Incoming City Tonnages by Generator Type

All materials received from City sources in 2006 came via transfer loads from other facilities.

Incoming Tonnages from the City of Los Angeles, 2006

Generator Type	Solid Waste (tons)	Yard Trimmings (tons)	C&D (tons)
Commercial/multi-family	-	-	-
Residential curbside (LASAN)	-	-	-
Self-haul	-	-	-
Transfer	764,300	52,600	6,800
Total Tons	**764,300**	**52,600**	**6,800**

Tip Fees

The tip fees in 2006 for solid waste and C&D materials at Chiquita Canyon were $55 per ton. The tip fee for yard trimmings was $25 per ton.

Ultimate Disposal

All solid waste received by Chiquita Canyon from City sources was landfilled as disposed waste. All yard trimmings that the facility received from City sources had been previously ground and were used for erosion control and other types of cover. Similarly, all C&D materials had been processed and were used for road bed and wet weather decking.

Daily/Annual Capacity

Chiquita Canyon has a total daily permitted capacity of 6,000 tons, or 1,872,000 tons per year, based on a six-day week.

Expansion Plans/Opportunities

Chiquita Canyon Landfill, scheduled to close in November 2019, filed a Notice of Preparation and applied for a Conditional Use Permit several years ago for a master plan revision to increase in both the volume and tenure of the landfill. The County Planning Department is reviewing an Administrative Draft Environmental Impact Report that was submitted in July 2007. The approval process is still pending.

El Sobrante Sanitary Landfill

Overview

El Sobrante Sanitary Landfill is a large-capacity disposal facility located in Riverside County, approximately 47 miles east of the City. It is permitted to receive up to 10,000 tons of waste per day, or 3,120,000 tons per year. The facility received 85,235 tons of solid waste from City sources in 2006, representing approximately two percent of the City's solid waste.

Incoming City Tonnages by Generator Type

In 2006, El Sobrante received solid waste from City sources that was transferred from other facilities.

Incoming Tonnages from the City of Los Angeles, 2006

Generator Type	Solid Waste (tons)	Yard Trimmings (tons)	C&D (tons)
Commercial/multi-family	-	-	-
Residential curbside (LASAN)	4,168	-	-
Self-haul	-	-	-
Transfer	81,067	-	-
Total Tons	**85,235**	**-**	**-**

Tip Fees

In 2006, the tip fee for solid waste was $33 per ton.

Ultimate Disposal

All solid waste received at El Sobrante from City sources was landfilled as disposed waste.

Daily/Annual Capacity

El Sobrante is permitted to receive 10,000 tons of total waste per day, or 3,120,000 tons per year, assuming a six-day week.

Expansion Plans/Opportunities

In August 2001, El Sobrante was granted permission to expand and now has 495 acres of active land and over 100 million cubic yards of disposal capacity remaining. The projected closing date is January 2030.

Frank R. Bowerman Sanitary Landfill

Overview

Frank R. Bowerman Sanitary Landfill is located in Irvine, Orange County, and is open to commercial customers only. It is a disposal facility with a permitted capacity of 8,500 tons of total waste per day, or 2,652,000 tons per year. The facility accepted a small portion of the solid waste generated in the City in 2006, just over one percent.

Incoming City Tonnages by Generator Type

Transfer trailers brought City solid waste to Bowerman Landfill. In 2006, the landfill accepted over 40,000 tons of solid waste from City sources.

Incoming Tonnages from the City of Los Angeles, 2006

Generator Type	Solid Waste (tons)	Yard Trimmings (tons)	C&D (tons)
Commercial/multi-family	-	-	-
Residential curbside (LASAN)	-	-	-
Self-haul	-	-	-
Transfer	41,173	-	-
Total Tons	**41,173**	**-**	**-**

Tip Fees

The tip fee in 2006 for solid waste at Frank R. Bowerman Landfill was $46 per ton.

Ultimate Disposal

All of the solid waste received from City sources was landfilled as disposed waste.

Daily/Annual Capacity

In 2006, the facility had a permitted capacity to receive up to 8,500 tons of total waste per day, or 2,652,000 tons per year.

Expansion Plans/Opportunities

In 2008, Frank R. Bowerman Landfill received a permit for a planned expansion to increase its permitted capacity to 11,500 tons per day. Based on this expansion, the facility is scheduled to close in 2053.

Lancaster Landfill

Overview

Lancaster Landfill is located approximately 50 miles north of the City in the rapidly growing Antelope Valley. The facility has a permitted capacity of 1,700 tons per day, or 530,400 tons per year, with plans to increase incoming capacity. Lancaster Landfill received 133,433 tons of solid waste from City sources in 2006, representing about four percent of the City's waste stream. The facility also accepted 50,455 tons of C&D materials from City sources.

Incoming City Tonnages by Generator Type

All solid waste and C&D materials from City sources brought to Lancaster in 2006 were transferred from intermediate facilities.

Incoming Tonnages from the City of Los Angeles, 2006

Generator Type	Solid Waste (tons)	Yard Trimmings (tons)	C&D (tons)
Commercial/multi-family	-	-	-
Residential curbside (LASAN)	-	-	-
Self-haul	-	-	-
Transfer	133,433	-	50,455
Total Tons	**133,433**	**-**	**50,455**

Tip Fees

Tip fees in 2006 were $48 per ton for solid waste, $34 per ton for yard trimmings, and $62 per ton for C&D materials.

Ultimate Disposal

All of the solid waste received from City sources was landfilled at Lancaster as disposed waste. The 50,455 tons of C&D materials are made up of aggregate from the Downtown Diversion facility. All 50,455 tons were used on site at Lancaster as ADC.

Daily/Annual Capacity

The facility is permitted to receive up to 1,700 tons of total waste per day, or 530,400 tons per year, assuming they are open six days per week.

Expansion Plans/Opportunities

Lancaster Landfill has applied for a permit that would expand its daily permitted capacity from 1,700 tons per day to 3,000 tons per day. The facility was projected to close in August, 2012, but is still in operation.

Olinda Alpha Sanitary Landfill

Overview

Olinda Alpha Sanitary Landfill is located in Brea, Orange County. It is a disposal facility with over 400 acres permitted for disposal and a permitted capacity of 8,000 tons per day, or 2,496,000 tons per year. In 2006, Olinda Alpha Landfill received almost four percent of the solid waste from City sources, or over 130,000 tons.

Incoming City Tonnages by Generator Type

In 2006, all solid waste entering the facility was transferred from intermediate facilities.

Incoming Tonnages from the City of Los Angeles, 2006

Generator Type	Solid Waste (tons)	Yard Trimmings (tons)	C&D (tons)
Commercial/multi-family	-	-	-
Residential curbside (LASAN)	-	-	-
Self-haul	-	-	-
Transfer	130,473	-	-
Total Tons	**130,473**	**-**	**-**

Tip Fees

The tip fee in 2006 for solid waste was $46 per ton.

Ultimate Disposal

All of the solid waste received from City sources was landfilled as disposed waste.

Daily/Annual Capacity

Olinda Alpha Landfill is permitted to receive 8,000 tons per day, or 2,496,000 tons per year, assuming that the facility is open six days a week.

Expansion Plans/Opportunities

Originally scheduled to close in 2012, Olinda Alpha was given an extension to remain open until 2021. When the facility closes in 2021, the remaining South Orange County facilities will expand to handle the waste currently being accepted by Olinda Alpha.

Prima Deshecha Sanitary Landfill

Overview

Prima Deshecha Sanitary Landfill is a disposal facility located in San Juan Capistrano, Orange County. The facility is permitted to receive 4,000 tons per day, or 1,248,000 tons per year. Prima Deshecha received a small portion of the solid waste generated in the City in 2006, less than one percent.

Incoming City Tonnages by Generator Type

All City solid waste that arrived at Prima Deshecha in 2006 was transferred from intermediate facilities.

Incoming Tonnages from the City of Los Angeles, 2006

Generator Type	Solid Waste (tons)	Yard Trimmings (tons)	C&D (tons)
Commercial/multi-family	-	-	-
Residential curbside (LASAN)	-	-	-
Self-haul	-	-	-
Transfer	24,047	-	-
Total Tons	**24,047**	**-**	**-**

Tip Fees

The tip fee in 2006 for solid waste at Prima Deshecha was $46 per ton.

Ultimate Disposal

All of the solid waste received from City sources was landfilled as disposed waste.

Daily/Annual Capacity

Prima Deshecha has a total permitted capacity of 4,000 tons per day or 1,248,000 tons per year, assuming that the facility is open six days per week.

Expansion Plans/Opportunities

Prima Deshecha Landfill is located on approximately 1,530 acres and is permitted to dispose solid waste on 699 acres. The landfill can be expanded to handle 7,500 tons per day. It is scheduled to close in 2067.

Puente Hills Landfill

Overview

Puente Hills Landfill is located next to the City of Whittier in unincorporated Los Angeles County, approximately 14 miles east of the City. It is a disposal facility permitted to accept up to 13,200 tons of waste per day, or 4,118,400 tons per year and is scheduled to close in October 2013. In 2006, Puente Hills Landfill received nearly 100,000 tons of solid waste from City sources, accounting for less than three percent of the City's solid waste. Puente Hills also accepted yard trimmings for ADC from City sources, including over 1.8 million tons of C&D materials primarily used for deck material or daily cover.

Incoming City Tonnages by Generator Type

In 2006, Puente Hills received City wastes via transfer vehicles and commercial haulers.

Incoming Tonnages from the City of Los Angeles, 2006

Generator Type	Solid Waste (tons)	Yard Trimmings (tons)	C&D (tons)
Commercial/multi-family	51,713	28	1,838,071
Residential curbside (LASAN)	-	-	-
Self-haul	-	-	-
Transfer	44,701	34	-
Total Tons	**96,414**	**62**	**1,838,071**

Tip Fees

In 2006, the tip fees for solid waste and C&D materials were $26.21 per ton, while the fee for yard trimmings was $12.10 per ton.

Ultimate Disposal

Most of the solid waste entering Puente Hills from City sources was landfilled as disposed waste. In 2006, of the total 96,414 tons received, 28,865 tons were processed at Puente Hills MRF where 1,404 tons were separated for recycling and 2,794 were sent to the Commerce Refuse-to-Energy facility. Yard trimmings were used as ADC. Of the C&D materials received from City sources, 1,838,000 tons were made up of dirt and asphalt; these materials were beneficially reused for deck material or daily cover. The remaining 71 tons of C&D materials were landfilled.

Daily/Annual Capacity

Puente Hills has a total permitted capacity of 13,200 tons per day, or 4,118,400 tons per year, assuming that the facility is open six days per week.

Expansion Plans/Opportunities

There are no plans to expand the landfill, which is scheduled to close in October 2013.

Scholl Canyon Sanitary Landfill

Overview

Scholl Canyon Sanitary Landfill is located in the city of Glendale, just north of the 134 freeway. It is a disposal facility accepting up to 3,400 tons of waste per day, or 1,060,800 tons per year. Scholl Canyon Landfill received a small amount of solid waste from City sources in 2006, small amounts of yard trimmings, and some C&D materials.

Incoming City Tonnages by Generator Type

In 2006, Scholl Canyon received a small amount of solid waste and yard trimmings from City sources, as well as 87,765 tons of C&D materials.

Incoming Tonnages from the City of Los Angeles, 2006

Generator Type	Solid Waste (tons)	Yard Trimmings (tons)	C&D (tons)
Commercial/multi-family	3,553	2	87,765
Residential curbside (LASAN)	-	-	-
Self-haul	-	-	-
Transfer	-	-	-
Total Tons	**3,553**	**2**	**87,765**

Tip Fees

The fees in 2006 for solid waste and C&D materials were $36.93 per ton, and the fee for yard trimmings was $13.75 per ton.

Ultimate Disposal

All 3,553 tons of solid waste received from City sources were landfilled as disposed waste. The negligible amount of yard trimmings was used for ADC, as were the 87,765 tons of dirt making up the C&D materials.

Daily/Annual Capacity

Scholl Canyon Landfill has a total daily permitted capacity of 3,400 tons per day, or 1,060,800 tons per year, assuming that the facility is open six days per week.

Expansion Plans/Opportunities

An Environmental Impact Report was submitted for public comment in December 2007 outlining two possible expansion proposals that would extend the life of the landfill beyond the 2019 closure date. The first is a vertical-only scenario that would allow for a 5 million-ton expansion and add approximately 12 years to the life of the landfill. The second proposal involves a vertical-horizontal scenario that would add 6 million tons of capacity and 15 years to the landfill life. The approval process is still pending.

Simi Valley Landfill & Recycling Center

Overview

Simi Valley Landfill & Recycling Center is located just northwest of the city of Simi Valley in Ventura County. Opened in 1970, this disposal facility is permitted to accept up to 3,000 tons of waste per day, or 936,000 tons per year. The facility received approximately two percent of the solid waste generated in the City.

Incoming City Tonnages by Generator Type

In 2006, all waste received by Simi Valley Landfill from City sources was solid waste transferred from intermediate facilities.

Incoming Tonnages from the City of Los Angeles, 2006

Generator Type	Solid Waste (tons)	Yard Trimmings (tons)	C&D (tons)
Commercial/multi-family	-	-	-
Residential curbside (LASAN)	-	-	-
Self-haul	-	-	-
Transfer	62,376	-	-
Total Tons	**62,376**	**-**	**-**

Tip Fees

The tip fee in 2006 for solid waste was $45 per ton.

Ultimate Disposal

All of the solid waste received from City sources was landfilled as disposed waste.

Daily/Annual Capacity

Simi Valley Landfill has a permitted capacity of 3,000 tons per day for solid waste, or 936,000 tons per year. It is also permitted to receive 6,000 tons per day, or 1,872,000 tons per year, of recycling, inert material, wood, and organic material.

Expansion Plans/Opportunities

The facility would like to increase capacity from 30 million to 80 million cubic yards and has submitted an application for this expansion. Simi Valley Landfill & Recycling Center has a projected closure date of December 2033.

Sunshine Canyon Landfill

Overview

Sunshine Canyon Landfill is located in Granada Hills on the City border, in northeast San Fernando Valley. This facility receives and disposes of more solid waste from City sources than any other landfill, receiving approximately 44 percent of the City's solid waste, or nearly 1.6 million tons. More than 90 percent of the City's 2006 residential curbside waste was brought to Sunshine Canyon. The landfill is permitted to receive up to 12,100 tons of waste per day, or 3,775,200 tons per year. Sunshine Canyon also received over 42,000 tons of C&D materials and a small amount of yard trimmings from City sources.

Incoming City Tonnages by Generator Type

In 2006, Sunshine Canyon received waste from City sources from both direct and transferred sources. Commercial haulers brought waste from business, industrial, multi-family sources, and residential curbside sources, to Sunshine Canyon.

Incoming Tonnages from the City of Los Angeles, 2006

Generator Type	Solid Waste (tons)	Yard Trimmings (tons)	C&D (tons)
Commercial/multi-family	406,075	712	42,262
Residential curbside (LASAN)	900,713	575	-
Self-haul	10,477	-	-
Transfer	282,079	-	-
Total Tons	**1,599,344**	**1,287**	**42,262**

Tip Fees

The gate rate in 2006 for solid waste and C&D materials was $48 per ton and the fee for yard trimmings was $35 per ton. LASAN pays a negotiated rate of approximately $30 per ton for solid waste disposal.

Ultimate Disposal

All solid waste received by Sunshine Canyon from City sources was landfilled as disposed waste. Sunshine Canyon sent yard trimmings to Falcon Transfer Station where it was ground and sent on to Colmac Energy to be burned for energy. The C&D materials were primarily inert debris and were used as wet weather decking and road base material.

Daily/Annual Capacity

The facility has a total permitted capacity of 12,100 tons per day, or 3,775,200 tons per year, assuming a six-day work week.

Expansion Plans/Opportunities

Sunshine Canyon has approximately 70 million tons of permitted capacity. While the potential exists for future facility expansion, there are no plans to do so at this time. Sunshine Canyon is scheduled to close in 2037.

Waste-to-Energy Facilities

Commerce Refuse-to-Energy

Overview

Commerce Refuse-to-Energy is located east of the South Los Angeles wasteshed in the City of Commerce. This facility receives and transforms solid waste and wood/textile waste. It received only a small portion of solid waste from City sources in 2006. It is permitted to receive up to 1,000 tons of waste per day, or 312,000 tons per year.

Incoming City Tonnages by Generator Type

Commercial haulers brought waste from business, industrial, and multi-family sources, as well as from transfer trailers, to Commerce Refuse-to-Energy.

Incoming Tonnages from the City of Los Angeles, 2006

Generator Type	Solid Waste (tons)	Yard Trimmings (tons)	C&D (tons)
Commercial/multi-family	2,660	-	-
Residential curbside (LASAN)	-	-	-
Self-haul	-	-	-
Transfer	4,480	-	-
Total Tons	**7,140**	**-**	**-**

Tip Fees

The tip fee in 2006 for solid waste was $61 per ton and the tip fee for wood/textiles was $29 per ton.

Ultimate Disposal

Of the 7,140 tons of total incoming waste, all were transformed except for 819 tons that were rejected and sent to Puente Hills Landfill for disposal. Rejected materials include non-processable waste (materials that cannot be processed to produce energy) such as concrete and asphalt. Residual ash was sent to Puente Hills Landfill and used for subgrade material for the winter deck. Any unused ash is stockpiled for later use.

Daily/Annual Capacity

The facility has a total permitted capacity of 1,000 tons per day, or 328,500 tons per year, assuming 90 percent availability.

Expansion Plans/Opportunities

There are no plans for expansion of this facility.

Southeast Resource Recovery Facility (SERRF)

Overview

Southeast Resource Recovery Facility is located in the south end of the Harbor wasteshed in the city of Long Beach. This facility receives and transforms solid waste. It is permitted to receive up to 2,240 tons of waste per day, or 698,880 tons per year. SERRF received a small portion of solid waste from City sources in 2006. In 2006, the facility also received small amounts of yard trimmings.

Incoming City Tonnages by Generator Type

Commercial haulers brought waste from commercial and multi-family generators and LASAN brought waste from residential curbside customers to SERRF.

Incoming Tonnages from the City of Los Angeles, 2006

Generator Type	Solid Waste (tons)	Yard Trimmings (tons)	C&D (tons)
Commercial/multi-family	9,829	-	
Residential curbside (LASAN)	16,519	57	-
Self-haul	-	-	-
Transfer	1,032	-	-
Total Tons	**27,380**	**57**	**-**

Tip Fees

The tip fee in 2006 for solid waste and C&D was $45 per ton.

Ultimate Disposal

The waste material was burned for energy. The remaining ash was turned into road base and used at Puente Hills Landfill.

Daily/Annual Capacity

The facility has a total permitted capacity of 2,240 tons per day, or 735,840 tons per year, assuming 90 percent availability.

Expansion Plans/Opportunities

There are no plans for expansion of this facility.

Inert Landfills[68]

Azusa Landfill

Overview

Azusa Landfill is located in the City of Azusa. This disposal facility accepts up to 6,500 tons of mixed C&D materials per day, or 2,028,000 tons per year. Azusa Landfill received 43,499 tons of C&D materials from City sources in 2006, in addition to a small amount of inert debris.

Incoming City Tonnages by Generator Type

In 2006, all 43,499 tons of C&D materials that Azusa received from City sources were brought in via self-haul.

Incoming Tonnages from the City of Los Angeles, 2006

Generator Type	Solid Waste (tons)	Yard Trimmings (tons)	C&D (tons)
Commercial/multi-family	-	-	-
Residential curbside (LASAN)	-	-	-
Self-haul	-	-	43,499
Transfer	-	-	-
Total Tons	**-**	**-**	**43,499**

Tip Fees

The fees for C&D and inert debris at Azusa in 2006 were $45 per pick-up truck, $80 per semi-truck, and $95 per bottom-dump truck.

Ultimate Disposal

All 42,974 tons of asbestos received from City sources were disposed at Azusa. Approximately 388 tons of rock, gravel, and soil were used for ADC, while 164 tons of tires were diverted to domestic recycling markets.

Daily/Annual Capacity

Azusa Landfill has a total daily permitted capacity of 6,500 tons per day, or 2,028,000 tons per year, assuming that the facility is open six days per week.

Expansion Plans/Opportunities

Azusa has no expansion plans or opportunities.

[68] Most inert landfills are classified as "Inert Debris Engineered Fill Operations" under state regulations and inert materials disposed at an inert landfill are considered beneficially reused and are not considered disposed as solid waste. California Code of Regulations Title 14, Natural Resources-Division 7, Article 5.95, Section 17388 (l)

Chandler's Landfill

Overview

Chandler's Landfill, located in the City of Rolling Hills Estates, is a 130-acre mine reclamation project that receives waste for disposal and recovery. However, it is different from other reclamation projects in that Chandler's Landfill also processes some recyclable material on site, grinding a portion of incoming concrete and road asphalt either for sale as road base or for use as ADC on site. Chandler's Landfill received 12,679 tons of C&D materials from City sources in 2006.

Incoming City Tonnages by Generator Type

In 2006, all C&D materials received by Chandler's Landfill that originated in Los Angeles came from commercial sources and were brought in via self-haul.

Incoming Tonnages from the City of Los Angeles, 2006

Generator Type	Solid Waste (tons)	Yard Trimmings (tons)	C&D (tons)
Commercial/multi-family	-	-	-
Residential curbside (LASAN)	-	-	-
Self-haul	-	-	12,679
Transfer	-	-	-
Total Tons	**-**	**-**	**12,679**

Tip Fees

In 2006, the fees for C&D and inert debris were $115 to $345 per load, depending on vehicle type.

Ultimate Disposal

Approximately 6,415 tons of C&D materials received from City sources were landfilled. Approximately 4,314 tons of material were used for ADC, while another 1,950 tons were diverted to domestic recycling markets.

Daily/Annual Capacity

Chandler's Landfill is a mine reclamation project and does not have a permitted capacity.

Expansion Plans/Opportunities

Chandler's Landfill has no expansion plans or opportunities.

Hanson Aggregates Landfill

Overview

Hanson Aggregates Landfill covers a 40-acre site in the City of Irwindale. It is a mine reclamation project that accepts up to 1,600 tons of mixed C&D materials per day, or 499,200 tons per year. Hanson Aggregates received 916 tons of C&D materials from City sources in 2006. They are not currently accepting waste because the County is prioritizing filling other former mines in the area. As a result, Hanson Aggregates is at less than one percent of its total capacity. The facility does not charge disposal fees because their primary interest is in reclaiming the mine to meet Surface Mining and Reclamation Act requirements, rather than in running a commercial landfill operation.

Incoming City Tonnages by Generator Type

In 2006, Hanson Aggregates received 733 tons of self-hauled waste and 183 tons of commercially hauled waste from commercial/multi-family sources in the City.

Incoming Tonnages from the City of Los Angeles, 2006

Generator Type	Solid Waste (tons)	Yard Trimmings (tons)	C&D (tons)
Commercial/multi-family	-	-	183
Residential curbside (LASAN)	-	-	-
Self-haul	-	-	733
Transfer	-	-	-
Total Tons	-	-	**916**

Tip Fees

In 2006, there was no tip fee for C&D materials and inert debris at Hanson Aggregates.

Ultimate Disposal

All 916 tons of C&D materials received from City sources were landfilled.

Daily/Annual Capacity

Hanson Aggregates Landfill has a total daily permitted capacity of 1,600 tons per day, or 499,200 tons per year, assuming that the facility is open six days per week.

Expansion Plans/Opportunities

Hanson Aggregates has no expansion plans or opportunities.

Lower Azusa (Arcadia)

Overview

Lower Azusa Landfill is located in the City of Arcadia. The facility accepts up to 4,000 cubic yards of inert materials per day, equivalent to approximately 1,720 tons per day or 536,640 tons per year. Lower Azusa received between 25,800 and 43,000 tons of inert materials in 2006, but was unable to estimate the amount that originated in the City.

Incoming City Tonnages by Generator Type

Not available.

Tip Fees

In 2006, Lower Azusa charged $70 to $130 per truck, depending on the size and type of vehicle.

Ultimate Disposal

Steel received by the landfill is recycled. Details on the final disposal of inert materials were not available.

Daily/Annual Capacity

Lower Azusa Landfill has a total daily permitted capacity of 4,000 cubic yards per day, or 1,248,000 cubic yards per year, assuming that the facility is open six days per week. Using a conversion factor of 860 pounds per cubic yard of inert material, the annual capacity is estimated to be 536,640 tons per year.

Expansion Plans/Opportunities

Lower Azusa has no expansion plans or opportunities.

Nu Way Arrow

Overview

Nu Way Arrow is an inert disposal facility located in the City of Irwindale. It accepted 85,950 tons of C&D material from City sources in 2006. The facility is permitted to accept up to 7,500 tons per day or up to 780,000 tons per year.

Incoming City Tonnages by Generator Type

In 2006, Nu Way Arrow received 85,951 tons of waste from City sources. Figures for tonnages from individual generator types were not available.

Incoming Tonnages from the City of Los Angeles, 2006

Generator Type	Solid Waste (tons)	Yard Trimmings (tons)	C&D (tons)
Commercial/multi-family	-	-	-
Residential curbside (LASAN)	-	-	-
Self-haul	-	-	-
Transfer	-	-	-
Total Tons	**-**	**-**	**85,951[69]**

Tip Fees

The tip fee at Nu Way Arrow in 2006 ranged from $40 to $95 per ton, depending on the size and type of vehicle.

Ultimate Disposal

Not available.

Daily/Annual Capacity

Nu Way Arrow has a total daily permitted capacity of 7,500 tons per day and 780,000 tons per year.

Expansion Plans/Opportunities

Nu Way Arrow has no expansion plans or opportunities.

[69] Figures for tonnages from individual generator types were not available

Peck Road Landfill

Overview

Peck Road Landfill is located in the City of Monrovia. It is a disposal facility that accepts up to 1,210 tons of mixed C&D materials per day, or 377,520 tons per year. Peck Road Landfill received 25,659 tons of C&D materials from City sources in 2006.

Incoming City Tonnages by Generator Type

In 2006, all C&D materials received by Peck Road that originated in Los Angeles were brought in via self-haul.

Incoming Tonnages from the City of Los Angeles, 2006

Generator Type	Solid Waste (tons)	Yard Trimmings (tons)	C&D (tons)
Commercial/multi-family	-	-	-
Residential curbside (LASAN)	-	-	-
Self-haul	-	-	25,659
Transfer	-	-	-
Total Tons	**-**	**-**	**25,659**

Tip Fees

The fees in 2006 for C&D materials and inert debris were $15 to $75 per truck, depending on type.

Ultimate Disposal

All 25,659 tons of concrete and asphalt received from City sources in 2006 were recycled into road base.

Daily/Annual Capacity

Peck Road Landfill has a total daily permitted capacity of 1,210 tons per day, or 377,520 tons per year, assuming that the facility is open six days per week.

Expansion Plans/Opportunities

Peck Road has no expansion plans or opportunities.

Reliance Pit #2

Overview

Reliance Pit #2 is a mine reclamation project located in the City of Irwindale that receives inert C&D materials. Reliance received 625 tons of C&D materials from City sources in 2006. Following that year, it was temporarily shut down so that the material could be diverted to other mine reclamation projects in the area. The owner is applying to reopen, but for the immediate future remaining capacity is 12 million yards.

Incoming City Tonnages by Generator Type

In 2006, all C&D materials received by Reliance Pit #2 that originated in Los Angeles were commercially hauled.

Incoming Tonnages from the City of Los Angeles, 2006

Generator Type	Solid Waste (tons)	Yard Trimmings (tons)	C&D (tons)
Commercial/multi-family	-	-	625[70]
Residential curbside (LASAN)	-	-	-
Self-haul	-	-	-
Transfer	-	-	-
Total Tons	**-**	**-**	**625**

Tip Fees

In 2006, Reliance did not charge tip fees for C&D material.

Ultimate Disposal

All 625 tons of C&D materials received from City sources were landfilled on site.

Daily/Annual Capacity

Reliance Pit #2 is a mine reclamation project and does not have a permitted capacity.

Expansion Plans/Opportunities

Reliance has no expansion plans or opportunities.

[70] Reliance reported accepting 1,452 cubic yards of inert materials, which were converted to tons using a conversion factor of 860 pounds per cubic yard of inert material.

Sun Valley Landfill

Overview

Sun Valley Landfill receives dirt, concrete, and asphalt for disposal. Over 80 percent of the incoming tonnage is made up of dirt. Sun Valley received 193,313 tons of C&D materials from City sources in 2006. The landfill will fill its remaining capacity in 15 years at the current rate of fill.

Incoming City Tonnages by Generator Type

In 2006, approximately 60 percent of the C&D materials received by Sun Valley Landfill that originated in the City of Los Angeles came from commercial sources and the other 40 percent were brought in via self-haulers.

Incoming Tonnages from the City of Los Angeles, 2006

Generator Type	Solid Waste (tons)	Yard Trimmings (tons)	C&D (tons)
Commercial/multi-family	-	-	115,988
Residential curbside (LASAN)	-	-	-
Self-haul	-	-	77,325
Transfer	-	-	-
Total Tons	-	-	**193,313**[71]

Tip Fees

The fee in 2006 for C&D materials was $45 to $135 per ton, depending on vehicle type.

Ultimate Disposal

All of the 193,313 tons of C&D material received from City sources were landfilled on site.

Daily/Annual Capacity

Sun Valley's permitted capacity is 1,720,700 tons per year.

Expansion Plans/Opportunities

Sun Valley has the potential to expand capacity, but there are no plans to do so at this time.

[71] Sun Valley reported accepting a total of 449,566 cubic yards of inert materials, which was converted to tons using a conversion factor of 860 pounds per cubic yard of inert material.

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Attachment C-3: Recycling Facilities[72]

The Allan Company, Santa Monica

Overview

The Allan Company, located in the City of Santa Monica, reported accepting 12,600 tons of recyclable materials from commercial sources in the City in 2007; 7,800 of those tons were hauled by private companies and 4,800 were self-hauled.

Incoming City Tonnages by Generator Type

This facility received commercially hauled and self-hauled recyclable materials from commercial sources.

Incoming Tonnages from the City of Los Angeles, 2006

Generator Type	2007 Recycling (tons)
Commercial	7,800
Self-haul	4,800
Residential curbside (LASAN)	0
Total Tons	**12,600**

Prices

The Allan Company provided price information after recycling commodity markets took a deep plunge in the fall of 2008. Their payments ranged from $0 for materials such as miscellaneous plastic containers and tin cans up to $300 per ton for aluminum cans.

Origin by Wasteshed

Approximately 90 percent of the recyclable materials received from City sources came from the West LA wasteshed. Another five percent came from the West Valley wasteshed, while the remaining five percent came from East Valley wasteshed.

Types of Materials Processed

Paper materials make up most of materials received by the Allan Company from City sources at 75 percent of the total, or 9,500 of the 12,600 tons. The facility also received plastic containers and film, metal, and glass containers.

End Markets

All 12,600 tons processed by the Allan Company are sent to recycling markets. This facility reported a zero percent residual waste rate. That is, none of the recyclable materials received from City sources are sent out to be disposed as waste.

Expansion Plans/Opportunities

The Allan Company reports plans to expand the facility, adding 2,500-4,000 tons per month. The only concern The Allan Company expressed about accepting additional materials from the City of Los Angeles is the environmental impact and subsequent regulations associated with additional vehicles entering the facility.

[72] Note that the facility surveys were conducted in 2007 and 2008 and reflect the circumstances at the time of the survey. The information presented in these surveys, including tons and tip fees, was self-reported by the facility operators.

Angelus Western Paper Fibers

Overview

Angelus Western Paper Fibers, located in central Los Angeles, reported accepting 187,200 tons of recyclable materials from commercial sources in the City in 2007; 62,400 of those tons were hauled by commercial haulers and 124,800 were self-hauled.

Incoming City Tonnages by Generator Type

This facility received commercially hauled and self-hauled recyclable materials from commercial sources.

Incoming Tonnages from the City of Los Angeles, 2006

Generator Type	2007 Recycling (tons)
Commercial	62,400
Self-haul	124,800
Residential curbside (LASAN)	0
Total Tons	**187,200**

Prices

Angelus Western Paper Fibers provided price information after recycling commodity markets took a deep plunge in 2008. Their payments ranged from $10 for mixed waste paper to $30 per ton for cardboard.

Origin by Wasteshed

Approximately 70 percent of the recyclable materials received from City sources came from the North Central wasteshed. Another 20 percent came from the South LA wasteshed, while the remaining 10 percent came from the West LA wasteshed.

Types of Materials Processed

Paper materials were the only materials received by Angelus Western Paper Fibers from City sources. Cardboard, newsprint, and mixed paper were the commodities reported.

End Markets

All 187,200 tons processed by Angelus Western Paper Fibers are sent to recycling markets. This facility reported an overall four percent residual waste rate. That is, four percent of the recyclable materials received from City sources are sent out to be disposed as waste.

Expansion Plans/Opportunities

Angelus Western Paper Fibers reports plans to expand the facility, adding 250 tons per day, or approximately 78,000 per year (based on a six-day work week). Angelus Western Paper Fibers expressed two primary concerns with regard to the expansion: 1) the economic situation and its effect on commodity prices and 2) negotiating purchase of railroad land adjacent to their existing facility. However, they noted that additional recycling tons from the City of Los Angeles would help make the expansion viable.

Bestway Recycling Co. Inc. (Firestone Facility)

Overview

Bestway Recycling is located in south Los Angeles near the City of South Gate. They reported accepting 56,430 tons of recyclable materials from commercial and residential sources in the City in 2007. Of those tons, 1,600 were hauled by private companies, 2,000 tons were self-hauled, and 52,830 tons were hauled by LASAN. Some of the LASAN residential curbside tons are transferred to the Bestway Firestone Facility from the Bestway Jefferson Boulevard location (which serves as a transfer point and does not process the materials).

Incoming City Tonnages by Generator Type

The table below breaks out Bestway Recycling tonnages by substream.

Incoming Tonnages from the City of Los Angeles, 2006

Generator Type	2007 Recycling (tons)
Commercial	1,600
Self-haul	2,000
Residential curbside (LASAN)	52,830
Total Tons	**56,430**

Prices

Price information was not available from Bestway Recycling for this report.

Origin by Wasteshed

Approximately 94 percent of the recyclable materials received from City sources came from the West LA wasteshed. Another four percent came from the South LA wasteshed, while the remaining two percent came from the North Central wasteshed.

Types of Materials Processed

Paper materials make up most of the material received by Bestway Recycling from the City at 58 percent of the total, or 32,840 of the 56,430 tons. The facility also received plastic containers and film, metal and glass containers.

End Markets

A total of 44,435 tons processed by Bestway Recycling are sent to recycling markets. This facility reported an overall 21 percent residual waste rate. That is, 21 percent of the recyclable materials received from City sources are sent out to be disposed as waste.

Expansion Plans/Opportunities

Bestway Recycling does not have plans to expand their facility, but has the space to process up to a total of 400 tons per day, or approximately 124,800 tons per year (based on a six-day work week). Bestway Recycling would need to purchase additional equipment to process the additional material.

Burbank Recycling

Overview

Burbank Recycling, located in the City of Burbank, reported accepting 800 tons of recyclable materials from commercial sources in the City in 2007. All of those tons were hauled by private companies.

Incoming City Tonnages by Generator Type

The table below breaks out Burbank Recycling tonnages by substream.

Incoming Tonnages from the City of Los Angeles, 2006

Generator Type	2007 Recycling (tons)
Commercial	800
Self-haul	0
Residential curbside (LASAN)	0
Total Tons	**800**

Prices

Price information was not available from Burbank Recycling for this report.

Origin by Wasteshed

Half of the recyclable materials received by Burbank Recycling from City sources came from the North Central wasteshed and the other half came from the East Valley wasteshed.

Types of Materials Processed

Burbank Recycling reported that all recyclable materials that came from the City's commercial establishments were made up of cardboard (500 tons) and office paper (300 tons).

End Markets

All 800 tons of cardboard and office paper processed by Burbank Recycling were sent to recycling markets. This facility reported an overall zero percent residual waste rate. That is, none of all the recyclable materials received from City sources are sent out to be disposed as waste.

Expansion Plans/Opportunities

Burbank Recycling does not have plans to expand the facility, but may consider opening a new facility if there were enough feedstock materials to merit a new site and equipment.

City Fibers (Santa Fe Ave.)

Overview

City Fibers (Santa Fe Ave.), located near downtown Los Angeles, reported accepting 85,000 tons of residential curbside recyclable materials hauled by LASAN in 2007.

Incoming City Tonnages by Generator Type

The table below breaks out City Fibers (Santa Fe Ave.) tonnages by substream.

Incoming Tonnages from the City of Los Angeles, 2006

Generator Type	2007 Recycling (tons)
Commercial	0
Self-haul	0
Residential curbside (LASAN)	85,000
Total Tons	**85,000**

Prices

LASAN receives an average of $12.20 per ton in revenues from City Fibers (Santa Fe Ave.) for blue bin materials.

Origin by Wasteshed

Approximately 50,000 tons, or 59 percent, of the recyclable materials received by City Fibers (Santa Fe Ave.) from City sources came from the North Central L.A. wasteshed, and 35,000 tons, or 41 percent, came from the South L.A. wasteshed.

Types of Materials Processed

Paper materials were the largest type of material received by City Fibers (Santa Fe Ave.) from the City at 44 percent of the total, or 37,500 tons. The facility also received plastic containers and film, metal and glass containers, and cardboard.

End Markets

Approximately 50,000 tons, or 59 percent, of recyclables processed by City Fibers (Santa Fe Ave.) were sent to recycling markets, and 35,000 tons of recyclable materials received from City sources were sent out to be disposed as waste.

Expansion Plans/Opportunities

City Fibers (Santa Fe Ave.) has plans to expand the facility, but the timing is uncertain.

City Fibers (Schoenborn St.)

Overview

City Fibers (Schoenborn St.), located in northwest Los Angeles, reported accepting 68,000 tons of residential curbside recyclable materials hauled by LASAN in 2007.

Incoming City Tonnages by Generator Type

The table below breaks out City Fibers (Schoenborn St.) tonnages by substream.

Incoming Tonnages from the City of Los Angeles, 2006

Generator Type	2007 Recycling (tons)
Commercial	0
Self-haul	0
Residential curbside (LASAN)	68,000
Total Tons	**68,000**

Prices

LASAN receives an average of $12.20 per ton in revenues from City Fibers (Schoenborn St.) for blue bin materials.

Origin by Wasteshed

All of the recyclable materials received by City Fibers (Schoenborn St.) from City sources came from the West Valley wasteshed.

Types of Materials Processed

Paper materials comprised most of the material received by City Fibers (Schoenborn St.) from the City at 57 percent of the total, or 39,000 tons. The facility also received plastic containers and film, metal, and glass containers, and cardboard.

End Markets

Approximately 52,000 tons, or 76 percent, of recyclables processed by City Fibers (Schoenborn St.) were sent to recycling markets, and 16,000 tons of recyclable materials received from City sources were sent out to be disposed as waste.

Expansion Plans/Opportunities

City Fibers (Schoenborn St.) does not have plans to expand the facility, but adding a second shift would increase the facility's capacity from 400 tons per day to 800 tons per day.

Los Angeles Recycling Center

Overview

Los Angeles Recycling Center, located near downtown Los Angeles, reported accepting 17,700 tons of recyclable materials from commercial sources in the City in 2007. A total of 1,700 of those tons were hauled by private companies while 16,000 tons were self-hauled.

Incoming City Tonnages by Generator Type

The table below breaks out Los Angeles Recycling Center tonnages by substream.

Incoming Tonnages from the City of Los Angeles, 2006

Generator Type	2007 Recycling (tons)
Commercial	1,700
Self-haul	16,000
Residential curbside (LASAN)	0
Total Tons	**17,700**

Prices

Price information was not available from Los Angeles Recycling Center for this report.

Origin by Wasteshed

All recyclable material received by Los Angeles Recycling Center from City sources came from the North Central wasteshed.

Types of Materials Processed

Paper materials comprised most of the material received by Los Angeles Recycling Center from the City at 89 percent of the total, or 15,760 of the 17,700 tons. The facility also received plastic containers and film, metal, and glass containers.

End Markets

All 17,700 tons processed by Los Angeles Recycling Center are sent to recycling markets. This facility reported an overall four percent residual waste rate. That is, four percent of all recyclable materials received from City sources are sent out to be disposed as waste.

Expansion Plans/Opportunities

Los Angeles Recycling Center does not have plans to expand the facility, but has the space to process up to a total of 1,000 tons per day, or approximately 312,000 per year (based on a six-day work week). Los Angeles Recycling Center would need to purchase additional equipment to process the additional material.

Potential Industries

Overview

Potential Industries, located in the Wilmington neighborhood of Los Angeles, reported accepting 55,400 tons of recyclable material from commercial and residential sources in the City in 2007, with 29,600 of those tons hauled by private companies, 13,200 tons self-hauled, and 12,600 tons hauled by LASAN.

Incoming City Tonnages by Generator Type

The table below breaks out Potential Industries tonnages by substream.

Incoming Tonnages from the City of Los Angeles, 2006

Generator Type	2007 Recycling (tons)
Commercial	29,600
Self-haul	13,200
Residential curbside (LASAN)	12,600
Total Tons	**55,400**

Prices

Price information was not available from Potential Industries for this report.

Origin by Wasteshed

All recyclable materials from residential curbside customers hauled by LASAN, and approximately 80 percent of the commercial recyclable materials, came from the Harbor wasteshed. Another 10 percent of the commercial recyclable materials came from the South LA wasteshed, while the remaining 10 percent came from the West LA wasteshed.

Types of Materials Processed

Paper materials comprise most of the material received by Potential Industries from the City at 79 percent of the total, or 43,700 of the 55,400 tons. The facility also received plastic containers and film, metal, and glass containers.

End Markets

A total 52,900 tons processed by Potential Industries are sent to recycling markets. This facility reported an overall five percent residual waste rate. That is, five percent of the recyclable materials received from City sources are sent out to be disposed as waste.

Expansion Plans/Opportunities

Potential Industries reported plans to expand the facility. The facility has been working with the City of Los Angeles Department of Environmental Affairs to expand processing capabilities. A permit application was submitted in September 2008 for this expansion. The new permit would add a total of 2,500 tons per day, or approximately 780,000 tons per year (based on a six-day week). Potential Industries welcomes the opportunity to accept additional recyclables from residential or commercial sources located in the City of Los Angeles.

Recycle America Alliance

Overview

Recycle America Alliance, located in south Los Angeles near the City of Huntington Park, reported processing a total of 200 tons of recyclable materials from City sources per day or 62,400 tons per year in 2007.

Incoming City Tonnages by Generator Type

Information was not available to break out tons by substream for Recycle America Alliance.

Incoming Tonnages from the City of Los Angeles, 2006

Generator Type	2007 Recycling (tons)
Commercial	-
Self-haul	-
Residential curbside (LASAN)	-
Total Tons	**62,400**

Prices

Price information was not available from Recycle America Alliance.

Origin by Wasteshed

Information on the origins of recycling was not available from Recycle America Alliance.

Types of Materials Processed

Recycle America Alliance reported accepting cardboard, newsprint, and other paper for recycling. The facility also accepts plastic containers and film, metal, and glass containers for recycling. Quantities were not available from Recycle America Alliance for this report.

End Markets

Information on end markets for processed recyclables was not available from Recycle America Alliance for this report.

Expansion Plans/Opportunities

Recycle America Alliance reported no plans to expand the facility; however, they have an unspecified amount of excess capacity at their existing facility and therefore are open to accepting additional clean recyclables for processing.

Smurfit Recycling

Overview

Smurfit Recycling, located in the City of Torrance, reported accepting 10,575 tons of recyclable materials from commercial sources in the City in 2007. A total of 250 of those tons were hauled by commercial haulers while 10,325 tons were self-hauled.

Incoming City Tonnages by Generator Type

The table below breaks out Smurfit Recycling tonnages by substream.

Incoming Tonnages from the City of Los Angeles, 2006

Generator Type	2007 Recycling (tons)
Commercial	250
Self-haul	10,325
Residential curbside (LASAN)	0
Total Tons	**10,575**

Prices

Price information was not available from Smurfit Recycling for this report.

Origin by Wasteshed

Information on the origin of recycling was not available from Smurfit Recycling for this report.

Types of Materials Processed

Paper materials comprise most of the material received by Smurfit Recycling from the City at 96 percent of the total, or 10,175 of the 10,575 tons. The facility also received plastic containers and film, as well as metal and glass containers.

End Markets

An estimated 10,375 tons processed by Smurfit Recycling are sent to recycling markets. This facility reported an overall two percent residual waste rate. That is, two percent of all recyclable materials received from City sources are sent out to be disposed as waste.

Expansion Plans/Opportunities

Smurfit Recycling does not have plans to expand the facility.

South Coast Recycling

Overview

South Coast Recycling, located in north Los Angeles near the City of Burbank, reported accepting 104,000 tons of recyclable material from commercial sources in the City in 2007. A total of 84,000 of those tons were hauled by commercial haulers while 20,000 tons were self-hauled.

Incoming City Tonnages by Generator Type

The table below breaks out South Coast Recycling tonnages by substream.

Incoming Tonnages from the City of Los Angeles, 2006

Generator Type	2007 Recycling (tons)
Commercial	84,000
Self-haul	20,000
Residential curbside (LASAN)	0
Total Tons	**104,000**

Prices

South Coast Recycling provided price information before recycling commodity markets took a deep plunge in the fall of 2008. Their payments ranged from $20 for mixed recyclables or mixed paper to $100 for cardboard or newsprint and up to $4,000 per ton for scrap copper.

Origin by Wasteshed

About 40 percent of the commercial recycling from City sources came from the North Central wasteshed. The following wastesheds each contributed an additional 20 percent of the total tonnage: West Valley, East Valley, and West LA.

Types of Materials Processed

Paper materials comprise most of the material received by South Coast Recycling from the City at 91 percent of the total, or 94,900 of the 104,000 tons. The facility also received plastic containers and film, metal and glass containers, and small amounts of scrap copper and brass.

End Markets

A total of 92,000 tons processed by South Coast Recycling are sent to recycling markets. This facility reported an overall 12 percent residual waste rate. That is, 12 percent of all recyclable materials received from City sources are sent out to be disposed as waste due to contamination.

Expansion Plans/Opportunities

South Coast Recycling does not have plans to expand the facility, but has the space to process an additional unspecified amount of recyclable materials.

Sun Valley Paper Stock, Inc.

Overview

Sun Valley Paper Stock, located in the Sun Valley area within the City of Los Angeles, reported accepting 87,302 tons of recyclable materials from commercial and residential sources in the City in 2007, with 1,740 of those tons hauled by commercial haulers and 85,562 tons hauled by LASAN.

Incoming City Tonnages by Generator Type

The table below breaks out Sun Valley Paper Stock tonnages by substream.

Incoming Tonnages from the City of Los Angeles, 2006

Generator Type	2007 Recycling (tons)
Commercial	1,740
Self-haul	0
Residential curbside (LASAN)	85,562
Total Tons	**87,302**

Prices

Sun Valley Paper Stock provided price information before recycling commodity markets took a deep plunge in the fall of 2008. Their payments range from $0 for miscellaneous plastics to $80 for cardboard or tin cans to $200 for plastic film and up to $3,460 per ton for aluminum cans.

Origin by Wasteshed

All recyclable materials from City sources came from the East Valley wasteshed.

Types of Materials Processed

Paper materials comprise most of the material received by Sun Valley Paper Stock from City sources at 57 percent of the total, or 49,544 of the 87,302 tons. The facility also received plastic containers and film, metal and glass containers, and a small amount of scrap metals.

End Markets

A total 66,135 tons processed by Sun Valley Paper Stock are sent to recycling markets. This facility reported an overall 25 percent residual waste rate. That is, 25 percent of the recyclable materials received from City sources are sent out to be disposed as waste due to contamination.

Expansion Plans/Opportunities

Sun Valley Paper Stock does not have plans to expand the facility, but has the space to process an additional unspecified amount of recyclable materials.

West Valley Fibers

Overview

West Valley Fibers, located in the Van Nuys area of the City of Los Angeles, reported accepting 28,860 tons of recyclable materials from commercial sources in the City in 2007. A total of 16,860 of those tons were hauled by commercial haulers while 12,000 tons were self-hauled.

Incoming City Tonnages by Generator Type

The table below breaks out West Valley Fibers tonnages by substream.

Incoming Tonnages from the City of Los Angeles, 2006

Generator Type	2007 Recycling (tons)
Commercial	16,860
Self-haul	12,000
Residential curbside (LASAN)	0
Total Tons	**28,860**

Prices

Price information was not available from West Valley Fibers for this report.

Origin by Wasteshed

About 85 percent of the commercial recycling from the City came from the West Valley wasteshed. The remaining 15 percent came from the East Valley wasteshed.

Types of Materials Processed

Paper materials comprise most of the material received by West Valley Fibers from City sources at 75 percent of the total, or 21,600 of the 28,860 tons. The facility also received plastic containers and film as well as aluminum and glass containers.

End Markets

A total of 28,710 tons processed by West Valley Fibers were sent to recycling markets. This facility reported less than a one percent residual waste rate. That is, less than one percent of all recyclable materials received from City sources are sent out to be disposed as waste.

Expansion Plans/Opportunities

West Valley Fibers reported plans to expand the facility. They are planning to add transloading capabilities to handle additional residential curbside recyclables, multi-family residential recyclables, and commingled commercial recyclable materials. West Valley Fibers is in the process of assessing possible adjacent or new sites for this expansion. Because a site is not yet decided on, they do not have a specific tonnage amount associated with the expansion. They would welcome any assistance the City of Los Angeles can provide to help facilitate the land acquisition and permitting process.

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Attachment C-4: C&D Materials Processing Facilities[73]

Note: transfer stations that also serve as C&D materials processing facilities are included in Attachment C-1.

Athens Sun Valley Material Recovery & Transfer Station

Overview

Athens Sun Valley Material Recovery & Transfer Station, located in Sun Valley, reported accepting 344,331 tons of C&D materials from commercial sources in the City in 2007, with all of those tons hauled by commercial haulers.

Incoming City Tonnages by Generator Type

The table below breaks out Athens Sun Valley tonnages by substream.

Incoming Tonnages from the City of Los Angeles, 2006

Generator Type	2007 Recycling (tons)
Commercial	344,331
Self-haul	-
Total Tons	**344,331**

Prices

Price information was not available from Athens Sun Valley for this report.

Origin by Wasteshed

Athens Sun Valley did not provide information on the origin of C&D tons by wasteshed.

Types of Materials Processed

Athens Sun Valley primarily received lumber and engineered wood as well as scrap metals from City sources.

End Markets

All 333 tons of wood waste processed by Athens Sun Valley was sent to recycling markets. An additional 1,445 tons of aggregate were sent to an inert landfill. For the C&D materials processed, this facility reported a zero percent residual waste rate. That is, none of the recyclable materials received from City sources were sent out to be disposed as waste.

Daily/Annual Capacity

Athens Sun Valley's total permitted capacity is 1,500 tons per day.

Expansion Plans/Opportunities

Athens Sun Valley reported plans to expand the facility for processing additional C&D materials for recycling. They are in the process of finalizing permits and paperwork to accept 500 additional tons per day, or 156,000 tons per year. The Draft Environmental Impact Report (EIR) was circulated in July 2009 and the Final EIR was issued in November 2009.

[73] Note that the facility surveys were conducted in 2007 and 2008 and reflect the circumstances at the time of the survey. The information presented in these surveys, including tons and tip fees, was self-reported by the facility operators.

Construction and Demolition Recycling

Overview

Construction and Demolition Recycling[74], located in the City of South Gate, reported accepting 13,590 tons of C&D materials from commercial sources in the City in 2007, with all tons delivered by self-haulers.

Incoming City Tonnages by Generator Type

The table below breaks out Construction and Demolition Recycling tonnages by substream.

Incoming Tonnages from the City of Los Angeles, 2006

Generator Type	2007 Recycling (tons)
Commercial	-
Self-haul	13,590
Total Tons	**13,590**

Prices

Price information was not available from Construction and Demolition Recycling for this report.

Origin by Wasteshed

Information on the origin of C&D materials delivered to Construction and Demolition Recycling was not available for this report.

Types of Materials Processed

Most of the C&D materials Construction and Demolition Recycling received from City sources consisted of gypsum board (3,180 tons), mixed metals (2,758 tons), lumber and engineered wood (1,472 tons), aggregate (944 tons), carpet (667), cardboard (158 tons), ceiling tile (128 tons), and furniture for donations (96 tons).

End Markets

An estimated 9,600 tons of C&D materials processed by Construction and Demolition Recycling were sent to recycling markets. For the C&D materials processed, this facility reported an overall 29 percent residual waste rate. That is, approximately 29 percent of the C&D materials received from City sources are sent out to be disposed as waste.

Daily/Annual Capacity

Construction and Demolition Recycling's total permitted capacity is 3,000 tons per day.

Expansion Plans/Opportunities

Construction and Demolition Recycling reported no plans to expand the facility for processing additional C&D materials, but has an unspecified amount of existing excess capacity.

[74] Previously known as Interior Removal Specialists.

Downtown Diversion

Overview

Downtown Diversion is located near downtown Los Angeles and reported accepting 360,000 tons of C&D materials from commercial sources in the City in 2007, with 270,000 hauled by private companies and 90,000 from self-haulers.

Incoming City Tonnages by Generator Type

The table below breaks out Downtown Diversion tonnages by substream.

Incoming Tonnages from the City of Los Angeles, 2006

Generator Type	2007 Recycling (tons)
Commercial	270,000
Self-haul	90,000
Total Tons	**360,000**

Prices

Price information was not available from Downtown Diversion for this report.

Origin by Wasteshed

Downtown Diversion received most of the C&D materials from the North Central wasteshed (60 percent of all tons), with an additional 30 percent coming from the South LA wasteshed, and the remaining 10 percent from the West LA wasteshed.

Types of Materials Processed

Most of the C&D materials Downtown Diversion received from the City consisted of lumber and engineered wood (108,000 tons), concrete (36,000 tons), aggregate (36,000 tons), asphalt paving and roofing (18,800 and 14,400 tons respectively), scrap ferrous metals (14,400 tons), cardboard and gypsum board (10,800 and 14,400 tons respectively). All cardboard, scrap ferrous metal, concrete, asphalt paving, and gypsum board were sent to recycling markets. Most of the wood waste went to hog fuel[75] markets (80,000 of the 108,000 tons), with the remaining to compost facilities. All asphalt roofing went to fuel/energy markets, while aggregates went out as ADC.

End Markets

A total of 270,000 tons of C&D materials processed by Downtown Diversion were sent to recycling, composting, fuel/energy, or ADC markets. For the C&D materials processed, this facility reported a 25 percent residual waste rate. That is, over 25 percent of the C&D materials received from City sources are sent out to be disposed as waste.

Daily/Annual Capacity

Downtown Diversion's total permitted capacity is 1,500 tons per day, or up to 525,000 tons per year.

Expansion Plans/Opportunities

Downtown Diversion reported no plans to expand the facility for processing additional C&D materials, but has approximately 300 tons per day, or 93,600 tons per year, of existing excess capacity.

[75] "Hog fuel" is chipped wood or sawmill residues used as fuel at biomass facilities.

Madison Materials

Overview

Madison Materials, located in Santa Ana, reported accepting 250 tons of C&D materials from commercial sources in the City in 2007, with all tons delivered by private haulers.

Incoming City Tonnages by Generator Type

The table below breaks out Madison Materials tonnages by substream.

Incoming Tonnages from the City of Los Angeles, 2006

Generator Type	2007 Recycling (tons)
Commercial	250
Self-haul	-
Total Tons	**250**

Prices

Madison Materials provided price information before recycling commodity markets took a deep plunge in the fall of 2008. Madison Materials charged customers $25 per load for mixed C&D loads up to 800 pounds, and $50 per ton for mixed C&D loads weighing more than 800 pounds.

Origin by Wasteshed

All C&D materials delivered to Madison Materials came from the South LA wasteshed.

Types of Materials Processed

A breakdown of specific materials was not available from Madison Materials for this report.

End Markets

All 250 tons of C&D materials Madison Materials processed were sent to recycling markets.

Daily/Annual Capacity

Madison Material's total permitted capacity is 950 tons per day.

Expansion Plans/Opportunities

Madison Materials reported plans to expand the facility for processing additional C&D materials, but does not yet know how much additional capacity will be added through the expansion.

Attachment C-5: Yard Trimmings Processing Facilities[76]

Note: transfer stations that also serve as yard trimmings processing facilities are included in Attachment C-1.

Eco-Logics

Overview

Eco-Logics is a yard trimmings processing facility located in the unincorporated area of Ventura County near the city of Moorpark. In 2006, Eco-Logics received 48,820 tons of yard trimmings from City sources. All of the yard trimmings originated in the Western wasteshed and were hauled via LASAN trucks to the Culver City transfer facility and then to Eco-Logics. LASAN terminated its contract with Eco-Logics in 2007. Eco-Logics no longer receives yard trimmings from City sources.

Incoming City Tonnages by Generator Type

In 2006, all of the yard trimmings received by Eco-Logics that originated in Los Angeles came from residential curbside collection.

Incoming Tonnages from the City of Los Angeles, 2006

Generator Type	Solid Waste (tons)	Yard Trimmings (tons)	C&D (tons)
Commercial/multi-family	-	-	-
Residential curbside (LASAN)	-	48,820	-
Self-haul	-	-	-
Transfer	-	-	-
Total Tons	**-**	**48,820**	**-**

Tip Fees

Not available.

Ultimate Disposal

All yard trimmings were mulched and distributed to growers in Ventura County.

Daily/Annual Capacity

Not available.

Expansion Plans/Opportunities

Not available.

[76] Note that the facility surveys were conducted in 2007 and 2008 and reflect the circumstances at the time of the survey. The information presented in these surveys, including tons and tip fees, was self-reported by the facility operators.

Greencycle

Overview

Greencycle is a yard trimmings processing facility located in the City of Santa Fe Springs. Tonnage data for Greencycle in 2006 were not available.

Incoming City Tonnages by Generator Type

Not available.

Tip Fees

Not available.

Ultimate Disposal

Not available.

Daily/Annual Capacity

Greencycle has a total permitted capacity of 135 tons per day, or 30,000 tons per year.

Expansion Plans/Opportunities

Not available.

Griffith Park Composting Facility

Overview

Griffith Park Compost Facility is located in the North Central wasteshed within the City of Los Angeles and is owned and operated by the City. It accepted 39,685 tons of yard trimmings and other organics from City sources in 2006. This includes 2,550 tons of biosolids from the Hyperion treatment plant, 17,213 tons of "zoo doo" from the Los Angeles Zoo, and nearly 20,000 tons of yard trimmings from the Los Angeles Department of Recreation and Parks.

Incoming City Tonnages by Generator Type

In 2006, all of the yard trimmings and organics received by Griffith Park Compost Facility that originated in Los Angeles came from City-hauled sources which are quantified under the commercial/multi-family (Hyperion biosolids), self-haul (Los Angeles Zoo), and transfer (Recreation and Park) substreams.

Incoming Tonnages from the City of Los Angeles, 2006

Generator Type	Solid Waste (tons)	Yard Trimmings/ Organics (tons)	C&D (tons)
Commercial/multi-family	-	2,550	-
Residential curbside (LASAN)	-	-	-
Self-haul	-	17,213[77]	-
Transfer	-	19,922[78]	-
Total Tons	**-**	**39,685**	**-**

Tip Fees

Griffith Park Compost Facility does not charge a tip fee for yard trimmings and other organics.

Ultimate Disposal

All organic materials received by Griffith Park Compost Facility are composted. TOPGRO®, the final compost product, is then used in Griffith Park, thus completing the full cycle of recycling. It is also available for retail sale to Los Angeles residents for their own urban landscaping projects.

Daily/Annual Capacity

Griffith Park Compost Facility's total permitted capacity is 156 tons per day.

Expansion Plans/Opportunities

Griffith Park Compost Facility has no expansion plans.

[77]Griffith Park Compost Facility accepted 51,000 cubic yards of "zoo doo," which was converted to tons using the FEECO's conversion factor of 675 pounds per cubic yard of manure. These tons were considered self-haul tons as the Los Angeles Zoo hauled them directly to Griffith Park Compost Facility.

[78]Griffith Park Compost Facility accepted 127,500 cubic yards of yard trimmings (converted using EPA's conversion factor of 312.5 pounds per cubic yard of leaves and grass) from the City of Los Angeles Department of Recreation and Parks. These tons are considered 'transfer' tons because they were previously processed at a grinding facility and then transported to Griffith Park Compost Facility.

Harbor Mulching Facility (San Pedro Mulching Facility)

Overview

Harbor Mulching, also known as San Pedro Mulching Facility, is located in the San Pedro neighborhood within the City of Los Angeles and is owned and operated by the City. This yard trimmings processing facility accepts up to 100 tons of yard trimmings per day, or 31,200 tons per year. Harbor Mulching received 20,521 tons of yard trimmings from City sources in 2006.

Incoming City Tonnages by Generator Type

In 2006, most of the yard trimmings received by Harbor Mulching that originated in Los Angeles were brought in through LASAN, although some were self-hauled.

Incoming Tonnages from the City of Los Angeles, 2006

Generator Type	Solid Waste (tons)	Yard Trimmings (tons)	C&D (tons)
Commercial/multi-family	-	-	-
Residential curbside (LASAN)	-	15,785	-
Self-haul	-	4,736	-
Transfer	-	-	-
Total Tons	**-**	**20,521**	**-**

Tip Fees

Harbor Mulching does not charge a tip fee for yard trimmings.

Ultimate Disposal

All organic materials received by Harbor Mulching are recycled as mulch.

Daily/Annual Capacity

Harbor Mulching has a total daily permitted capacity of 100 tons per day, or 31,200 tons per year, assuming that the facility is open six days per week.

Expansion Plans/Opportunities

Harbor Mulching has no expansion plans.

Lopez Canyon Environmental Center (Lakeview Terrace)

Overview

Lopez Canyon Environmental Center, also known as Lakeview Terrace, is located in the East Valley wasteshed within the City of Los Angeles and is owned and operated by the City. It is a yard trimmings processing facility that accepts up to 1,000 tons of yard trimmings per day, or 312,000 tons per year. Lopez Canyon received 31,301 tons of yard trimmings from City sources in 2006.

Incoming City Tonnages by Generator Type

In 2006, most of the yard trimmings received by Lopez Canyon that originated in Los Angeles were brought in through LASAN from the East Valley wasteshed.

Incoming Tonnages from the City of Los Angeles, 2006

Generator Type	Solid Waste (tons)	Yard Trimmings (tons)	C&D (tons)
Commercial/multi-family	-	-	-
Residential curbside (LASAN)	-	24,078	-
Self-haul	-	7,223	-
Transfer	-	-	-
Total Tons	**-**	**31,301**	**-**

Tip Fees

Lopez Canyon does not charge a tip fee for yard trimmings.

Ultimate Disposal

All of the materials are mulched and composted.

Daily/Annual Capacity

The facility has a total permitted capacity of 1,000 tons of yard trimmings per day, or 312,000 tons per year, assuming a six-day work week.

Expansion Plans/Opportunities

Lopez Canyon has no expansion plans or opportunities.

North Hills Recycling Inc.

Overview

North Hills Recycling Inc. is a yard trimmings processing facility located in the Granada Hills area within the City of Los Angeles. North Hills accepts up to 500 tons of yard trimmings per day, or 156,000 tons per year.

Incoming City Tonnages by Generator Type

In 2006, 40,000 tons of the yard trimmings received by North Hills that originated in Los Angeles were brought in via commercial haulers, and 40,000 tons were self-hauled.

Incoming Tonnages from the City of Los Angeles, 2006

Generator Type	Solid Waste (tons)	Yard Trimmings (tons)	C&D (tons)
Commercial/multi-family	-	40,000	-
Residential curbside (LASAN)	-	-	-
Self-haul	-	40,000	-
Transfer	-	-	-
Total Tons	-	80,000	-

Tip Fees

The fees for yard trimmings range from $25 to $45 per ton.

Ultimate Disposal

All 80,000 tons of yard trimmings received from City sources were sent to Covanta biomass plant in Delano, California to be used for biomass power.

Daily/Annual Capacity

North Hills has a total daily permitted capacity of 500 tons per day, or 156,000 tons per year, assuming that the facility is open six days per week.

Expansion Plans/Opportunities

North Hills has no expansion plans or opportunities.

Norwalk Industries

Overview

Norwalk is a yard trimmings processing facility located in the City of Santa Fe Springs. Tonnage data for Norwalk in 2006 were not available.

Incoming City Tonnages by Generator Type

Not available.

Tip Fees

Not available.

Ultimate Disposal

Not available.

Daily/Annual Capacity

Norwalk's total permitted capacity is 200 tons per day, or up to 70,000 tons per year.

Expansion Plans/Opportunities

Not available.

Van Norman Chipping and Grinding Facility

Overview

Van Norman is a yard trimmings processing facility located in the Granada Hills area within the City of Los Angeles. It is owned by the City of Los Angeles Department of Water and Power and operated by the Bureau of Street Services. Van Norman received 47,734 tons of yard trimmings from City sources in 2006.

Incoming City Tonnages by Generator Type

In 2006, Van Norman received yard trimmings originating in the City of Los Angeles through LASAN and self-haul customers, which were primarily limited to the Bureau of Street Services.

Incoming Tonnages from the City of Los Angeles, 2006

Generator Type	Solid Waste (tons)	Yard Trimmings (tons)	C&D (tons)
Commercial/multi-family	-	-	-
Residential curbside (LASAN)	-	36,718	-
Self-haul	-	11,016	-
Transfer	-	-	-
Total Tons	-	**47,734**	-

Tip Fees

Van Norman does not charge a tip fee for yard trimmings.

Ultimate Disposal

All materials received by Van Norman are chipped and mulched.

Daily/Annual Capacity

Van Norman's total permitted capacity is 499 tons per day, or up to 120,000 tons per year.

Expansion Plans/Opportunities

This facility ceased operations in 2008.

Food Scrap Composting Facilities

There are 48 composting facilities in California that are permitted to accept food scraps. Twelve commercial scale facilities are located in southern California. Table 14 lists the facilities in southern California permitted to accept food scraps. These facilities (except for Community Recycling) were not surveyed for this report because they did not receive tons from City sources in 2006, but are included as they are important for future planning.

The City is evaluating new diversion programs for food scraps for both residential and commercial generators. If organics processing facilities within or nearby the City cannot be permitted to receive food scraps, these materials may need to be transported to some of the more distant composting facilities that are permitted to receive food scraps. The following table lists the facilities in southern California permitted to receive food scraps and the distance each facility is from CLARTS.

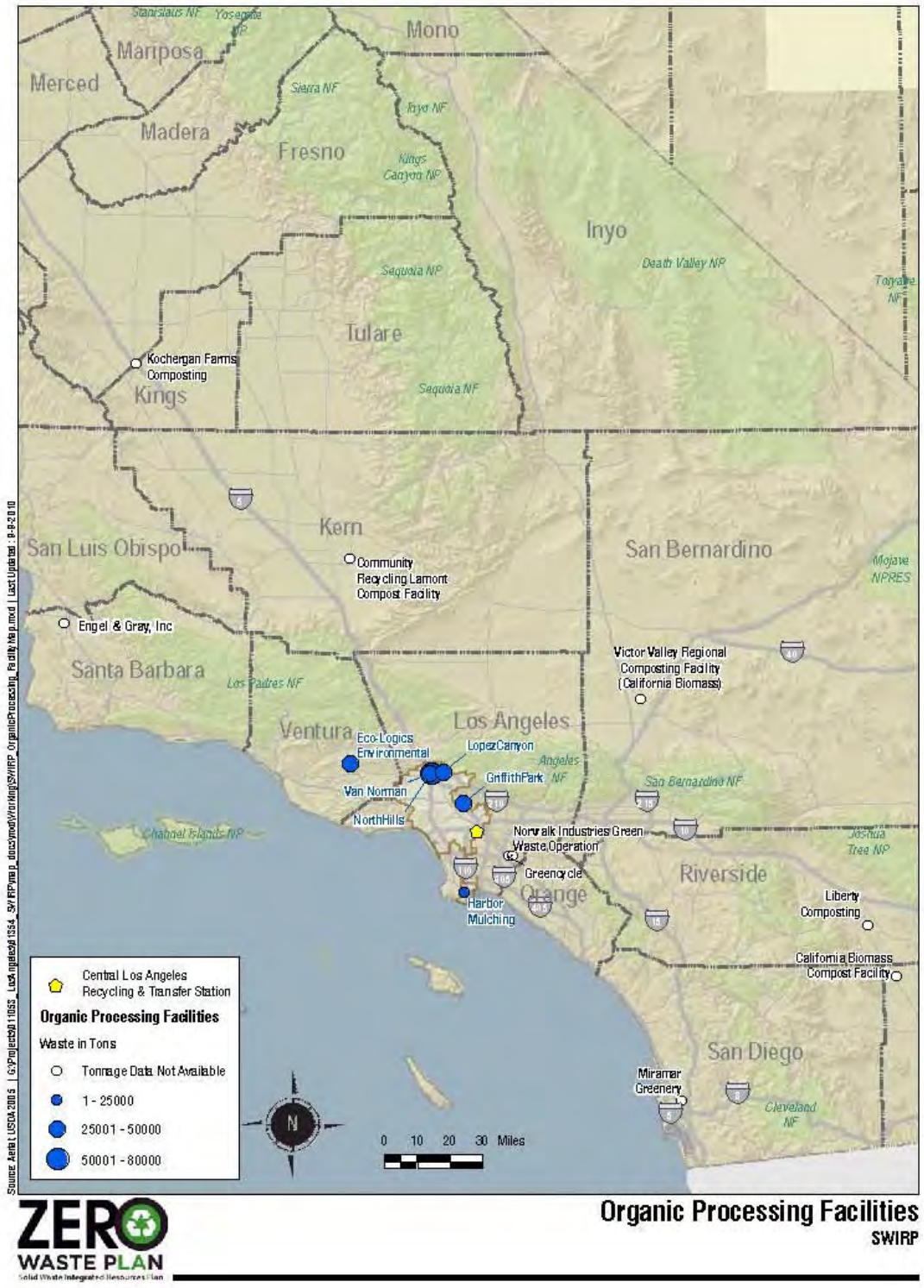
If food scraps are collected by LASAN trucks, they would need to be transferred to bigger capacity containers to be transported out of the City using the transfer station. The location of CLARTS, the composting facilities permitted to receive food scraps, and the organics processing facilities that received materials from City sources in 2006 are shown in Figure 18.

Facilities in Southern California Permitted to Accept Food Scraps

Food Scrap Composting Facilities[1]	Location	Distance from CLARTS (miles one-way)[2]	Permitted Capacity (tons per day)[1]
California Biomass Compost Facility	Thermal, Riverside County	137	700
Coachella Valley Composting Facility	Coachella, Riverside County	129	250
Community Recycling Lamont Compost Facility	Lamont, Kern County	97	3,692
California Biomass Victor Valley Regional Composting Facility	Victorville, San Bernardino County	92	700
Engel & Gray, Inc.	Santa Maria, Santa Barbara County	199	700[3]
El Corazon Compost Facility	Oceanside, San Diego County	83	500
Kochergan Farms Composting	Avenal, Kings County	188	1,000
Lancaster Reclaimable Anaerobic Composter	Lancaster, Los Angeles County	69	500
Liberty Composting (San Joaquin Composting)	Lost Hills, Kern County	160	2,620[4]
Miramar Greenery	San Diego, San Diego County	112	690
Ralphs Renewable Energy Facility	Compton, Los Angeles County	16	350
Tierra Verde Industries EcoCentre	Irvine, Orange County	40	3,000

[1]Source: CalRecycle Solid Waste Information System database (accessed March 25, 2013).
[2]Estimated using Google Maps.
[3]Based on permitted capacity of 208,800 tons per year (300 operating days per year).
[4]Based on permitted capacity of 786,000 tons per year (300 operating days per year).

Figure 18: Organics Processing Facilities that Received Materials from City Sources in 2006 and Southern California Composting Facilities Permitted to Receive Food Scraps



Attachment C-6: Electronics Processing Facilities[79]

Electronics Recyclers of America (ERA)

Overview

Electronics Recyclers of America (ERA) reported accepting 1,707 tons of electronics from City residents and businesses in 2007.

Incoming City Tonnages by Central Collection Site

The table below breaks out ERA tonnages by central collection site.

Central Collection Site	2007 Received Electronics (tons)	Percentage
West Valley Yard	115	7
East Valley Yard	123	7
Western Yard	41	2
Bureau of Street Services	13	1
Cal State Northridge	70	4
Canoga Park	37	2
Central LA Transfer Station	9	1
Department of General Services	119	7
Gaffey S.A.F.E. Center	110	6
Hubert Humphrey Event	8	0
Hyperion S.A.F.E. Center	156	9
Los Angeles Valley College	36	2
North Central Yard	79	5
Pierce College	51	3
Randall S.A.F.E. Center	199	12
Rodeo Place Event	14	1
Harbor Yard	151	9
South LA Yard	45	3
Southwest Yard	1	0
UCLA S.A.F.E. Center	82	5
Universal Studios Event	21	1
Washington S.A.F.E. Center	84	5
LA Glendale S.A.F.E. Center	143	8
Total	**1,707**	**100**

[79] Note that the facility surveys were conducted in 2007 and 2008 and reflect the circumstances at the time of the survey. The information presented in these surveys, including tons and tip fees, was self-reported by the facility operators.

Prices

Because of Senate Bill 20, the Electronic Waste Recycling Act of 2003 (which provides a funding mechanism for certain types of electronic waste), ERA does not charge for recycling monitors or cathode ray tubes (CRTs).

Origin by Wasteshed

ERA provided tons by central collection site.

Types of Materials Processed

ERA accepts all electronic devices and components.

End Markets

About 1,640 tons of the electronics ERA processed were sent to recycling markets, including the glass from monitors and CRTs, metals, and plastic components. All wood waste is sent to hog fuel markets. For the electronics processed, this facility reported an overall rate of four percent residual waste (which was sent to solid waste landfills). Residual waste includes electronic waste components that cannot be recycled and must be disposed, including composite materials (materials of different types fused or glued together) and treated wood.

Expansion Plans/Opportunities

Though ERA reported no expansion plans, the company could add nearly 108,000 tons per year at the existing facility location by adding more sophisticated processing equipment, including conveyor systems, shredders, and screening and granulating machines.

E-Recycling of California

Overview

E-Recycling of California (ERC) reported accepting 76.1 tons of electronics from City residents and businesses in 2007.

Incoming City Tonnages by Central Collection Site

The table below breaks out ERC tonnages by central collection site.

Central Collection Site	2007 Received Electronics (tons)	Percentage
UCLA S.A.F.E. Center	75	99
Stephen S. Wise Collection Event	1.1	1
Total	**76.1**	**100**

Prices

ERC rebates LASAN for Covered Electronic Waste that qualifies under the requirements of Senate Bill 20, the Electronic Waste Recycling Act of 2003.

Origin by Wasteshed

ERC provided tons by central collection site.

Types of Materials Processed

ERC accepts all electronic devices and components.

End Markets

Of the 76.1 tons of electronics recycled on behalf of the City, 98.9 percent were diverted from landfill to commodities markets including glass-to-glass, metals, plastics, circuit boards, and wiring. The resulting residual wood by-product is also recycled at ERC's green waste operation where it is manufactured for lined landfill ground cover.

Expansion Plans/Opportunities

ERC has the capacity to receive 83 to 85 tons per day at its Paramount facility, and has the ability to increase capacity if market conditions require more processing capability. In order to diversify its services, ERC is also opening a new facility in Orange County in 2010 and its operations can be expanded to serve market needs.

IMS Electronics Recycling

Overview

IMS Electronics Recycling reported accepting 49 tons of electronics, primarily from City residents in 2007.

Prices

IMS does not have information on prices for this report.

Origin by Wasteshed

IMS does not have information on the origin of electronics for this report.

Types of Materials Processed

IMS accepts all electronic devices and components.

End Markets

About 47 of the 49 tons of the electronics IMS processed were sent to recycling markets, including the glass from monitors and CRTs, metals, and plastic components. All wood waste is sent to hog fuel markets. For the electronics processed, this facility reported an overall rate of 3.5 percent residual waste (which was sent to solid waste landfills). Residual waste includes electronic waste components that cannot be recycled and must be disposed, including composite materials (materials of different types fused or glued together) and treated wood.

Expansion Plans/Opportunities

Though IMS reported no expansion plans, the company could add nearly 21,000 tons per year of processing at the existing facility.

Attachment C-7: Solid Waste Facility Survey Forms 2006

City of Los Angeles Zero Waste Plan:

Survey of Solid Waste Facility Operators[80]

Basic information

Name of facility:
Address:
Contact person:
Phone:

Description of services and activities at the facility:

(Please check all that apply for material received in **2006 from within the City of Los Angeles**)

MSW Disposal:

__ Transfer station that receives MSW from the City and sends material to disposal
__ Landfill that receives MSW for disposal
__ Other facility that receives MSW for disposal

Organics:

__ Organics composting facility
__ Organics facility that does processing other than composting

MSW Recycling:

__ Facility that recovers non-C&D recyclables.
__ Facility receives loads of commingled or single-stream recyclables
__ Facility receives loads of source-separated or dual-stream recyclables
__ Facility recovers recyclables from mixed MSW
__ Facility that offers recycling drop-off or buy-back services

C&D Disposal:

__ Transfer station that receives C&D loads and sends material to disposal
__ Landfill that receives C&D loads for disposal
__ Facility that recovers C&D recyclables from C&D loads

[80] This is the survey form used to conduct the facility surveys. The surveys were conducted in 2007 and 2008 for calendar year 2006.

Materials received

Please indicate the tons of each type of material received in **2006 from within the City of Los Angeles**. Tons should reflect the weight of incoming material prior to any recovery or diversion steps that are applied at your facility.

Origin:	Material type			
	MSW	**Organics**	**Recyclables (or MSW to be processed in a MRF)**	**C&D (or C&D to be processed in a MRF)**
Residential MSW				
Commercial & multifamily waste MSW				
Commercially hauled C&D				
Self-haul				
Totals				

Please indicate tip fees at your facility for the following:

MSW: $_____ / ton

Recyclables: $_____ / ton

C&D: $_____ / ton

Organics: $_____ / ton

Origin by District

Please estimate the portion of organics, recyclables, and C&D from each of the **Los Angeles districts**.

	MSW	Recyclables	Organics	C&D
West Valley				
East Valley				
West L.A.				
North Central L.A.				
South L.A.				
Harbor				

For MSW that was sent to disposal in **2006 from within the City of Los Angeles**, please indicate:

Total 2006 tons sent to landfills: _____

List the landfills and tons for each:

1) _____ landfill _____ tons
2) _____ landfill _____ tons
3) _____ landfill _____ tons
4) _____ landfill _____ tons
5) _____ landfill _____ tons

<u>For C&D material or C&D MRF residuals</u> that were sent to disposal in **2006 from within the City of Los Angeles**, please indicate:

Total 2006 tons sent to landfills: _____

List the landfills and tons for each:

1) _____ landfill _____ tons
2) _____ landfill _____ tons
3) _____ landfill _____ tons
4) _____ landfill _____ tons
5) _____ landfill _____ tons

Total 2006 tons sent to other destinations: _____ (Please explain below.)

<u>For Residuals from MSW recycling or organics</u> processing operations that were sent to disposal in **2006 from within the City of Los Angeles**, please indicate.

Total 2006 tons sent to landfills: _____

List the landfills and tons for each:

1) _____ landfill _____ tons
2) _____ landfill _____ tons
3) _____ landfill _____ tons
4) _____ landfill _____ tons
5) _____ landfill _____ tons

Total 2006 tons sent to other destinations: _____ (Please explain below.)

Other information

Capacity

What is the facility's permitted capacity for receiving MSW?
_____ tons/day

What is the facility's permitted capacity for receiving mixed C&D waste?
_____ tons/day

What is the facility's permitted capacity for receiving recyclables?
_____ tons/day

What is the facility's permitted capacity for receiving organics?
_____ tons/day

Is it possible to expand the facility? _____

Are there plans to expand the facility? _____

If so, what is the status and how much capacity will be added? Please explain below.

Attachment C-8: Recycling, Green/Organic Waste Materials, and C&D Materials Facility Survey Forms 2007

City of Los Angeles Zero Waste Plan:

Survey of Recycling and C&D Processors[81]

Basic Information:

Name of facility:

Address:

Contact person:

Phone:

Email:

Description of Facility:

(Please check all that apply for material received in **2007 from within the City of Los Angeles**)

Recycling MRFs:

__ Facility that receives loads of source-separated recyclables from businesses and institutions

__ Facility that receives loads of mixed recyclables from businesses and institutions

__ Facility that receives loads of "blue bin" materials collected from residential curbside customers by LASAN

Green/Organic Waste Processors:

__ Facility that chips and grinds green/organic waste from businesses and institutions

__ Facility that composts green/organic waste from businesses and institutions

__ Facility that processes green/organic waste from businesses and institutions with methods other than composting

C&D Recyclables Processors:

__ Facility that recovers C&D recyclables from business and institutional loads

[81] This is the survey form used to conduct the facility surveys. The surveys were conducted in 2008 for calendar year 2007.

Materials Received and Fees:

Please indicate the tons of each type of material received in **2007 from within the City of Los Angeles**. Tons should reflect the weight of incoming material prior to any recovery or diversion process that occurs at your facility.

Hauler / origin	Material type (2007 tons)		
	Recyclables	**Green/Organic Waste**	**C&D Recyclables**
Commercially-hauled from businesses and institutions			
Self-hauled from businesses and institutions			
LASAN hauled from residential curbside customers		N/A	
Totals			

Please check materials that your facility receives, and indicate ***tip fees*** or ***(payment)*** at your facility for these materials:

Please √	**Recyclables**	**$ / ton charged or (paid)**
	LASAN "blue bin" recyclables	
	Uncoated corrugated cardboard	
	Newspaper	
	Mixed waste paper	
	Other paper	
	Glass	
	Tin/steel cans	
	Aluminum cans	

Please √	**Recyclables**	**$ / ton charged or (paid)**
	Appliances	
	Other ferrous metal	
	Other non-ferrous metal	
	HDPE plastic	
	PET plastic	
	#3-#7 plastic	
	Plastic film	
	Mixed/commingled recyclables	
	Electronics and televisions	
	Motor oil	
	Paint	
	Batteries	
	Textiles	
	Other materials (please list):	

Please √	**Green/Organic Waste**	**$ / ton charged or (paid)**
	Food	
	Green waste	
	Other materials (please list):	

Please √	**C&D Recyclables**	**$ / ton charged or (paid)**
	Lumber and engineered wood	
	Concrete	
	Asphalt paving	
	Asphalt roofing	
	Gypsum board	
	Rock, gravel and soil	
	Other materials (please list):	

Origin by Wasteshed:

If available, please estimate the percentage of recyclables, green/organic waste, and C&D recyclables from each of the **Los Angeles wastesheds**.

	Recyclables	**Green/Organic Waste**	**C&D Recyclables**
West Valley			
East Valley			
West LA			
North Central LA			
South LA			
Harbor			

End Market Destinations, by Material:

Please indicate the tons of each material **from within the City of Los Angeles** that were sent to each indicated destination **in 2007**.

Material	Recycling markets	Composting	Alternative daily cover (ADC)	Fuel / energy	Other destinations	Please specify "other destinations" below
Uncoated corrugated cardboard						
Newspaper						
Mixed waste paper						
Other paper						
Glass						
Tin/steel cans						
Aluminum cans						
Appliances						
Other ferrous metal						
Other non-ferrous metal						
HDPE plastic						
PET plastic						
#3-#7 plastic						
Plastic film						
Food						
Green waste						
Textiles						
Lumber and engineered wood						
Concrete						
Asphalt paving						
Asphalt roofing						
Gypsum board						
Rock, gravel and soil						
Electronics and televisions						
Motor oil						
Paint						
Batteries						
Other materials (please list):						

Disposal Destinations, Residual Waste:

Please indicate the total tons of residual waste **from City of Los Angeles recyclable loads** that were sent to disposal destinations **in 2007**.

Type of Processor	Material type (2007 tons)		
	Tons disposed at Landfills	**Tons disposed at other disposal facility**	**Specify "other disposal facility" below**
Recyclables MRF/Processor			
Green/Organic Waste Processor			
C&D Recyclables Processor			
Totals			

Capacity:

1. What is the facility's capacity for receiving recyclables?

_____ tons/day

a. Source separated

_____ tons/day

b. Mixed

_____ tons/day

2. What is the facility's capacity for receiving green/organic waste?

_____ tons/day

a. Source separated

_____ tons/day

b. Mixed

_____ tons/day

3. What is the facility's capacity for receiving C&D recyclables?

_____ tons/day

a. Source separated

_____ tons/day

b. Mixed

_____ tons/day

4. Is it possible to expand the facility? _____

5. Are there plans to expand the facility? _____

a. If so, what is the status and how much capacity will be added? Please explain below.

b. What are the "drivers" for this expansion? Please explain below.

c. What are the barriers to future expansion? Please explain below.

6. If more recyclable materials were available from the City of Los Angeles Zero Waste program, would you be: a) willing, and b) able to process them? Please explain below.

7. If you are not able or willing to process recyclable materials from the City of Los Angeles Zero Waste program, under which conditions would you be: a) willing, or b) able to process additional materials? Please explain below.

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Attachment C-9: Household Hazardous Waste Program Information and Electronics Facility Survey Form

City of Los Angeles Household Hazardous Waste Program Information

Source: Lead Agency Form CalRecycle 303a Household Hazardous Waste Collection Information for FY 2006-2007

Material Type		Tons Collected by Program Type			
		Permanent Facility	Mobile Facility	Curbside Program* (other than oil)	Total Weight Collected (in tons)
1. Flammable and Poison					
	Flammable solids / liquids	0.88	0.40	-	1.28
	Bulked flammable liquids	0.55	-	-	0.55
	Oil - base paints	518.68	129.88	-	648.55
	Poisons	108.25	20.73	-	128.98
	Reactive and explosive	0.01	0.02	-	0.04
2. Acid					
	Inorganic and organic acid	23.10	3.51	-	26.61
3. Base					
	Inorganic and organic base	50.23	7.01	-	57.25
4. Oxidizer					
	Neutral oxidizers, Organic peroxides, Oxidizing acid, and Oxidizing base	5.41	2.44	-	7.85
5. PCB -containing					
Polychlorinated biphenyls	PCB - containing paint	-	-	-	-
	Other PCB waste (includes ballasts)	0.88	0.18	-	1.06
6. Reclaimable					
	Antifreeze	21.21	4.35	-	25.56
	Auto type batteries (motor vehicles)	43.38	30.40	-	73.78
	Latex paint	445.48	72.43	-	517.90
	Motor oil/oil products	98.60	29.54	-	128.14
	Used oil filters (recyclables only)	3.27	1.25	-	4.52

City of Los Angeles Household Hazardous Waste Program Information (cont.)					
Material Type		Tons Collected by Program Type			
		Permanent Facility	Mobile Facility	Curbside Program* (other than oil)	Total Weight Collected (in tons)
7. Asbestos					
	Asbestos	6.13	0.01	-	6.13
8. Universal Waste (UW)**					
	Mercury containing thermostats / automatic switches / thermometers / and novelties	0.61	0.06	-	0.67
	Mercury containing waste (other)	0.24	0.04	-	0.28
	Lamps	3.75	1.40	-	5.15
	Rechargeable batteries	1.58	0.65	-	2.23
	Other batteries	29.53	7.02	-	36.56
Electronic Waste (UW)					
	Covered Electronic Devices	511.18	78.50	490.20	1,079.87
	Universal Waste Electronic Devices	346.33	86.28	86.04	518.65
Aerosol Containers (UW)					
	Aerosol containers	-	-	-	-
9. Other HHW					
	Home - generated sharps	1.61	1.25	-	2.86
	Pharmaceutical Waste	1.72	1.25	-	2.97
	Compressed gas cylinders	26.57	6.57	-	33.14
	Treated wood	0.83	-	-	0.83
	Non - UW aerosol containers (corrosive, flammable, poison)	53.17	9.10	-	62.27
	Other (name) _____	169.09	30.09	-	199.17
10. Grand Total		2,472.22	524.32	576.24	3,572.79

*Electronics are collected by City crews on an on-call basis.
**Universal wastes must be recycled with the exception of batteries, novelty items with mercury, mercury thermostats, rubber flooring, Covered Electronic Devises, and aerosol cans (non-empty). Energy recovery or fuel incineration is not considered recycling. If the waste cannot be managed by recycling, then it must be managed as a hazardous waste.
Source: Lead Agency Form CalRecycle 303a Household Hazardous Waste Collection Information For FY 2006-2007.
Universal wastes are regulated through the US EPA
http://www.epa.gov/wastes/hazard/wastetypes/universal/index.htm (accessed March 29, 2010)

City of Los Angeles Household Hazardous Waste Program Information (cont.)

Material Type		Tons Disposed / Diverted by Management Method***							
		Destructive Incineration	Fuel Incineration	Landfill	Neutralization / Treatment	Recycled	Reused	Stabiliz-ation	Total Pounds Disposed / Diverted
1. Flammable and Poison									
	Flammable solids / liquids	0.78	0.50	-	-	-	-	-	1.28
	Bulked flammable liquids	0.45	0.10	-	-	-	-	-	0.55
	Oil - base paints	628.08	20.48	-	-	-	-	-	648.55
	Poisons	127.48	1.50	-	-	-	-	-	128.98
	Reactive and explosive	0.04	-	-	-	-	-	-	0.04
2. Acid									
	Inorganic and organic acid	7.92	-	-	18.69	-	-	-	26.61
3. Base									
	Inorganic and organic base	-	-	-	44.12	-	13.13	-	57.25
4. Oxidizer									
	Neutral oxidizers, Organic peroxides, Oxidizing acid, and Oxidizing base	1.15	-	-	6.70	-	-	-	7.85
5. PCB -containing									
	PCB - containing paint	-	-	-	-	-	-	-	-
	Other PCB waste (includes ballasts)	0.53	-	0.40	-	0.13	-	-	1.06
6. Reclaimable									
	Antifreeze	2.72	-	-	-	22.84	-	-	25.56
	Auto type batteries (motor vehicles)	-	-	-	-	73.78	-	-	73.78
	Latex paint	-	-	3.90	-	514.00	-	-	517.90
	Motor oil/oil products	-	-	-	-	128.14	-	-	128.14
	Used oil filters (recyclables only)	-	-	-	-	4.52	-	-	4.52
7. Asbestos									
	Asbestos	-	5.31	-	-	0.83	-	-	6.13
8. Universal Waste (UW)									
	Mercury containing thermostats / automatic switches / thermometers / and novelties	-	-	-	-	0.67	-	-	0.67

City of Los Angeles Household Hazardous Waste Program Information (cont.)

Material Type		Tons Disposed / Diverted by Management Method***							
		Destructive Incineration	Fuel Incineration	Landfill	Neutralization / Treatment	Recycled	Reused	Stabiliz-ation	Total Pounds Disposed / Diverted
8. Universal Waste (UW) Continued									
	Mercury containing waste (other)	-	-	-	-	0.28	-	-	0.28
	Lamps	-	-	0.15	-	5.00	-	-	5.15
	Rechargeable batteries	0.03	-	-	-	2.20	-	-	2.23
	Other batteries	0.26	31.99	-	-	4.30	-	-	36.56
Electronic Waste (UW)									
	Covered Electronic Devices	-	-	-	-	1,079.87	-	-	1,079.87
	Universal Waste Electronic Devices	-	-	-	-	518.65	-	-	518.65
Aerosol Containers (UW)									
	Aerosol containers	-	-	-	-	-	-	-	-
9. Other HHW									
	Home - generated sharps	2.86	-	-	-	-	-	-	2.86
	Pharmaceutical Waste	2.97	-	-	-	-	-	-	2.97
	Compressed gas cylinders	13.03	-	-	-	20.11	-	-	33.14
	Treated wood	0.43	-	0.40	-	-	-	-	0.83
	Non - UW aerosol containers (corrosive, flammable, poison)	19.07	41.79	-	1.40	-	-	-	62.27
	Other (name)_____	5.10	2.23	38.52	-	0.03	-	153.29	199.17
10. Grand Total		812.87	103.90	43.37	70.91	2,375.32	13.13	153.29	3,572.79

***The completed Disposed/Diverted Management Methods section indicates whether the universal waste types were managed as a universal waste or a hazardous waste. If they were recycled, they are considered universal waste. If they were incinerated or disposed, they were considered a hazardous waste.

Destructive Incineration - means the materials were destoyed in a hazardous waste incinerator.

Fuel Incineration – means the materials were combusted and used as a fuel.

Landfill – means the materials were disposed in a hazardous waste landfill

Neutralization/Treatment – means the materials were treated so that they were no longer considered hazardous.

Recycled – means the materials were processed into new products.

Reused – means the materials were reused in their current forms.

Stabilization – means the mateirals were treated so that they could be safely disposed.

City of Los Angeles Zero Waste Plan

Survey of E-Waste Processors[82]

Basic Information:

Name of facility:

Address:

Contact person:

Phone:

Email:

Materials Received & Fees:

Please indicate the tons of e-waste received in **2007 from within the City of Los Angeles**, by hauler and origin. Tons should reflect the weight of incoming material prior to any recovery or diversion process that occurs at your facility.

Hauler	Origin/Source	2007 tons
Totals		

[82] This is the survey form used to conduct the facility surveys. The surveys were conducted in 2008 for calendar year 2007.

Origin by Wasteshed:

If available, please estimate the portion of e-waste from each of the **Los Angeles wastesheds**.

Wasteshed	**E-waste**
West Valley	
East Valley	
West L.A.	
North Central L.A.	
South L.A.	
Harbor	

Please indicate ***tip fees*** or ***(payment)*** at your facility for each item received:

Item	**$ / ton charged or (paid)**

End Market Destinations, by Item:

For each item recycled, please indicate the tons **from within the City of Los Angeles** that were sent to each destination **in 2007**.

Item recycled	Recycling markets	Other destinations	Please specify "other destinations" below

Disposal Destinations, Residual Waste:

Please indicate the total tons of residual waste **from City of Los Angeles recyclable loads** that were sent to disposal destinations **in 2007**.

Disposal Destination	**2007 Tons Disposed**		
	Tons disposed at Landfills	**Tons disposed at other disposal facility**	**Specify "other disposal facility" below**
Landfill			
Other disposal facility (please specify below):			
Totals			

Capacity:

1. What is the facility's capacity for receiving e-waste?

_____ tons/day

2. Is it possible to expand the facility? _____

3. Are there plans to expand the facility? _____

a. If so, what is the status and how much capacity will be added? Please explain below.

b. What are the "drivers" for this expansion? Please explain below.

c. What are the barriers to future expansion? Please explain below.

6. If more e-waste were available from the City of Los Angeles Zero Waste program, would you be: a) willing, and b) able to process them? Please explain below.

7. If you are not able or willing to process e-waste from the City of Los Angeles Zero Waste program, under which conditions would you be: a) willing, or b) able to process additional materials? Please explain below.

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Appendix D

Facility Analysis

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Section 1 Facility Assessment

1.1 Introduction

As part of a comprehensive strategy to meet the long-term goals of the City of Los Angeles (City), this report describes the approach and methods used to arrive at the number and types of facilities required for managing solid waste,[1] residual waste, recyclable and compostable materials, and construction and demolition debris.

The City generated about 10 million tons of solid waste, recyclable and compostable materials, and construction and demolition materials in 2010, and is expected to generate about 11 million tons in 2030.[2]

In order to meet the goals of the *Solid Waste Integrated Resources Plan* (SWIRP) as well as manage the volume of waste generated within the City through 2030, new programs and facilities will be needed. *Appendix A Policy and Program Analysis* analyzes different policies and programs the City could implement to reduce waste and increase recycling. These policies and programs are intended to reduce waste generation at households and businesses and increase the recovery of materials.

This report, *Appendix D Facility Analysis*, analyzes facilities or combinations of facilities that could be used to both process source-separated materials generated through new policies and programs implemented by the City, and manage waste that remains after recycling and composting. There are many different types of facilities that can be used to handle different waste streams, each targeting ways to recover more materials and/or convert the residual waste into energy, alternative fuels and/or useful by-products.

1.2 Facility Assessment Process

In this report, the waste stream is divided into four main categories:

- **Blue Bin** – Includes all source-separated recyclable materials (from residential, commercial, and self-haul sources)
- **Green Bin** – Includes all source-separated organics -- yard trimmings, food scraps, and compostable paper (from residential, commercial, and self-haul sources)
- **Black Bin** – Includes all residual waste collected (from residential, commercial, and self-haul sources) and residual waste from processing facilities
- **Construction and Demolition (C&D)** – Includes all C&D materials generated at C&D sites

[1] "Solid waste" is generally used to refer to materials that have not been segregated for reuse, recycling or composting. "Residual waste" is generally used to refer to materials that are left over after being separated from other reusable, recyclable or compostable materials (either through source-separation by a generator or through processing at a material recovery facility).

[2] *Appendix B Material Flow Model and Generation Projections* page B-20, Table 10.

The first three categories are based on the City of Los Angeles Bureau of Sanitation (LASAN) residential collection program in which materials are collected in three separate bins.[3] These terms can be used generically to describe the streams of materials flowing from commercial as well as residential generators in the City to processing and disposal facilities. The blue bin handles source separated recyclable material, such as: newspaper, mixed paper, cardboard, glass containers, plastics, and metals. The green bin handles yard trimmings, including grass clippings, tree trimmings, and other plant debris from yard maintenance. The black bin handles residual waste that is not placed in the other bins.

This source-separated collection system is a result of past policies and programs that govern the collection, transportation, and processing of materials in the City. The new policies and programs are designed to increase recycling by the generators. The specific collection system would be designed for each generator type. The fourth category, C&D materials, refers to debris which is generally collected in roll-off bins at construction sites or self-hauled by contractors or generators, and contains any material types associated with construction, demolition, renovation, and remodeling projects that take place throughout the City.

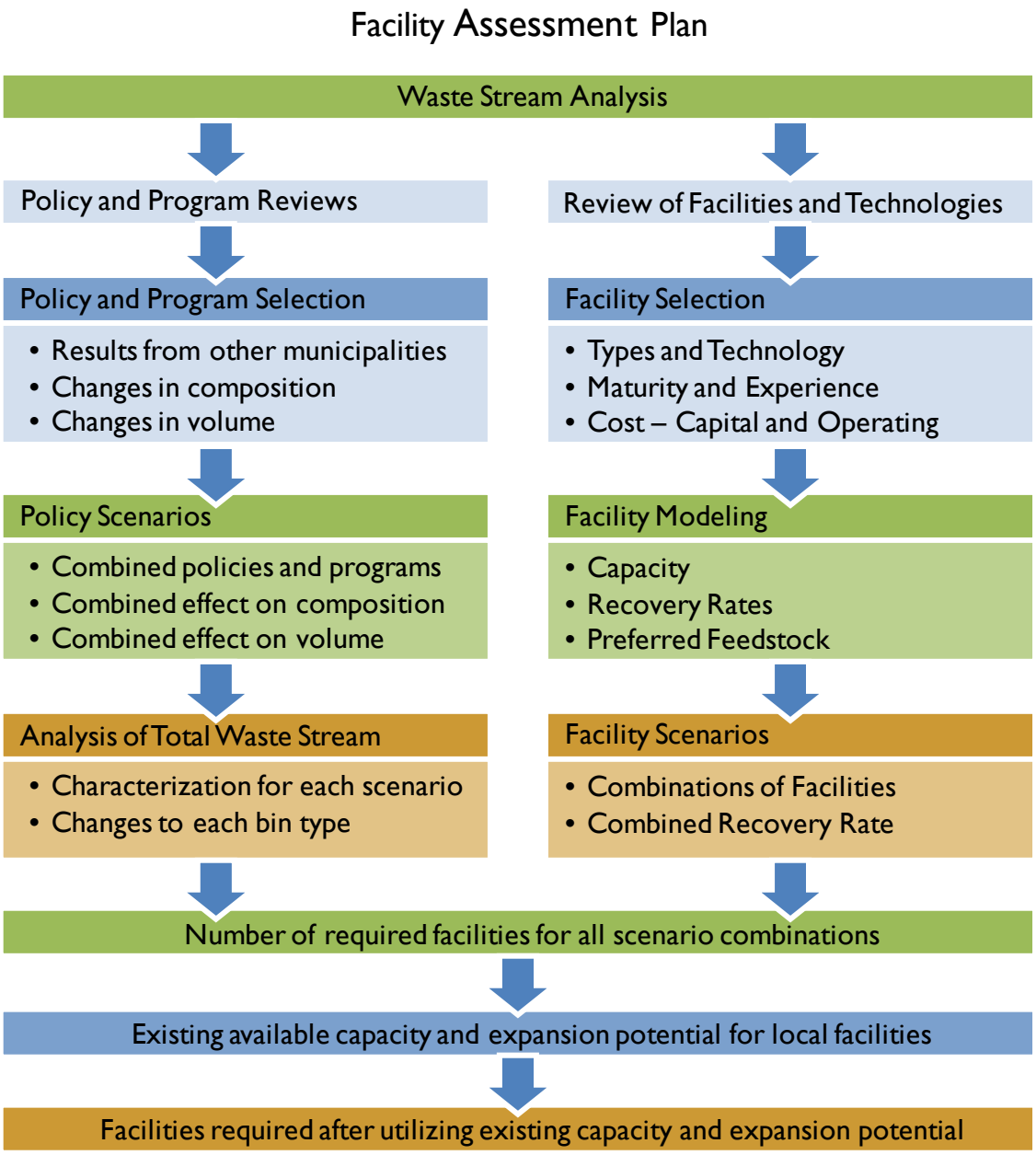
Based on the results of the policy and program analysis, the diversion potential of the policies and programs on the waste stream were determined using the material flow model described in *Appendix B Material Flow Model and Generation Projections*. Appropriate types of processing facilities were considered for each of the material streams[4] resulting from the new diversion programs. The facilities considered have several purposes: to process and extract readily recyclable material, prepare residual black bin waste for processing, convert residual waste to energy or other marketable by-products, and to otherwise prepare and consolidate materials for more efficient transportation and delivery to appropriate markets/end users. The following types of facilities for processing the various material streams and waste streams were evaluated:

- Landfills
- Mixed Material Processing (MPP)
- Clean Material Recovery Facility (Clean MRF)
- Aerobic Composting
- Mulching
- Alternative Technology:[5] Advanced Thermal Recycling (ATR)
- Alternative Technology: Thermal (gasification, pyrolysis, plasma arc gasification) (ATT)

[3] Residents in the City may also subscribe to a fourth bin, a brown bin for horse manure.
[4] "Material stream" is generally used to refer to materials that have been segregated from residual waste for recycling. "Waste stream" is generally used to refer to materials that have not been segregated for reuse, recycling and composting.
[5] The term "Alternative Technology" is all-inclusive. A subset of these black bin processing facility types is called "conversion technology"; the term used by CalRecycle to describe new and emerging non-combustion thermal, chemical, and biological technologies. Anaerobic digestion, which is sometimes included in the list of "conversion technologies," is regulated as composting under State law.

- Alternative Technology: Biological (anaerobic digestion) (ATB)
- C&D Processing

The material flow model details the tons of materials from generator sources, the tons and types of materials created by each generator source, and the method used to collect the materials. After determining tons and composition of the material streams, a two-step approach to determine the facility requirements was performed, and is illustrated in the Facility Assessment Flow Chart.



Two paths are shown, which illustrate the required information for both the policy and program changes and the facility requirements to promote waste reduction and recycling. Based on stakeholder input obtained in Phase 1 of the SWIRP planning process, a set of policies and programs to be implemented by the City was identified.[6] These policies and programs were combined in five different scenarios, including the baseline scenario (which assumes no new policy or program changes), so the combined impact of various groupings of policies and programs could be analyzed.[7] Using the diversion potential associated with each policy or program as inputs to the material flow model, the total diversion associated with each of the scenarios was determined, as well as the tons and material types associated with each of the three material streams (blue bin, green bin, and black bin).

Simultaneously, different facilities and technologies which could handle residual waste were reviewed (refer to list on page D-2), and certain facilities and technologies were selected for their application to different material streams. The performance of these facilities and the desired feedstock for each black bin processing technology was then determined. These facilities were then combined based on different scenarios (e.g., mixed material processing followed by different alternative technologies) to determine their collective effects on the material stream.

Once the material stream was determined and the facilities were selected, they were combined to determine the total recovery rate and number of facilities that would be required, assuming a full build out. These facility requirements are called the "Projected Demand" (i.e., the facilities that would be needed if all materials were to be processed in the system not considering the capacity of existing blue bin, green bin, and black bin facilities). An assessment of the capacity of existing facilities was then performed to determine the gap between the existing solid waste infrastructure and the facilities needed to meet the goals of the SWIRP plan (Projected Demand). This assessment is referred to as the "Gap Analysis." The Gap Analysis was combined with the Projected Demand to determine the actual number of facilities that would be required.

1.3 Waste Characterization

A detailed profile of the City's waste stream was prepared using historic waste stream data. A model was developed to evaluate the impacts of different policies and programs in the first step. Because these policies and programs will alter the waste stream characteristics, the model was used to estimate the changes to the materials that would be placed in different collection bins and subsequently delivered to the various facilities. This information became the baseline data used to evaluate the types and numbers of facilities required for each scenario.

The City's disposed waste stream was divided into 41 types of waste, which were grouped into eight categories.[8] The eight categories of waste are: paper, glass, metal, electronics & appliances, plastic,

---

[6] These policies and programs are described in detail in *Appendix A Policy and Program Analysis,* beginning on page A-3.
[7] The policy and program scenarios are described in the *Phase 2 Policy, Program, and Facility Plan*, beginning on page 31.
[8] Based on CalRecycle definitions included in http://www.calrecycle.ca.gov/Wastechar/MatCategory.htm (accessed October 1, 2013)

organics, C&D, and special waste. The paper category contains cardboard and paper bags, newspaper, mixed paper, compostable paper (such as paper towels and food-soiled paper packaging), and remainder/composite (R/C) paper. The glass category contains container glass, flat glass, and R/C glass. The metal category contains tin/steel cans, other ferrous, aluminum cans, other non-ferrous, and R/C metal. The electronics & appliances category contains electronics and major appliances. The plastic category contains #1 plastic containers, #2 plastic containers, other plastic containers (#3-7), expanded polystyrene, recyclable film, mixed plastic reusable/recyclable, and mixed plastic that is non-reusable/non-recyclable. The organics category contains food, yard trimmings, manures, textiles, and R/C organics. The C&D category contains concrete, asphalt paving, asphalt roofing, lumber, gypsum board, rock/soil/fines, and R/C C&D. The special waste category contains household hazardous waste (HHW), ash, sewage solids (including biosolids), bulky items, tires, R/C special, and mixed residue (material that cannot be further sorted and categorized). Though it is illegal to throw some special waste (including batteries) in the trash, small quantities of prohibited material continue to enter the waste stream.

As described in *Appendix A Policy and Program Analysis*, over 20 policies and programs were evaluated under five policy and program scenarios.

- Scenario 1 was the 2010 baseline case, which examined the waste stream if no new policies or programs were implemented.
- Scenario 2 included the following policies and programs:
  - Modify residential rate structure
  - Expand the Recycling Ambassador program (education and technical assistance)
  - Multi-family recycling (require all buildings to have service)
  - Multi-family green bin (phase in as appropriate)
  - Bulky item reuse and recycling
  - Add textiles to blue bin or partner with local non-governmental organizations
  - Add food scraps to green bin
  - Large scale media/social marketing/education
  - Require all commercial haulers to provide recycling services to their customers
  - Require all businesses to have recycling services
  - Provide more public area recycling (streets and parks)
  - Require all C&D loads to be processed
- Scenario 3 added the following requirements to Scenario 2:
  - Mandatory recycling separation
  - Mandatory organics separation
  - Ordinance requiring resource recovery centers at transfer stations
  - Increase diversion requirements at C&D facilities
  - Increased code enforcement

- Scenario 4 adds "extended producer responsibility" (EPR) for toxics and difficult to recycle materials, a single use bag ban, and State packaging legislation, including Blue Dot/Green Dot legislation,[9] to the policies and programs of Scenario 2.
- Scenario 5 adds EPR for toxics and difficult to recycle materials, a single use bag ban, and advocacy for State packaging legislation to the policies and programs of Scenario 3.

Research was performed and data was collected about similar programs in other communities to evaluate the impact and effectiveness that each program or policy would potentially have on the City's waste stream. Using this data, the waste flow model was created to estimate diversion using both expected participation rates and expected efficiency rates. As described in *Appendix B Material Flow Model and Generation Projections*, this model estimates both the change in total tons of discarded materials and the composition of the material that is discarded. Using the diversion assumptions developed for the model, the diversion rates by policy and program were estimated. The results of the policy and program analysis are included in **Attachment D-1: Waste Stream Analysis**. Table 1 summarizes the results from Attachment D-1 and provides the estimated disposed and diverted tons by policy and program scenario. Table 1 summarizes these results using baseline tonnages for 2010. The model can also estimate tons by generator type, by wasteshed, and by material type for each year through 2030.

Table 1: Projected Diversion Potential by Scenario

Scenario	Tons Disposed	Tons Diverted	Diversion Rate
Scenario 1 No New Policies or Programs (2010 Baseline)	3,121,937	7,978,008	72%
Scenario 2 New Policies and Programs	2,317,771	8,782,174	79%
Scenario 3 Add Mandatory Requirements to Scenario 2	1,620,029	9,479,916	85%
Scenario 4 Add Upstream Policies to Scenario 2	2,201,847	8,898,098	80%
Scenario 5 Add Upstream Policies to Scenario 3 (Full Implementation of SWIRP)	1,547,799	9,552,146	86%

Source: City of Los Angeles Zero Waste Planning Model – Final Results, January, 2013. Refer to Attachment D-1.

To conduct the facility analysis and determine the number and types of facilities that will be needed in the future, the model was used to estimate black bin, green bin, and blue bin tons, by policy and program

[9] "Blue Dot/Green Dot" legislation would require all products and packaging to be labeled as recyclable or compostable.

scenario, in 2030. Tables 2, 3, and 4 summarize the total amount of materials estimated for each bin type by scenario and by wasteshed in 2030, as projected by the material flow model.

Table 2: Projected Annual Tons of Black Bin Materials in 2030

	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5
East Valley	580,440	435,163	308,689	413,197	293,877
Harbor	147,682	110,361	78,337	104,806	74,628
North Central	839,041	639,689	441,766	605,767	423,905
South LA	479,533	360,708	255,732	342,056	243,011
West Valley	576,870	430,145	304,171	409,500	290,552
Western	419,630	307,688	214,861	292,504	205,353
Overall	**3,043,196**	**2,283,754**	**1,603,556**	**2,167,830**	**1,531,326**

Source: City of Los Angeles Zero Waste Planning Model – Final Results, January 2013
Note: Projections include all residual waste from residential, commercial, institutional, and industrial sources.

Table 3: Projected Annual Tons of Green Bin Materials in 2030

	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5
East Valley	216,916	255,861	321,272	255,861	321,272
Harbor	34,754	44,393	60,803	44,393	60,803
North Central	146,846	194,948	287,334	194,948	287,334
South LA	90,377	122,466	176,340	122,466	176,340
West Valley	223,220	262,087	328,956	262,087	328,956
Western	148,595	172,169	217,446	172,169	217,446
Overall	**860,708**	**1,051,924**	**1,392,151**	**1,051,924**	**1,392,151**

Source: City of Los Angeles Zero Waste Planning Model – Final Results, January 2013Note: Projections include all organics from residential, commercial, institutional, and industrial sources.

Table 4: Projected Annual Tons of Blue Bin Materials in 2030

	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5
East Valley	514,467	594,718	655,685	584,671	638,562
Harbor	124,937	145,950	161,538	143,295	157,059
North Central	858,928	972,232	1,077,587	988,026	1,077,353
South LA	354,387	420,287	471,310	412,291	457,446
West Valley	612,572	693,374	752,382	682,818	734,879
Western	489,122	558,758	606,202	549,663	734,879
Overall	**2,954,412**	**3,385,319**	**3,724,704**	**3,360,764**	**3,800,179**

Source: City of Los Angeles Zero Waste Planning Model – Final Results, January 2013
Note: Projections include all recycling from residential, commercial, institutional, and industrial sources.

After determining the tonnages of these material streams, different facilities and combinations of facilities were analyzed to determine the City's options for processing the three material streams in order to maximize recycling and diversion. The facility analysis focused on determining the types of facilities to be used, the combinations of these facilities, and the performance of each type of facility. Generic facility descriptions and scenarios for combinations of facilities are presented in the following sections of this report, and more detailed profiles and performance estimates for each facility type are included in **Attachment D-2: Facility Descriptions**.

1.4 Facility Types

A variety of solid waste processing facilities are needed to manage the City's black bin, blue bin, and green bin material streams. These facilities can be somewhat independent, but are likely to be built as part of a holistic system aimed at achieving certain results. In order to maximize diversion, various disposal, material processing, and alternative technology facilities were considered. The type of facilities being considered include typical processing plants, proven commercial processing technologies, and emerging processing technologies from around the world. Alternative technology facilities are designed to process residual waste directly into energy or fuel and/or recoverable by-products.

After the review and analysis of various types of facilities suitable for handling the materials that will be generated through the City's new policies and programs, the following facilities were used in the material flow model to estimate the diversion potential of different facility approaches:

- Clean Material Recovery Facility (Clean MRF)
- Mixed Material Processing Facility (a.k.a. Dirty MRF or Wet MRF)
- C&D Processing Facility
- Aerobic Composting Facility for yard trimmings and other organics
- Anaerobic Digestion for source-separated organics
- Mulching Facility
- Alternative Technology Facilities including (but not limited to):
  - Alternative Technology: Advanced Thermal Recycling
  - Alternative Technology: Biological (Anaerobic Digestion)
  - Alternative Technology: Thermal (gasification, pyrolysis, plasma arc)
- Biomass-to-energy (wood waste, wood plus other biomass)

Profiles were created for each of these facility types. Additional facility types considered for the model, including additional types of alternative technology facilities, resource recovery centers, and transfer stations are described. Each profile includes information detailing the recovery rates for materials, capacity, performance, operating cost, capital cost, and overall diversion rates. These profiles also include information on processing operations, local examples of facilities, and the amount of experience and maturity that exists for each of these facilities. These profiles can be found in **Attachment D-2: Facility Descriptions**.

1.4.1 Landfills

Landfills are assumed to be included in each scenario, as the final disposal option to handle the residue that cannot be recycled, composted, recovered for electricity or fuels. Specific information on the performance, capacity, and location of landfills was not considered in detail because this report focuses on recycling and diverting waste from landfills. Table 5 provides the permitted capacities of the landfills in the Los Angeles region. Alternative daily cover (ADC) and other beneficial use at landfills are considered for bottom ash[10] from thermal treatment facilities. Bottom ash from thermal facilities can potentially be marketed and beneficially reused in construction projects (as is commonly practiced in Europe). However, because of the strict regulatory environment in California, it is anticipated that ash residues will need to pass established standards prior to being beneficially reused at landfills for ADC or in landfill road construction (as is commonly practiced in the U.S. and in southern California[11]). The existing waste-to-energy facilities in southern California are able to reuse the ash they generate in road construction and for wet-weather pads at a local landfill.[12] However, the ash processing facilities[13] at the existing waste-to-energy facilities are grandfathered under State regulations. The Department of Toxics Substances Control may restrict the reuse of ash or require special handling of ash from new facilities in the future if the ash contains toxic materials, such as heavy metals. Solid waste landfills and inert landfills may also be end-markets for C&D and other inert debris that can be beneficially reused at landfills as ADC, and in construction of roads and wet-weather pads. City policy[14] does not allow yard trimmings collected by LASAN to be used as ADC. However, use of yard trimmings as ADC is part of LASAN's contingency plans if no processing capacity for yard trimmings is available.

[10] All thermal treatment facilities recover metals and create ash and other non-combustible residues leftover from the treatment process. Many new thermal facilities separate fly ash (the air pollutants that are mixed with the exhaust air and removed by the air pollution control system) from bottom ash (the ash or vitrified ash that remains in the chamber after the residual waste is treated).

[11] Ash from the Commerce-Refuse-to-Energy Facility and the Southeast Resource Recovery Facility is treated and used for road construction and for constructing the wet-weather pad at the Puente Hills Landfill.

[12] With the closure of the Puente Hills Landfill in October 2013, these facilities will need to find another landfill for this material.

[13] The on-site ash processing facilities treat the ash with Portland cement to control the leaching of heavy metals.

[14] Public Works Board Report on Green Waste Processing Contingency Plan adopted on September 22, 2006.

Table 5: Los Angeles Region Landfill Permitted Capacity[1]

Facility	Permitted Daily Capacity (Tons)	2012 Average Yearly/Daily Tonnage (Tons)[2]	Anticipated Closure Date
Antelope Valley Landfill	3,564	252,000/966	2042
Puente Hills Landfill	13,200	2,144,000/8,215	2013
Sunshine Canyon City/County Landfill	12,100	2,217,000/8,500	2037
Chiquita Canyon Landfill	5,000	906,000/3,470	2019
Calabasas Landfill	3,500	187,000/716	2025
Scholl Canyon Landfill	3,400	211,000/808	2030
Lancaster Landfill	1,700	208,000/800	2044
Savage Canyon Landfill	350	78,000/300	2048
City of Burbank Landfill	240	33,000/126	2053
Pebbly Beach Landfill	49	3,000/11	2020
San Clemente Landfill	10	400/1.5	2032
El Sobrante[3]	16,054	1,928,000/7,400	2045
Simi Valley[3]	9,250	663,000/2,500	2052
Frank R. Bowerman Sanitary Landfill[3]	11,500	Not available	2053
Olinda Alpha Sanitary Landfill[3]	8,000	Not available	2021
Mesquite Canyon Landfill[3]	20,000	Not available	2097

[1] Source: County of Los Angeles Countywide Integrated Waste Management Plan: 2012 Annual Report
[2] Based on 5-days/week landfill operation (261 days/year)
[3] Source: www.calrecycle.ca.gov/SWFacilities/Landfills/Tonnages/

1.4.2 Mixed Material Processing (MMP)

A mixed material processing (MMP) facility, also referred to as a dirty MRF, is a facility that sorts recyclable material from residual waste. These facilities can also be adapted to sort or remove different materials to prepare residual waste for composting, advanced thermal recycling, and other alternative technologies. Preferred loads include residual waste from residential and commercial generators, and undesirable loads include concentrated amounts of C&D materials or concentrated amounts of wet materials, such as restaurant food scraps (in the case of thermal technologies). The primary waste to be targeted at these facilities is residual waste from residential or commercial sources.

To determine the size and number of MMP facilities needed for each scenario, certain assumptions were made. The assumptions are based on several factors. First, the effectiveness for material recovery is based on the operational experience of other local MMPs. Second, it is assumed that the capacity or processing rate will be slightly higher than the processing rates of existing facilities (which are merchant facilities that have been developed based on open market conditions without a guaranteed flow of materials). Third, it is assumed that facilities will need to be located conveniently throughout the service area.

Using these criteria, the assessment assumed that all new facilities will be able to process about 200,000 tons per year (tpy) or 500 to 750 tons per day (tpd) based on 300 operating days per year, which will be handled by two different lines. One sorting line will run two 8-hour shifts per weekday, while the other

runs one 8-hour shift per weekday. Each sorting line will only run one 8-hour shift per day on Saturdays. Materials are typically unloaded onto the tipping floor, where larger pieces of metal, wood, cardboard, and plastic are removed. Materials are then loaded into a hopper or conveyor, where equipment is used to break bags and screen materials. Materials are then typically processed through a series of rotating screens to separate fiber, containers, and small contaminants. Numerous sort stations are located along a conveyor to pick off various materials, either to be sent to market or to be used by alternative technologies to produce electricity and/or fuels and by-products. Separated commodities are typically dropped into storage bunkers and later conveyed to a baler or loaded into roll-off containers to prepare for shipping.

Residue that cannot be processed further is shipped to landfills. Small quantities of electronic waste (e-waste) and HHW (less than 1 percent of the total waste stream) may be received by MMP facilities, which should attempt to remove this material and send it for proper handling and disposal. Marketable recyclable materials include commodities, such as glass, newspaper (ONP), cardboard (OCC), mixed paper, ferrous metal, aluminum, plastics #1 (PET), #2 (HDPE), #6 (HDPS), and mixed plastic. Inert material may be screened for size separation, and delivered to an inert landfill or used as ADC at a landfill. A simple MMP facility that only separates for recycling considers a high diversion rate to be about 30 percent, an average diversion rate to be between 15 percent and 20 percent, and a poor diversion rate to be around 10 percent. New, emerging technology at MMP facilities using more mechanical separation and optical sorting may be able to achieve higher diversion rates (50 to 65 percent). Higher diversion rates may also be achieved by targeting more materials, such as film plastic, wood, inert materials (concrete, bricks), textiles, cartons and soils. These types of facilities are currently under development in California.[15]

1.4.3 Alternative Technology: Advanced Thermal Recycling

Advanced Thermal Recycling (ATR) is a technology that uses complete combustion of organic carbon-based materials in an oxygen-rich environment, producing an exhaust gas composed primarily of carbon dioxide and water with inorganic materials converted to bottom ash and fly ash. ATR facilities use residual waste from residential or commercial generators, or residual waste from other solid waste facilities, to produce an uninterruptible source of energy and by-products. ATR facilities produce energy, recover metals from the bottom ash, and reduce waste volume by combusting the waste and injecting air at atmospheric pressure to reach the chemically balanced air-fuel ratio for combustion. The hot exhaust gases flow through a boiler, where steam is produced for driving a steam turbine-generator, producing electricity. Exhaust air is treated with advanced pollution control technologies that remove air pollutants to meet stringent clean air emissions standards from environmental regulatory agencies. Some of the air pollutants that are monitored and treated include: mercury, lead, furans, dioxins, nitrogen oxides, sulfur oxides, particulate matter, volatile organic compounds, carbon monoxide, and hydrogen chloride. Cooled exhaust gas flows through emissions control systems before being exhausted through stacks into the

[15] Examples of newer facilities with new processing technology, targeting new materials include Republic Services' Newby Island Processing Facility in Milpitas, and Waste Management's Davis Street Transfer Station in Oakland.

atmosphere. Common by-products for controlling air quality of plant emissions include gypsum and hydrochloric acid. Other products include the recovery of ferrous and non-ferrous metals from the bottom ash. The fly ash and bottom ash are separated and the bottom ash can be reused as landfill cover, processed for road base, or possibly used for other beneficial uses. The amount of ash produced by ATR facilities depends on the level of processing and the composition of waste processed. Typically, the volume of waste is reduced by 75 to 90 percent through ATR. Highly processed, homogenous dry organic waste with negligible levels of glass, metal, ash, and other inerts is the most efficient feedstock, both for volume reduction and energy production. ATR facilities should not be used for inert materials, industrial waste, ashes, and liquids.

Typical ATR facilities have processing capacities that range from 500 - 2,000 tpd (168,000 - 672,000 tpy at 92 percent availability). For the facility analysis, the capacity of new ATR facilities is based on a facility processing capacity of 1,000 tpd (336,000 tpy at 92 percent availability). This represents a single advanced thermal unit, and some facilities may be scaled to include multiple advanced thermal units. The volume of waste is reduced to 10 to 30 percent, depending on the technology and the composition of the feedstock. In many cases, the ash can be diverted from disposal and beneficially reused. However, stricter regulations may make beneficial reuse more challenging. Advanced Thermal Recycling is a proven technology, with plants throughout Europe and Japan. Currently, no facility of its type exists in the United States.

1.4.4 Alternative Technology: Thermal (Alt Tech Thermal or ATT)

Alternative Technology Thermal (ATT) is a general term used to describe thermal technologies, such as pyrolysis, gasification, plasma arc gasification, and other technologies that produce synthesis (syngas) gas to generate electricity from waste using thermal or chemical reactions. The energy source is found in organic waste, such as paper, plastic, and wood. ATT facilities use an external heat source to heat the feedstock to high temperatures without the need to introduce air into the heat chamber. The external heating causes the waste to react and produce syngas. Syngas consists primarily of hydrogen, carbon monoxide, and carbon dioxide. With a proper feedstock, these reactions can reduce the volume of waste by 85 percent, and are intended to produce more energy than is required for the process. Ideal feedstock for an ATT facility would be mostly mixed paper, plastics, and other dry organics.

A capacity of 500 tpd (162,000 tpy at 90 percent availability) was selected for potential ATT units because it reflects a small capacity unit. ATT facilities can have several modules on site, each with a 500 tpd capacity, operating efficiently, while maintaining continuous and uninterruptible energy production and by-products. This also allows the facilities to scale-up by adding more units as needed. The actual performance, by-products, efficiency, and desired feedstock for ATT facilities vary by different technologies and manufacturers. Several ATT facilities using supplemental fuel and high heating value feedstocks have been operational in Japan for the past 10 years. However, there are currently no commercial scale ATT facilities in the US using residual waste as a feedstock.

1.4.5 Alternative Technology: Biological (Alt Tech Bio or ATB)

Alternative Technology Biological is a general term used to describe various technologies that use micro-organisms in biological processes to produce biogas to generate electricity or alternative fuels from waste.

The leading example of this technology is anaerobic digestion (AD). These technologies convert organic waste to energy using bacteria to break down waste to produce biogas. This type of biogas consists primarily of methane and carbon dioxide. These facilities process paper, food scraps, and other organics. Although the first phase of the biological process (hydrolysis phase) of these facilities often operate in batch-type processes, methane generating and subsequent electrical generation phases of these facilities are designed to operate continuously and provide uninterruptible power. With a proper feedstock, biological degradation can reduce the volume of waste by 70 percent, provide energy or transportation fuels, and digestate can be sent to a compost facility. A capacity of 500 tpd (162,000 tpy at approximately 90 percent availability) was selected for potential ATB facilities because it reflected a mid-range capacity facility. The actual performance, by-products, efficiency, and desired feedstock for ATB facilities vary with different technologies and manufacturers.

1.4.6 Alternative Technology: Physical

Physical technologies alter the physical characteristics of the residual waste feedstock. Examples of physical technologies include Refuse-Derived Fuel (RDF) facilities and autoclave facilities. RDF facilities separate, shred, and/or dry materials to produce a homogeneous fuel. The materials may be densified or pelletized into fuel pellets and transported and combusted as a supplementary fuel in utility boilers or waste-to-energy facilities. Autoclave facilities process residual waste and subject it to low or medium pressure steam in a closed, rotating pressure vessel. The high-temperature steam breaks down cellulosic materials and sterilizes the entire feed stream. Cans and bottles are de-labeled. Plastics typically are slightly melted, resulting in significant volume reduction. The residual waste stream is reduced in volume by about one-third. The product material exits the steam pressure vessel or autoclave as a recyclable or usable fiber that can potentially be marketed for paper manufacturing, burned for energy or used to create a transportation fuel.

1.4.7 Clean Material Recovery Facilities (Clean MRFs)

Clean MRFs (Material Recovery Facilities) receive and process source separated recyclables, often referred to as commingled materials or blue bin recyclables. Clean MRFs use various technologies and methods to sort, bale, and ship material by commodity type to market. Capacity for Clean MRFs typically ranges from 50-600 tpd (15,000-180,000 tpy), with some facilities capable of handling up to 1,000 tpd (300,000 tpy). For this analysis, the assumption is that a new facility would operate at about 200,000 tpy (500 to 750 tpd based on 300 operating days per year), which represents a large-sized facility. On weekdays, one sorting line could operate for two 8-hour shifts per day, while the other sorting line would run for one 8-hour shift per day. Each sorting line would run between 25 and 30 tons per hour while in operation.

Clean MRFs typically recover traditional commodity recyclable materials, including ONP, OCC, mixed paper, aluminum cans, bi-metal cans, PET, HDPE, mixed plastics, HDPS, and container glass. Typical residues include food scraps, auto parts, yard trimmings, wood, dirt and other inerts, glass shards, and other residue. Residue levels for Clean MRFs are strongly tied to the performance of the curbside recycling programs to eliminate contamination, which depends on education and enforcement. Clean MRFs have been in operation in the US and internationally for over 25 years and are considered to be

mature, proven technologies. Several Clean MRFs are already used to process blue bin materials generated in the City, and additional Clean MRFs will be needed to process additional blue bin materials generated through new policies and programs. The size of the facility is generally determined by the amount of commingled materials that can be practically and cost effectively transported to the site.

1.4.8 Aerobic Composting

Aerobic composting is one of two options examined as an alternative to disposal for green bin materials. All new composting facilities are assumed to have a variety of operations on site, including chipping and grinding, mulching, and composting. Compost facilities can vary greatly in size, and compost facilities designed for processing residual waste are typically in the range of 100-1,000 tpd (26,000-260,000 tpy), with some facilities capable of handling up to 3,000 tpd (780,000 tpy), based on 260 operating days per year. There are various methods of aerobic composting; the new facilities in this report are assumed to use windrow composting, in-vessel processing, or aerated static pile systems.

- **Windrow** – compostable material is piled in long rows and regularly turned and watered to enhance aerobic activity and control temperature and moisture.
- **In-vessel** – compostable material is placed in enclosed reactors (metal tanks, concrete bunkers or plastic tubes or "ag bags") where airflow and temperature can be controlled through perforated pipes buried in the material.
- **Aerated static pile** – compostable material is placed in piles on perforated pipes under removable covers, and fans are used to push or pull air through the pipes to control the composting process.

Composting facilities can release emissions, including odors and volatile organic compounds, regulated through CARB and SCAQMD. To address emissions and concerns about siting, new composting facilities are being designed using more emission control technologies, making them more suitable for urban environments. Operators of composting and mulching facilities must register with SCAQMD.[16] Depending on the emissions of the operation, SCAQMD may require the facility to be enclosed.

Two different sizes of compost facilities were also examined in this analysis. The first facility considered was a large facility capable of processing 260,000 tpy. This facility would accept an average of 1,000 tpd of waste, operate six days per week, and would be difficult to site in urban areas, due to the acreage requirements. A smaller facility, one that processes about 60,000 tpy, could be suitable for more urban areas, particularly if designed with more emission controls and good management practices. A facility this size would accept about 200 tpd of material and would operate six days per week.

For windrow composting, ground up yard trimmings are piled into long windrows, where the material is periodically turned and moistened to allow it to compost for a period of 60 to as much as 120 days. After this period, the resulting material is screened to remove any contaminants and the compost is placed in

[16] South Coast Air Quality Management District, Rule 1133, Composting and Related Operations – General Administrative Requirements.

curing piles. Residue that is removed is sent to landfill. Oversized materials can be reprocessed and composted. Preparation for market may include blending compost with additives to create a soil amendment. Markets for compost may include contractors, farmers, gardeners, landscapers, the public, and nurseries for soil amendment. Typical residues include plastic film and glass and plastic shards. The amount of residue from composting operations depends on the success of the feedstock, especially curbside programs.

Facilities that accept only 'clean green' material, such as materials from landscapers, gardeners, and nurseries, produce a higher quality product that requires less screening and is more suitable for commercial sales. Compost facilities were also analyzed with the assumption they would accept compostable organic materials from food scrap collections, MMP residues, and possibly from Alt Tech Biological operations.

1.4.9 Mulching

The other type of facility considered to handle yard trimmings was a chip-and-grind/mulching facility. This type of facility typically includes minimal processing (chipping, grinding, and possibly screening) of the feedstock to produce a mulch product or to prepare wood as fuel for biomass power plants. This type of facility was not included in the black bin facility analysis because policy scenarios 2 through 5 include adding food scraps to the green bin system, which would contaminate the mulch or biomass products. Mulching facilities were only analyzed for green bin waste that does not include food scraps, and would preferably be reserved for yard trimmings from residential yard trimmings collection programs, commercial sources, such as gardeners, landscapers, and nurseries.

1.4.10 S.A.F.E (Solvents/Automotive/Flammables/Electronics) Centers

S.A.F.E. Centers are permanent HHW collection facilities located throughout the City. Seven of these centers currently operate throughout the City. These centers accept paints and solvents, used motor oil and filters, anti-freeze, automotive products, cleaning products, pool and garden chemicals, aerosol cans, medicine, auto batteries, household batteries and e-waste. These facilities are provided as a service to the residents, and as a way to keep harmful and potentially dangerous chemicals and hazardous materials out of the waste stream. Stakeholders identified the need for more facilities located throughout the City to enhance accessibility and convenience.

1.4.11 C&D Mixed Processing

C&D Mixed Processing facilities are facilities that receive and process construction and demolition materials. These types of facilities provide different levels of processing depending on acceptable materials they receive, and may produce a variety of commodities at each facility. Typical commodities recycled include gypsum, clean wood, ferrous metal, aluminum, inert material (including engineered fill) and ADC. The volume of C&D materials produced in the City, including any potential increases from different policy scenarios through 2030, is lower than existing C&D processing capacity in the City and local area, so no additional C&D processing capacity is calculated.

1.4.12 Resource Recovery Centers

Resource Recovery Centers are facilities open to the public that receive certain recoverable materials that typically are contained in self-hauled loads delivered by residents or businesses to a disposal site for disposal. The materials received at Resource Recovery Centers are processed and marketed as recyclables, or made available for reuse/resale (either at the Resource Recovery Centers or off-site at other related reuse stores or resale facilities). At some facilities, the diversion activity takes place after customers enter through the fee gate and the public is required to separate materials for recycling and reuse. If they would like to proceed directly to the disposal area, they are required to pay an extra fee. Diversion levels and costs at Resource Recovery Centers can vary widely depending on the extent of the diversion activities. These activities can include public area drop-off for traditional recyclables (cans, bottles, and paper), salvaging materials from the tipping area at a transfer station or landfill (large pieces of metal, cardboard or wood), diverting reusable items (furniture, building materials, and household goods), and providing retail sales on site. Some activities may be co-located at a transfer station or landfill, but others may be off-site. The concept of using off-site facilities has been described as a "serial MRF," where multiple salvage, processing, and sales activities happen in a variety of locations in close proximity that are cross-promoted.

1.4.13 Transfer Stations

Transfer stations are facilities where solid waste or other materials (such as recyclables, yard trimmings and food scraps) are transferred from route trucks or self-haul vehicles to larger trucks or rail cars for longer distance transport. Transfer stations can host many activities on-site including: material recovery or recyclable processing; drop-off and buyback centers for recyclables, C&D recovery, bulky item salvage, and Resource Recovery Centers. Capacity for transfer stations typically ranges from 50-1,000 tpd (15,000-300,000 tpy), with some facilities capable of handling up to 5,000 tpd (1.5 million tpy), based on 300 operating days per year.

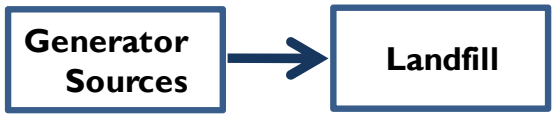
Section 2 Facility Scenarios

After the waste stream characteristics were determined through modeling, the number of facilities required to process materials from each bin type was estimated. This facility model included different combinations of material flows from one type of facility to another. Materials collected from blue bins would continue to be sent to a Clean MRF. After reviewing the policy and program scenarios, it was determined that green bin materials would be sent to an aerobic composting facility, because a mulching facility would be unable to process food scraps. Green bin materials are assumed to be sent to an organic processing facility that is capable of performing an assortment of functions on-site, including chipping and grinding, composting, and mulching.

Black bin materials include a wide variety of material types. It is the least uniform of the three material streams (blue, green, black), and has the most types of facilities that can process it. For these reasons, different scenarios were examined using various combinations of facilities to process materials from black bins. These eight facility scenarios are shown below:

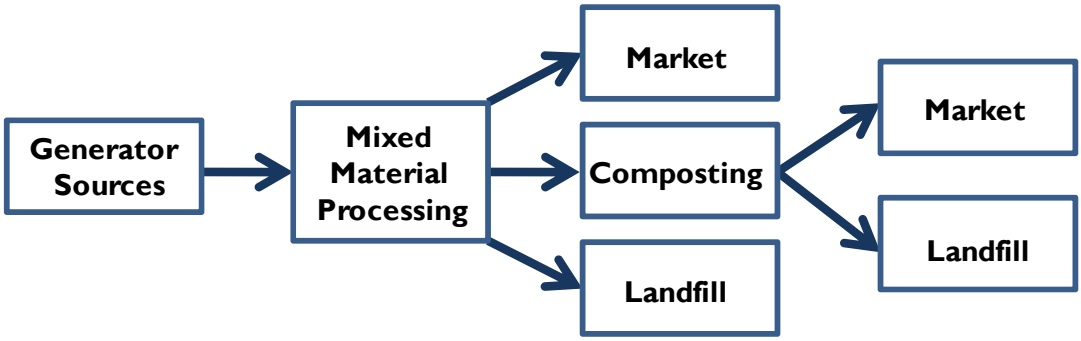
Facility Scenario A: Under this scenario, all black bin materials are sent directly to landfill. This scenario was evaluated to provide a baseline scenario to compare recovery rates and costs to other black bin scenario options. Figure 1 illustrates this scenario.

Figure 1: Facility Scenario A



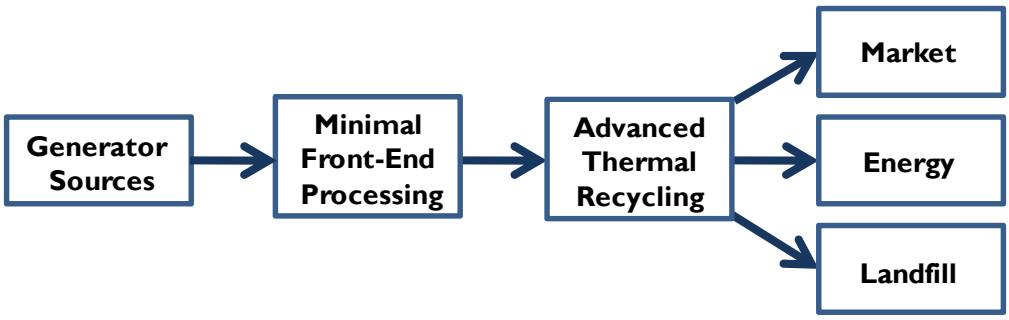
Facility Scenario B: Under this scenario, MMP receives all residual waste and processes it to recover recyclables for market and compostable materials for composting. Materials that are not recyclable or compostable are sent to landfill. Compost facilities process compostable materials for market and send non-compostable residues to landfill. This scenario separates all organics and materials that have markets for diversion. Figure 2 illustrates this scenario.

Figure 2: Facility Scenario B



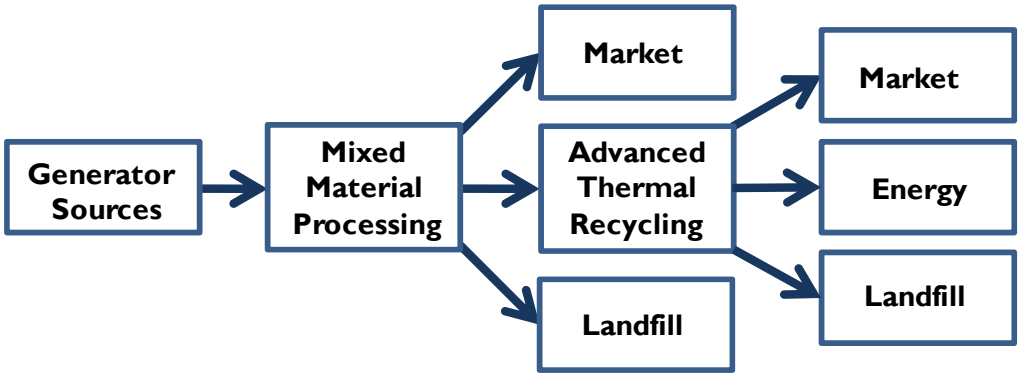
Facility Scenario C: ATR receives all residual waste and converts it to energy and by-products. Minimal processing by ATR would include screening to remove glass, C&D, soil, and other inert materials and would use magnets and eddy currents to remove metal. For this scenario, all residual waste is sent to ATR where minimal front-end processing is required (unless the system relies on an RDF technology in which case front-end processing at MMP would be required to process the materials to create the RDF). Figure 3 illustrates this scenario.

Figure 3: Facility Scenario C



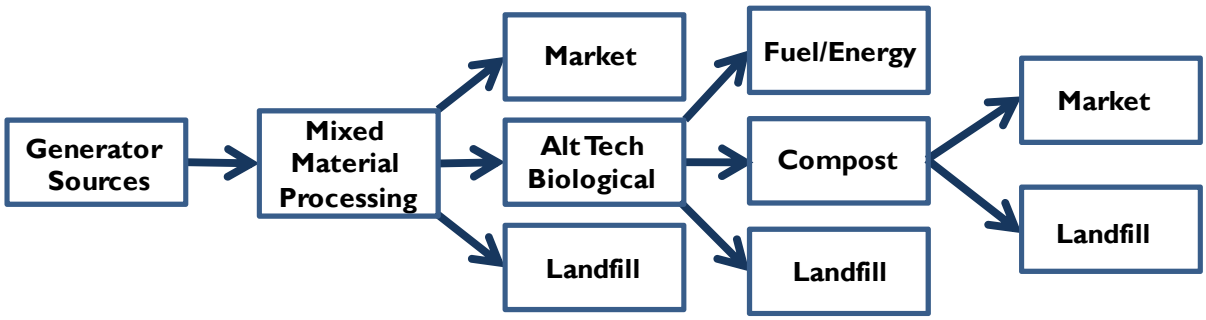
Facility Scenario D: MMP receives all residual waste and processes it to separate marketable materials from materials acceptable for conversion at an ATR facility and non-processable residue (which is sent to landfill). The ATR facility receives residual materials from MMP for conversion to energy and by-products. This scenario assumes that it is more desirable to recover material for recycling than convert it to energy at an ATR facility. MMP would remove all marketable materials, and would prepare non-marketable residual materials for ATR. Preparation for ATR would include screening waste to remove glass, C&D, metals, soil, and other inert materials which would increase conversion efficiency. This scenario represents a situation where recycling is preferred over ATR, but post-processing residual materials are still sent to ATR. Figure 4 illustrates this scenario.

Figure 4: Facility Scenario D



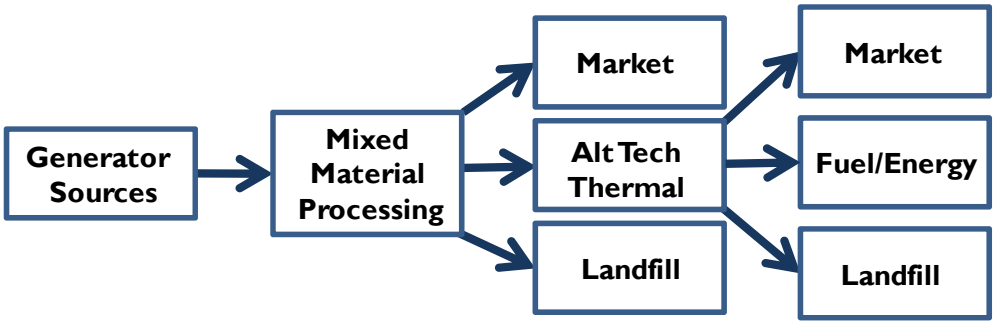
Facility Scenario E: MMP receives all residual waste and processes it to separate marketable materials from organic materials (food, food-soiled paper, and other organics) and non-processable residue (which is sent to landfill). ATB converts the organic materials into fuel or energy, and post-processing residual materials are composted or sent to landfill. MMP would thus provide a feedstock of food, food-soiled paper, and other organics. This scenario represents a situation where recycling is prioritized, organic materials are sent to ATB prior to composting, and materials which cannot be recycled, digested or composted are sent to landfill. Figure 5 illustrates this scenario.

Figure 5: Facility Scenario E



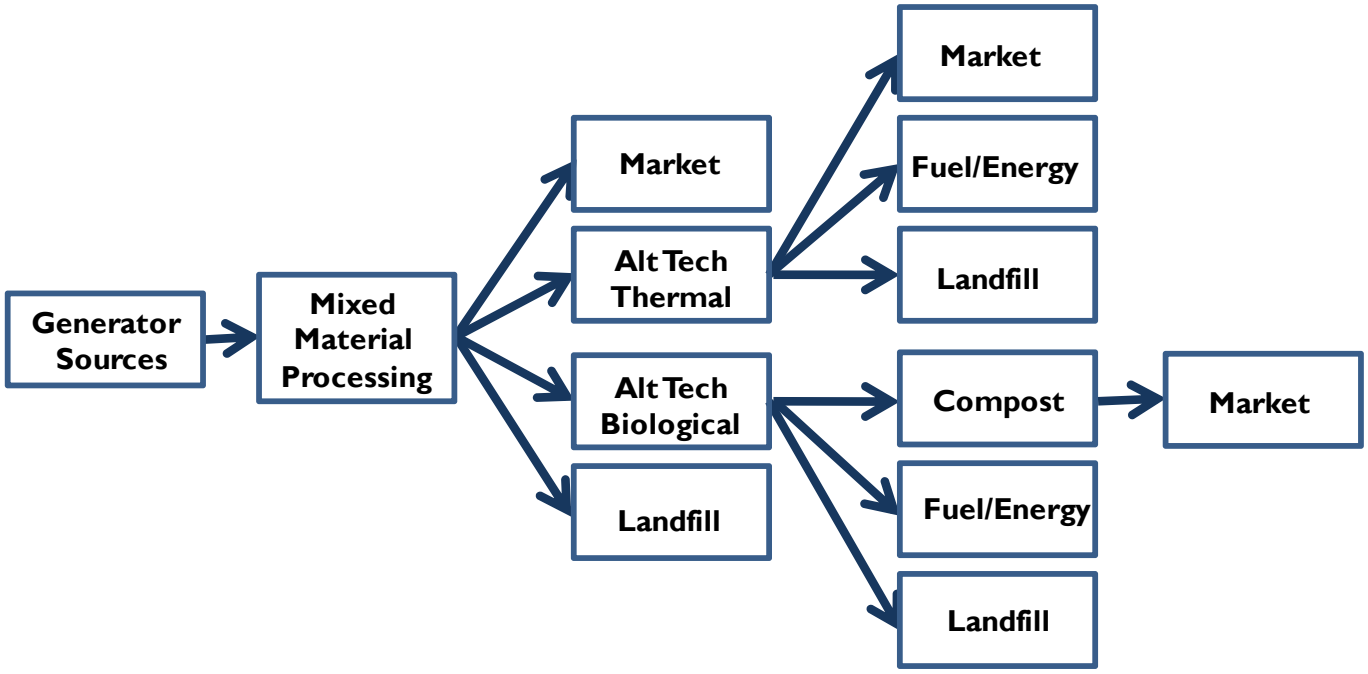
Facility Scenario F: MMP receives all residual waste and processes it to separate marketable materials from materials acceptable for processing at an ATT facility and non-processable residue (which is sent to landfill). ATT converts materials into energy or fuel, and creates ash and other by-products. Marketable by-products are sold to markets and non-marketable residues are sent to landfill. MMP would create a feedstock of paper, plastics, dry organics, and other material that would be desirable for ATT. This scenario represents a situation where recycling is prioritized, materials that cannot be recycled are sent to ATT, and materials that cannot be converted or recycled are sent to landfill. Figure 6 illustrates this scenario.

Figure 6: Facility Scenario F



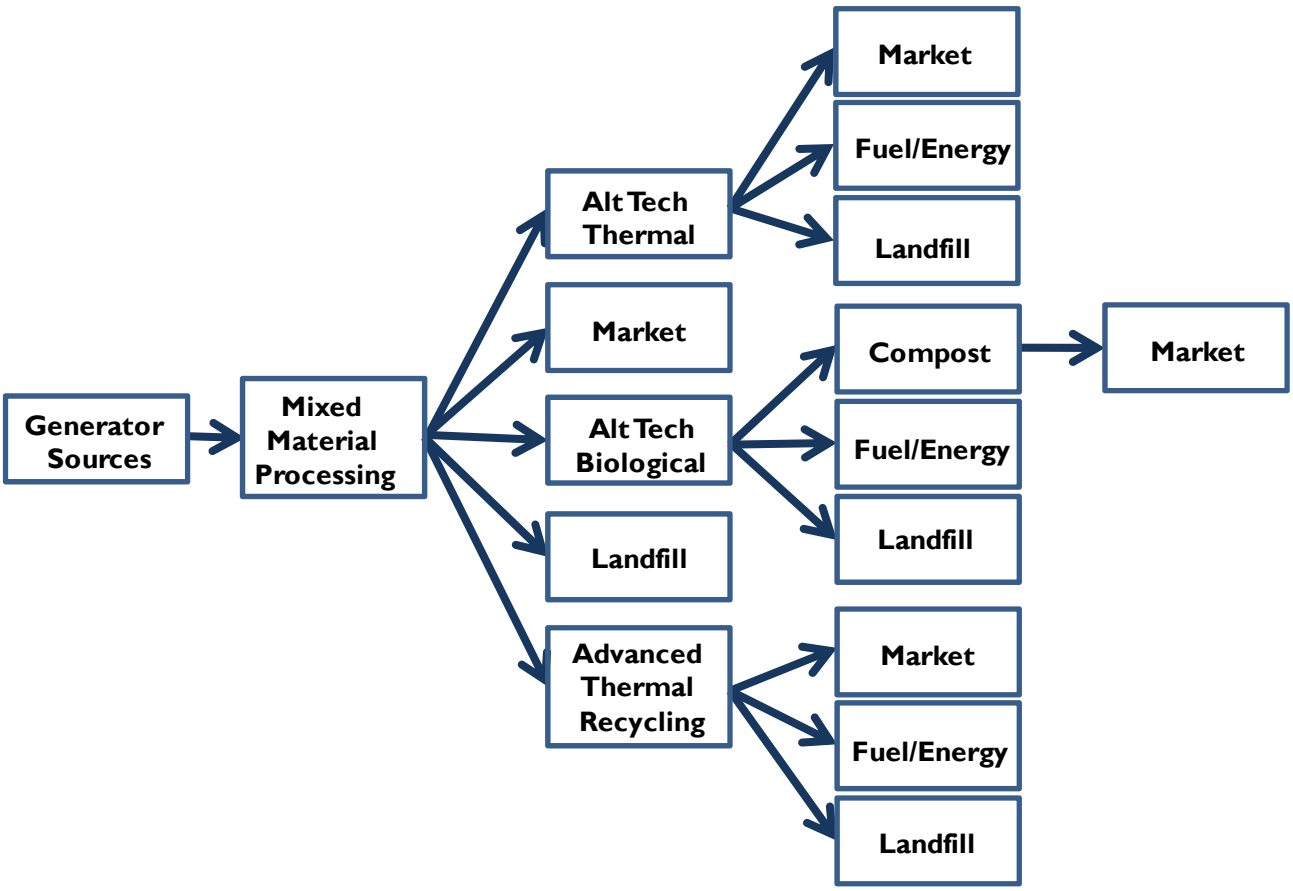
Facility Scenario G: MMP receives all residual waste and processes it to separate marketable materials from materials acceptable for processing at an ATT or ATB facility, and non-processable residue (which is sent to landfill). Food, food-soiled paper, and other organic materials are sent to ATB. Paper, plastics, and other processable materials are sent to ATT. ATT converts waste into fuel or energy, and post-processing residual materials are sold to market or sent to landfill. ATB converts organic materials into fuel or energy, and post-processing residual materials are composted or sent to landfill. This scenario was chosen to represent a situation where recycling is prioritized, and non-recyclable materials are divided between ATT and ATB, based on where the materials are best suited to be converted. Materials that cannot be converted or recycled are sent to landfill. Figure 7 illustrates this scenario.

Figure 7: Facility Scenario G



Facility Scenario H: MMP receives all residual waste and processes it to separate marketable materials from materials acceptable for processing at ATT, ATB, and ATR facilities, and non-processable residue (which is sent to landfill). Food, food-soiled paper and other organics are sent to ATB. Paper, plastics, and other processable materials are sent to ATT. Other materials that are not appropriate for ATT or ATB are sent to ATR. ATT converts waste into fuel or energy, and residual materials are sold to market or sent to landfill. ATB converts organic materials into fuel or energy, and residual materials are composted or sent to landfill. ATR converts waste to energy, and residual materials are sent to market or landfill. Figure 8 illustrates this scenario.

Figure 8: Facility Scenario H



After these facility scenarios were identified, preliminary tests were run on each facility scenario, including basic cost estimates and diversion results. The initial results are shown in Table 6. These preliminary results were presented to the stakeholders during Workshop 9 in March 2009.

Table 6: Preliminary Diversion Results by Policy and Facility Scenario

"Black Bin" Scenario	Cost Per Ton	Policy Scenario 1 Baseline	Policy Scenario 2 SWIRP	Policy Scenario 3 Mandatory	Policy Scenario 4 EPR+2	Policy Scenario 5 EPR+3
(A) Landfill	$50-80	62%	72%	80%	73%	81%
(B) MMP, Compost	$50-80	88%	91%	93%	92%	94%
(C) ATR	$120-150	97%	98%	98%	98%	98%
(D) MMP, ATR	$120-150	97%	98%	98%	98%	98%
(E) MMP, ATB	$100-130	88%	91%	93%	92%	93%
(F) MMP, ATT	$120-150	94%	96%	97%	96%	97%
(G) MMP, ATT, ATB	$120-150	93%	94%	95%	94%	95%
(H) MMP, ATB, ATT, ATR	$120-150	93%	94%	95%	94%	95%

Source: City of Los Angeles Zero Waste Planning Model - Preliminary Results, March 2009

Each of the facility scenarios B through H could achieve very high diversion rates, between 93 and 98 percent diversion assuming all policies and programs are implemented. Since many of the facility scenarios yielded comparable results, the analysis was simplified and the number of facility scenarios evaluated was reduced.

After running the preliminary tests and discussing the facility scenarios with the stakeholders at the March 2009 workshops, it was determined that facility scenarios B, D, E, and F provide the clearest comparison between the technologies. Each of these scenarios assumes that the City will implement pre-processing through an MMP and that the technology (whether thermal or biological) will be co-located with the MMP. The MMP can prepare different feedstocks for different technologies (thermal and biological) and additional technologies can be co-located at the same facility (as described in facility scenarios G and H). However, the addition of multiple technologies will not necessarily increase diversion. In some cases (such as in facility scenarios G and H), adding technologies reduces efficiency. Costs could increase by including multiple technologies, depending on the technologies and process.

In selecting a specific technology or combination of technologies, the City will likely weigh multiple factors including cost, efficiency, diversion potential, reliability, and "highest and best" use of materials.

Section 3 Projected Demand and Gap Analysis

After the facility scenarios were identified, additional performance data was created for the new facility types. New MMP performance was identified for scenarios where MMP was diverting waste to different technologies. Preliminary models were run and it was determined that facility scenarios B, D, E, and F would be used to estimate the number of facilities that would be required in 2030. Each of the scenarios involves MMP facilities recovering recyclables for market and preparing a feedstock for alternative technology or compost.

The projected demand of black bin facilities is the number of facilities that would be required to process all black bin waste generated in the City in 2030 if no solid waste infrastructure already existed. Section 3.4 Existing Facility Capacity and Expansion Potential details the number of facilities that would be required after existing available processing capacity is considered.

3.1 Black Bin Facility Requirements

The number of required black bin facilities was calculated by putting the future waste characterization through the different facility scenarios using the expected facility performances to determine how each waste type would be treated through the facility scenario. The facility scenarios were used as a guide to determine which facilities would be required for each scenario. Using the facility performance expectations, the amount of waste that would need to be handled by each facility type was determined. These tonnage volumes are shown in Table 7.

Table 7: Processing Requirements in 2030 – Additional Annual Tons by Facility Type

Facility Scenario	Facility Type	Tons received by each facility type in 2030, by policy scenario				
		Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5
B	MMP	3,043,196	2,283,754	1,603,556	2,167,830	1,531,326
	Compost	1,697,094	1,275,375	863,645	1,248,719	854,019
D	MMP	3,043,196	2,283,754	1,603,556	2,167,830	1,531,326
	ATR	2,367,430	1,794,942	1,277,985	1,704,628	1,219,510
E	MMP	3,043,196	2,283,754	1,603,556	2,167,830	1,531,326
	ATT	2,030,548	1,522,253	1,051,143	1,441,188	998,653
F	MMP	3,043,196	2,283,754	1,603,556	2,167,830	1,531,326
	ATB	1,559,308	1,173,993	785,261	1,147,337	775,636

Source: City of Los Angeles Zero Waste Planning Model – Final Results, January 2013

As shown in Table 7, the City is expected to generate between approximately 1.5 and 3 million tons of residual waste in 2030 that will require processing. This range is based on the generation projections (described in *Appendix B Material Flow Model and Generation Projections*) and varies based on the program and policy scenarios implemented (described in *Appendix A Policy and Program Analysis*). The siting of a limited number of very large-scale solid waste processing facilities within the City limits to handle that

amount of residual waste, as indicated in Table 7, would be extremely difficult, due to potential environmental impacts and anticipated community resistance. Alternatively, direct hauling and/or using transfer stations in order to deliver the residual waste to remote processing sites would be extremely costly and impractical. Consequently, the number of smaller ("community scale") facilities that would be needed to process the residual waste generated within the City was determined. Table 8 summarizes the number of required smaller scale facilities that would be suitable for siting throughout the City to process all the black bin materials in 2030 by scenario.

Table 8: Total Projected Black Bin MMP Facility Demand by 2030

Facility Scenario	Facility Type	Number of facilities required by policy scenario				
		Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5
B	MMP	15	11	8	11	8
	Compost (large)	7	5	3	5	3
B	MMP	15	11	8	11	8
	Compost (small)	28	21	14	21	14
D	MMP	15	11	8	11	8
	ATR	6	5	4	5	3
E	MMP	15	11	8	11	8
	ATT	11	8	6	8	5
F	MMP	15	11	8	11	8
	ATB	9	6	4	6	4

Source: City of Los Angeles Zero Waste Planning Model – Final Results, January 2013

As shown in Table 8, depending on the scenario of policies and programs implemented in the City, anywhere from 8 to 15 black bin facilities (which could include MMP facilities and additional processing technologies) may be required to process all black bin materials generated in 2030. The number of black bin facilities required by wasteshed to process black bin materials is presented in Table 9.

Table 9: Projected Black Bin MMP Facilities Required by Wasteshed

Wasteshed	Total black bin facilities required in 2030 by wasteshed				
	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5
Overall	15	11	8	11	8
East Valley	3	2	2	2	2
Harbor	1	1	<1	1	<1
North Central	4	3	2	3	2
South LA	2	2	1	2	1
West Valley	3	2	2	2	1
Western	2	2	1	1	2

Source: City of Los Angeles Zero Waste Planning Model – Final Results, January 2013

The number of black bin MMP facilities by wasteshed indicated in Table 9 may not add up to the total number of facilities required per scenario, due to rounding. In some columns in Table 9, the number of facilities by wasteshed is less than one (<1). This indicates that there is not enough tonnage generated in this wasteshed for a whole new facility. In this case, tons from one wasteshed can be transferred to another wasteshed for processing. In some cases, use of transfer stations may be required to help efficiently transfer materials between wastesheds in order to maximize the capacity of a facility.

3.2 Green Bin Facility Requirements

The projected number of facilities that would be required to process all new green bin materials is calculated in this section. Existing infrastructure, a portion of which is controlled by private industry, currently processes all green bin materials that are generated in the City at this time. As the City expands its food scrap program (where food scraps and compostable paper are co-collected with yard trimmings), some of the existing composting/mulching facilities will need to be re-permitted to accept food scraps. In addition to this infrastructure, new facilities would also need to be constructed to process increases in the generation of green bin materials between 2010 and 2030.

The projected demand of green bin facilities is the number of facilities that would be required to process the additional tons of green bin materials generated in the City in 2030 if no processing infrastructure already existed. Section 3.4 details the number of facilities that would be required after existing available processing capacity is considered.

The increase in tonnage for green bin materials between 2010 and 2030 are shown in Table 10 for each of the five policy scenarios:

Table 10: Increase in Annual Tons of Green Bin Materials between 2010 and 2030

Wasteshed	Additional tons of green bin materials in 2030 by wasteshed				
	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5
Overall	26,460	216,890	557,118	216,890	557,118
East Valley	29,669	68,615	134,025	68,615	134,025
Harbor	1,173	10,026	26,436	10,026	26,436
North Central	(7,316)	40,786	133,172	40,786	133,172
South LA	(19,608)	12,481	66,356	12,481	66,356
West Valley	60,825	99,692	166,561	99,692	166,561
Western	(38,283)	(14,710)	30,568	(14,710)	30,568

Source: City of Los Angeles Zero Waste Planning Model – Final Results, January 2013
Note that totals may not sum due to rounding.

Table 10 shows that only about 26,000 tons of new green bin materials (under Scenario 1) are expected to be generated from population increases and generation increase per capita. However, in scenarios 2 through 5, policies and programs are capable of increasing green bin materials by an additional 220,000 to 560,000 tons, based on new programs including food scrap diversion and mandatory source-separation. Note that for some of the wastesheds, the green bin materials decline in 2030 from the base year of 2010. This is because the population projections provided by the Southern California Association of Governments predict a decline in single-family households across Los Angeles beginning in 2025.

Two options for green bin facilities are shown below. Table 11 shows the number of green bin facilities that would be required if small capacity 60,000 tpy (200 tpd) facilities are used. Table 12 shows the number of green bin facilities that would be required if larger capacity 260,000 tpy (1,000 tpd) facilities are used.

Table 11: Projected Green Bin Facility Demands (60,000 TPY)

Wasteshed	Additional small green bin facilities needed in 2030 by wasteshed				
	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5
Overall	<1	4	9	4	9
East Valley	<1	1	2	1	2
Harbor	<1	<1	<1	<1	<1
North Central	<1	1	2	1	2
South LA	<1	<1	1	<1	1
West Valley	1	2	3	2	3
Western	<1	<1	1	<1	1

Source: City of Los Angeles Zero Waste Planning Model – Final Results, January 2013
Note that totals may not sum due to rounding.

Table 12: Projected Green Bin Facility Demands (260,000 TPY)

Wasteshed	Additional large green bin facilities needed in 2030 by wasteshed				
	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5
Overall	<1	1	2	1	2
East Valley	<1	<1	1	<1	<1
Harbor	<1	<1	<1	<1	<1
North Central	<1	<1	1	<1	1
South LA	<1	<1	<1	<1	<1
West Valley	<1	<1	1	<1	1
Western	<1	<1	<1	<1	<1

Source: City of Los Angeles Zero Waste Planning Model – Final Results, January 2013
Note that totals may not sum due to rounding.

In some columns in Tables 11 and 12, the number of green bin facilities by wasteshed is less than one. This suggests that some facilities may be able to serve multiple wastesheds in the City. Transfer stations may be utilized in some wastesheds to help efficiently haul green bin materials to the facilities. Some combination of large and small facilities will likely be desired, which will depend on the availability of land, permitting conditions, and the requirements and availability of markets. Large capacity compost facilities may need to be sited outside the City limits, in which case transfer stations will be required to efficiently transport green bin materials to these facilities.

3.3 Blue Bin Facility Requirements

As with green bin facilities above, the projected number of facilities that would be required to process all blue bin materials is calculated in this section. Existing infrastructure, much of which is controlled by private industry, currently processes all blue bin materials that are generated in the City at this time. In addition to this infrastructure, new facilities would also need to be constructed to process increases in the generation of blue bin materials between 2010 and 2030.

The projected demand of blue bin facilities is the number of facilities that would be required to process the additional tons of blue bin materials generated in the City in 2030 if no processing infrastructure already existed. Section 3.4 details the number of facilities that would be required after existing available processing capacity is considered.

The increase in tonnage for blue bin materials between 2010 and 2030 is shown in Table 13 for each of the five policy scenarios:

Table 13: Increase in Annual Tons of Blue Bin Materials between 2010 and 2030

	Additional tons of blue bin materials in 2030 by wasteshed				
Wasteshed	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5
Overall	340,455	771,362	1,110,746	746,807	1,042,859
East Valley	65,870	146,121	207,087	136,074	189,965
Harbor	13,999	35,011	50,599	32,357	46,120
North Central	93,917	207,221	312,576	223,014	312,341
South LA	28,841	94,742	145,764	86,746	131,901
West Valley	98,155	178,957	237,965	168,401	220,462
Western	39,674	109,310	156,755	100,216	142,069

Source: City of Los Angeles Zero Waste Planning Model – Final Results, January 2013
Note that totals may not sum due to rounding.

As shown in Table 13, the increase in generation from population growth and other changes not related to new policies and programs will increase the number of tons generated in the City by over 340,000 tpy, while different policy scenarios can increase the production of blue bin tonnage to over 1 million tpy.[17] The number of Clean MRFs that would be required to process the projected increases is shown in Table 14.

[17] The number of tons of blue bin materials was calculated using the material flow model and estimating the policy and program participation rates and efficiencies. Based on these assumptions, diversion tons were estimated by scenario.

Table 14: Projected Blue Bin Facility Demands (200,000 TPY)

Wasteshed	Additional Blue Bin Facilities needed in 2030 by Wasteshed				
	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5
Overall	2	4	6	4	5
East Valley	<1	1	1	1	1
Harbor	<1	<1	<1	<1	<1
North Central	<1	1	2	1	2
South LA	<1	<1	1	<1	<1
West Valley	<1	1	1	1	1
Western	<1	1	1	1	1

Source: City of Los Angeles Zero Waste Planning Model – Final Results, January 2013
Note that totals may not sum due to rounding.

In the wastesheds listed in Table 14, less than one facility is indicated by "<1," and suggests that in those cases some facilities may be able to serve multiple wastesheds. In each scenario, transfer station capacity may be desired in certain districts, such as Harbor, to make transportation of blue bin materials to Clean MRFs more efficient and environmentally friendly.

3.4 Existing Facility Capacity and Expansion Potential

As described in Sections 3.1, 3.2, and 3.3, the projected demand or total number of facilities required was determined, assuming full build-out of all desired facilities and assuming that no facilities currently exist to process waste. This section discusses existing solid waste facilities in and around the City and identifies the existing available capacity and the potential for expansion capacity using published information and/or surveys of existing facilities. This section does not address possible institutional obstacles, permitting and/or jurisdictional constraints for utilizing the available capacity, but is intended to identify potential capacity realizing that additional research and more detailed analysis would be needed to confirm the possible use of the available capacity.

Detailed information on the facilities, their processing capacity, and the methods used to determine existing and potential expanded capacity is provided in **Attachment D-3 Existing Facility Capacity Analysis.** A summary of the results of the analysis is shown in Table 15, which gives a range of available processing capacity and expansion potential for different facility types.

Table 15: Available Processing Capacity Expansion Capacity by Facility Type

Facility Type	Available Processing Capacity (tons per day)
MMP	1,750 - 3,600
Clean MRF	1,200 - 2,600
Composting	550 - 1,100
Chipping & Grinding	900 - 2,300
C&D Processing Facilities	2,300 - 4,850
Transfer Stations	4,800 - 8,150
Food scraps	150 - 300
Waste-to-Energy Facilities	Approx. 1,200
Landfills	25,000 - 28,000

Sources: Attachment D-3 Existing Facility Capacity Analysis
County of Los Angeles Countywide Integrated Waste Management Plan: 2012 Annual Report

Available C&D processing capacity is between 2,300 tpd and 4,850 tpd (717,600-1,513,200 tpy), but C&D generation is only expected to increase by 62,000 tpy by 2030, including all the changes in policies and programs. The number of MMP facilities, Clean MRFs, and compost facilities that would be required by the City for full implementation of policy and program scenarios (assuming utilization of existing facility capacity takes place first), is discussed below. Table 16 shows the projected number of MMP facilities that will be required to process all the black bin waste in each scenario. The number of MMP facilities required by wasteshed was not broken out because existing facilities, both inside and outside the City, will likely accept waste from multiple wastesheds, and some facilities may not be able to receive waste from the City because of jurisdictional or other agreements or obligations. Each new MMP facility will have the capacity to process about 200,000 tpy of black bin waste.

Table 16: Black Bin Facility Requirements by 2030

	Number of Black Bin Facilities Required				
Facility Type	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5
Projected Demand					
MMP	15	11	8	11	8
Net New Facilities Needed					
MMP	12	8	5	8	5

Source: City of Los Angeles Zero Waste Planning Model – Final Results, January 2013

The actual number of green bin facilities, which will be required to process green bin materials, is shown in Table 17. This number includes the anticipated and existing green bin capacity from existing facilities to be between 550 and 1,100 tpd. Assuming each facility operates six days per week, and using the conservative end of the range at 550 tpd, existing green bin facilities could process about 172,000 tpy. Table 17 details the overall expected number of green bin facilities required in the City.

Table 17: Green Bin Facility Requirements by 2030

Facility Type	Number of green bin facilities required				
	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5
Projected Demand					
Compost (large)	<1	1	2	1	2
Compost (small)	<1	4	9	4	9
Net New Facilities Needed					
Compost (large)	0	0	1	0	1
Compost (small)	0	1	6	1	6

Source: City of Los Angeles Zero Waste Planning Model – Final Results, January 2013

The actual number of Clean MRFs, which will be required to process blue bin materials, is shown in Table 18. This number includes the anticipated existing Clean MRF capacity from existing facilities to be between 1,200 and 2,600 tpd (assuming each facility will receive waste 300 days per year, and the facilities will receive a total of 1,200 tpd). With these assumptions, existing Clean MRFs could process about 360,000 tpy of source separated recyclables generated in the City. Table 18 details the expected number of Clean MRFs that will be required in the City after existing Clean MRF capacity is considered.

Table 18: Blue Bin Facility Requirements by 2030

Facility Type	Number of Blue Bin Facilities Required				
	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5
Projected Demand					
Clean MRF	2	4	6	4	5
Net New Facilities Needed					
Clean MRF	0	2	4	2	3

Source: City of Los Angeles Zero Waste Planning Model – Final Results, January 2013

3.5 Transfer Station Capacity Requirements

The facility scenarios assume that the City will be successful in siting the needed number of blue bin, green bin, and black bins facilities throughout the City and within each wasteshed. The stakeholders who participated in the SWIRP planning process supported the development of community scale facilities within each wasteshed to handle the materials generated within each wasteshed. However, because of the difficulties of siting new or expanding existing facilities, it is likely that the City will need to transfer some materials between wastesheds for processing, or transfer materials outside of the City for composting or ultimate disposal. As described in Sections 3.5.1 and 3.5.2, up to 7,000 tpd of black bin and green bin materials generated citywide may need to be transferred between wastesheds or outside of the City if the City or private sector operators are unsuccessful in siting new black bin and green bin facilities within the City.

3.5.1 Black Bin Material Transfer

As described in Section 3.4, five new black bin processing facilities are anticipated to be needed in the City by 2030, assuming full implementation of programs. As described in Section 3.1, the City is expected to generate between approximately 1.5 and 3 million tons of residual waste per year (or 5,000 to 10,000 tpd based on 300 operating days per year) by the year 2030 that will require processing. If the City or the private sector operators are unsuccessful in siting these facilities, they may have to transfer these tons to remote black bin processing facilities or remote landfills.

Attachment D-3 Existing Facility Capacity Analysis describes the excess capacity currently available at existing transfer stations within the region. The analysis concluded that there was between 4,800 and 8,150 tpd of available or planned capacity at existing transfer stations. Table 19 summarizes this analysis.

Table 19: Existing and Planned Transfer Station Capacity

Transfer Stations	Permitted Capacity (tpd)	Estimated Additional Transfer Capacity (tpd)
American Waste Transfer Station	2,225	100-200
Athens Services Transfer Station	5,000	--
Athens (Sun Valley)	1,500	500-1,000
Bel-Art Waste Transfer Station	1,500	--
Carson Transfer Station	5,300	--
Central Los Angeles Recycling and Transfer Station (CLARTS)	4,025	1,000-2,500
Community Recycling	1,700	500-800
Compton Recycling & Transfer Station (Browning Ferris Industries)	1,500	600-1,000
Downey Area Recycling & Transfer Station (DART)	5,000	--
East Los Angeles Recycling and Transfer Station (ELARTS)	700	100-150
Falcon Refuse	1,850	--
Innovative Waste Control	1,250	--
Mission Road Recycling and Transfer Station (Waste Management)	1,785	--
Paramount Resource Recycling Facility	2,400	200-500
South Gate Transfer Station – Los Angeles County Sanitation District	1,000	--
South Gate Transfer Station – Waste Management	2,000	--
Southern California Disposal	1,056	300-500
Waste Resources Recovery	500	1,500
Total	**40,291**	**4,800-8,150**

Data based on surveys conducted for SWIRP in 2007 and 2008. Refer to Attachment D-3 Existing Facility Capacity Analysis, beginning on page D-3-1.
Note: Falcon Refuse has the physical capability of expanding from 1,850 tpd to 5,600 tpd and Bradley Transfer Station is pursuing an expansion from 1,500 tpd to 5,000 tpd.

The additional transfer capacity was estimated, using the information developed from the Facility Surveys included in Attachment C-1 in *Appendix C Infrastructure and Materials Flows*, beginning on page C-1-1. Each facility was asked about its current expansion plans and expansion potential. Several facilities, including Athens (Sun Valley), Community Recycling, Compton, Paramount, Southern California Disposal and Waste Resources Recovery are actively engaged in pursuing permits for expansion. CLARTS has developed a master plan to evaluate the feasibility of increasing its processing capacity. Several facilities are known to have some excess capacity or are operating at less than their permit limits including American Waste, CLARTS, and ELARTS. Falcon has no current plans to expand its facility. However, it reported that it has the physical capability of expanding from 1,850 tpd to 5,600 tpd. In addition, the Bradley Transfer Station (which was not operating in 2006 during the timeframe of the facility surveys) currently operates at 1,500 tpd and is pursuing an expansion to 5,000 tpd. Based on this information, there is potentially as much as 15,400 tpd of excess or potential new transfer capacity in the region that could be available to generators in the City. LASAN may wish to secure long-term agreements for some transfer capacity. However, it appears that the private sector operators are investing in sufficient capacity to meet the needs of the generators in the City.

3.5.2 Green Bin Material Transfer

As described in Section 3.4, one large or six small green bin processing facilities will need to be developed in the region by 2030 to handle the materials expected to be generated through the full implementation of the policies and programs. Since compost facilities may be difficult to site and permit in the urban areas, the City may need to transfer green bin materials to remote facilities. As described in Section 3.2, residents and businesses in the City are expected to generate up to 560,000 tpy or 18,000 tpd (based on 300 operating days per year) of green bin materials citywide in 2030 at full implementation of programs. If the City or private sector operators are unsuccessful in siting new green bin processing capacity, at least some additional transfer station capacity will need to be secured by 2030 in order to meet the City's needs.

3.5.3 Blue Bin Material Transfer

Blue bin materials are generally delivered to Clean MRFs by route trucks and are not typically transferred or double-handled. However, as described in *Appendix C Infrastructure and Material Flows*, Attachment C-3 Recycling Facility Surveys, some of the LASAN residential curbside tons are transferred to the Bestway Firestone Facility from the Bestway Jefferson Boulevard location (which serves as a transfer point and does not process the materials). West Valley Fibers reported plans to expand its facility. They are planning to add transloading capabilities to handle additional residential curbside recyclables, multi-family residential recyclables, and commingled commercial recyclable materials. Depending on where new blue bin processing capacity is developed, some transloading capabilities may continue to be needed in the future.

3.6 Landfill Capacity Requirements

As described in Section 3.1, the City is expected to generate between approximately 1.5 and 3 million tons of residual waste per year (or 5,000 to 10,000 tpd based on 300 operating days per year) by the year 2030 that will require processing. Assuming that the City or private sector operators are successful in siting new black bin processing facilities within the City and these facilities are capable of diverting 70 to 90 percent of the residual waste from disposal, as much as 150,000 to 900,000 tpy (500 to 3,000 tpd (based on 300 operating days per year) will still require landfilling. Table 20 provides an estimate of the potential excess daily capacities of the landfills in the Los Angeles region that are expected to remain operational through 2030.

Table 20: Potential Excess Daily Capacity of Landfills within the Los Angeles Region through 2030[1]

Facilities	Permitted Daily Capacity (tons)	2012 Average Daily Tonnage (tons)[2]	Potential Excess Daily Capacity (tons)	Anticipated Closure Date
Antelope Valley Landfill	3,564	966	2,598	2042
Sunshine Canyon City/County Landfill	12,100	8,500	3,600	2037
Scholl Canyon Landfill	3,400	808	2,592	2030
Lancaster Landfill	1,700	800	900	2044
Savage Canyon Landfill	350	300	50	2048
City of Burbank Landfill	240	126	114	2053
San Clemente Landfill	10	1.5	9	2032
El Sobrante[3]	16,054	7,400	8,654	2045
Simi Valley[3]	9,250	2,500	6,750	2052
Total	**46,668**	**21,402**	**25,267**	

[1] Source: County of Los Angeles Countywide Integrated Waste Management Plan: 2012 Annual Report
[2] Based on 5-days/week landfill operation (261 days/year)
[3] Source: www.calrecycle.ca.gov/SWFacilities/Landfills/Tonnages/

Section 4 Market Assessment

4.1 Introduction

This section assesses the current status of recycling markets for the primary and secondary materials expected to be diverted through implementation of the various SWIRP programs, policies, and facilities. Opportunities for enhancing the quality of recovered materials and encouraging creation and expansion of market development for recyclers, manufacturers and end-users in the Los Angeles region are also discussed.

Recycling markets are a necessary component for any Zero Waste system. Intermediate and end markets provide the vehicle for beneficial reuse of the diverted materials by returning them to the manufacturing and production of new products. Markets also provide an important revenue source to help sustain diversion programs; create new green jobs; and reduce greenhouse gas emissions. Without sufficient markets even the best diversion programs will fail.

4.1.1 Traditional Commodity Recyclables

Markets vary widely in terms of the role that dealers and brokers play in selling and purchasing materials recovered through material collection programs or from material recovery facilities (MRFs) or mixed material processing (MMP) facilities. Recovered materials can be broken into two major categories: traditional commodity recyclables (bottles, cans, fiber paper, plastic), and organics. There are important differences between the types of markets available for these two broad categories.

There are basically three types of potential buyers for the recovered materials: processors or dealers, brokers, and end-user manufacturers. Dealers purchase recyclable materials, process them to end-user specifications, and transport them to market. These firms include paper packers, paper stock dealers, scrap metal dealers, and intermediate processors that handle a wide variety of recyclables. A broker generally purchases materials directly from a number of suppliers and resells them to an end-user manufacturer without any processing. Brokers provide transportation arrangements to deliver the materials to market, and can provide advantages to the end-user because they can ensure a reliable supply of materials, usually at steadier prices. End-user manufacturers (such as paper mills, steel and aluminum smelters, glass, or plastic manufacturing plants) use the recyclable material as an alternative or supplemental feedstock to virgin materials in the manufacturing process to create new products that will be sold to consumers.

4.1.2 Local Market Development for Recyclables

For materials that do not have sufficient markets or infrastructure, government intervention has helped create markets, such as implementing a bottle bill or requiring the use of recycled content products such as requiring all newspapers sold or printed to contain a minimum amount of recycled fiber.

In the past, bottle bills have been introduced to encourage recycling, discourage litter, and generate revenue on unclaimed deposits. The California Beverage Container Recycling and Litter Reduction Act (AB 2020) enacted in 1986, helped foster collection infrastructure by establishing redemption values on

beverage containers and requiring the establishment of certified recycling centers within convenience zones where the public could return beverage containers to redeem them for cash when the containers were recycled. The program includes plastic, glass and metal beverage containers, with California being the first state in the nation to include plastic containers. The redemption value is 5 cents on containers less than 24 ounces and 10 cents on containers 24 ounces or larger.

Another program to foster collection and recycling infrastructure was established in California through passage of the Electronic Waste Recycling Act of 2003 (SB 20). This legislation affects product retailers and consumers, and establishes an Electronic Waste Recycling Fee for some types of e-waste in order to divert hazardous products from the waste stream and support an emerging market for the electronic components. Under this program, consumers pay a fee at the point of sale of certain electronics, such as televisions and computer monitors. Fees are based on screen size measured diagonally, and the most recent revised fees are: $8.00 for screens greater than 4 inches and less than 15 inches, $16.00 for screens equal to or greater than 15 inches and less than 35 inches, and $25.00 for 35 inches and larger. Retailers remit these fees to the Board of Equalization (BOE). The funds are then distributed to State approved recyclers at the fixed rate per pound for collection and a separate rate for recycling, or a combined rate for collection and recycling. The State approved recyclers (if they have not collected the material) in turn pay the established fixed rate to State approved collectors. This program has dramatically increased e-waste recycling in California.

All recycling markets operate under a true supply and demand economy that is impacted by global politics, population and economic growth, and human behavior and changing attitudes about consumption and climate change. Market prices fluctuate and are occasionally volatile since they are susceptible to external market forces.

Materials that have existing markets include cardboard (old corrugated containers/OCC), newspaper (old newspaper/ONP), glass, #1 plastic (polyethylene terephthalate/PET), #2 plastic (high density polyethylene/HDPE), ferrous metal, aluminum, and more, but few are local or domestic markets. Recyclable commodities are traded on a worldwide basis and there is greater demand for these commodities in Asia where many of the products (and packaging) that are purchased in the US (and throughout the world) are manufactured. Local market demand is dependent on the local manufacturing economy, which has historically decreased in the Los Angeles region due to a declining industrial base and increased demand for residential and commercial development. If more products and packaging were produced locally, there will be more demand for purchasing these commodities locally. Development of local markets for non-commodity recyclables (organics, C&D, building materials, and reusable items) is an important focus of the City.

Recyclables are delivered to processing facilities in source separated form (such as loads from curbside blue bin collection routes), in "clean" (e.g., minimally contaminated by wet waste) loads of commercial materials. The resultant "products" after processing will include the following recyclables:

- OCC
- ONP
- Mixed paper

- Clear, amber, and green glass containers; and mixed glass cutlet
- PET, HDPE and all #3 - 7 plastic containers
- Mixed plastics and film plastic
- Ferrous and nonferrous scrap metal
- Aluminum, steel, and bi-metal cans
- Textiles (for reuse, rags, and export)

The unprecedented rise of market prices between 2006 and 2008 was due to the increased demand in the Pacific Rim markets and burgeoning gross national products of China, India, and other fast growing economies globally. The dramatic fall (late 2008) in prices was due to the global recession. The mill price for OCC during 2006 - 2008 rose to $200 per ton, then declined rapidly in the latter half of 2008 to below $40 per ton and rebounded in mid-2009 to roughly $95 per ton. When markets are down, recyclers will store or stockpile commodities that have value. The last time commodity markets plunged (in the 1990s) it took ten years for prices to fully recover. However, veteran recyclers understand that commodity prices are dictated by the laws of supply and demand and will never be static.

According to surveys of local processors, since the economy has recovered from the recent global economic recession, it is expected that capacity for recycled material will continue to expand beyond previous levels, domestically and/or internationally.

Southern California has lost several recycled fiber paper mills since the early 2000s, as product manufacturing and paper production have moved overseas. It is reasonable to assume that mill capacity will be developed overseas (for material such as fiber and plastic) and domestically (for materials such as glass and aluminum) as needed to consume the additional tonnage generated by SWIRP policies, programs, and facilities. This has been the case historically and should continue in the future, as long as the demand for the final products (such as cardboard boxes, glass containers, and aluminum cans) continues. The City is able to efficiently and quickly ship resources overseas due to the proximity of the Port of Los Angeles and Port of Long Beach, which combined are the third largest port complex in the world.

China's "Green Fence" policy went into effect in February 2013. Under this policy, the Chinese government has put stricter controls on the recyclable materials imported into the country and has rejected over 800,000 metric tons of poorly sorted or dirty shipments of materials from foreign exporters.[18] This has required local processors to more carefully prepare their materials for export, increasing the cost of recycling.

[18] The Guardian, "Could China's 'green fence' prompt a global recycling innovation?" August 27, 2013, http://www.theguardian.com/sustainable-business/china-green-fence-global-recycling-innovation (accessed October 1, 2013).

In summary, capacity should be available both domestically and overseas to consume the City's additional recyclables. Market deficiencies exist only for those fringe commodities such as textiles (and perhaps low grade mixed plastics or poorly sorted materials). Opportunities for domestic market development exist for some textiles. Some carpeting is being recycled back to the carpet mills; natural fiber materials are remanufactured into wiping cloths and rags and some synthetic materials are reused in carpet underlay pad. However, source-separated textiles will need sustainable end-user markets in addition to the export market

It may be desirable to provide economic or other incentives to help create commodity markets locally. By developing local markets, the City may be able to create a sustainable local economy for recyclables to help reduce reliance on overseas markets, improve the local economy and create new local jobs.

4.1.3 Organics

California has been a pioneer in the recovery and treatment of materials in the organic waste stream (yard trimmings, food scraps, biosolids). Some organics recycling programs have been operating in the Los Angeles area for generations. While formalized curbside collection of residential and commercial organics (yard trimmings, food scraps, food soiled paper) substantially increased in California after 1995, recent waste characterization studies have shown that organics are currently the largest material type still present in the waste stream, even 20 years after the passage of AB 939 (Assembly Bill 939, The California Integrated Waste Management Act of 1989).

In Southern California, many landfills accept yard trimmings (processed or unprocessed) for use as ADC. Under current statute, this is considered "recycling" and counts as diversion credit under AB 939. City policy[19] does not allow yard trimmings collected by LASAN to be used as ADC. Recent legislative and regulatory action may change that definition in the future. The closure of the Puente Hills Landfill in October 2013 will also have a tremendous impact on the ADC markets. CalRecycle is currently reviewing the regulations and policies relating to the use of yard trimmings as ADC. In addition to ADC, yard trimmings are used for direct land application (typically to orchard crops like lemons and/or avocados); as fuel for wood waste to energy (biomass) plants, to make compost or as a bulking agent for sewage sludge composting.

The following sections discuss the market conditions for organics that are or will be produced by SWIRP policies, programs, and facilities.

4.2 Market Development – Organics (yard trimmings, food scraps, and other organics)

SWIRP and other Zero Waste plans across the U.S. and Canada are placing new emphasis on the diversion of organics remaining in the waste stream, estimated to comprise about 30 percent of the City's total disposal tonnage.

[19] Public Works Board Report on Green Waste Processing Contingency Plan adopted on September 22, 2006.

4.2.1 Yard Trimmings

Until very recently, the LASAN organics diversion program consisted of residential yard trimmings collection (green bin), horse manure (brown bin) and a minimal amount of yard trimmings and manure diverted by the Los Angeles Zoo. In addition, a significant tonnage of source-separated yard trimmings are collected and delivered to chipping and grinding facilities by the private sector (tree trimmers, landscapers, and others).

In recent years, the City has launched pilot collection programs targeting supermarkets, restaurants, and residential curbside customers to divert food scraps. Given the emphasis on organic diversion by SWIRP, and the expected increase in recovered quantities of between 400,000 and 700,000 tons per year, it is imperative that sustainable markets be found.

The processing of typical yard trimmings from the residential sector consists of contaminant removal, grinding, and screening which results in three main products: mulch (chips and fines together), fines for composting, and wood chips for landscaping or biomass power.

Markets for recovered organic products (like compost and mulch) have been slow to develop in Southern California for a number of reasons. Many observers believe that the abundance of free or very low cost ADC "markets" eliminated both the need to develop non-ADC markets and the need to maintain feedstock quality.[20] In most cases, the contamination levels in curbside yard trimmings are unimportant if they are to be used for landfill cover. In order to access agricultural markets, yard trimmings would need to be transported north or east to agricultural markets. This is also currently true of accessing the wood waste-to-energy (biomass) markets and has not proven to be a substantial barrier. Urban wood waste can be marketed to biomass facilities located in the agricultural areas. However, the City needs to strive for local markets and accessibility. This could be achieved by siting facilities locally that can process urban wood waste, including alternative technologies such as gasification (wood waste to energy) and acid hydrolysis (wood waste to ethanol).

CalRecycle has spent over $1 million demonstrating the use of urban-derived yard trimmings as a feedstock for compost used on agriculture. Due to their efforts since the 1990s, as well as market development by the few composters able to compete with ADC, some agriculture markets do exist. Agriculture is currently the single biggest market for finished compost in California. The recent rise in fertilizer prices (which tend to track with natural gas prices) has also contributed to good agricultural markets for compost. The ability of compost and mulch to retain moisture in the soil (allowing a grower to use less water and less energy to pump it) may also be a future driver in the agricultural use of compost.

CalRecycle is developing a Life Cycle Analysis of Organics Diversion Alternatives. A study that was completed as part of that larger study documented that there are significant greenhouse gas (GHG) benefits from using compost on agricultural soils.

[20] Note that City policy does not allow yard trimmings collected by LASAN to be used as ADC.

The local market situation will be further stressed by two future events: 1) the continuing pressure at CalRecycle to minimize and eventually eliminate the diversion credit for the use of yard trimmings as ADC in landfill operations and 2) the closure of the Puente Hills Landfill. The former will place another 2,800 tpd of yard trimmings and mulch on the open market for Los Angeles County, 1,500 tpd for Orange County, 690 tpd for Riverside County, 460 tpd for San Bernardino County, and 145 tpd for Ventura County.[21] The closure of Puente Hills alone will release 1,200 tpd of yard trimmings to the open market. In total, approximately 5,600 tpd of yard trimmings will be available for a market that has been slow to expand in the past, due in part to the prevalence of cheap and available ADC markets. It is likely that region-wide market development efforts will be needed to ease the transition from reliance on ADC. Jurisdictions in areas without access to ADC markets do not report difficulty marketing recovered organic products. However, the development of steady agricultural markets for yard trimmings and mulch, and yard trimmings containing food scraps for compost may take years to fully develop.

4.2.1.1 Market Development - Yard Trimmings

Opportunities for development of markets for yard trimmings must include the following:

1. **Reduce Contamination.** Increase outreach efforts to educate City residents about acceptable and unacceptable materials for the green bin program. This effort will lead to a reduction in contamination, improved handling of the material during processing, a better compost product, improved marketability, and lower production cost.
2. **Support Ongoing Outreach Efforts.** CalRecycle has been holding a number of workshops highlighting the benefits of recovered organics on agricultural soils. To support the ongoing outreach efforts, the City can work with CalRecycle, the local Resource Conservation Districts, and University Extension agents to support and expand these efforts.
3. **Enhanced Organics Marketing Plan.** To enhance its marketing efforts, the City can undertake a written organics marketing plan that provides a detailed strategy for managing the increased volumes of organics to be diverted. The City can continue investigating how to access agricultural and horticultural markets for compost and mulch.
4. **Adopt Compost Use Specifications.** The City can adopt or adapt existing CalTrans specifications for using compost and mulch in all City public works projects (such as erosion control and stormwater management).
5. **Compost Use in New Development.** The City can also consider adopting a compost use requirement for any new residential or commercial development or re-development.

[21] Source: CalRecycle Disposal Reporting System, 2007.

6. **Increased use by residents.** Enhanced outreach and education of the residents of Los Angeles related to free pick-up of mulch and compost at the City's eleven mulch give-away sites.[22]

4.2.2 Food Scraps with Yard Trimmings

Food scraps are one of the largest untapped materials in the California waste stream. How food scraps are diverted and processed depends on the source. Many jurisdictions are adding residential food scraps to their residential curbside yard trimmings collection programs. Co-collected food scraps and yard trimmings must go to a composting facility that is permitted to accept food scraps. Currently, only about 10 to 15 percent of the existing composting facilities in California are permitted to accept food scraps, but this is changing rapidly. In addition, CalRecycle is currently examining the scientific basis for requiring food scraps to be processed at the highest tier-composting permit.[23] A number of Notification-tier facilities are successfully using a Research Notification to allow them to accept food scraps while they process the higher tier permit. The addition of residential food scraps to residential yard trimmings would have a significant diversion potential (for the residential sector).

4.2.2.1 Market Development – Food Scraps with Yard Trimmings

Once food scraps are added to residential curbside collection, they can no longer be used as ADC or mulch. If they are to be composted, they typically need to be received at a composting facility with a permit to accept food scraps. As mentioned in Section 4.2.2 Food Scrap with Yard Trimmings, only about 10 to 15 percent of the facilities in California are currently permitted to accept food scraps.

The recommended market development required to accommodate the addition of residential food scraps to residential yard trimmings collection are similar as those listed in Section 4.2.1.1 for overall yard trimmings market development, with the following additions:

1. If the addition of food scraps in the green bin is implemented citywide, the City must undertake a comprehensive outreach and education program to encourage residents to reduce contamination and increase participation. This will result in a cleaner feedstock material for processing and a better final product for the markets.
2. The City should support efforts at the State level to allow all composting facilities to accept food scraps for composting (not only those permitted at the highest tier). This will increase the options for City-collected organics.

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[22] Boyle Heights, East Los Angeles, Elysian Valley, Lakeview Terrance, Lincoln Heights, North Hills, North Hollywood, San Pedro, Sun Valley, Van Nuys, West Los Angeles.

[23] CalRecycle permits composting facilities according to different "tiers", based on the throughput of the facility and the types of materials processed. The lowest tier (requiring the least regulation) is the "Exempt" tier, followed (with increasing regulation) by the "Notification," "Registration," and "Full Solid Waste Facility Permit" tiers. "Research Notification" is a special designation for facilities permitted under the Notification tier that are testing composting methods. These provisions are described in the California Code of Regulations, Title 14, beginning with Section 17850.

4.2.3 Food Scraps

The addition of food scraps to yard trimmings-only composting facilities is seen by some as improving the quality of the final compost product. Adding food scraps may also reduce the amount of water required during the composting process.

This improved compost quality by the introduction of food scraps as feedstock has been documented by two of the largest composters of food scraps in the State: Jepson Prairie Organics (a division of Recology, formerly Norcal Waste Systems, Vacaville) and Community Recycling and Resource Recovery (Lamont). Community Recycling has been successfully using their compost product on a variety of agricultural crops in the San Joaquin Valley including cotton, citrus, strawberries, almonds, and alfalfa.

Some food scraps (predominantly commercial, industrial, or institutional) may be collected separately in great enough quantities to be used for anaerobic digestion. In some cases, the food scraps may be co-digested using existing digester capacity at wastewater treatment plants, or it may be digested by stand-alone digesters or through the wastewater collection system through residential garbage disposal units. It is unclear whether or not the "residue" from anaerobic digestion (often called "digestate"[24]) will need to be composted or will be able to be directly applied to agricultural land or otherwise beneficially reused. The end use of material that has been anaerobically digested will depend on the quality of the material (source separated or commingled) and the specific type of digester (high solids versus low, mesophilic versus thermophilic, etc.).

4.2.3.1 Market Development – Food Scraps

The required market development strategies for food scraps are similar to the recommendations for yard trimmings discussed in Section 4.2.2.1 with the following additions:

1. The City can advocate for additional markets for foods scraps by participating in CalRecycle's discussions on anaerobic digestion.
2. The City is studying the potential to include pre-processed food scraps at its wastewater treatment plants.

[24] Digestate is solid material remaining after the anaerobic digestion of a biodegradable feedstock.

The following chart describes the different organic feedstocks, processing techniques and end uses.

Feedstock	How Processed	End Use
Yard Trimmings	Chipped and/or ground; Composted	Biomass Fuel ADC Colored Mulch[25] Direct Land Application Mulch Compost Feedstock Co-compost Bulking Agent
Yard Trimmings co-collected with Food Scraps	Chipped and/or ground; Composted	Compost
Food Scraps	Composted Digested	Compost Biogas and Digestate

4.3 Additional Commodities Produced by New Policies and Programs

The policy, program, and facility scenarios under consideration for SWIRP are predicted to generate a significant increase in diverted material that must find adequate markets in order for the master plan to be successful. Market capacity to accommodate the increased supply of diverted materials will come from utilizing the existing markets, expanding the markets already in place, or from creating new markets, and likely will include all three.

The following additional tonnages associated with implementation of SWIRP policies, programs, and facilities will need to find or develop markets:

- Approximately 800,000 to 1,000,000 tons per year of additional traditional commodity recyclables (paper, glass, metals, plastic, and similar products)
- Approximately 200,000 to 550,000 tons per year of additional organics (yard trimmings, food scraps, and similar materials)
- Approximately 60,000 tons per year of additional inerts

These materials will be processed by a variety of facilities including Clean MRFs, MMP facilities, C&D MRFs, yard trimmings chipping and grinding, yard trimmings (with food scraps) composting, and alternative technologies.

[25] Colored mulch is created from wood waste that has been dyed for use in decorative landscaping.

Section 5 Facility Aesthetics

It is important to integrate each facility into the community it serves, both functionally and aesthetically. Further studies will be required to design, permit, and construct facilities, but certain design and operation philosophies and considerations can be applied to help integrate any structure into its neighborhood. Some communities and jurisdictions even have a set of aesthetic guidelines for new buildings to promote a sense of community and harmony among buildings. The following are typical design philosophies used to integrate solid waste facilities within the community and neighborhood they are to be built in:

- **Traffic** – Site location, off-site routes, and ingress and egress plans should be chosen to work with existing traffic patterns and limit the potential traffic burden. Facilities should also be designed to screen large scale operations from public view and to provide efficient design and operation to minimize the amount of vehicles waiting in queue and to ensure that queuing does not occur on public roadways.
- **Building size** – Solid waste facilities generally require a large clear floor space with a high roof clearance, so several design approaches are used to minimize or reduce the visual impact of the facility. These approaches can include designing the facility to blend in with nearby buildings, identifying highways, roads and other important vantage points, and using landscape and other screens to protect the neighbor's view of the facilities.
- **Noise** – Sites should be arranged to minimize the time trucks spend idling in queue, to provide screens and landscaping that diffuse sound, and provide onsite parking as a buffer zone for sound. Operation and process noises that occur inside the facilities can be minimized by fully enclosing the building, orienting openings to face screens, and lining or insulating buildings to reduce sound.
- **Odor, dust, litter, and animal control** – Building design should include controls for reducing dust, while site design should consider prevailing wind conditions and sensitive neighbors. Proper material storage and cleaning can prevent odor and reduce the possibility of vermin (rodents and birds).
- **Community Involvement** – Projects can also increase their appeal to the community by including an education/information center, which would be capable of holding community meetings, educating citizens about recycling, and providing tours to schools. Providing a sustainable site, which may include Leadership in Energy and Environmental Design (LEED) certification, may also help promote the facility in the community.

Currently, there are several solid waste facilities designed to blend into the surrounding land uses that are operating successfully within the region, including the Rainbow Disposal MRF in Huntington Beach and the Puente Hills MRF in Los Angeles County. As existing facilities show, including desired design features and considering neighborhood aesthetics for solid waste facilities can help ensure that they become an asset to the community. A detailed discussion concerning aesthetics and community integration and a description of the Rainbow Disposal and Puente Hills facilities can be found in **Attachment D-4: Facility Aesthetics**.

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Attachment D-1 Waste Stream Analysis

Policy and Program Scenario Diversion and Disposal Estimates Using 2010 Projected Tonnage

Source: City of Los Angeles Zero Waste Planning Model – Final Results, January 2013

Tons Diverted and Disposed in Each Scenario - 2030

Results

	Single Family		
	Tons Disposed	Tons Diverted	Diversion Rate
Scenario 1	856,944	1,284,385	60%
Scenario 2	650,256	1,491,073	70%
Scenario 3	478,312	1,663,018	78%
Scenario 4	611,073	1,530,256	71%
Scenario 5	448,636	1,692,694	79%

	Multi Family		
	Tons Disposed	Tons Diverted	Diversion Rate
Scenario 1	537,190	159,656	23%
Scenario 2	415,566	281,280	40%
Scenario 3	290,718	406,128	58%
Scenario 4	387,505	309,341	44%
Scenario 5	270,493	426,354	61%

	Commercial		
	Tons Disposed	Tons Diverted	Diversion Rate
Scenario 1	1,649,062	3,662,047	69%
Scenario 2	1,217,933	4,093,176	77%
Scenario 3	834,526	4,476,582	84%
Scenario 4	1,169,252	4,141,857	78%
Scenario 5	812,197	4,498,911	85%

	Total (w/o C&D)		
	Tons Disposed	Tons Diverted	Diversion Rate
Scenario 1	3,043,196	5,106,088	63%
Scenario 2	2,283,754	5,865,530	72%
Scenario 3	1,603,556	6,545,728	80%
Scenario 4	2,167,830	5,981,454	73%
Scenario 5	1,531,326	6,617,959	81%

	C&D		
	Tons Disposed	Tons Diverted	Diversion Rate
Scenario 1	78,741	2,871,920	97%
Scenario 2	34,017	2,916,644	99%
Scenario 3	16,473	2,934,188	99%
Scenario 4	34,017	2,916,644	99%
Scenario 5	16,473	2,934,188	99%

	Total		
	Tons Disposed	Tons Diverted	Diversion Rate
Scenario 1	3,121,937	7,978,008	72%
Scenario 2	2,317,771	8,782,174	79%
Scenario 3	1,620,029	9,479,916	85%
Scenario 4	2,201,847	8,898,098	80%
Scenario 5	1,547,799	9,552,146	86%

Rounded Results

	Single Family		
	Tons Disposed	Tons Diverted	Diversion Rate
Scenario 1	857,000	1,284,000	60%
Scenario 2	650,000	1,491,000	70%
Scenario 3	478,000	1,663,000	78%
Scenario 4	611,000	1,530,000	71%
Scenario 5	449,000	1,693,000	79%

	Multi Family		
	Tons Disposed	Tons Diverted	Diversion Rate
Scenario 1	537,000	160,000	23%
Scenario 2	416,000	281,000	40%
Scenario 3	291,000	406,000	58%
Scenario 4	388,000	309,000	44%
Scenario 5	270,000	426,000	61%

	Commercial		
	Tons Disposed	Tons Diverted	Diversion Rate
Scenario 1	1,649,000	3,662,000	69%
Scenario 2	1,218,000	4,093,000	77%
Scenario 3	835,000	4,477,000	84%
Scenario 4	1,169,000	4,142,000	78%
Scenario 5	812,000	4,499,000	85%

	Total (w/o C&D)		
	Tons Disposed	Tons Diverted	Diversion Rate
Scenario 1	3,043,000	5,106,000	63%
Scenario 2	2,284,000	5,866,000	72%
Scenario 3	1,604,000	6,546,000	80%
Scenario 4	2,168,000	5,981,000	73%
Scenario 5	1,531,000	6,618,000	81%

	C&D		
	Tons Disposed	Tons Diverted	Diversion Rate
Scenario 1	79,000	2,872,000	97%
Scenario 2	34,000	2,917,000	99%
Scenario 3	16,000	2,934,000	99%
Scenario 4	34,000	2,917,000	99%
Scenario 5	16,000	2,934,000	99%

	Total		
	Tons Disposed	Tons Diverted	Diversion Rate
Scenario 1	3,122,000	7,978,000	72%
Scenario 2	2,318,000	8,782,000	79%
Scenario 3	1,620,000	9,480,000	85%
Scenario 4	2,202,000	8,898,000	80%
Scenario 5	1,548,000	9,552,000	86%

Note: The diversion potential of each policy and program was estimated based on data from comparable policies and programs implemented in other communities, research based on national studies and City pilot data, and educated estimates based on experiences with other similar programs. The diversion rates presented in this waste stream analysis assume full implementation of the policies and programs all at once. However, new policies and programs will be developed over time through additional research, testing, and pilot programs before full-scale implementation. Several policies will require new ordinances which will require City Council action and time to implement. This table presents the tons disposed, tons diverted, and the diversion rate by scenario. Descriptions and diversion assumptions for each of the policies and programs included in each scenario are included in *Appendix A Policy and Program Analysis*.

Attachment D-2 Facility Descriptions

Facility Types

During the SWIRP model planning meeting held in August 2008, the preliminary list of facility types to be profiled in the material flow model was identified. Based on the discussion at the model planning meeting held on January 29, 2009, a final list of facilities was selected for inclusion in the model. These facility types are highlighted in yellow. Facilities were categorized by major facility type.

Preliminary List (August 2008)
MRFs:
1. Clean
2. Mixed Materials Processing (dirty wet MRF)
3. Dirty dry MRF
C&D Processing:
4. C&D Mixed Processing
5. Inerts (also final destination)
Composting:
6. Mulching (current—yard trimmings only)
7. Aerobic composting of yard trimmings
8. Aerobic composting of yard trimmings and other organics
9. Composting
Anaerobic digestion:
10. Clean organics
11. Wet residual waste
12. Dry residual waste
Alternative Technology:
13. Advanced thermal recycling
14. Gasification
15. Plasma arc gasification
16. Pyrolysis
17. Hyrdolysis
18. Biomass-to-energy
Wood waste
Wood plus other biomass

Preliminary List (August 2008)- continued
HHW:
19. S.A.F.E. Centers
Reuse centers:
20. Reuse/Resource recovery center (small scale self-haul MRF with reuse)
21. Used item stores (e.g., Goodwill)
Transfer stations:
22. Residual waste
End-use markets:
23. Compost markets
24. Energy markets – gas or electricity
25. Commodities markets
26. Beneficial reuse of ash
27. Building materials (road base)
Additional Facilities added to the Model (January 2009)
Preprocessing prior to Alt Tech ATR
Preprocessing prior to Alt Tech Bio
Preprocessing prior to Alt Tech Thermal
Preprocessing prior to Alt Tech Chemical
Preprocessing prior to Alt Tech Bio and Alt Tech Thermal
Preprocessing prior to Alt Tech Bio, Alt Tech Thermal and Alt Tech ATR
Dismantling facility

Facility Descriptions

After the final list of facilities was determined, profiles for each of the facilities were made. These profiles include examples of other facilities of this type. These descriptions are not intended to provide definitive evidence of what is feasible in the City and the surrounding area, but are included to provide information and background for these facility types. Cost information was provided, when possible, to allow for comparison, and actual costs, processing capacities, and performance might vary significantly from what is presented below. Further information was collected on these facilities after their selection and initial descriptions were determined.

Type: Clean MRF

Examples:
1. Sun Valley Paper Stock, Sun Valley, CA, USA
2. City Fibers, North Hills, CA, USA
3. Bestway, Los Angeles (downtown), CA, USA

Feedstock: Source separated recyclables, especially curbside (Blue Bin)

Description: Sorts recyclable materials into commodities, consolidates or bales them, and sells and ships to markets. Contaminants trucked to local landfills.

Capacity Range: 50-600 tpd

Process: Material is dumped on a tipping floor, and then pushed by loaders to feed conveyors. Material is processed through dual stage screens to separate two dimensional items, typically fiber (OCC, ONP, mixed paper), containers, and small contaminants. Fiber is hand sorted off elevated conveyor platforms into commodities and dropped in bunkers below. Containers are processed through ferrous magnets, eddy-current magnets, and hand sorting. The small contaminant stream (dirt, rocks, broken glass and ceramics, bottle caps) may be further processed by optical/pneumatic sorting to recover broken glass. Sorted material is moved from bunkers and baled (fiber, plastic, metal) or loaded directly into roll-off trucks (glass).

Residues: Garbage, food scraps, auto parts, yard trimmings, wood, dirt and other inerts, glass shards

Products: Traditional commodity recyclables (OCC, ONP, mixed paper, aluminum cans, bi-metal cans, HDPE, PET, mixed plastics, HDPS, glass beverage bottles)

Markets: Domestic and overseas mills and manufacturing plants (i.e., paper mills, bottle manufacturing plants, aluminum smelters)

Landfill Diversion:

	Optimal	Average	Poor
Overall Diversion (%)	90+	80	70-

Level of Commercialization/Industry Experience:
- Approximately 25 years operational experience
- Hundreds of plants in U.S. alone
- High level of commercialization and refinements

Status of Development:
Mature: **X** Growth: Infancy: Demonstration:

Economics:
Capital Cost: $25,000 per ton of capacity
Tipping Fee: pays $10-20/ton (depending on quality of feed stock and revenue share)

Reliability/Confidence in Data:
High: **X** Medium: Low:

Caveats/Comments:
- Facility performance intimately tied to performance of curbside program and education of residents.
- Cost of program all in containers and collection.

Type: Mixed Material Processing Facility (Dirty MRF, MMP)

Examples:

1. Athens MRF, City of Industry, CA, USA
2. Rainbow Disposal, Huntington Beach, CA, USA
3. CVT, Anaheim, CA, USA
4. Community Recycling, Sun Valley, CA, USA
5. City Terrace Recycling, Los Angeles, CA, USA

Feedstock: Residual waste from residential and commercial generators
Materials Desired: Residual waste from residential and commercial sources
Problem Material: Concentrated loads of wet materials such as restaurant food scraps, construction and demolition materials

Delivery Assumptions: Local collection vehicles, rear loading, side-loading and front-loading, vehicles deliver residual waste directly to site

Description: Removes recyclable material from residual waste. Commodities that are removed are stored in boxes or bunkers and then baled or consolidated and sold and shipped to markets. Residues are shipped to local landfills.

Capacity Range: 200 – 400 tpd

Process: Residual waste from residential and commercial collection vehicles is tipped onto a floor. Material is sorted on the floor to remove larger items such as dimensional wood, metal, or large pieces of plastics that might clog or interrupt sort lines. Loaders or grapples then load a conveyor or surge hopper. In most cases, a mechanical device is used to open bags and containers prior to screening and sorting. Material is processed through dual stage screens to separate fiber (OCC, ONP, and mixed paper), containers, and small contaminants. Fiber is hand sorted off elevated conveyor platforms into commodities and dropped into bunkers below. Containers are processed through ferrous magnets, eddy-current magnets, and hand sorting. The small contaminant stream (dirt, rocks, broken glass and ceramics, bottle caps) may be further processed by optical/pneumatic sorting. Sorted material is moved from bunkers and baled (fiber, plastic, metal) or loaded directly into roll-off trucks (glass). The remaining material is shipped to a local landfill.

Residues: Garbage, food scraps, yard trimmings, electronic scrap, hazardous waste, wood, dirt and other inerts

Products: Traditional commodity recyclables (OCC, ONP, mixed paper, aluminum cans, metal cans, HDPE, PET, mixed plastics, HDPS, glass bottles) and ADC.

Markets: Domestic and overseas mills and manufacturing plants (i.e. paper mills, bottle recycling plants, smelters)

Landfill Diversion:

	Optimal	Average	Poor
Overall Diversion (%)	30	15	5
Overall Disposal (%)	70	85	95

Level of Commercialization/Industry Experience:

- Approximately 20 years operation experience
- Hundreds of plants in U.S. alone
- High level of commercialization and refinements

Status of Development:
Mature: **X** Growth: Infancy: Demonstration:

Economics:
Capital Cost: $30,000 to $50,000 per ton of capacity
Tipping Fee: $40 - $60 Varies depending on quality of feedstock, revenue from recyclables, transportation cost

Reliability/Confidence in Data:
High: **X** Medium: Low:

Caveats/Comments:

- Facility performance tied to collection and delivery system.
- City offers a certification program for mixed material processors.

Type: C&D Mixed Processing

Examples:

1. Bradley Landfill and Recycling Center, Sun Valley, CA, USA
2. Construction & Demolition Recycling, South Gate, CA, USA
3. Direct Disposal, Los Angeles, CA USA
4. Downtown Diversion, Los Angeles, CA, USA
5. Looney Bins, Sun Valley, CA, USA

Feedstock: Mixed construction and demolition materials from construction sites or remodels
Materials Desired: Loads with wood, cardboard, plastics, dry wall, concrete, dirt, asphalt shingles or other roofing materials
Problem materials: Asphalt shingles, roofing with tar paper and wood attached, wet/dry wall material

Delivery Assumptions: Receives drop-box/roll-off containers and contractor delivered materials; self haulers

Description: Removes recyclable and reusable material from mixed construction and demolition debris, including OCC, mixed paper, plastics, wood, gypsum board, scrap metals, soil, asphalt, brick, and concrete

Capacity Range: 50 - 500 tpd

Process: Mixed C&D loads are delivered to processing yards for sorting of the recyclable materials. Materials are tipped and floor sorted to remove bulky or large items (such as carpet, plastic pipe, large pieces of dimensional wood and steel). Large pieces of OCC and metals may also be removed at this time. Material then may be processed through screens to remove inert debris, including rocks, dirt, grit, glass, soil, and small items. The screened material may pass under a magnetic separator and crusher to create a uniform size. The material passing over the screens is conveyed to sorting lines to remove contaminants and separate materials; primarily wood, paper, plastic, and metal. Materials including gypsum board, soil and rock, and concrete may be ground for conversion into ADC for landfills. Remaining residual waste and contaminants are shipped to landfills. Sorted material is baled (fiber, plastic, metal) or can be loaded directly into trucks for transportation to recycling facilities.

Residues: Residual waste, small plastics, paper, other organics

Products: Steel, aluminum, construction inerts, soil and stone, asphalt, concrete, glass, cardboard, plastic, tile, brick, and possibly gypsum board

Markets: Construction (aggregate or fill, asphalt, concrete, soil and stone, brick, tile), foreign and domestic manufacturing (steel, aluminum, paper, cardboard, glass), landfills for ADC.

Landfill Diversion:

	Optimal	Average	Poor
Overall Diversion (%)	80	70	50-
Overall Disposal (%)	20	30	50+

Level of Commercialization/Industry Experience:

- Over 30 years operation experience
- Hundreds of plants in U.S. alone
- High level of commercialization and refinements

Status of Development:
Mature: **X** Growth: Infancy: Demonstration:

Economics:
Capital Cost: $15,000 to $30,000 per ton of capacity
Tipping Fee: $30 to $50/ton (depending on quality of feed stock and revenue)

Reliability/Confidence in Data:
High: **X** Medium: Low:

Caveats/Comments:

- C&D materials composition can vary depending on demographics
- Some areas charge more for C&D materials to be landfilled to encourage recycling
- Cost of program covered by cost to contractors and developers
- The City offers a certification program to mixed C&D recyclers

Type: Aerobic Yard Trimmings Composting/Aerobic Organics Composting

Examples:

1. Victor Valley Regional Compost Facility (formerly California Biomass), Victorville, CA, USA
2. Community Recycling, Lamont, CA, USA
3. Griffith Park Composting, Los Angeles, CA, USA
4. Tierra Verde Industries, Irvine, CA, USA

Feedstock: Depending on facility permit requirements, feedstocks can include: yard Trimmings (residential green bin or source separated); food scraps; manures; biosolids

Description: Biological decomposition of organic materials (i.e., yard trimmings, food scraps, and animal manure) by microorganisms in an aerated environment to produce a compost product which is beneficially reused as a soil amendment.

Capacity Range: 100-3,000 tpd

Process: *Traditional Windrow Method*: Composting is carried out in windrows with periodic turning for about 120 days. A compost pile requires proper nutrients, aeration, moisture, and temperature to carry out the decomposition process. *Aerated Static Piles (ASP)*: An enhanced composting method in which the windrow piles are aerated from a pipe gallery below. These operations may be enclosed in a building with the air emissions from the windrow piles are treated via a biofilter. *Covered Aerated Static Piles*: A variation on the traditional ASP involves covering the piles with a textile blanket to allow collection and treatment of air emissions through a biofilter.

Residues: Primarily film plastic, glass shards, paper scraps, and other contaminants from the green bin program

Products: Soil Amendments

Markets: Local nurseries, building contractors, gardeners, landscapers, and the public

Landfill Diversion:

	Optimal	Average	Poor
Overall Diversion (%)			
Clean Green	99	95	90
Curbside	95	90	≤80

Level of Commercialization/Industry Experience:

- Approximately 30 years operational experience
- Hundreds of plants in U.S. alone
- High level of commercialization and refinements

Status of Development:

Mature: **X** Growth: Infancy: Demonstration:

Economics:

Capital Cost: $3,000 to $17,000 per ton of capacity

Tipping Fee: $40-60/ton (low end for traditional windrows, high end for covered ASP)

Reliability/Confidence in Data:

High: **X** Medium: Low:

Caveats/Comments:

- Traditional windrow composting is a mature method to process yard trimmings. Covered ASP is growing due to pending regulations requiring air emission control[26]
- LASAN green bin materials are prohibited from being used as ADC and must be composted or mulched

[26] South Coast Air Quality Management District Rules 1133, 1133.1 and 1133.2 (accessed October 1, 2013):
http://www.arb.ca.gov/DRDB/SC/CURHTML/R1133.PDF
http://www.arb.ca.gov/DRDB/SC/CURHTML/R1133-1.PDF
http://www.arb.ca.gov/DRDB/SC/CURHTML/R1133-2.PDF

Type: Yard Trimmings Chipping, Grinding and Mulching

Examples:

1. Community Recycling, Sun Valley, CA, USA
2. Harbor Mulching Facility, CA, USA
3. Lopez Canyon Environmental Center, Los Angeles, CA, USA
4. North Hills Recycling, Granada Hills, CA, USA

Feedstock: Source separated yard trimmings from residential green bins, landscapers, gardeners, tree trimmers

Description: Chips and grinds material to create mulch. Curbside yard trimmings often sorted to remove contamination prior to grinding

Capacity Range: 100-1,000 tpd

Process: Yard trimmings received and processed, typically in outdoor facilities, contaminants are pulled out by workers on the deck. Clean materials from landscapers, gardeners, and tree trimmers are ground in tub grinders, screened and stored pending sale or distribution. Curbside yard trimmings, which may have more contamination, are often screened, sorted for contaminant removal on an elevated sorting line, then ground and screened again.

Residues: Contamination in curbside material: plastic, rubber hoses, paper, residual waste, metal, glass, palm fronds

Products: Wood chips, the larger woody materials created by the grinding process, are sold or distributed for use as ground cover or sold as boiler fuel for biomass facilities. "Fines", the smaller materials screened out from the wood chips, are used for composting.

Markets: Local biomass power plants, composting operations, nurseries, developers, residential consumers

Landfill Diversion: Closely related to amount of curbside yard trimmings vs. "Clean Green"

	Optimal	Average	Poor
Overall Diversion (%)	99	95	<90

Level of Commercialization/Industry Experience:

- Over 30 years of experience
- Over 20 permitted facilities in the region

Status of Development:

Mature: **X** Growth: Infancy: Demonstration:

Economics:

Capital Cost: $2,600 to $3,600 per ton of capacity

Tipping Fee: $20-40/ton (depending on source and quality of feedstock)

Reliability/Confidence in Data:

High: **X** Medium: Low:

Caveats/Comments:

- Mulch from the LASAN curbside yard trimmings program is provided free to residents at mulch give away sites throughout the City

Type: Reuse Centers and Recovery Parks

Examples:

1. Cold Canyon Resource Recovery Park, San Luis Obispo, CA, USA
2. Recycle Town, Sonoma County, CA, USA
3. Urban Ore, Berkeley, CA, USA
4. Last Chance Mercantile, Monterey County, CA, USA
5. CHaRM (Center for Hard to Recycle Materials), Boulder, Colorado, USA

Feedstock: Varied, but typically: furniture, appliances, electronics, lumber, yard trimmings, recyclables, bicycles, clothing, inerts

Description: Typically an open area and/or warehouse where the public can drop-off and pick-up items for reuse or further processing for recycling

Capacity Range: 1-10 tpd

Process: Sites are designed with multiple drop-off areas or roll-off containers where the public places materials. Once truck-size lots accumulate, material is trucked to processing facilities or disposed if no markets exist. Users may also pick up items or material such as used furniture, mulch, or lumber.

Residues: Material and items without markets

Products: Items for reuse and recycling

Markets: Yard trimmings processors, e-waste processors, the public, thrift stores, building contractors

Landfill Diversion:

	Optimal	Average	Poor
Overall Diversion (%)	100	95	<90

Level of Commercialization/Industry Experience:

- Decades of experience at the more significant facilities

Status of Development:

Mature: **X**[27] Growth: Infancy: Demonstration:

Economics:

Capital Cost: $50,000 per ton of capacity

Tipping Fee: $0/ton (Generally offered free to the public through subsidy by local jurisdiction; costs $50-100/ton)

Reliability/Confidence in Data:

High: **X** Medium: Low:

Caveats/Comments:

- Addresses self-haul loads, reuse and "hard to recycle" materials
- Favored in rural areas where there are more self-haulers, and traditional recycling and reuse programs are not available

[27] Resource Recovery Centers located at disposal facilities have existed in California for over 20 years. However, there are relatively few of these facilities in the Los Angeles area. The Allan Company operates the recycling facility at the City of Santa Monica Transfer Station. This facility includes a drop-off area for recyclable materials from the public (including metals, plastic, glass, and paper). It is more common for salvage operations in Los Angeles to be located off-site from disposal facilities. There are several architectural salvage facilities operating in the Los Angeles region, including Silverlake Architectural Salvage, Pasadena Architectural Salvage, Freeway Building Materials, Santa Fe Wrecking & Salvage, Habitat for Humanity, and Cleveland Wrecking. Materials, such as doors, windows, tubs, sinks, brick, tile and other salvaged items can be delivered by the public for drop-off, buy-back or consignment.

Type: Biomass Power Plant

Examples:

1. Madera Power LLC, Madera, CA, USA
2. Colmac Energy, Mecca, CA, USA
3. AES Delano, Delano, CA, USA

Feedstock: Ground wood waste, and yard trimmings, contaminated paper

Description: Power plants, typically in the 20-30 megawatt (MW) size that utilize wood chips and other biomass materials as a fuel to generate steam. Steam produced in the boiler is used in a steam turbine to produce electricity.

Capacity Range: 200-1,000 tpd

Process: Wood chips and other biomass materials are received in transfer trucks, dumped and stored in large open yards covering several acres. The material is then metered into the gasification or combustion units by feed conveyors. Heat from the combustion unit (such as a fluidized bed boiler) or gasifier unit is used to heat water to produce steam. Steam produced in the boiler is used in a steam turbine to produce electricity that is sold into the local power grid.

Residues: Ash, if unacceptable for soil conditioner

Products: Electricity, ash used for soil conditioner

Markets: Power utilities or large industrial users of energy. Local farms that use the ash as a soil conditioner.

Landfill Diversion:

	Optimal	Average	Poor
Overall Diversion (%)	99+	98	95

Level of Commercialization/Industry Experience:

- Over 40 years of experience
- 28 plants statewide
- Two facilities in Southern California

Status of Development:

Mature: **X** Growth: Infancy: Demonstration:

Economics:

Capital Cost: $100,000 per ton of capacity

Tipping Fee: pays $25 bone dry/ton ($15-20/ton "as received" depending on moisture content of feedstock)

Reliability/Confidence in Data:

High: **X** Medium: Low:

Caveats/Comments:

- Older facilities may need major retrofits – many facilities built in the 1970s
- Rising fuel cost for long haul to these remote plants impacts economics
- Typically, payment by the plant ($25 per bone dry tons) offsets trucking so suppliers usually break even
- Beneficial use of ash as soil conditioners provide near 100% diversion. Biomass facilities are able to market their ash. However, if no market exists and ash must be landfilled, this results in residues of approximately 7% by weight.

Type: Anaerobic Digestion (dry residual waste)

Examples:

1. DRANCO, Belgium
2. Valorga, Spain

Feedstock: Organics and residual waste

Description: Controlled, in-vessel decomposition of organic material by microbes producing biogas for heating and power generation, and a semi-solid digestate residual that can be used as compost feedstock. Solids are as high as 40% in the digester, hence the term "high solids" digesters.

Capacity Range: 200-500 tpd

Process: Material is typically screened or otherwise processed for contaminant removal, then metered into digester tanks where microbes digest the organics in the absence of oxygen and produce biogas which is collected off the top of the tank. The semi-solid digestate, comprised of less digestible material, is collected and used as compost feedstock in an aerobic composting operation. The biogas may be converted into a vehicle fuel or used to produce electricity.

Residues: Contaminants sorted out of feedstock; and digestate if no market exists.

Products: Biogas for heating and power production; and digestate for compost feedstock

Markets: Utility companies, large industrial gas or steam users, composting operations, truck fleets

Landfill Diversion:

	Optimal	Average	Poor
Overall Diversion (%)	80	70	60

Level of Commercialization/Industry Experience:

- 10 years+ of experience at the more significant facilities

Status of Development:

Mature: Growth: **X** Infancy: Demonstration:

Economics:

Capital Cost: $100,000 to $200,000 per ton of capacity

Tipping Fee: $100-130/ton (varies depending on market for digestate, and value of electricity)

Reliability/Confidence in Data:

High: Medium: **X** Low:

Caveats/Comments:

- Mature technology for organic materials; emerging technology for residual waste
- Quality of feedstock important in overall facility performance
- Creates less gas and more digestate than the clean organics and wet residual waste digester

Type: Anaerobic Digestion (Organics and wet residual waste)

Examples:

1. UC Davis (Onsite Power), Davis, CA, USA
2. East Bay Municipal Utility District, Oakland, CA, USA
3. ArrowBio, Tel Aviv, Israel

Feedstock: Food scraps, yard trimmings, wet residual waste (from wet/dry collection programs)

Description: Controlled, in-vessel decomposition of organic material by microbes producing biogas for heating and power generation, and a semi-solid digestate residual that can be used as compost feedstock

Capacity Range: 200-500 tpd

Process: Material is typically screened or otherwise processed for contaminant removal, then metered into digester tanks where microbes digest the organics in the absence of oxygen and produce biogas which is collected off the top of the tank. The semi-solid digestate, comprised of less digestible material, is collected and used as compost feedstock in an aerobic composting operation. The biogas may be converted into a vehicle fuel or used to produce electricity.

Residues: Contaminants sorted out of feedstock; and digestate if no market exists

Products: Biogas for heating and power production; and digestate for compost feedstock

Markets: Utility companies, large industrial gas or steam users, composting operations, truck fleets

Landfill Diversion:

	Optimal	Average	Poor
Overall Diversion (%)	90	80	70

Level of Commercialization/Industry Experience:

- Decades of experience at the more significant facilities for biosolids
- Emerging for organics and residual waste

Status of Development:

Mature: Growth: **X** Infancy: Demonstration:

Economics:

Capital Cost: $100,000 to $200,000 per ton of capacity

Tipping Fee: $100-130/ton (varies depending on market for digestate, and value of electricity)

Reliability/Confidence in Data:

High: Medium: **X** Low:

Caveats/Comments:

- Mature technology for organic materials; emerging technology for residual waste
- Quality of feedstock important in overall facility performance

Type: Gasification/Plasma Arc Gasification

Examples:

1. Thermoselect, Chiba, Japan
2. Plasco (pilot plant), Ottawa, Ontario, Canada

Feedstock: Residual waste; industrial waste

Description: Thermal technology that converts residual waste into a synthesis gas which can then be sold as gas or converted to electricity

Capacity Range: 100-500 tpd

Process: Residual waste (sometimes supplemented with industrial waste and high Btu materials, such as plastics) is typically ground and fed to the converter units where heat breaks the material down to individual molecules (the synthesis or "syngas"). This gas is then cleaned and either sold to the local gas company or large industrial user or combusted in engines or turbines to generate electricity. The exhaust from the boiler is treated through a sophisticated air pollution control system.

Residues: Heavy metals and other contaminants from gas cleaning equipment

Products: Ferrous metal (salvaged up front by magnets), electricity or fuel, sulfur (agricultural grade), aggregate/ash (for construction industry or cement manufacturing)

Markets: Utility Companies, Construction industry, agriculture

Landfill Diversion:

	Optimal	Average	Poor
Overall Diversion (%)	100	99	75

Level of Commercialization/Industry Experience:

- Low – first North American demonstration plant just now coming online
- Experience over the last 10 years all overseas

Status of Development:

Mature: Growth: Infancy: **X** Demonstration:

Economics:

Capital Cost: $200,000 per ton of capacity

Tipping Fee: $120-200/ton (depending on fuel value of residual waste feedstock, technology, plant size, and value of electricity)

Reliability/Confidence in Data:

High: Medium: Low: **X**

Caveats/Comments:

- Opposition from environmental groups regarding potential health risks and environmental impacts still an issue
- If aggregate can be sold as cement additive or construction product, diversion can approach 100%; if not, diversion will be closer to 75-80%
- Tip fee heavily reliant on electricity value because plants achieve high levels of power output per ton of feedstock
- Data and experience will be stronger when Plasco's Ottawa plant is fully operational and can substantiate gas quality, power output, aggregate sale, and emissions control

Type: Hydrolysis (ethanol production)

Examples:

1. BlueFire Ethanol (under development), Lancaster, CA, USA

Feedstock: Yard trimmings and wood waste (C&D, residential green bin or source separated)

Description: Chemical or biological conversion of cellulose via hydrolysis to produce sugars, which are then fermented and distilled to produce fuel-grade ethanol

Capacity Range: 100-500 tpd

Process: Incoming yard trimmings and wood waste is ground and fed into the hydrolysis process where the cellulose and hemicellulosic[28] portions of the feedstock are converted to sugars via an acid process or an enzymatic process. The sugar water is then fermented (like beer) and finally distilled to pure alcohol (ethanol). The alcohol is then denatured by adding a small amount of gasoline and sold as fuel-grade ethanol.
In some processes, the portion of the feedstock that will not hydrolyze (primarily plant lignin) is captured, dried, and used as fuel in a boiler to generate a substantial portion of the energy consumed by the facility. Ash from the boiler is used as a soil amendment.
In the concentrated acid hydrolysis method, the acid is recovered and reused. Final neutralization of the sugar water results in the production of gypsum, which is sold into agricultural markets as soil conditioner.
One ton of incoming yard trimmings produces roughly 70 gallons of ethanol.

Residues: Primarily film plastic, paper, and other contaminants from the green bin programs

Products: Transportation fuel, soil amendments

Markets: Fuel blenders (that blend the ethanol roughly 1:10 with gasoline for the local market), Local farmers

Landfill Diversion:

	Optimal	Average	Poor
Overall Diversion (%)			
Yard trimmings	99	95	90
Wood waste	99	97	95

Level of Commercialization/Industry Experience:

- No commercial plants in the world to date
- First projects now in development in the U.S. supported by the US Department of Energy
- BlueFire project in Lancaster, California likely to be the first one in operation

Status of Development:

Mature: Growth: Infancy: **X** Demonstration:

[28] Any of several polysaccharides that are more complex than a sugar and less complex than cellulose, found in plant cell walls and produced commercially from corn grain hulls. Source: The American Heritage® Dictionary of the English Language, Fourth Edition copyright ©2000 by Houghton Mifflin Company. Updated in 2009. Published by Houghton Mifflin Company.

Type: Hydrolysis (ethanol production)
Economics: **Capital Cost:** Not available **Tipping Fee:** $0-10/ton (plants looking for free feedstock or to pay marginal price; costs not available)
Reliability/Confidence in Data: High: Medium: Low: **X**
Caveats/Comments: • Facility performance and economics look very promising giving rising costs of transportation fuel and need for domestic supplies of renewable fuel • Plants taking source separated material do not need a Solid Waste Facility Permit from CalRecycle if they can pass the 3-part test.[29] BlueFire was not required to obtain such a permit. However, in the future, if hydrolysis plants can accept organic residues as feedstock, then they will need this permit • Provides as alternative and very strong market for yard trimmings beyond the traditional compost markets • Tip fee heavily reliant on electricity value because plants achieve high levels of power output per ton of feedstock

[29] The "3-part test" requires that the materials be: 1) separated for reuse; 2) have less than 10% contamination; and 3) have less than 1% putrescible material. California Code of Regulations, Title 14, (14 CCR) Division 7, Chapter 3, Article 6.0 et seq. (commencing at section 17400).

Type: Pyrolysis

Examples:

1. IES (pilot plant), Romoland, CA, USA
2. Balboa Pacific (proposed pilot plant), San Diego, CA USA

Feedstock: Residual waste

Description: Thermal conversion process that, in the absence of oxygen, converts residual waste into a synthesis gas and a solid "char" product

Capacity Range: 100-500 tpd

Process: Residual waste is typically ground, dried to less than 10% moisture, and fed into the pyrolysis chamber through an air lock to keep air from entering the chamber. The resulting gas is combusted in a thermal oxidizer and the heat used to generate steam in a boiler. The steam can either be used for heat or injected into a turbine to generate electricity. The exhaust from the boiler is treated through a sophisticated air pollution control system.

Residues: Inert material, heavy metals, and other contaminants from gas cleaning equipment

Products: Electricity, char, gypsum

Markets: Utility companies, carbon black[30] manufacturers, asphalt paving, agriculture

Landfill Diversion:

	Optimal	Average	Poor
Overall Diversion (%)	90	85	80

Level of Commercialization/Industry Experience:

- Low. First demonstration plant in U.S. is performing test runs (IES – 50 tpd)

Status of Development:

Mature: Growth: Infancy: **X** Demonstration:

Economics:

Capital Cost: $200,000 per ton of capacity

Tipping Fee: $120-200/ton (depending on fuel value of residual waste feedstock, technology, plant size, and value of electricity)

Reliability/Confidence in Data:

High: Medium: Low: **X**

Caveats/Comments:

- Syngas has higher CH_4 content than gasification syngas and therefore can more easily be converted to fuel (liquefied natural gas (LNG) or compressed natural gas (CNG))
- Requires time to substantiate gas quality, power output, aggregate sale, and emissions control

[30] Any of a group of intensely black, finely divided forms of amorphous carbon, usually obtained as soot from partial combustion of hydrocarbons, used principally as reinforcing agents in automobile tires and other rubber products, but also as extremely black pigments of high hiding power in printing ink, paint, and carbon paper. Source: www.britannica.com (accessed October 1, 2013).

Type: Refuse-Derived Fuel Facility

Examples:

1. Honolulu, HI, USA (prepares feedstock for on-site combustion)
2. West Palm Beach, FL, USA (prepares feedstock for on-site combustion)
3. Hartford, CT, USA (prepares feedstock for on-site combustion)

Feedstock: Residual waste

Description: Physical technology which alters the physical characteristics of the residual waste feedstock. These materials may be separated, shredded, and/or dried in a processing facility. The resulting material is referred to as refuse-derived fuel (RDF). It may be densified or pelletized into homogeneous fuel pellets and transported and combusted as a supplementary fuel in utility boilers.

Capacity Range: 500 to 2000 tpd per processing line

Process: The RDF process typically includes thorough pre-separation of recyclables, shredding, drying, and densification to make a product that is easily handled. Initial processing includes field-based manual sorting and removal of white goods and other large ferrous materials. Glass and plastics are removed through manual sorting and by commercially available separation devices commonly found in MRFs or MMPs. This is followed by shredding to reduce the size of the remaining feedstock to about eight inches or less, for further processing and handling. Magnetic separators are used to remove ferrous metals. Eddy-current separators are used for aluminum and other non-ferrous metals. The resulting material contains mostly food scraps, non-separated paper, some plastics (recyclable and non-recyclable), yard trimmings, wood, and other materials. Reduction of about 10-20% of the incoming residual waste feedstock can be accomplished through initial RDF processes.

Residues: Non-processable materials, inerts, glass, and plastics.

Products: Shredded or pelletized fuel for combustion.

Markets: Waste-to-energy facilities, power plants, or other utility boilers.

Landfill Diversion: (assuming combustion included)

	Optimal	Average	Poor
Overall Diversion (%)	90	85	80-

Level of Commercialization/Industry Experience:

- Over 20 years of experience.

Status of Development:

Mature: **X** Growth: Infancy: Demonstration:

Economics: (assuming combustion included)
Capital Cost: $200,000 to $250,000 per ton per day of design capacity
Tipping Fee: $120 to $200/ton (depending on feedstock and revenues from energy sales)

Reliability/Confidence in Data:

High: **X** Medium: Low:

Caveats/Comments:

- Requires market for combustion.

Type: Steam Processing/Autoclaving

Examples:

1. Salinas Valley Solid Waste Authority CR3 Autoclave Pilot Facility (1-2 tpd), Salinas, CA, USA
2. World Waste of Anaheim Steam Classification (no longer operating), Anaheim, CA, USA
3. Sterecycle, Yorkshire, England (100,000 tpy)

Feedstock: Residual waste

Description: Physical technology which alters the physical characteristics of the residual waste feedstock. The materials are broken down into three (3) components which are easily separated through typical screening processes. The components include a "fine" fibrous biomass, slightly larger biomass materials mixed with contaminants and large materials including recyclables such as cans, melted bottles mixed with some large contaminants. Each component has diversion potential.

Capacity Range: 25 to 30 tons per load, potentially 150 tpd

Process: Steam processing takes raw residual waste (or residual waste with minimal processing) and subjects it to low or medium pressure steam in a closed, rotating pressure vessel. The high-temperature steam breaks down cellulosic materials and sterilizes the entire feed stream. Cans and bottles are de-labeled. Plastics typically are slightly melted, resulting in significant volume reduction. The residual waste stream is reduced in volume by about one third. The product material exits the steam pressure vessel or autoclave as a recyclable or usable fiber that can potentially be burned for energy or used to create a transportation fuel.

Residues: In-organic materials, small plastic, metals & glass.

Products: Cans and bottles for recycling; fiber for further processing through biomass-to-energy facilities, creation of biogas through anaerobic digestion or through a developing technology to produce bio-ethanol using a chemical/distillation process.

Markets: Domestic and oversees mills and manufacturing plants (i.e., bottle recycling plants, smelters) for recyclables; power utilities or industrial users for power produced; potential ethanol distributors for developing technology creating bio-ethanol products.

Landfill Diversion:

	Optimal	Average	Poor
Overall Diversion (%)	80 (based on biomass energy conversion & recycling)	50+ (based on volume reduction & recycling)	50-

Level of Commercialization/Industry Experience:

- Emerging technology for residual waste

Status of Development:

Mature: Growth: Infancy: Demonstration: **X**

Economics:

Capital Cost: Not enough information available.

Tipping Fee:

Reliability/Confidence in Data:

High: **X** Medium: Low:

Caveats/Comments:

- Requires market for combustion, anaerobic digestion or chemical/distillation process to handle and create marketable/divertible materials.

Type: Waste-to-Energy

Examples:

1. Commerce Refuse to Energy, City of Commerce, CA, USA
2. Southeast Resource Recovery Facility (SERRF), Long Beach, CA, USA

Feedstock: Unsorted/mixed residential (black bin), and commercial residual waste hauled directly from collection routes and/or residual waste from MRFs, MMPs, residual organic waste from other processes
Desired Materials: Residual waste from residential and commercial sources
Problem Materials: Inert materials; industrial waste; ashes and liquids

Delivery Assumptions: Material delivered from front and side loading trucks or transfer trailers

Description: Waste-to-energy facility using combustion of carbon based material to produce energy. Inorganic material will be contained in the ash residue. Exhaust gas is treated in emission control systems before being released into the atmosphere.

Capacity Range: 500 – 2000 tpd

Process: Materials are conveyed or loaded into feed hoppers that complete combustion of carbon based material in an oxygen rich atmosphere (oxygen level above chemically balanced air-fuel requirement for combustion) with high air to fuel ratios. Inorganic material is converted to ash and flue-gas is composed primarily of carbon dioxide and water. The hot flue gas flows through a boiler, where steam is produced. Steam may be used directly or for driving a steam turbine generator to generate electricity. Cooled exhaust gas flows through emissions control systems before being exhausted through stacks into the atmosphere. The fly ash and bottom ash are often mixed. After treatment, the remaining ash is typically disposed in landfills or can be reused as landfill cover, processed for road base or possibly other beneficial uses.

Residues: Bottom ash, fly ash, heavy metals and other contaminants from gas cleaning equipment

Products: Steam, electricity, bottom ash/fly ash, iron, steel, non-ferrous metal, metal oxides.

Markets: Construction (bottom ash as road aggregate), domestic and foreign industry (steel, iron, other metal)

Landfill Diversion:

	Optimal	Average	Poor
Overall Diversion (%)	95-96	90	80-
Overall Disposal (%)	4-5	10	20+

Level of Commercialization/Industry Experience:

- Began operating in the US in 1975
- 86 plants in 25 states
-

Status of Development:
Mature: **X** Growth: Infancy: Demonstration:

Economics:
Capital Cost: $200,000-250,000 per ton capacity
Tipping Fee: $120 to $200/ton (depends on feedstock, revenues from sale of energy by products)

Reliability/Confidence in Data:
High: **X** Medium: Low:

Type: Advanced Thermal Recycling

Examples:

1. TREA Breisgau Advanced Thermal Recycling Facility, Freiberg, Germany
2. Müllverwertung Rugenberger Damm Advanced Thermal Recycling Facility, Hamburg, Germany

Feedstock: Unsorted/mixed residential (black bin), and commercial residual waste hauled directly from collection routes and/or residual waste from MRFs, MMPs, residual organic waste from other processes
Desired Materials: Residual waste from residential and commercial sources
Problem Materials: Inert materials; industrial waste; ashes and liquids

Delivery Assumptions: Material delivered from front and side loading trucks or transfer trailers

Description: Advanced Thermal Recycling facility using combustion of carbon based material to produce energy and steam and recovery metals. Inorganic material will be contained in the ash residue. Exhaust gas is treated in advance of emission control systems before being released into the atmosphere.

Capacity Range: 500 – 2000 tpd

Process: Materials are conveyed or loaded into feed hoppers that complete combustion of carbon based material in an oxygen rich atmosphere (oxygen level above chemically balanced air-fuel requirement for combustion) with high air to fuel ratios. Inorganic material is converted to ash and flue-gas is composed primarily of carbon dioxide and water. The hot flue gas flows through a boiler, where steam is produced. Steam may be used directly or for driving a steam turbine generator to generate electricity. Cooled exhaust gas flows through emissions control systems for the removal of pollutants before being exhausted through stacks into the atmosphere. Common by-products for controlling air quality of plant emissions include gypsum and hydrochloric acid (HCl). Other products include the recovery of ferrous and non-ferrous metals from the bottom ash. The fly ash and bottom ash are typically separated and the bottom ash can be reused as landfill cover, processed for road base or possibly other beneficial uses.

Residues: Bottom ash, fly ash, heavy metals and other contaminants from gas cleaning equipment

Products: Steam, electricity, bottom ash/fly ash, iron, steel, non-ferrous metal, metal oxides. Many plants also produce hydrochloric acid and gypsum.

Markets: Construction (bottom ash as road aggregate, Gypsum for wallboard), domestic and foreign industry (steel, iron, other metal), chemical industry (HCl)

Landfill Diversion:

	Optimal	Average	Poor
Overall Diversion (%)	95-96	90	80-
Overall Disposal (%)	4-5	10	20+

Level of Commercialization/Industry Experience:

- High level of commercialization in Europe and Japan
- Primary method of managing and reducing solid waste disposed in landfills for material that cannot be recycled in Japan and parts of Europe[31]

Status of Development:
Mature: **X** Growth: Infancy: Demonstration:

[31] In 1994 74.4 percent of household waste in Japan was incinerated. Source: Clark, J.F.M., *The Burning Issue: Historical Reflections on Municipal Waste Incineration*, University of St. Andrews, page 4. http://www.stir.ac.uk/media/wwwstiracuk/cehp/images/burning-issue.pdf (accessed October 1, 2013). Map of Waste-to-Energy Plants, 2010, Confederation of European Waste-to-Energy Plants, http://www.cewep.eu/information/data/studies/m_960 (accessed October 1, 2013)

Type: Advanced Thermal Recycling
Economics: **Capital Cost:** $200,000-250,000 per ton capacity **Tipping Fee:** $120 to $200/ton (depends on feedstock, revenues from sale of energy by products)
Reliability/Confidence in Data: High: **X** Medium: Low:

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Attachment D-3 Existing Facility Capacity Analysis

Introduction

This section provides an overview of the existing solid waste management infrastructure and an estimate of the excess capacity available. This analysis is general in nature as it is often difficult to truly assess the excess capacity of existing facilities. It was beyond the scope of this report to visit each facility and perform an "on the ground" assessment of their equipment capacity, shifts, ability to physically expand, etc. The SWIRP team relied on the following to come to our conclusions:

- Personal knowledge of the facilities and their operation;
- CalRecycle permit capacity data vs. actual known throughput;
- Cascadia Consulting Group and Clements Environmental Corp. data gathered during SWIRP Phase 1 and Phase 2 facility survey; and
- Aerial photos showing structures and potentially available open space for expansion within the existing site boundaries.

It was beyond the scope of this study to determine purchase possibility for any adjacent parcels. However, the aerials do show if adjacent properties are built-out or not.

In order for second or third shifts of workers at MMPs and TSs to be fully effective, it may be necessary for landfills to extend their hours, even up to receiving materials 24 hours a day.

Due to the "overview" level of the data, when assessing excess capacity the team looked only for significant projects in the hundreds of tons per day range and expressed potential increased capacity as ranges rather than a fixed number.

The following facility types were included in this assessment:

- Mixed Material Processing (MMP);
- Clean MRF;
- Composting Facilities;
- Chipping and Grinding Facilities;
- C&D MRFs;
- Food scraps Processing Facilities; and,
- Transfer Stations.

Mixed Material Processors (MMP) and Transfer Stations (TS)

Of the 20 MMP or TS facilities used for recyclable material or residual waste generated within the City of Los Angeles, seven are estimated to have the existing excess capacity for mixed material processing, through the ability to add shifts or equipment to accommodate a significant increase in recyclable material throughput. In addition, of these 20 facilities, 10 transfer stations are estimated to have existing excess transfer capacity.

As shown in **Table D-3-1** "Estimated Excess Capacity at Existing MMP and TS Facilities," the seven MMP facilities have an additional total capacity of 1,750 - 3,600 tpd. The 10 transfer stations have additional total capacity of 4,800-8,150 tpd. Highlighted in yellow are those facilities located in the City of Los Angeles.

Aerial photos of the 20 facilities are provided with the facilities outlined to highlight the availability, or lack thereof, of space for potential expansion either on-site or adjacent.

TABLE D-3-1 ESTIMATED EXCESS CAPACITY AT EXISTING MMP AND TS FACILITIES[32]					
	Facility/Location	**Permitted Capacity (TPD)**	**Discussion**	**Estimated Additional Capacity (TPD) MMP**	**Estimated Additional Capacity (TPD) TS**
1.	American Waste TS 1449 W. Rosecrans Av. Gardena, CA 90247	2,225	Transfer only. No expansion plans.	0	100-200
2.	Athens TS – Industry 14048 E. Valley Bl. Industry, CA 91746	5,000	Major dirty MRF/MMP system in place.	200-500	0
3.	Athens (Sun Valley) 11121 Pendleton St. Sun Valley, CA 91352	400	New 1,500 SWFP in process for full MMP/Transfer.	250-500	500-1,000
4.	Bel-Art TS 2501 E. 68th St. Long Beach, CA 90805	1,500	Transfer only. No expansion plans.	0	0
5.	Carson TS & MRF 321 W. Francisco St. Carson, CA 90745	5,300	No expansion plans.	0	0
6.	CLARTS 2201 E. Washington Bl. Los Angeles, CA 90034	4,025	Existing permit 4,025 tpd, operating at approx. 3,000 tpd. Could add new MMP equipment although MMP space constrained. Could add a second shift to transfer operation.	200-500	1,000-2,500

[32] Data based on surveys conducted for SWIRP in 2007 and 2008.

TABLE D-3-1 ESTIMATED EXCESS CAPACITY AT EXISTING MMP AND TS FACILITIES[32]					
	Facility/Location	Permitted Capacity (TPD)	Discussion	Estimated Additional Capacity (TPD) MMP	Estimated Additional Capacity (TPD) TS
7.	Community Recycling 9147 De Garmo Ave, Sun Valley, CA 91352	1,700	Existing permit 1,700 tpd, applying for 2,500 tpd.	500-800	500-800
8.	Compton Recycling and TS/BFI 2509 W. Rosecrans Av. Compton, CA 90059	1,500	2,100 tpd with plans to increase to 2,500 tpd.	0	600-1,000
9.	Culver City T.S. 9255 W. Jefferson Bl. Culver City, CA 90232	500	Transfer only.	0	0
10.	DART 9770 Washburn Rd. Downey, CA 90241	5,000	No expansion possibility.	0	0
11.	ELARTS 1512 E. Bonnie Beach Pl. City Terrace, CA 90063	700	No expansion plans. Transfer only.	0	100-150
12.	Falcon Refuse Center 3031 "I" Street Wilmington, CA 90744	1,850	No expansion plans. Physical capability of expanding to 5,600 tpd	0	0
13.	Innovative Waste Control 4133 Bandini Bl. Vernon, CA 90023	1,250	Transfer only. No expansion plans. Space constrained.	0	0
14.	Mission Road 840 S. Mission Rd. Los Angeles, CA 90023	1,785	No expansion possibility. Space severely constrained.	0	0

TABLE D-3-1 ESTIMATED EXCESS CAPACITY AT EXISTING MMP AND TS FACILITIES[32]					
Facility/Location		**Permitted Capacity (TPD)**	**Discussion**	**Estimated Additional Capacity (TPD) MMP**	**Estimated Additional Capacity (TPD) TS**
15.	Paramount Resource 7230 Petterson Ln. Paramount, CA 90723	2,400	Expanded MMP proposed. Current throughput is less than 500 tons per day.	200-500	200-500
16.	South Gate San District 9530 S. Garfield Av. South Gate, CA 90280	1,000	Transfer only. No expansion possibility.	0	0
17.	South Gate TS (WM) 4489 Ardine St. South Gate, CA 90280	2,000	Transfer only. No expansion possibility.	0	0
18.	Southern California Disposal 1908 Frank St. Santa Monica, CA 90404	1,056	Transfer only. No existing MMP. Physical expansion in permitting process.	0	300-500
19.	Sun Valley Paper Stock 8701 San Fernando Rd. Sun Valley, CA 91352	750	New in-building MMP in planning process.	200-300	
20.	Waste Resources Recovery 357 W. Compton Bl. Gardena, CA 90247	500	Expansion from 500 tpd to 2,000 tpd	200-500	1,500
TOTAL ADDITIONAL CAPACITY				**1,750-3,600 TPD**	**4,800-8,150 TPD**



1. AMERICAN WASTE TRANSFER STATION

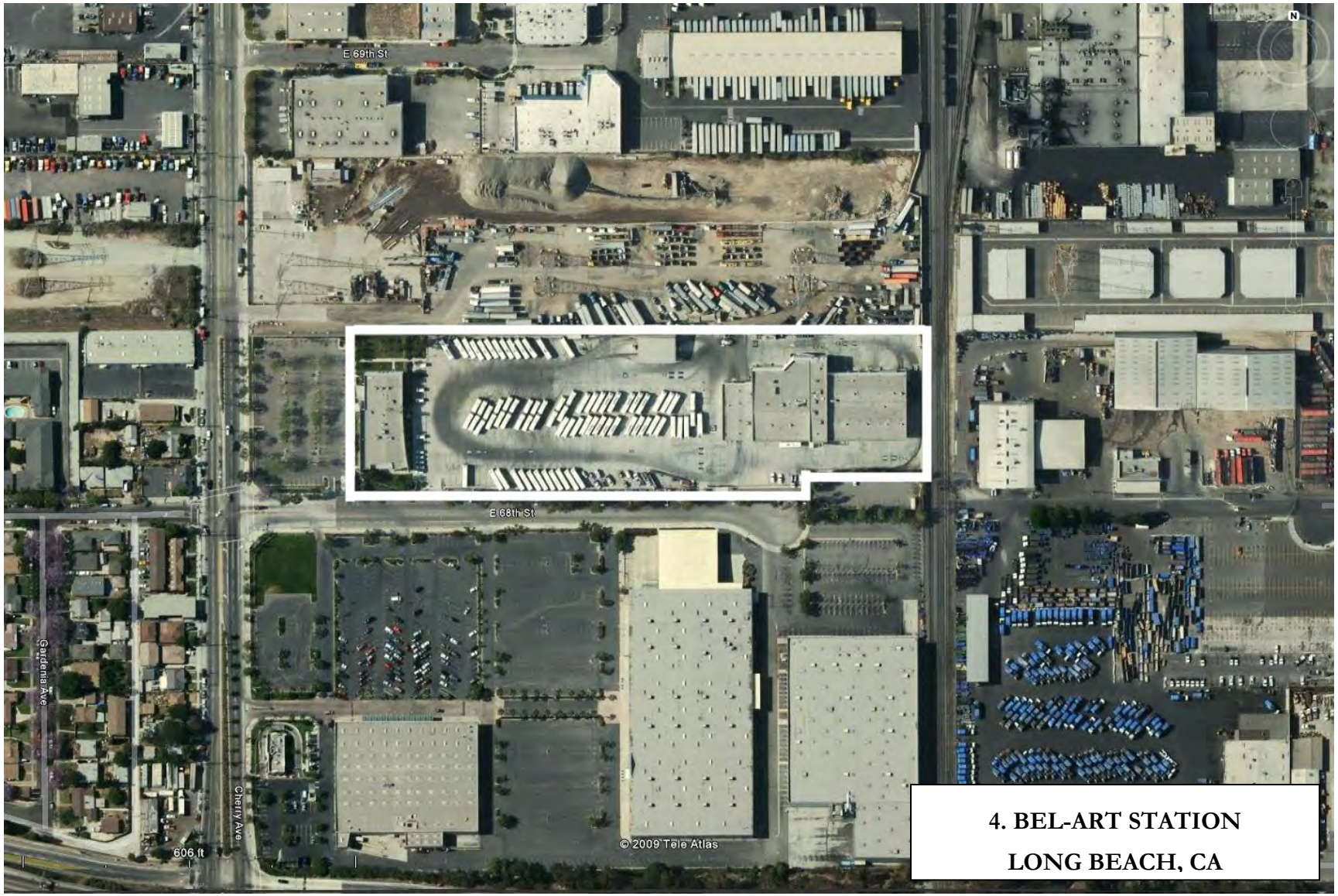
GARDENA, CA



2. ATHENS TRANSFER STATION
INDUSTRY, CA



3. ATHENS SUN VALLEY
SUN VALLEY, CA



4. BEL-ART STATION

LONG BEACH, CA



5. CARSON TRANSFER STATION
CARSON, CA



6. CLARTS

LOS ANGELES, CA



7. COMMUNITY RECYCLING
SUN VALLEY, CA



8. COMPTON TS

COMPTON, CA


Ince Blvd
Hayden Pl
Lucerne Ave
Van Buren Pl
W Jefferson Blvd
Hetzler Rd
Jefferson Blvd
© 2009 Tele Atlas
552 ft
Imagery Date: Jul 31, 2007
lat 34.020144° lon -118.384934° elev 68 ft
9. CULVER CITY TS
CULVER CITY, CA



10. DART

DOWNEY, CA



11. ELARTS

LOS ANGELES, CA


E Grant St
Perry Ave
E Opp St
47
W Gaylord St
Judson Ave
W 15th
Lawrence Way
Paul Jones Ave
Nicholson Ave
Hobson Ave
Farragut Ave
708 ft
© 2009 Tele Atlas
12. BFI FALCON
COMMERCE, CA



13. INNOVATIVE

LOS ANGELES, CA



14. MISSION ROAD TS

LOS ANGELES, CA



15. PARAMOUNT RESOURCE AND RECYCLING
LOS ANGELES, CA



16. SOUTH GATE SANITATION DISTRICT

SOUTH GATE, CA



17. SOUTH GATE WASTE MANAGEMENT

SOUTH GATE, CA


Michigan Ave
24th St
Santa Monica Fwy
10
Virginia Ave
Frank St
High Pl
Cloverfield Blvd
Ware Ave
© 2009 Tele Atlas
18. SCD
SANTA MONICA, CA



19. SUN VALLEY PAPER STOCK
LOS ANGELES, CA



20. WRR

LOS ANGELES, CA

Existing Clean Material Recovery Facilities (MRF)

As shown in **Table D-3-2** "Estimated Excess Capacity at Existing Clean MRF Facilities," of the 14 clean MRF facilities currently being utilized for commercial recyclables and residential blue bin materials, 10 facilities have a total additional capacity of 1,200-2,600 tpd. Highlighted in yellow are those facilities located in the City of Los Angeles. Aerial photos of these facilities follow the table.

TABLE D-3-2
ESTIMATED EXCESS CAPACITY AT EXISTING CLEAN MRF FACILITIES[33]

	Facility	Permitted Capacity (TPD)	Discussion	Additional Capacity (TPD)
1.	Allan Company 2411 Delaware Av. Santa Monica, CA 90404	150	Opening a new MRF with City of Santa Monica.	100-300
2.	Angelus Western 2474 Porter St. Los Angeles, CA 90021	750	Solid waste permit for 700 tpd capacity – space constrained.	0
3.	Bestway (Firestone) 2268 E. Firestone Av. Los Angeles, CA 90002	1,200	Capacity available. New 1,200 tpd Solid Waste Permit. Currently processing curbside material of WLA.	200-400
4.	Bestway WLA 6001 W. Jefferson Bl. Culver City , CA 90232	No Permit.	Trans-load only.	0
5.	Bestway (LA) 960 N. Main Street Los Angeles, CA 90012	No Permit.	Current City contractor for N. Central LA curbside.	0
6.	Burbank Recycling Center 500 S. Flower St. Burbank, CA 91502	No Permit.	Add shift.	100-200
7.	City Fibers (Plant No. 2) 2545 E. 25th St.	500	Add second shift. New parcel available to expand facility. Current city contractor for South LA curbside.	200-300

[33] Data based on surveys conducted for SWIRP in 2007 and 2008.

TABLE D-3-2 ESTIMATED EXCESS CAPACITY AT EXISTING CLEAN MRF FACILITIES[33]				
	Facility	**Permitted Capacity (TPD)**	**Discussion**	**Additional Capacity (TPD)**
	Los Angeles, CA 90058			
8.	City Fibers (W. Valley) 16714 Schoenborn St. Los Angeles, CA 91343	350	Add second shift. Current city contractor for West Valley LA curbside.	100-200
9.	Community Recycling 9147 DeGarmo Av. Sun Valley, CA 91352	1,700	At capacity.	0
10.	CR&R 11232 Knott Av. Stanton, CA 90680	1,800	Capacity available.	100-400
11.	Potential Industries 922 East E Street Wilmington, CA 90744	No permit	Major clean MRF. Expansion plans being proposed.	200-400
12.	Recycle America Alliance 7100 Stanford Avenue Los Angeles, CA 90001	No Permit.	Add shift.	50-100
13.	South Coast Recycling 4560 Doran St. Los Angeles, CA 90039	No Permit	Limited MRF.	50-100
14.	Sun Valley Paper Stock 8701 San Fernando Rd. Sun Valley, CA 91352	750	Could add 2nd shift.	100-200
TOTAL ADDITIONAL CAPACITY				**1,200-2,600 TPD**



1. ALLAN CO. MRF

SANTA MONICA, CA



2. ANGELUS WESTERN
LOS ANGELES, CA


E 87th St
Firestone Blvd
S Alameda St
42
Ivy St
E 88th St
435 ft
© 2009 Tele Atlas
Imagery Date: Jul 31, 2007
lat 33.957532° lon -118.231553° elev 127 ft
3. BESTWAY FIRESTONE
LOS ANGELES, CA

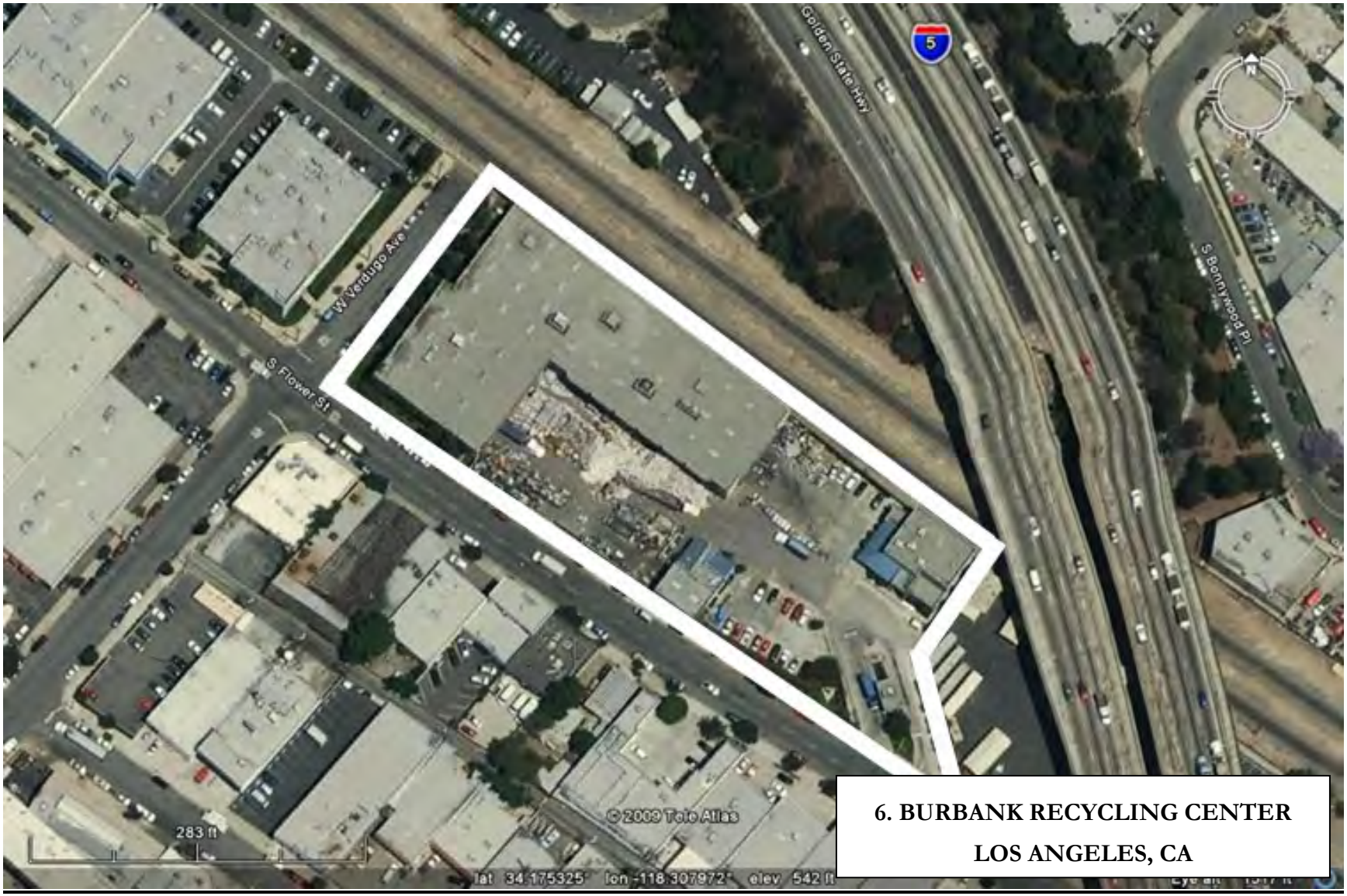


4. BESTWAY WLA

CULVER CITY, CA



5. BESTWAY MAIN STREET
LOS ANGELES, CA



6. BURBANK RECYCLING CENTER
LOS ANGELES, CA



7. CITY FIBERS. PLANT NO. 2

LOS ANGELES, CA



8. CITY FIBERS. VALLEY PLANT

LOS ANGELES, CA



9. COMMUNITY RECYCLING
SUN VALLEY, CA

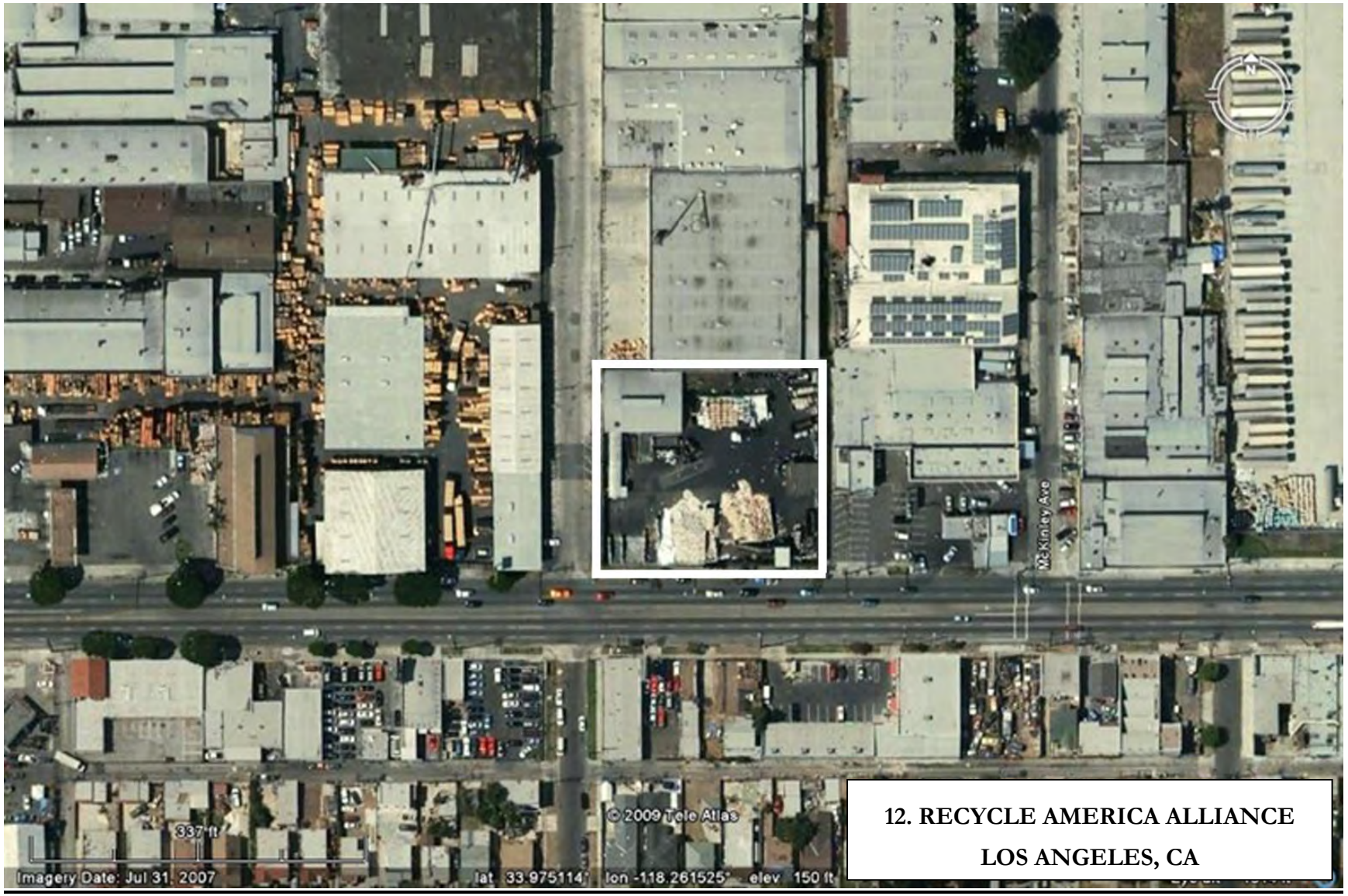


10. CR&R

STANTON, CA



11. POTENTIAL INDUSTRIES
WILMINGTON, CA



12. RECYCLE AMERICA ALLIANCE
LOS ANGELES, CA



13. SOUTH COAST RECYCLING
LOS ANGELES, CA



14. SUN VALLEY PAPER STOCK
LOS ANGELES, CA

Existing Composting Facilities

As shown in **Table D-3-3** "Estimated Excess Capacity at Existing Composting Facilities," of the four composting facilities currently being utilized, three facilities have a total additional capacity of 550-1,100 tpd. Highlighted in yellow are those facilities located in the City of Los Angeles. Aerial photos of these facilities follow the table.

TABLE D-3-3
ESTIMATED EXCESS CAPACITY AT EXISTING COMPOSTING FACILITIES[34]

	Facility	Permitted Capacity (TPD)	Discussion	Estimated Additional Capacity (TPD)
1.	California Biomass 20055 Shay Road Victorville, CA 92394	700	Recently purchased by Athens.	50-100
2.	Community Recycling 1261 North Wheeler Ridge Rd. Lamont, CA 93203	3,692	3,692 tpd total permitted capacity at Lamont.	400-700
3.	Griffith Park 5400 Griffith Park Dr. Los Angeles CA 90027	1,000 cubic yards/day	No expansion plans.	0
4.	Lopez Canyon Environmental Center 11950 Lopez Canyon Road Los Angeles, CA 91342	1,000	Space available, but limited	100-300
TOTAL ADDITIONAL CAPACITY				**550-1,100 TPD**

[34] Data based on surveys conducted for SWIRP in 2007 and 2008.



1. CALIFORNIA BIOMASS
ADELANTO, CA



2. COMMUNITY RECYCLING

LAMONT, CA



3. GRIFFITH PARK

LOS ANGELES, CA



4. LOPEZ CANYON
LOS ANGELES, CA

Existing Chipping and Grinding Facilities

As shown in **Table D-3-4** "Existing Chipping and Grinding Facilities," of the 11 chipping and grinding facilities currently being utilized, five facilities have additional capacity for 900-2,300 tpd. Yellow highlighted facilities are located within the City of Los Angeles.

Aerial photos of these facilities follow the table.

TABLE D-3-4
ESTIMATED EXCESS CAPACITY AT EXISTING CHIPPING AND GRINDING FACILITIES[35]

	Facility	Permitted Capacity (TPD)	Discussion	Estimated Additional Capacity (TPD)
1.	Athens (Sun Valley) 11121 Pendleton St. Sun Valley, CA 91352	400	New 1,500 tpd permit in permit process.	100-200
2.	Community Recycling 11300 Pendleton Street Sun Valley, CA 91352	1,200	Permits in progress to increase capacity from 1,200 to 1,500 tpd.	200-300
3.	Eco Logics 8255 Grimes Canyon Rd. Moorpark, CA 93021		No expansion plans.	0
4.	Greencycle 12815 East Imperial Hwy. Santa Fe Springs, CA 90670	135 tpd	No data available.	0
5.	Griffith Park 5400 Griffith Park Dr. Los Angeles CA 90027	1,000 cubic yards/day	No expansion plans.	0
6.	Harbor Mulching		100 tpd capacity - no	

[35] Data based on surveys conducted for SWIRP in 2007 and 2008.

TABLE D-3-4
ESTIMATED EXCESS CAPACITY AT EXISTING CHIPPING AND GRINDING FACILITIES[35]

	Facility	Permitted Capacity (TPD)	Discussion	Estimated Additional Capacity (TPD)
	1400 North Gaffey Street San Pedro, CA 90731	120 tpd	expansion possibility.	0
7.	Lopez Canyon Environmental Center 11950 Lopez Canyon Road Los Angeles, CA 9134	1,000	Space available – City owned and controlled.	200-500
8.	North Hills 11700 Blucher Av. Granada Hills, CA 91345	1,000	500 tpd capacity – no expansion plans or opportunities.	0
9.	Norwalk Industries 13780 East Imperial Highway Santa Fe Springs, CA 90670	200	No data available.	0
10.	Van Norman Chipping 15751 Rinaldi St. Granada Hills, CA 91344	499	Limited expanded throughput.	100-300
11.	WMI Bradley 9227 Tujunga Bl. Los Angeles, CA 91352	No permit - 1,260	Expansion space available at landfill.	300-1,000
TOTAL ADDITIONAL CAPACITY				**1,000-2,400 TPD**



1. ATHENS SUN VALLEY
SUN VALLEY, CA



2. COMMUNITY CHIP AND GRIND
LOS ANGELES, CA



3. ECO LOGICS

MOORPARK, CA



4. GREENCYCLE

SANTA FE SPRINGS, CA



5. GRIFFITH PARK

LOS ANGELES, CA



6. HARBOR MULCHING

LOS ANGLES, CA



7. LOPEZ CANYON
LOS ANGELES, CA



8. NORTH HILLS

GRANADA HILLS, CA



9. NORWALK INDUSTRIES
SANTA FE SPRINGS, CA



10. VAN NORMAN
GRANADA HILLS, CA



11. WMI BRADLEY

LOS ANGELS, CA

Existing C&D MRFs

As shown in **Table D-3-5**, "Estimated Excess Capacity at Existing C&D MRFs," of the eight (8) C&D facilities currently being utilized, all have potential to increase their processing capacity. The eight facilities have a total additional capacity of 2,300-4,850 tpd. Yellow highlighted facilities are located within the City of Los Angeles.

TABLE D-3-5
ESTIMATED EXCESS CAPACITY AT EXISTING C&D MRFs[36]

	Facility	Permitted Capacity (TPD)	Discussion	Estimated Additional Capacity(TPD)
1.	Athens (Sun Valley) 11121 Pendleton St. Sun Valley, CA 91352	400	New 1,500 tpd permit in process.	200-500
2.	Athens TS (Industry) 14048 E. Valley Bl. Industry, CA 91746	5,000	C&D sort line installed in 2007	200-500
3.	Community Recycling 9147 De Garmo Ave, Sun Valley, CA 91352	1,200	Apply for new permit to increase C&D from 1,200 to 2,000 tpd.	400-800
4.	CWS 621 W. 152 St. Gardena, CA 90247	1,500	Limited expansion capability	50- 100
5.	Direct Disposal 3720 Noakes St. Los Angeles, CA 90023	200 cubic yards./day.	Space limited.	200-300
6.	Downtown Diversion 2424 East Olympic Blvd. Los Angeles, CA 90021	1,500	Full MRF in operation. Extended shift operations possible.	200-500

[36] Data based on surveys conducted for SWIRP in 2007 and 2008.

TABLE D-3-5 ESTIMATED EXCESS CAPACITY AT EXISTING C&D MRFs[36]				
	Facility	**Permitted Capacity (TPD)**	**Discussion**	**Estimated Additional Capacity(TPD)**
7.	IRS/Construction and Demolition Recycling 9309 Rayo Ave. South Gate, CA 90280	3,000	New Permit in 2008.	500-1,500
8.	Looney Bins 11616 Sheldon St. Sun Valley, CA 91352	750	Limited space available.	100-200
9.	Madison Materials 1034 East 4th Street Santa Ana, CA 92701	950	Could increase to 1,400 tpd by adding a second shift	450
TOTAL ADDITIONAL CAPACITY				**2,300-4,850TPD**



1. ATHENS SUN VALLEY
SUN VALLEY, CA



2. ATHENS INDUSTRY

INDUSTRY, CA



3. COMMUNITY RECYCLING
SUN VALLEY, CA



4. CWS

GARDENA, CA



5. DIRECT DISPOSAL

LOS ANGELES, CA

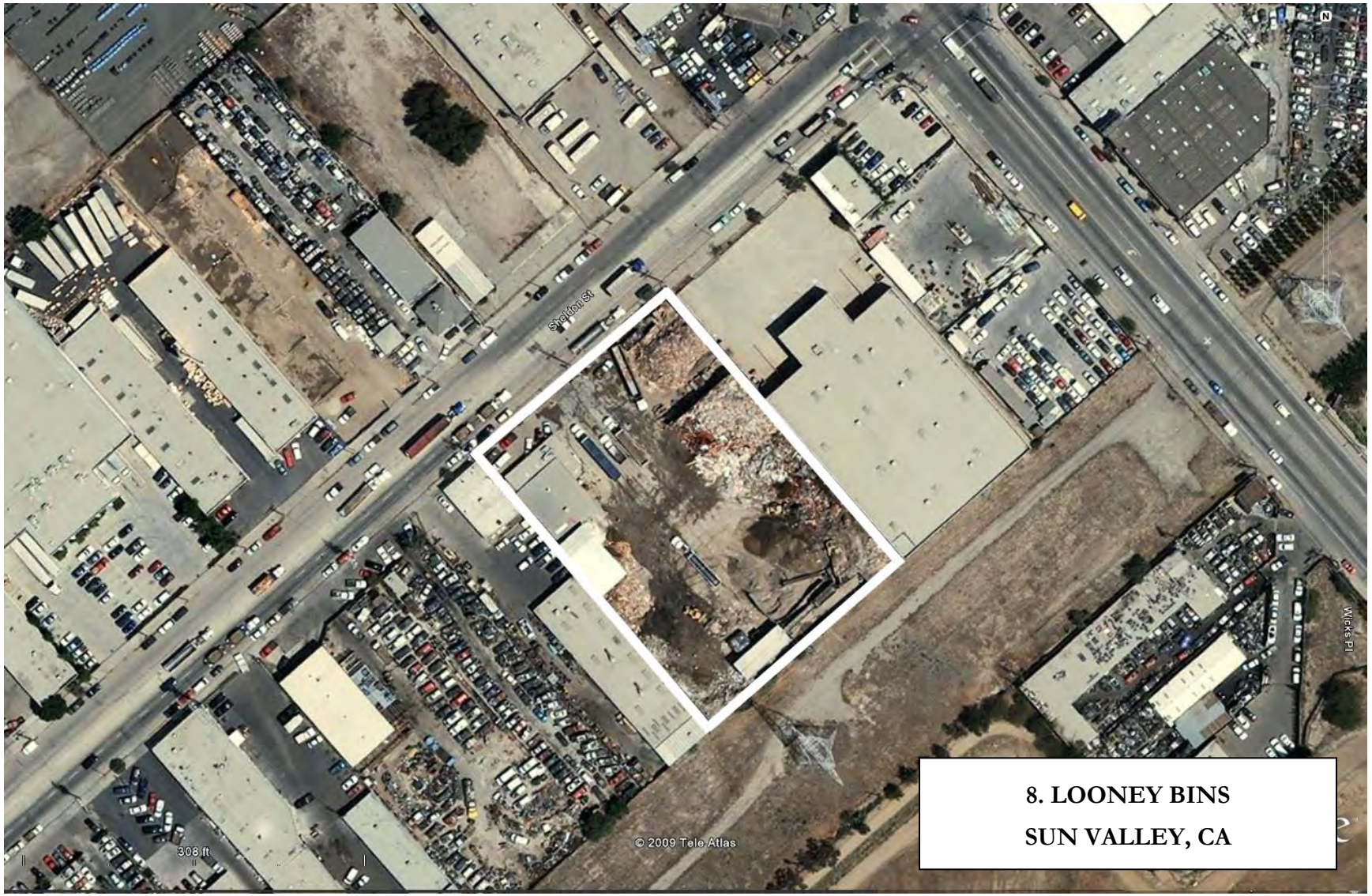


6. DOWNTOWN DIVERSION
SUN VALLEY, CA



7. IRS

SOUTHGATE, CA



8. LOONEY BINS
SUN VALLEY, CA



9. MADISON MATERIALS

SANTA ANA, CA

Existing Food Scraps Processing Facilities

As shown in **Table D-3-6**, "Estimated Excess Capacity at Existing Food scraps Processing Facilities," each of the two facilities currently being utilized has potential to increase its processing capacity. The two facilities have a total additional capacity of 150-300 tpd.

TABLE D-3-6
ESTIMATED EXCESS CPACITY AT EXISTING FOOD SCRAPS PROCESSING FACILITIES[37]

	Facility	Permitted Capacity	Discussion	Additional Capacity
1.	California Biomass 20055 Shay Road Victorville, CA 92394	700	Purchased by Athens.	50-100 TPD
2.	Community Recycling 1261 North Wheeler Ridge Rd. Lamont, CA 93203	3,692	Currently in permitting to increase produce trim and cull and food scraps by 200 tpd at their Sun Valley Transfer Station. Lamont Composting operation has excess capacity to handle this increase.	100-200 TPD
TOTAL ADDITIONAL CAPACITY (Food scraps)				**150-300 TPD**

[37] Data based on surveys conducted for SWIRP in 2007 and 2008.



1. CALIFORNIA BIOMASS

ADELANTO, CA



2. COMMUNITY COMPOSTING
LAMONT, CA

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Attachment D-4 Facility Aesthetics

Section 1 Introduction

A key element for meeting the goals of SWIRP will be to provide the necessary infrastructure to support collection programs and to process and transform residual waste into usable products and a source of renewable energy. Even with the new initiatives being considered, many new facilities will be needed to process the waste stream. Basic transportation economics demand these facilities be located throughout each of the wastesheds to best serve the residences and businesses and to reduce travel time for route trucks. Therefore, facilities need to be designed and operated to be an asset to the neighborhood and contribute to the overall aesthetics of the local environment.

Planning and design of solid waste facilities that blend into the local neighborhoods is underway in the Los Angeles area. Many facilities are being retrofitted to add services and in the process are making investments to provide facelifts to improve appearances and operations. The purpose of this section of the report is to describe the aesthetic features and the operating practices used to make these facilities good neighbors.

Section 2 Background - Facility Types

There are currently over forty solid waste facilities that are operating in and around the City that receive, process, and transport recyclables material and solid waste to markets and landfills. These include:

- Material Recovery Facilities –MRF (dirty and clean)
- Transfer Stations
- Compost Facilities
- Advanced Thermal Recycling
- Landfills

Most of these facilities have been operating and providing service over many years. But many more MRFs and other types of facilities, including alternative technologies, will be needed to meet the future goals of the City. Examples of the alternative technology facilities currently considered feasible are:

- Advanced Thermal Recycling
- Alternative technology thermal – i.e., gasification, pyrolysis
- Alternative technology bioconversion
- Alternative technology chemical conversion

Further analysis and evaluation of these and other specific alternatives will be needed before decisions are made on which facilities will be built and where they will be located. The City is very urbanized and developed; therefore, all facilities to be built must be designed to become an asset to the surrounding neighborhood. Although each type of facility and each site have unique requirements and conditions,

there are standard design and operational philosophies that can be established to maximize the functional and aesthetic value of every facility.

Section 3 How Solid Waste Facilities are Designed to Be Good Neighbors

For any constructed project to be a good neighbor, it is essential to understand the functional and aesthetic issues inherent in the project requirements (from site selection through daily operation management) and the functional and aesthetic sensitivities of the selected site and community. The issues are identified as those aspects inherent in the project's construction and operations that could have an impact on surrounding businesses, residents, and infrastructure such as the facility's traffic volume, tonnage of material to be handled, and hours of operation. Community sensitivities are identified by understanding the conditions which are location dependent such as the site's zoning requirements as well as the surrounding zoning designations and current infrastructure. Aesthetic style guidelines, often dictated and regulated by the local jurisdiction, are used to promote a feel of community.

Typically, solid waste facilities are located within industrial or commercial zones with easy connection routes to main highways and/or arterial roads.[38] Good access routes will impact residential or retail zones so the facility design and operation must be sensitive to the greater community.

3.1 Typical Design Issues and Design Mitigation

3.1.1 Traffic

With any new facility there will be an increase in the number of trucks that deliver materials and transport materials. If the facility includes services for public or self-haul vehicles to drop-off solid waste and recyclables, additional traffic may be experienced. Key site and building design elements can limit any intrusion on the community conscience. Traffic design issues include:

1. **Site location and off-site routes-** Selected to minimize area traffic changes Environmental Affairs Department, Planning Department, and Transportation Department will work together with facility designers to locate sites with good access.

2. **Site configuration** – Site ingress and egress is designed to work within existing traffic patterns. Traffic signals are considered at certain ingress and egress points. Building access orientation is planned in order to screen large scale operations from street frontages and sensitive neighbors.

3. **On-site traffic design** – Provides clear routes for all users: commercial, industrial, employees, public, and visitors. Offers clear separation of truck as well as small vehicular traffic and clear directional and area destination signage, which will minimize wait time and queuing through efficient design and operation. Grants maneuvering space and circulation for efficient delivery

[38] The City adopted an ordinance amending its municipal code to allow alternative technology facilities within M2 (light industrial), M3 (heavy industrial), and PF (public facility) zones.

and a sufficient number of stalls for peak traffic times. It also includes staffing for direction assistance and load pre-sorting, and enough on-site space so queuing does not occur on public roadways. Addresses the location of scales from point of ingress and stacked queue lanes to increase on-site capacity.

3.1.2 Building size

A lot of activity takes place within the walls of solid waste facility buildings which require large clear floor space and high roof clearances. Even in industrial zones solid waste facilities may be larger and taller than surrounding structures. Several design approaches are used to reduce impacts, including:

1. **Site Line Studies** – Determines the view of the site from surrounding highways, roads, and neighbors, and identifies critical views for aesthetics, screening, and sensitive neighbors.
2. **Architectural design to reduce the bulk of the structures** – Achieves an aesthetic style which will not only blend into the community, but will enhance the neighborhood. Design can vary the horizontal position of the wall, height of eave lines or parapets, material textures, and select color aesthetic themes or neutral appearances.
3. **Architectural design to blend in the neighborhood** – Design to fit the local community aesthetic philosophy. Provides adequate setbacks from public roadways, visual screen walls, and fences to reduce visual impact. Offers landscaping to screen views, and soften and naturalize the appearance of the site and structures.

3.1.3 Noise

Most of the operational noise is contained inside the buildings. However, the daily activity of vehicles entering and leaving the site as well as use of on-site mobile equipment creates noise that needs to be considered in the design and operational plans. These include:

1. **Site noise** – Design to minimize truck routes and idling in queue to reduce sound. Provides solid screen walls and landscaping to deflect and diffuse sound. On-site parking can be used as buffer zones for noise impacts.
2. **Operations and process noise** – Design to ensure that operations occur within fully enclosed buildings. Included in the design are the orientation of the building, location of the openings, and building materials which may include lined or insulated panels to further reduce the noise.

3.1.4 Odor, Dust, Litter, and Animal Control

The nature of the material handled at solid waste facilities can create adverse environmental conditions. These situations can be avoided through good design and proper operations, and may include:

1. **Building design** –These are controls for reducing fugitive dust inside the building, and include: misting systems, natural and power ventilation, and routine housekeeping measures.
2. **Site design and operations/maintenance** – Design to control materials outside of structures. Considers prevailing wind, sensitive neighbors, daily maintenance, and cleaning schedules.

3. **Design and operations** – Is used to avoid excessive material storage stockpiling to reduce the impacts of blown litter, odor, and vermin (rodent and bird) populations.

3.1.5 Additional Design Features

Eliminating potential intrusions of facilities on the neighborhood is only part of being a good neighbor. Projects can also add real value and advantage to the neighborhood when they include:

1. **Education / information centers** – Provide knowledge and community space for school education tours, public recycling and awareness courses, and community meetings.
2. **Sustainability** – Local facilities reduce environmental impacts and provide more convenience for public services. Sustainability features include: LEED certification for new construction, LEED values included even if budgets will not allow full certification, and onsite recycling centers. Sustainability benefits include: reduced truck routes from source to facility and reduced truck traffic.

Section 4 Examples of Modern Solid Waste Facilities

This section presents three projects in California. Two of them represent expansions and remodels of existing facilities, and one represents a new, ground-up project. Factors contributing to the need for expansion of existing facilities and the development of new facilities are:

- **Increase in volume of incoming material** – Due to population growth or volume per capita growth.
- **Increase needs to recycle and process residual waste** – Because of mandated recycling goals or marketing opportunities.
- **Safety and efficiency** – Based on the need to handle increased traffic or diverse traffic (commercial, public, industrial, construction) and the need to develop new technology.

1. **Rainbow Disposal, Huntington Beach –** MRF/ MMP/ Yard trimmings /Education/Transfer Station



Existing Site Prior to Upgrades



New Upgraded Design

Upgrades include:

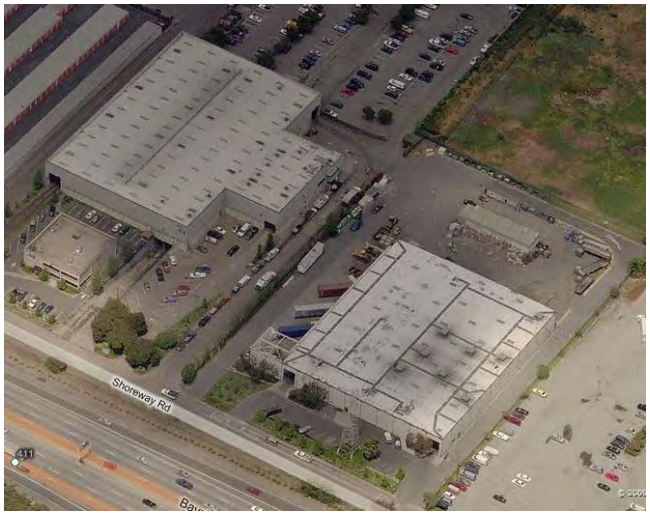
Expanded Capacity

- MRF
- Transfer station
- Yard trimmings processing
- Operational improvements

Community enhancements

- Street facades
- Landscaping
- Education center

2. **Shoreway Environmental Center, San Carlos -** MRF/ Transfer Station/Yard trimmings/ Recycle Center/ Education



Existing Site Prior to Upgrades



New Upgraded Design

Upgrades include:

Expanded Capacity

- MRF
- Transfer station
- Yard trimmings processing
- Operational improvements

Community enhancements

- Street facades
- Landscaping
- Education center



Shoreway Environmental Center

3. **Puente Hills Material Recovery Facility, Los Angeles County** - MRF/ Yard trimmings /C&D Processing/ Education Center/ Transfer Station /Rail-haul



New State-of-the-Art Design

Features include:

- Near entrance to existing landfill site means no regional traffic changes
- New state of the art MRF and Transfer Station
- Rail-haul transfer station
- Education Center

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APPENDIX B.1

NOTICE OF PREPARATION

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CITY OF LOS ANGELES
CALIFORNIA

BOARD OF
PUBLIC WORKS
—
COMMISSIONERS
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—
ENRIQUE C. ZALDIVAR
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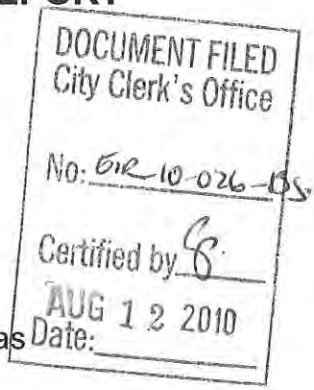
VAROUJ S. ABKIAN
ADEL H. HAGEKHALIL
ALEXANDER E. HELOU
ASSISTANT DIRECTORS
—
SOLID RESOURCES
SUPPORT SERVICES DIVISION

JAVIER L. POLANCO
ACTING DIVISION MANAGER

1149 S. BROADWAY, 8TH FLOOR
LOS ANGELES, CA 90015
TEL: (213) 485-3605
FAX: (213) 485-2961

August 12, 2010

NOTICE OF PREPARATION AND PUBLIC SCOPING MEETING FOR DRAFT PROGRAM ENVIRONMENTAL IMPACT REPORT



DOCUMENT No. : EIR-10-026-BS

PROJECT NAME: Solid Waste Integrated Resources Plan (SWIRP)

PROJECT LOCATION/ADDRESS: Refer to attached Project Description

COMMUNITY PLANNING AREA: City-wide/All Community Planning Areas

COUNCIL DISTRICT: City-wide/All Council Districts

DUE DATE FOR PUBLIC COMMENTS: September 16, 2010

PROJECT DESCRIPTION: The Solid Waste Integrated Resources Plan (SWIRP) is a long-range master plan for solid waste management in the City of Los Angeles (City). SWIRP proposes an approach for the City to achieve a goal of diverting 70 percent of the solid waste from landfills by 2013 and 90 percent diversion by 2025. These targeted diversion rates would be implemented through an enhancement of existing policies and programs, implementation of new policies and programs, and the development of future facilities to meet the City's recycling and solid waste infrastructure needs over a 20-year planning period. It is assumed that the facilities would be within a 100-mile radius of the City. Specific locations for these facilities have not been identified at this time; rather SWIRP notes the number and type of facilities that would be required over the next 20 year planning period. *Please see attached project description for additional information*

REQUESTED LAND USE ENTITLEMENTS: No land use entitlement requests are associated with the proposed project. SWIRP is a policy document.

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED: An Initial Study was not prepared for the project, thus the Program Environmental Impact Report (PEIR) for the project will address all of the environmental issue areas, including: aesthetics, agricultural resources, air quality, biological resources, cultural resources, geology/soils, global climate change/greenhouse gases, hazards/hazardous materials, hydrology/water quality, land use/planning, mineral resources, noise, population/housing, public services/utilities, recreation and transportation/traffic.

The enclosed materials reflect the scope of the proposed project (subject to change) which may be of interest to you and/or the organization you represent. A PEIR will be prepared by the Department of Public Works, Bureau of Sanitation. The Bureau of Sanitation welcomes all comments regarding the environmental impacts of the proposed project. **Written comments must be submitted to the office by September 16, 2010.**

Please direct your comments to:

Ms. Reina Pereira, P.E., Senior Environmental Engineer
City of Los Angeles
Department of Public Works, Bureau of Sanitation
Public Works Building (PWB) MS 521
1149 South Broadway, 8th Floor
Los Angeles, CA 90015

Or you can e-mail your comments to: reina.pereira@lacity.org and note subject as:
SWIRP EIR NOP Comments

PEIR SCOPING MEETING: Two PEIR scoping meetings will be held on August 26, 2010. The 1:30 p.m. session is for public agencies and the 6:30 p.m. session will be for all interested parties. The scoping meetings will be held at the following location:

City of Los Angeles, Bureau of Sanitation
Public Works Building
Sub-basement Room #6
1149 South Broadway
Los Angeles, CA 90015

Please allow adequate time to check-in at the front security desk prior to the meeting.

Solid Waste Integrated Resources Plan
Project Description

The Solid Waste Integrated Resources Plan (SWIRP) is a long-range master plan for solid waste management in the City of Los Angeles (City). SWIRP proposes an approach for the City to achieve a goal of diverting 70 percent of the solid waste from landfills by 2013 and 90 percent diversion by 2025. These targeted diversion rates would be implemented through an enhancement of existing policies and programs, implementation of new policies and programs, and the development of future facilities to meet the City's recycling and solid waste infrastructure needs over a 20-year planning period.

Project Location

SWIRP addresses the handling of solid waste for the City, which covers approximately 498 square miles and is home to approximately 3.8 million residents. The programs and policies identified in SWIRP would apply to all residential, commercial, industrial and institutional generators in the City. SWIRP also identifies a variety of facilities that will need to be constructed to meet the City's recycling and solid waste infrastructure requirements over the 20-year planning period. For the purposes of this EIR, it is assumed that the facilities would be within a 100-mile radius of the City, as shown on Figure 1. Specific locations for these facilities have not been identified at this time; rather SWIRP notes the number and type of facilities that would be required over the next 20 years. The City organized the SWIRP stakeholder process throughout the City and held workshops in each of the City's six collection districts or "wastesheds." These wastesheds are shown on Figure 2 and include East Valley, West Valley, Western, North Central, South Los Angeles, and Harbor.

Project Objectives

The objectives of SWIRP represent City policies and the guiding principles identified during the stakeholder process and are as follows:

- Achieve 70 percent landfill diversion rate for solid waste by 2013;
- Achieve 90 percent landfill diversion rate for solid waste by 2025;
- Protect public health and the environment;
- Make the City a leader for zero waste practices;
- Promote manufacturer and consumer responsibility;
- Provide incentives for reducing, reusing and recycling;
- Increase recycling by providing convenient opportunities for residents, businesses and institutions;
- Find solutions that are both economically efficient and environmentally preferable;
- Promote education and outreach to decrease wasteful consumption and to increase recycling;
- Invest in new, safe technologies; and
- Provide solutions that are equitable from a geographic, economic and environmental perspective.

Project Components

To reach the City's goals of 70 percent diversion by 2013 and 90 percent diversion by 2025, SWIRP recommends a series of policies, programs and facilities to be implemented over the next 20 years.

Expansion of Existing Programs

The City has many successful programs in place for managing solid waste and diverting waste from landfills. SWIRP would expand these programs, as appropriate, to further increase solid waste management and landfill diversion. These programs are managed by the City's Bureau of Sanitation (BOS) Solid Resources Divisions which have the responsibility for the collection, disposal, and recycling of over 1.7 million tons per year of solid resources for the residents of the City.

Downstream Policies and Programs

SWIRP recommends a number of "downstream" policies and programs that will need to be implemented to achieve zero waste. Downstream policies and programs address materials after they are generated. They address collection, processing, recycling and disposal. The City has identified additional downstream programs that will be needed to achieve zero waste, including programs designed for single-family residences, multi-family residences, commercial generators and construction and demolition (C&D) sites.

Mandatory Participation Programs

SWIRP recommends a number of mandatory participation programs that will need to be implemented to achieve zero waste. These include mandatory recycling, mandatory organics separation, requiring resource recovery centers at transfer stations and landfills, enforcement through recycling ambassadors and direct technical assistance and increased diversion requirements at C&D facilities.

Upstream Policies

"Upstream" is a way of describing policies that address waste prior to the point of generation. Upstream policies would affect design of the product or package prior to manufacturing. Extended Producer Responsibility (EPR) is a strategy for encouraging manufacturers to take responsibility for the end-of-life of their products. These initiatives seek to encourage manufacturers to design their products or packaging with less waste or with materials that are easy to recycle.

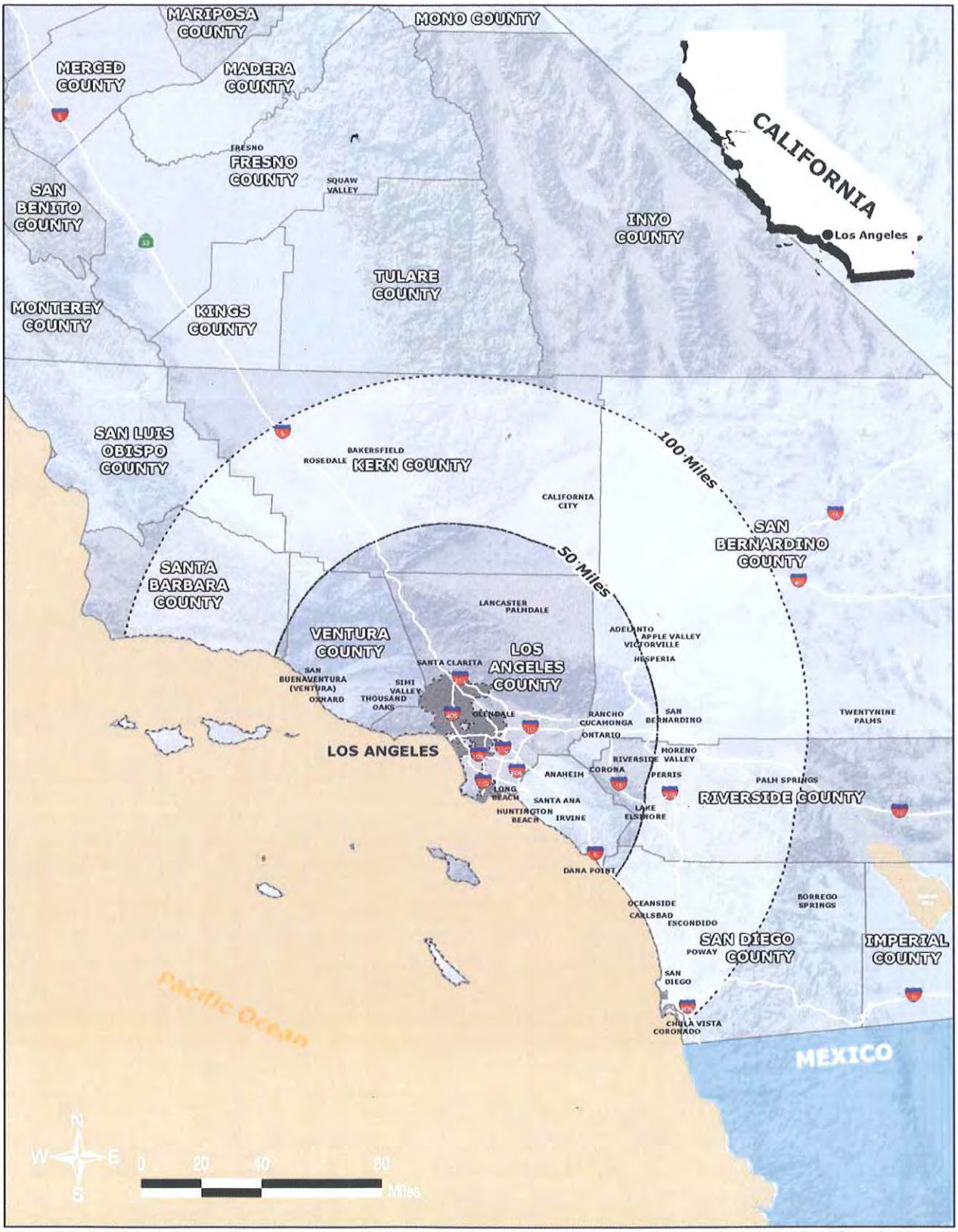
Processing Facilities

An essential component of SWIRP is the identification and development of future facilities to meet the City's recycling and solid waste infrastructure needs over the 20-year planning period. Facility types include blue bin, green bin and black bin processing facilities. SWIRP does not identify specific locations for any of these facilities; but rather identifies the number of facility types and the anticipated time frames for phasing in the development of these facilities.

Blue bin facilities capable of processing source-separated recyclable and reusable materials, including materials recovered from the BOS blue bin program and source-separated commercial recycling. Other facilities for source separated materials were also discussed within this category, including resource recovery centers for self-hauled materials. Green bin facilities are capable of processing yard trimmings,

food scraps and other compostable materials, either source-separated or sorted from other waste at a processing facility. Potential green and blue bin facilities identified in SWIRP include, but are not limited to: (1) clean materials recovery facilities; (2) resource recovery centers; and (3) small and large scale composting facilities.

Black bin facilities are capable of processing municipal solid waste (MSW) from residential black bins, commercial waste sources, or residue from processing facilities. Potential black bin processing facilities identified in SWIPR include, but are not limited to: (1) mixed materials processing facilities; (2) advanced thermal recycling (waste-to-energy); (3) alternative technology–biological (anaerobic digestion); and (4) alternative technology–thermal (plasma arc/gasification/pyrolysis).

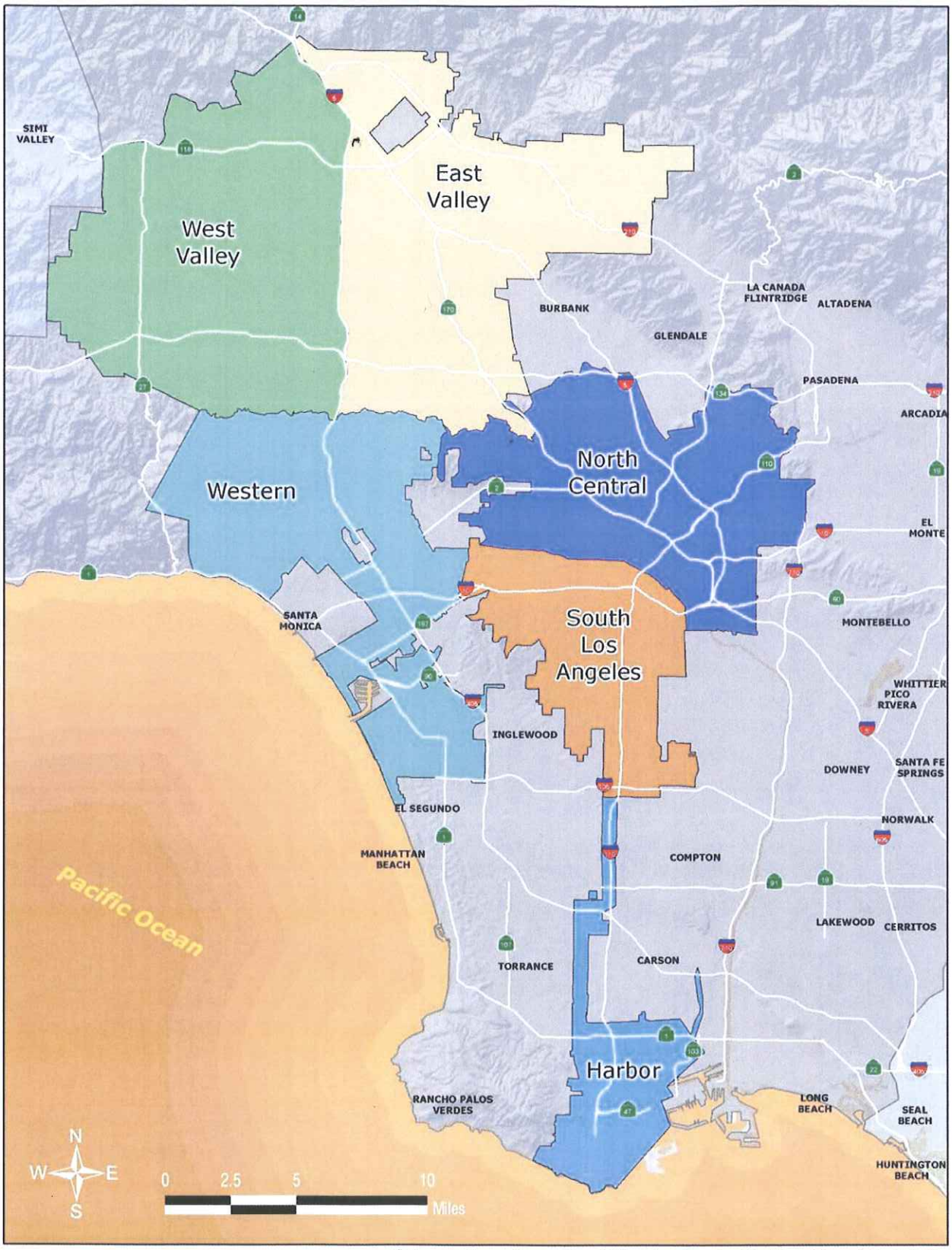


CITY OF LOS ANGELES
SANITATION
DEPARTMENT OF PUBLIC WORKS

Project Study Area

FIGURE 1

SWIRP | City of Los Angeles | Draft Environmental Impact Report



CITY OF LOS ANGELES
SANITATION
DEPARTMENT OF PUBLIC WORKS

City of Los Angeles Wastesheds/Collection Districts

FIGURE 2

SWIRP | City of Los Angeles | Draft Environmental Impact Report

APPENDIX B.2

NOTICE OF PREPARATION COMMENT LETTERS

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STATE OF CALIFORNIA
Governor's Office of Planning and Research
State Clearinghouse and Planning Unit

Arnold Schwarzenegger
Governor

Cathleen Cox
Acting Director

Notice of Preparation

August 18, 2010

To: Reviewing Agencies

Re: Solid Waste Integrated Resources Plan (SWIRP)
SCH# 2010081061

Attached for your review and comment is the Notice of Preparation (NOP) for the Solid Waste Integrated Resources Plan (SWIRP) draft Environmental Impact Report (EIR).

Responsible agencies must transmit their comments on the scope and content of the NOP, focusing on specific information related to their own statutory responsibility, within 30 days of receipt of the NOP from the Lead Agency. This is a courtesy notice provided by the State Clearinghouse with a reminder for you to comment in a timely manner. We encourage other agencies to also respond to this notice and express their concerns early in the environmental review process.

Please direct your comments to:

Reina Pereira
City of Los Angeles
Department of Public Works, Bureau of Sanitation
1149 South Broadway, 8th Floor
Los Angeles, CA 90015

with a copy to the State Clearinghouse in the Office of Planning and Research. Please refer to the SCH number noted above in all correspondence concerning this project.

If you have any questions about the environmental document review process, please call the State Clearinghouse at (916) 445-0613.

Sincerely,

Scott Morgan
Director, State Clearinghouse

Attachments
cc: Lead Agency

Document Details Report
State Clearinghouse Data Base

SCH# 2010081061
Project Title Solid Waste Integrated Resources Plan (SWIRP)
Lead Agency Los Angeles, City of

Type NOP Notice of Preparation

Description The Solid Waste Integrated Resources Plan (SWIRP) is a long-range master plan for solid waste management in the City of Los Angeles (City). SWIRP proposes an approach for the City to achieve a goal of diverting 70 percent of the solid waste from landfills by 2013 and 90 percent diversion by 2025. These targeted diversion rates would be implemented through an enhancement of existing policies and programs, implementation of new policies and programs, and the development of future facilities to meet the City's recycling and solid waste infrastructure needs over a 20-year planning period. It is assumed that the facilities would be within a 100-mile radius of the City. Specific locations for these facilities have not been identified at this time; rather SWIRP notes the number and type of facilities that would be required over the next 20 year planning period.

Lead Agency Contact

Name Reina Pereira
Agency City of Los Angeles
Phone (213) 485-3605 **Fax** 213 - 485-2961
email reina.pereira@lacity.org
Address Department of Public Works, Bureau of Sanitation
City 1149 South Broadway, 8th Floor Los Angeles **State** CA **Zip** 90015

Project Location

County Los Angeles
City Los Angeles, City of
Region
Cross Streets
Lat / Long
Parcel No.
Township **Range** **Section** **Base**

Proximity to:

Highways
Airports
Railways
Waterways
Schools
Land Use

Project Issues Aesthetic/Visual; Agricultural Land; Air Quality; Biological Resources; Archaeologic-Historic; Geologic/Seismic; Other Issues; Toxic/Hazardous; Water Quality; Landuse; Minerals; Noise; Population/Housing Balance; Public Services; Recreation/Parks; Traffic/Circulation

Reviewing Agencies Resources Agency; Department of Conservation; Department of Parks and Recreation; Resources, Recycling and Recovery; Department of Water Resources; Department of Fish and Game, Region 5; Native American Heritage Commission; Caltrans, District 7; Department of Toxic Substances Control; Regional Water Quality Control Board, Region 4

Date Received 08/18/2010 **Start of Review** 08/18/2010 **End of Review** 09/16/2010

Note: Blanks in data fields result from insufficient information provided by lead agency.

NOP Distribution List

County: Los Angeles SCH# 2010081061

Resources Agency

- [x] **Resources Agency**
  Nadell Gayou
- [ ] **Dept. of Boating & Waterways**
  Mike Sotelo
- [ ] **California Coastal Commission**
  Elizabeth A. Fuchs
- [ ] **Colorado River Board**
  Gerald R. Zimmerman
- [ ] **Dept. of Conservation**
  Rebecca Salazar
- [ ] **California Energy Commission**
  Eric Knight
- [ ] **Cal Fire**
  Allen Robertson
- [ ] **Central Valley Flood Protection Board**
  James Herota
- [ ] **Office of Historic Preservation**
  Ron Parsons
- [x] **Dept of Parks & Recreation**
  Environmental Stewardship Section
- [ ] **California Department of Resources, Recycling & Recovery**
  Sue O'Leary
- [ ] **S.F. Bay Conservation & Dev't. Comm.**
  Steve McAdam
- [ ] **Dept. of Water Resources**
  Resources Agency
  Nadell Gayou
- [ ] _____
  Conservancy

Fish and Game

- [ ] **Depart. of Fish & Game**
  Scott Flint
  Environmental Services Division
- [ ] **Fish & Game Region 1**
  Donald Koch
- [ ] **Fish & Game Region 1E**
  Laurie Harnsberger
- [ ] **Fish & Game Region 2**
  Jeff Drongesen
- [ ] **Fish & Game Region 3**
  Charles Armor
- [ ] **Fish & Game Region 4**
  Julie Vance
- [x] **Fish & Game Region 5**
  Don Chadwick
  Habitat Conservation Program
- [ ] **Fish & Game Region 6**
  Gabrina Gatchel
  Habitat Conservation Program
- [ ] **Fish & Game Region 6 I/M**
  Brad Henderson
  Inyo/Mono, Habitat Conservation Program
- [ ] **Dept. of Fish & Game M**
  George Isaac
  Marine Region

Other Departments

- [ ] **Food & Agriculture**
  Steve Shaffer
  Dept. of Food and Agriculture
- [ ] **Depart. of General Services**
  Public School Construction
- [ ] **Dept. of General Services**
  Anna Garbeff
  Environmental Services Section
- [ ] **Dept. of Public Health**
  Bridgette Binning
  Dept. of Health/Drinking Water

Independent Commissions,Boards

- [ ] **Delta Protection Commission**
  Linda Flack
- [ ] **Cal EMA (Emergency Management Agency)**
  Dennis Castrillo
- [ ] **Governor's Office of Planning & Research**
  State Clearinghouse
- [x] **Native American Heritage Comm.**
  Debbie Treadway
- [ ] **Public Utilities Commission**
  Leo Wong
- [ ] **Santa Monica Bay Restoration**
  Guangyu Wang
- [ ] **State Lands Commission**
  Marina Brand
- [ ] **Tahoe Regional Planning Agency (TRPA)**
  Cherry Jacques

Business, Trans & Housing

- [ ] **Caltrans - Division of Aeronautics**
  Sandy Hesnard
- [ ] **Caltrans - Planning**
  Terri Pencovic
- [ ] **California Highway Patrol**
  Scott Loetscher
  Office of Special Projects
- [ ] **Housing & Community Development**
  CEQA Coordinator
  Housing Policy Division

Dept. of Transportation

- [ ] **Caltrans, District 1**
  Rex Jackman
- [ ] **Caltrans, District 2**
  Marcelino Gonzalez
- [ ] **Caltrans, District 3**
  Bruce de Terra
- [ ] **Caltrans, District 4**
  Lisa Carboni
- [ ] **Caltrans, District 5**
  David Murray
- [ ] **Caltrans, District 6**
  Michael Navarro
- [x] **Caltrans, District 7**
  Elmer Alvarez
- [ ] **Caltrans, District 8**
  Dan Kopulsky
- [ ] **Caltrans, District 9**
  Gayle Rosander
- [ ] **Caltrans, District 10**
  Tom Dumas
- [ ] **Caltrans, District 11**
  Jacob Armstrong
- [ ] **Caltrans, District 12**
  Chris Herre

Cal EPA

Air Resources Board

- [ ] Airport Projects
  Jim Lerner
  - [ ] Transportation Projects
    Douglas Ito
  - [ ] Industrial Projects
    Mike Tollstrup
- [ ] **State Water Resources Control Board**
  Regional Programs Unit
  Division of Financial Assistance
- [ ] **State Water Resources Control Board**
  Student Intern, 401 Water Quality Certification Unit
  Division of Water Quality
- [ ] **State Water Resouces Control Board**
  Steven Herrera
  Division of Water Rights
- [x] **Dept. of Toxic Substances Control**
  CEQA Tracking Center
- [ ] **Department of Pesticide Regulation**
  CEQA Coordinator

Regional Water Quality Control Board (RWQCB)

- [ ] **RWQCB 1**
  Cathleen Hudson
  North Coast Region (1)
- [ ] **RWQCB 2**
  Environmental Document Coordinator
  San Francisco Bay Region (2)
- [ ] **RWQCB 3**
  Central Coast Region (3)
- [x] **RWQCB 4**
  Teresa Rodgers
  Los Angeles Region (4)
- [ ] **RWQCB 5S**
  Central Valley Region (5)
  - [ ] **RWQCB 5F**
    Central Valley Region (5)
    Fresno Branch Office
  - [ ] **RWQCB 5R**
    Central Valley Region (5)
    Redding Branch Office
- [ ] **RWQCB 6**
  Lahontan Region (6)
  - [ ] **RWQCB 6V**
    Lahontan Region (6)
    Victorville Branch Office
- [ ] **RWQCB 7**
  Colorado River Basin Region (7)
- [ ] **RWQCB 8**
  Santa Ana Region (8)
- [ ] **RWQCB 9**
  San Diego Region (9)

- [ ] **Other** _____

Last Updated on 07/12/10

STATE OF CALIFORNIA Arnold Schwarzenegger, Governor

NATIVE AMERICAN HERITAGE COMMISSION
915 CAPITOL MALL, ROOM 364
SACRAMENTO, CA 95814
(916) 653-6251
Fax (916) 657-5390
Web Site www.nahc.ca.gov
e-mail: ds_nahc@pacbell.net

August 24, 2010

MS. REINA PEREIRA
CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS, BUREAU OF SANITATION
1149 South Broadway, 8th Floor
Los Angeles, CA 90015

Re: SCH#2010081061; Notice of Completion; draft Environmental Impact Report (DEIR) for **the EIR 10-026-BS, Solid Waste Integrated Resources Plan (SWIRP) Project** located City-wide; City of Los Angeles; Los Angeles County, California.

Dear Ms. Pereira:

The Native American Heritage Commission (NAHC) is the state 'trustee agency' pursuant to Public Resources Code §21070 for the protection and preservation of California's Native American Cultural Resources. (Also see *Environmental Protection Information Center v. Johnson (1985) 170 Cal App. 3rd 604).* The California Environmental Quality Act (CEQA - CA Public Resources Code §21000-21177, amendment effective 3/18/2010) requires that any project that causes a substantial adverse change in the significance of an historical resource, that includes archaeological resources, is a 'significant effect' requiring the preparation of an Environmental Impact Report (EIR) per the California Code of Regulations §15064.5(b)(c)(f) CEQA guidelines). Section 15382 of the CEQA Guidelines defines a significant impact on the environment as "a substantial, or potentially substantial, adverse change in any of physical conditions within an area affected by the proposed project, including ...objects of historic or aesthetic significance. The lead agency is required to assess whether the project will have an adverse impact on these resources within the 'area of potential effect (APE), and if so, to mitigate that effect. State law also addresses Native American Religious Expression in Public Resources Code §5097.9.

The Native American Heritage Commission did perform a Sacred Lands File (SLF) search in the NAHC SLF Inventory, established by the Legislature pursuant to Public Resources Code §5097.94(a) and Native American Cultural Resources **were identified** within one-half mile of the APE identified for the project. Early consultation with Native American tribes in your area is the best way to avoid unanticipated discoveries once a project is underway. Enclosed are the names of the culturally affiliated tribes and interested Native American individuals that the NAHC recommends as 'consulting parties,' for this purpose, that may have knowledge of the religious and cultural significance of the historic properties in the project area (e.g. APE). We recommend that you contact persons on the attached list of Native American contacts. A Native American Tribe or Tribal Elder may be the only source of information about a cultural resource.. Also, the NAHC recommends that a Native American Monitor or Native American culturally knowledgeable person be employed whenever a professional archaeologist is employed during the 'Initial Study' and in other phases of the environmental planning processes.

Furthermore the NAHC recommends that you contact the California Historic Resources Information System (CHRIS) at the Office of Historic Preservation (OHP) Coordinator's office (at (916) 653-7278, for referral to the nearest OHP Information Center of which there are 10.

Consultation with tribes and interested Native American tribes and interested Native American individuals, as consulting parties, on the NAHC list ,should be conducted in compliance with the requirements of federal NEPA (42 U.S.C. 4321-43351) and Section 106 and 4(f) of federal NHPA (16 U.S.C. 470 [f)]*et se),* 36 CFR Part 800.3, the President's Council on Environmental Quality (CSQ; 42 U.S.C. 4371 *et seq.*) and NAGPRA (25 U.S.C. 3001-3013), as appropriate. The 1992 *Secretary of the Interior's Standards for the Treatment of Historic Properties* were revised so that they could be applied to all historic resource types included in the National Register of Historic Places and including *cultural landscapes.* Consultation with Native American communities is also a matter of environmental justice as defined by California Government Code §65040.12(e).

Lead agencies should consider avoidance, as defined in Section 15370 of the California Environmental Quality Act (CEQA) when significant cultural resources could be affected by a project. Also, Public Resources Code Section 5097.98 and Health & Safety Code Section 7050.5 provide for provisions for accidentally discovered archeological resources during construction and mandate the processes to be followed in the event of an accidental discovery of any human remains in a project location other than a 'dedicated cemetery. Discussion of these should be included in your environmental documents, as appropriate.

The authority for the SLF record search of the NAHC Sacred Lands Inventory, established by the California Legislature, is California Public Resources Code §5097.94(a) and is exempt from the CA Public Records Act (c.f. California Government Code §6254.10). The results of the SLF search are confidential. However, Native Americans on the attached contact list are not prohibited from and may wish to reveal the nature of identified cultural resources/historic properties. Confidentiality of "historic properties of religious and cultural significance' may also be protected the under Section 304 of the NHPA or at the Secretary of the Interior' discretion if not eligible for listing on the National Register of Historic Places. The Secretary may also be advised by the federal Indian Religious Freedom Act (cf. 42 U.S.C, 1996) in issuing a decision on whether or not to disclose items of religious and/or cultural significance identified in or near the APE and possibly threatened by proposed project activity.

CEQA Guidelines, Section 15064.5(d) requires the lead agency to work with the Native Americans identified by this Commission if the initial Study identifies the presence or likely presence of Native American human remains within the APE. CEQA Guidelines provide for agreements with Native American, identified by the NAHC, to assure the appropriate and dignified treatment of Native American human remains and any associated grave liens. Although tribal consultation under the California Environmental Quality Act (CEQA; CA Public Resources Code Section 21000 – 21177) is 'advisory' rather than mandated, the NAHC does request 'lead agencies' to work with tribes and interested Native American individuals as 'consulting parties,' on the list provided by the NAHC in order that cultural resources will be protected. However, the 2006 SB 1059 the state enabling legislation to the Federal Energy Policy Act of 2005, does mandate tribal consultation for the 'electric transmission corridors. This is codified in the California Public Resources Code, Chapter 4.3, and §25330 to Division 15, requires consultation with California Native American tribes, and identifies both federally recognized and non-federally recognized on a list maintained by the NAHC

Health and Safety Code §7050.5, Public Resources Code §5097.98 and Sec. §15064.5 (d) of the California Code of Regulations (CEQA Guidelines) mandate procedures to be followed, including that construction or excavation be stopped in the event of an accidental discovery of any human remains in a location other than a dedicated cemetery until the county coroner or medical examiner can determine whether the remains are those of a Native American. . Note that §7052 of the Health & Safety Code states that disturbance of Native American cemeteries is a felony.

Again, Lead agencies should consider avoidance, as defined in §15370 of the California Code of Regulations (CEQA Guidelines), when significant cultural resources are discovered during the course of project planning and implementation.

Please feel free to contact me at (916) 653-6251 if you have any questions.

Sincerely,

Dave Singleton
Program Analyst

Attachment: List of Culturally Affiliated Native American Contacts

Cc: State Clearinghouse

Native American Contacts
Los Angeles County
August 24, 2010

Charles Cooke
32835 Santiago Road
Acton , CA 93510
suscol@intox.net

(661) 733-1812 - cell
suscol@intox.net

Chumash
Fernandeno
Tataviam
Kitanemuk

Tongva Ancestral Territorial Tribal Nation
John Tommy Rosas, Tribal Admin.
,
tattnlaw@gmail.com
310-570-6567

Gabrielino Tongva

Fernandeno Tataviam Band of Mission Indians
William Gonzales, Cultural/Environ Depart/Rudy Ortega
601 South Brand Boulevard, Suite 102
San Fernando CA 91340
rortega@tataviam-nsn.us
(818) 837-0794 Office

(818) 837-0796 Fax

Fernandeno
Tataviam

Kitanemuk & Yowlumne Tejon Indians
Delia Dominguez
981 N. Virginia
Covina , CA 91722
(626) 339-6785

Yowlumne
Kitanemuk

LA City/County Native American Indian Comm
Ron Andrade, Director
3175 West 6th Street, Rm.
Los Angeles , CA 90020
randrade@css.lacounty.gov
(213) 351-5324
(213) 386-3995 FAX

San Fernando Band of Mission Indians
John Valenzuela, Chairperson
P.O. Box 221838
Newhall , CA 91322
tsen2u@hotmail.com
(661) 753-9833 Office
(760) 885-0955 Cell
(760) 949-1604 Fax

Fernandeño
Tataviam
Serrano
Vanyume
Kitanemuk

Ti'At Society
Cindi Alvitre
6515 E. Seaside Walk, #C
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calvitre@yahoo.com
(714) 504-2468 Cell

Gabrielino

Gabrieleno/Tongva San Gabriel Band of Mission
Anthony Morales, Chairperson
PO Box 693
San Gabriel , CA 91778
GTTribalcouncil@aol.com
(626) 286-1632
(626) 286-1758 - Home
(626) 286-1262 -FAX

Gabrielino Tongva

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code. Also, federal National Environmental Policy Act (NEPA), National Historic Preservation Act, Section 106 and fed eral NAGPRA. And 36 CFR Part 800.3.

This list is only applicable for contacting local Native Americans for consultation purposes with regard to cultural resources impact by the proposed SCH#2010081061; CEQA Notice of Preparation (NOP); draft Environmental Impact Repaort (DEIR) for the Solid Waste Integrated Resources Plan (SWIRP); City of Los Angeles; Los Angeles County, California.

Native American Contacts
Los Angeles County
August 24, 2010

Gabrielino Tongva Nation
Sam Dunlap, Chairperson
P.O. Box 86908 Gabrielino Tongva
Los Angeles , CA 90086
samdunlap@earthlink.net

(909) 262-9351 - cell

Gabrielino-Tongva Tribe
Linda Candelaria, Chairwoman
1875 Century Park East, Suite 1500
Los Angeles , CA 90067 Gabrielino
lcandelaria1@gabrielinoTribe.org
310-428-5767- cell
(310) 587-2281

Gabrielino Tongva Indians of California Tribal Council
Robert F. Doramae, Tribal Chair/Cultural
P.O. Box 490 Gabrielino Tongva
Bellflower , CA 90707
gtongva@verizon.net
562-761-6417 - voice
562-925-7989 - fax

Gabrielino-Tongva Tribe
Bernie Acuna
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(310) 587-2281

Shoshoneon Gabrieleno Band of Mission Indians
Andy Salas, Chairperson
PO Box 393 Gabrieleno
Covina , CA 91723
gabrielenoindians@yahoo.
626-926-4131
213) 688-0181 - FAX

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code. Also, federal National Environmental Policy Act (NEPA), National Historic Preservation Act, Section 106 and fed eral NAGPRA. And 36 CFR Part 800.3.

This list is only applicable for contacting local Native Americans for consultation purposes with regard to cultural resources impact by the proposed SCH#2010081061; CEQA Notice of Preparation (NOP); draft Environmental Impact Repaort (DEIR) for the Solid Waste Integrated Resources Plan (SWIRP); City of Los Angeles; Los Angeles County, California.

DEPARTMENT OF TRANSPORTATION
DISTRICT 7, OFFICE OF REGIONAL PLANNING
IGR/CEQA PROGRAM
100 SOUTH MAIN STREET
LOS ANGELES, CA 90012-3606
PHONE (213) 897-6696
FAX (213) 897-1337

Flex your power!
Be energy efficient!

October 28, 2010

Ms. Reina Pereira
City of Los Angeles, Bureau of Sanitation
Wastewater Engineering Services
1149 South Broadway, 8th Floor
Los Angeles, CA 90015

Re: ***Solid Waste Integrated Resources Plan (SWIRP)***
Notice of Preparation of a Draft EIR
IGR/CEQA 100844/EA SCH#2010081061

Dear Ms. Pereira

Thank you for including the California Department of Transportation (Caltrans) in the environmental review process for the proposed Solid Waste Integrated Resources Plan (SWIRP). The SWIRP is a long range master plan for solid waste management in the City of Los Angeles. In the interest of mutual cooperation through completion of the plan, we have the following comments:

There is a potential for significant transportation impacts on State highway facilities as a result of the proposed project to the extent that solid waste is projected to be transported on them. To help us evaluate project –related traffic impacts on State the highway system, we request that a traffic study be prepared. The traffic study should include a peak-hour analysis of the impacted highway facilities. Generally we request that traffic studies include the following information:

1. Existing traffic volume counts during AM and PM peak periods.
2. Level of Service before and after development
3. Future conditions should include both project, and project plus cumulative traffic.
4. Discussion of mitigation measures appropriate to alleviate any anticipated traffic impacts, including sharing of mitigation costs.

For additional information, please refer to our Guide for the preparation of Traffic Impact Studies at: http://www.dot.ca.gov/hq/traffops/developserv/operationalsystems/reports/tisguide.pdf

Generally we recommend that the following elements related to truck traffic be evaluated/considered, where applicable:

1) The increased potential for pavement and base sections break-down by heavy trucks.
2) Truck vehicle access onto the highway may be slower than other vehicle due to the additional weight.
3) Turning radii may need to be larger to prevent trucks from crossing the centerline.

4) Shoulder widths may need to be increased.
5) Sight distance may influence the need for curve corrections.
6) Escape ramps for runways may be needed on steeper grades.
7) Larger traffic volumes may create a need for passing lanes.
8) Cargo spills need to be cleaned up expeditiously to prevent accidents.
9) Truck routes need to avoid areas with frequent pedestrian use, such as schools.
10) Signal timing and placement as trucks may have greater difficulty stopping.
11) Emission systems on older trucks may not meet new air quality standards.

If you have any questions, you may reach me at (213) 897-9140 and refer to IGR/CEQA record number 100844/EA.

Sincerely,

DIANNA WATSON
IGR/CEQA Program Manager
Caltrans, District 7

cc: Scott Morgan, State Clearinghouse

South Coast
Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4178
(909) 396-2000 • www.aqmd.gov

August 24, 2010

Reina Pereira, P.E. , Senior Environmental Engineer
City of Los Angeles
Department of Public Works, Bureau of Sanitation
Public Works Building (PWB) MS 521
1149 South Broadway, 8th Floor
Los Angeles, CA 90015

Notice of Preparation of a Draft Environmental Impact Report (Draft EIR) for the Solid Waste Integrated Resources Plan

The South Coast Air Quality Management District (SCAQMD) appreciates the opportunity to comment on the above-mentioned document. The SCAQMD's comments are recommendations regarding the analysis of potential air quality impacts from the proposed project that should be included in the draft environmental impact report (EIR). Please send the SCAQMD a copy of the Draft EIR upon its completion. **In addition, please send with the draft EIR all appendices or technical documents related to the air quality analysis and electronic versions of all air quality modeling and health risk assessment files. Electronic files include spreadsheets, database files, input files, output files, etc., and does not mean Adobe PDF files. Without all files and supporting air quality documentation, the SCAQMD will be unable to complete its review of the air quality analysis in a timely manner. Any delays in providing all supporting air quality documentation will require additional time for review beyond the end of the comment period.**

Air Quality Analysis

The SCAQMD adopted its California Environmental Quality Act (CEQA) Air Quality Handbook in 1993 to assist other public agencies with the preparation of air quality analyses. The SCAQMD recommends that the Lead Agency use this Handbook as guidance when preparing its air quality analysis. Copies of the Handbook are available from the SCAQMD's Subscription Services Department by calling (909) 396-3720. Alternatively, the lead agency may wish to consider using the California Air Resources Board (CARB) approved URBEMIS 2007 Model. This model is available on the SCAQMD Website at: www.urbemis.com.

The Lead Agency should identify any potential adverse air quality impacts that could occur from all phases of the project and all air pollutant sources related to the project. Air quality impacts from both construction (including demolition, if any) and operations should be calculated. Construction-related air quality impacts typically include, but are not limited to, emissions from the use of heavy-duty equipment from grading, earth-loading/unloading, paving, architectural coatings, off-road mobile sources (e.g., heavy-duty construction equipment) and on-road mobile sources (e.g., construction worker vehicle trips, material transport trips). Operation-related air quality impacts may include, but are not limited to, emissions from stationary sources (e.g., boilers), area sources (e.g., solvents and coatings), and vehicular trips (e.g., on- and off-road tailpipe emissions and entrained dust). Air quality impacts from indirect sources, that is, sources that generate or attract vehicular trips should be included in the analysis.

The SCAQMD has developed a methodology for calculating PM2.5 emissions from construction and operational activities and processes. In connection with developing PM2.5 calculation methodologies, the SCAQMD has also developed both regional and localized significance thresholds. The SCAQMD requests that the lead agency quantify PM2.5 emissions and compare the results to the recommended PM2.5 significance thresholds. Guidance for calculating PM2.5 emissions and PM2.5 significance thresholds can be found at the following internet address: http://www.aqmd.gov/ceqa/handbook/PM2_5/PM2_5.html.

In addition to analyzing regional air quality impacts the SCAQMD recommends calculating localized air quality impacts and comparing the results to localized significance thresholds (LSTs). LST's can be used in addition to the recommended regional significance thresholds as a second indication of air quality impacts when preparing a CEQA document. Therefore, when preparing the air quality analysis for the proposed project, it is recommended that the lead agency perform a localized significance analysis by either using the LSTs developed by the SCAQMD or performing dispersion modeling as necessary. Guidance for performing a localized air quality analysis can be found at http://www.aqmd.gov/ceqa/handbook/LST/LST.html.

In the event that the proposed project generates or attracts vehicular trips, especially heavy-duty diesel-fueled vehicles, it is recommended that the lead agency perform a mobile source health risk assessment. Guidance for performing a mobile source health risk assessment ("Health Risk Assessment Guidance for Analyzing Cancer Risk from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis") can be found on the SCAQMD's CEQA web pages at the following internet address: http://www.aqmd.gov/ceqa/handbook/mobile_toxic/mobile_toxic.html. An analysis of all toxic air contaminant impacts due to the decommissioning or use of equipment potentially generating such air pollutants should also be included.

Mitigation Measures

In the event that the project generates significant adverse air quality impacts, CEQA requires that all feasible mitigation measures that go beyond what is required by law be utilized during project construction and operation to minimize or eliminate significant adverse air quality impacts. To assist the Lead Agency with identifying possible mitigation measures for the project, please refer to Chapter 11 of the SCAQMD CEQA Air Quality Handbook for sample air quality mitigation measures. Additional mitigation measures can be found on the SCAQMD's CEQA web pages at the following internet address: www.aqmd.gov/ceqa/handbook/mitigation/MM_intro.html Additionally, SCAQMD's Rule 403 – Fugitive Dust, and the Implementation Handbook contain numerous measures for controlling construction-related emissions that should be considered for use as CEQA mitigation if not otherwise required. Other measures to reduce air quality impacts from land use projects can be found in the SCAQMD's Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning. This document can be found at the following internet address: http://www.aqmd.gov/prdas/aqguide/aqguide.html. In addition, guidance on siting incompatible land uses can be found in the California Air Resources Board's Air Quality and Land Use Handbook: A Community Perspective, which can be found at the following internet address: http://www.arb.ca.gov/ch/handbook.pdf. CARB's Land Use Handbook is a general reference guide for evaluating and reducing air pollution impacts associated with new projects that go through the land use decision-making process. Pursuant to state CEQA Guidelines §15126.4 (a)(1)(D), any impacts resulting from mitigation measures must also be discussed.

Data Sources

SCAQMD rules and relevant air quality reports and data are available by calling the SCAQMD's Public Information Center at (909) 396-2039. Much of the information available through the Public Information Center is also available via the SCAQMD's World Wide Web Homepage (http://www.aqmd.gov).

The SCAQMD is willing to work with the Lead Agency to ensure that project-related emissions are accurately identified, categorized, and evaluated. If you have any questions regarding this letter, please call Ian MacMillan, Program Supervisor, CEQA Section, at (909) 396-3244.

Sincerely,

Ian MacMillan
Program Supervisor, CEQA Inter-Governmental Review
Planning, Rule Development & Area Sources

IM
LAC100812-02
Control Number

CalRecycle

DEPARTMENT OF RESOURCES RECYCLING AND RECOVERY

801 K STREET, MS 19-01, SACRAMENTO, CALIFORNIA 95814 • (916) 322-4027 • WWW.CALRECYCLE.CA.GOV

September 30, 2010

Ms. Reina Pereira, P.E., Senior Environmental Engineer
City of Los Angeles
Department of Public Works, Bureau of Sanitation
Public Works Building (PWB) MS 521
1149 South Broadway, 8th Floor
Los Angeles, CA 90015

Subject: SCH No. 2010081061: Notice of Preparation for the Solid Waste Integrated Resources Plan Draft Environmental Impact Report

Dear Ms. Pereira:

Thank you for allowing the Department of Resources Recycling and Recovery (CalRecycle) staff to provide comments for this proposed project and for your agency's consideration of these comments as part of the California Environmental Quality Act (CEQA) process.

CalRecycle staff has reviewed the environmental document cited above and offers the following project description, analysis and our recommendations for the proposed project based on our understanding of the project. If CalRecycle's project description varies substantially from the project as understood by the Lead Agency, CalRecycle staff requests that the Lead Agency clarify any significant differences in the project description in the Draft Environmental Impact Report.

Project Description

The City of Los Angeles, Department of Public Works, acting as Lead Agency, has prepared and circulated a Notice of Preparation for the Solid Waste Integrated Resources Plan Draft Environmental Impact Report.

The Solid Waste Integrated Resources Plan is a long-range master plan for solid waste management in the City of Los Angeles. The Solid Waste Integrated Resources Plan proposes an approach for the City of achieve a goal of diverting 70 percent of the solid waste from landfills by 2013 and 90 percent diversion by 2025. These targeted diversion rates would be implemented through an enhancement of existing policies and programs, implementation of new policies and programs, and the development of future facilities to meet the City's recycling and solid waste infrastructure needs over a 20-year planning period. It is assumed that the facilities would be within a 100-mile radius of the City. Specific locations for these facilities have not been identified at this time; rather the Solid Waste Integrated Resources Plan notes the number and type of facilities that would be required over the next 20 year planning period.

CALRECYCLE'S COMMENTS AND QUESTIONS

CalRecycle staff were unable to comment within the designated comment period because of workload constraints; when the Draft Environmental Impact Report is available for review please include CalRecycle as a Reviewing Agency.

If any specific sites are identified please describe the sites in detail, indicating specifics to the operation of the site and analyze for environmental effects and impacts to health safety and the environment related to those sites.

CalRecycle staff suggests that a discussion of SCAQMD Rule 410, pertinent parts of AB 32 – Global Warming Solutions Act, and Appendix F of the CEQA Guidelines, which was amended effective March 18, 2010, to ensure that Lead Agencies comply with the substantive directive in PRC 21100(b)(3), be included in the Draft Environmental Impact Report. For more information on CEQA Appendix F go to http://ceres.ca.gov/ceqa/guidelines/.

Summary

CalRecycle staff thanks the Lead Agency for the opportunity to review this Notice of Preparation. CalRecycle staff requests copies of any subsequent environmental documents including; the Draft Environmental Impact Report, the Final Environmental Impact Report, any Statement of Overriding Considerations and Notices of Determination for this project.

If you have any questions regarding this letter, please contact me at 916.324.3753 or email me at Patrick.Snider@CalRecycle.ca.gov .

Sincerely,

Patrick Snider
Integrated Waste Management Specialist
Waste Compliance and Mitigation Program
Permitting and Local Enforcement Agency Support – South
Department of Resources Recycling and Recovery – CalRecycle

**Please note that correspondence related to this letter and for staff of the Waste Compliance and Mitigation Program should continue to be sent to 1001 I Street, Sacramento, CA 95814. Correspondence specifically for the attention of the Director of CalRecycle should be sent to the address in the letterhead.*

Cc: Susan Markie – CalRecycle – via email
Nicki Ruszczycky – CalRecycle – via email
David Thompson – City of LA, LEA – via email

SOUTHERN CALIFORNIA
ASSOCIATION of GOVERNMENTS

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September 16, 2010

Ms. Reina Pereira, P.E.
City of Los Angeles
Department of Public Works, Bureau of Sanitation
Public Works Building (PWB) MS 521
1149 South Broadway, 8th Floor
Los Angeles, CA 90015
reina.pereira@lacity.org

RE: SCAG Comments on the Notice of Preparation of a Draft Environmental Impact Report for the Solid Waste Integrated Resources Plan (SWIRP) [I20100279]

Dear Ms. Pereira,

Thank you for submitting the **Notice of Preparation of a Draft Environmental Impact Report for the Solid Waste Integrated Resources Plan (SWIRP) [I20100279]** to the Southern California Association of Governments (SCAG) for review and comment. SCAG is the authorized regional agency for Inter-Governmental Review of Programs proposed for federal financial assistance and direct development activities, pursuant to Presidential Executive Order 12372 (replacing A-95 Review). Additionally, pursuant to Public Resources Code Section 21083(d) SCAG reviews Environmental Impact Reports of projects of regional significance for consistency with regional plans per the California Environmental Quality Act Guidelines, Sections 15125(d) and 15206(a)(1). SCAG is also the designated Regional Transportation Planning Agency and as such is responsible for both preparation of the Regional Transportation Plan (RTP) and Federal Transportation Improvement Program (FTIP) under California Government Code Section 65080 and 65082.

SCAG staff has reviewed this project and determined that the proposed project is regionally significant per California Environmental Quality Act (CEQA) Guidelines, Sections 15125 and/or 15206. The proposed project is a long-range master plan for solid waste management in the City of Los Angeles.

Policies of SCAG's Regional Transportation Plan (RTP) and Compass Growth Visioning (CGV) that may be applicable to your project are outlined in the attachment. The RTP, CGV, and table of policies can be found on the SCAG web site at: http://scag.ca.gov/igr. For ease of review, we would encourage you to use a side-by-side comparison of all SCAG policies with a discussion of the consistency, non-consistency or non-applicability of the policy and supportive analysis in a table format (example attached).

The attached policies are meant to provide guidance for considering the proposed project within the context of our regional goals and policies. We also encourage the use of the SCAG List of Mitigation Measures extracted from the RTP to aid with demonstrating consistency with regional plans and policies. **When available, please send environmental documentation ONLY to SCAG's main office in Los Angeles and provide a minimum of 45 days for SCAG to review.** If you have any questions regarding the attached comments, please contact Bernard Lee at (213) 236-1895 or leeb@scag.ca.gov. Thank you.

Sincerely,

Jacob Lieb, Manager
Environmental and Assessment Services

COMMENTS ON THE NOTICE OF PREPARATION OF A DRAFT ENVIRONMENTAL IMPACT REPORT FOR THE SOLID WASTE INTEGRATED RESOURCES PLAN (SWIRP) [I20100279]

PROJECT LOCATION

SWIRP addresses the handling of solid waste for the City, which covers approximately 498 square miles and is home to approximately 3.8 million residents. The programs and policies identified in SWIRP would apply to all residential, commercial, industrial and institutional generators in the City. SWIRP also identifies a variety of facilities that will need to be constructed to meet the City's recycling and solid waste infrastructure requirements over the 20-year planning period. For the purposes of this EIR, it is assumed that the facilities would be within a 100-mile radius of the City. Specific locations for these facilities have not been identified at this time; rather SWIRP notes the number and type of facilities that would be required over the next 20 years.

PROJECT DESCRIPTION

SWIRP proposes an approach for the City to achieve a goal of diverting 70 percent of the solid waste from landfills by 2013 and 90 percent diversion by 2025. These targeted diversion rates would be implemented through an enhancement of existing policies and programs, implementation of new policies and programs, and the development of future facilities to meet the City's recycling and solid waste infrastructure needs over a 20-year planning period.

CONSISTENCY WITH REGIONAL TRANSPORTATION PLAN

Regional Growth Forecasts

The DEIR should reflect the most current SCAG forecasts, which are the 2008 RTP (May 2008) Population, Household and Employment forecasts. The forecasts for your region, Subregion and city are as follows:

Adopted SCAG Regionwide Forecasts[1]

	2010	2015	2020	2025	2030	2035
Population	19,418,344	20,465,830	21,468,948	22,395,121	23,255,377	24,057,286
Households	6,086,986	6,474,074	6,840,328	7,156,645	7,449,484	7,710,722
Employment	8,349,453	8,811,406	9,183,029	9,546,773	9,913,376	10,287,125

Adopted City of Los Angeles Subregion Forecasts[1]

	2010	2015	2020	2025	2030	2035
Population	4,140,516	4,214,082	4,292,139	4,367,538	4,440,017	4,509,435
Households	1,386,658	1,445,177	1,506,564	1,554,478	1,600,754	1,638,823
Employment	1,860,672	1,905,337	1,933,860	1,967,393	2,003,196	2,037,472

Adopted City of Los Angeles Forecasts[1]

	2010	2015	2020	2025	2030	2035
Population	4,057,484	4,128,125	4,204,329	4,277,732	4,348,282	4,415,773
Households	1,366,985	1,424,701	1,485,519	1,532,998	1,578,850	1,616,578
Employment	1,820,092	1,864,061	1,892,139	1,925,148	1,960,393	1,994,134

1. The 2008 RTP growth forecast at the regional, subregional, and city level was adopted by the Regional Council in May 2008. City totals are the sum of small area data and should be used for advisory purposes only.

The **2008 Regional Transportation Plan (RTP)** also has goals and policies that may be pertinent to this proposed project. This RTP links the goal of sustaining mobility with the goals of fostering economic development, enhancing the environment, reducing energy consumption, promoting transportation-friendly development patterns, and encouraging fair and equitable access to residents affected by socio-economic, geographic and commercial limitations. The RTP continues to support all applicable federal and state laws in implementing the proposed project. Among the relevant goals and policies of the RTP are the following:

Regional Transportation Plan Goals:

RTP G1 *Maximize mobility and accessibility for all people and goods in the region.*
RTP G2 *Ensure travel safety and reliability for all people and goods in the region.*
RTP G3 *Preserve and ensure a sustainable regional transportation system.*
RTP G4 *Maximize the productivity of our transportation system.*
RTP G5 *Protect the environment, improve air quality and promote energy efficiency.*
RTP G6 *Encourage land use and growth patterns that complement our transportation investments.*
RTP G7 *Maximize the security of our transportation system through improved system monitoring, rapid recovery planning, and coordination with other security agencies.*

GROWTH VISIONING

The fundamental goal of the **Compass Growth Visioning** effort is to make the SCAG region a better place to live, work and play for all residents regardless of race, ethnicity or income class. Thus, decisions regarding growth, transportation, land use, and economic development should be made to promote and sustain for future generations the region's mobility, livability and prosperity. The following "Regional Growth Principles" are proposed to provide a framework for local and regional decision making that improves the quality of life for all SCAG residents. Each principle is followed by a specific set of strategies intended to achieve this goal.

Principle 1: Improve mobility for all residents.

GV P1.1 *Encourage transportation investments and land use decisions that are mutually supportive.*
GV P1.2 *Locate new housing near existing jobs and new jobs near existing housing.*
GV P1.3 *Encourage transit-oriented development.*
GV P1.4 *Promote a variety of travel choices*

Principle 2: Foster livability in all communities.

GV P2.1 *Promote infill development and redevelopment to revitalize existing communities.*
GV P2.2 *Promote developments, which provide a mix of uses.*
GV P2.3 *Promote "people scaled," walkable communities.*
GV P2.4 *Support the preservation of stable, single-family neighborhoods.*

Principle 3: Enable prosperity for all people.

GV P3.1 *Provide, in each community, a variety of housing types to meet the housing needs of all income levels.*
GV P3.2 *Support educational opportunities that promote balanced growth.*
GV P3.3 *Ensure environmental justice regardless of race, ethnicity or income class.*
GV P3.4 *Support local and state fiscal policies that encourage balanced growth*
GV P3.5 *Encourage civic engagement.*

Principle 4: Promote sustainability for future generations.

GV P4.1 *Preserve rural, agricultural, recreational, and environmentally sensitive areas*
GV P4.2 *Focus development in urban centers and existing cities.*
GV P4.3 *Develop strategies to accommodate growth that uses resources efficiently, eliminate pollution and significantly reduce waste.*
GV P4.4 *Utilize "green" development techniques*

CONCLUSION

As the clearinghouse for regionally significant projects per Executive Order 12372, SCAG reviews the consistency of local plans, projects, and programs with regional plans. This activity is based on SCAG's responsibilities as a regional planning organization pursuant to state and federal laws and regulations. Guidance provided by these reviews is intended to assist local agencies and project sponsors to take actions that contribute to the attainment of regional goals and policies.

All feasible measures needed to mitigate any potentially negative regional impacts associated with the proposed project should be implemented and monitored, as required by CEQA. We recommend that you review the SCAG List of Mitigation Measures for additional guidance, and encourage you to follow them, where applicable to your project. The SCAG List of Mitigation Measures may be found here: http://www.scag.ca.gov/igr/documents/SCAG_IGRMMRP_2008.pdf

SUGGESTED SIDE BY SIDE FORMAT - COMPARISON TABLE OF SCAG POLICIES

For ease of review, we would encourage the use of a side-by-side comparison of all SCAG policies with a discussion of the consistency, non-consistency or not applicable of the policy and supportive analysis in a table format. All policies and goals must be evaluated as to impacts. Suggested format is as follows:

The complete table can be found at: http://www.scag.ca.gov/igr/

- Click on ***"Demonstrating Your Project's Consistency With SCAG Policies"***
- Scroll down to ***"Table of SCAG Policies for IGR"***

SCAG Regional Transportation Plan Goals and Compass Growth Visioning Principles		
Regional Transportation Plan Goals		
Goal/ Principle Number	**Policy Text**	**Statement of Consistency, Non-Consistency, or Not Applicable**
RTP G1	Maximize mobility and accessibility for all people and goods in the region.	***Consistent:*** *Statement as to why* ***Not-Consistent:*** *Statement as to why* *or* ***Not Applicable:*** *Statement as to why*
RTP G2	Ensure travel safety and reliability for all people and goods in the region.	***Consistent:*** *Statement as to why* ***Not-Consistent:*** *Statement as to why* *or* ***Not Applicable:*** *Statement as to why*
RTP G3	Preserve and ensure a sustainable regional transportation system.	***Consistent:*** *Statement as to why* ***Not-Consistent:*** *Statement as to why* *or* ***Not Applicable:*** *Statement as to why*
Etc.	Etc.	Etc.

CITY OF LOS ANGELES

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Sun Valley Area Neighborhood Council

9000 Sunland Blvd Suite "A"
Sun Valley CA 91352
Telephone 818-767-8262
Fax 818-767-7510

WWW.SVANC.ORG

Ms Reina Pereira PE Senior Environmental Engineer
City Of Los Angeles
Department of Public works, Bureau of Sanitation
Public Works Building (PWB) MS 521
1149 South Broadway 8th floor
Los Angeles Calif 90015

RE: SWIRP EIR SCOPING COMMENTS
EIR-10-026-BS

Ms Peira;
Thank you for the opportunity to comment on this project.
Any Waste Facility that is built to accommodate the plans for the Zero Waste program in Los Angeles should be built on a property that is large enough to accommodate expansion at a future date.
All entrances and exits that will be used for Waste trucks shall be paved with Cement/Concrete. No roadways that will be traversed by waste vehicles will be paved in asphalt.
Asphalt catches little bits of debris that falls from the waste vehicles and it goes into the tiny crevices that no sweeper can dislodge. These little scraps of waste attract birds particularly Starlings which then set up homes in the area and cause problems at public open spaces by defecating.
Any and all Waste vehicles accessing the facility shall burn CNG/LNG fuel. No waste vehicles shall be allowed access that burn Diesel fuel.
The Facility shall be built with a negative Air Pressure system, so that as Trucks enter or exit from the Facility fresh air will be sucked in through the opening and the air from inside cannot escape
All air in the facility will be treated and conditioned before it is allowed to exit the facility so that it shall be free from any and all odors.
Trucks entering and leaving the facility will go thru an air lock. They will enter thru fast opening overhead doors that place them in an airlock when the exterior door closes behind them the door into the working portion of the facility will open to allow access.
There vill be little signage. No large signs bigger than 2 foot by 3 feet near the entrance.
The entire Facility shall be set back from the public streets and roadways by Twenty feet. This twenty feet set back shall be tastefully landscaped preferably by large trees and Shrubs that can be sheared into tall hedges.

Shrubs that can be sheared into tall hedges.
The building itself shall be built down into the ground so it cannot be seen from the surrounding streets.
There shall be no quequing of any vehicles on public streets. All quequing shall be on the facility out of view of the surrounding homes businesses and/or people.
The hours of operation shall not exceed 12 hours per day Preferably on the order of 6AM to 6PM Five days per week Monday through Friday. Each Saturday the entire facility shall be cleaned inside and out during the hours of 8AM to 6PM.
Any and all Trucks used to haul waste and all other vehicles used to operate the facility shall be washed twice a week
ALL motorized vehicles, conveyances used in the operation of the plant shall use electricity or LNG/CNG fuel.
Workers in the plant shall be furnished with Bathroom facilities close to their workstations so that they are able to access these facilities to wash during there morning and afternoon break.
An indoor lunchroom removed from the facility shall be provided for the workers..
Landscaping shall be installed along the cement/ concrete roadways traversed by the waste trucks. All Rainwater or Stormwater from a storm rendering up to one-inch of rainfall shall be captured and allowed to perculate down into the ground.
Curb cuts shall be used to allow rain water to flow into the landscaping.
Parking shall be provided on-site for the workers and the parking lot(s) shall have a planter with a large tree and shrubs in it for every 8 cars. The parking lot shall be surfaced with paving that allows stormwater to perculate down thru it.
Irrigation for all landscaping shall be controled by Smart Timers hooked to a satellite which will water as needed by the weather.
All stormwater over and above the one inch storm shall be captured and run thru a clarifier or device that will clean most impurities before it is allowed to drain into a sewer system. All Best Practices should be used to keep as much of the rainwater so it may be recycled. No rainwater shall be allowed to run into the streets friom this facility.
It is the desire of The Sun Valley Area Neighborhood Council That this first facility NOT be built in the surrounds of Sun Valley. We already have more than our fair share of undesireable businesses. It is also our desire that this facility generate clean electricity as an end product NOT any kind of Bio-fuel
Thank You
Sincerely

Mike O'Gara Planning Committee
Sun Valley Area Neighborhood Council
9301 Cayuga Ave
Sun Valley Ca 91352
818-767-6766

Program Environmental Impact Report (PIER)
City of LA Solid Waste Integrated Resources Plan (SWIRP)

Potential Industries, Inc. (Potential) would like to receive notices for hearings on the project. Please email such information to ddomonoske@potentialindustries.com and mail them to 922 East "E" Street, Wilmington CA 90744.

Comments from Potential Industries, Inc. regarding the Scoping Meeting – Notice of Preparation held August 26, 2010 are as follows:

Promote jobs and economic growth within the City of LA: Providing incentives to promote additional business with companies already established in the City of LA will help create job growth while expanding the tax base and overall economic activity.

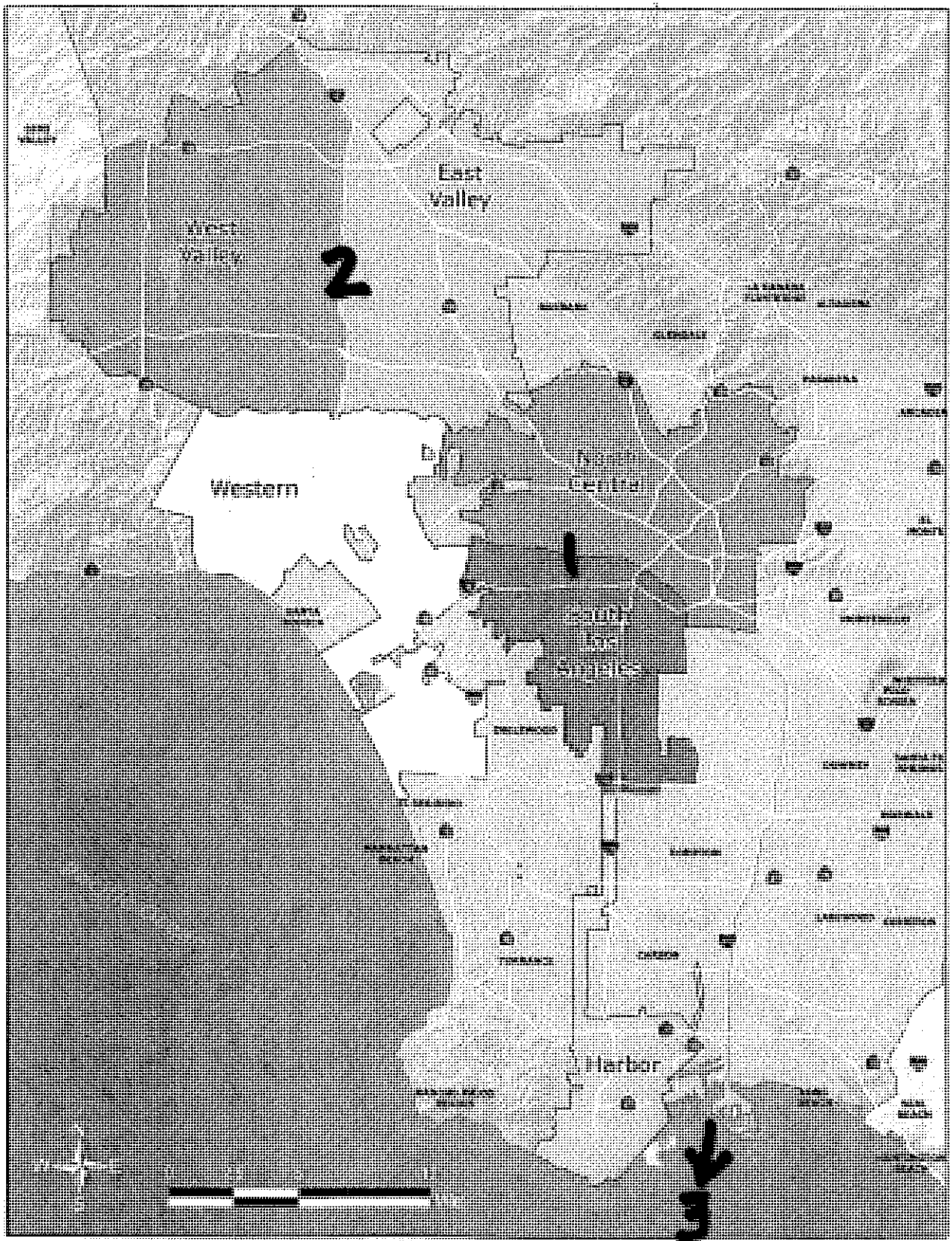
Types of Processing Facilities: Many material streams require pre-processing before being delivered to end user that actually produce a finished product. We suggest that the PIER distinguish between "pre-processors" (also known as "beneficiating processor") and end users. Examples of Pre- Processors would be a clean materials recovery facility, mixed materials processing facility, construction & demolition facilities, and resource recovery centers. Examples of User-Processors (also known as end user) actually producing finished products would be large or small scale composting, 100% recycled paper mills, waste to energy, anaerobic digestion, plasma arc/gasification/pyrolysis.

Processing Facility LOCATIONS: The location of Local and Regional User-Processers should be taken into consideration when calculating the impacts of siting Pre-Processors.

For example, please refer to the attached page 2: LOCAL OPTIONS. Assuming the market for a specific recyclable material such as cardboard, newspaper, or mixed paper does not exist within a 100 mile radius (most mills in CA consuming recovered paper have closed because they use too much precious water and the few remaining mills can't consume the enormous quantities generated within the City of LA), then those recyclable materials are exported from the Port of LA. Materials collected in the Harbor would negatively impact the environment if they were sent to a Pre Processor in zone 1 or zone 2 because the materials would still have to be transported back to the Port of LA for export. Materials collected in zone 1 would negatively impact the environment if sent to a Pre Processor in zone 2 because the materials would still have to be transported to the Port of LA for export. The basic idea is that all materials that are primarily exported, such as cardboard, newspaper, and mixed paper, should be taken to Pre Processors within the district they are collected or other districts en route to the Harbor.

Another example is found on page 3: REGIONAL OPTIONS. Assuming the market for a specific material such as green waste or food waste does not exist within the City districts (no permitted sites available), then those materials are exported from the City to region A, B, or C. If materials require Pre-Processing (for example removing contamination, sorting one or more material types from another, or size reduction) then those activities should be done in the City prior to shipment to User-Processors.

LOCAL OPTIONS

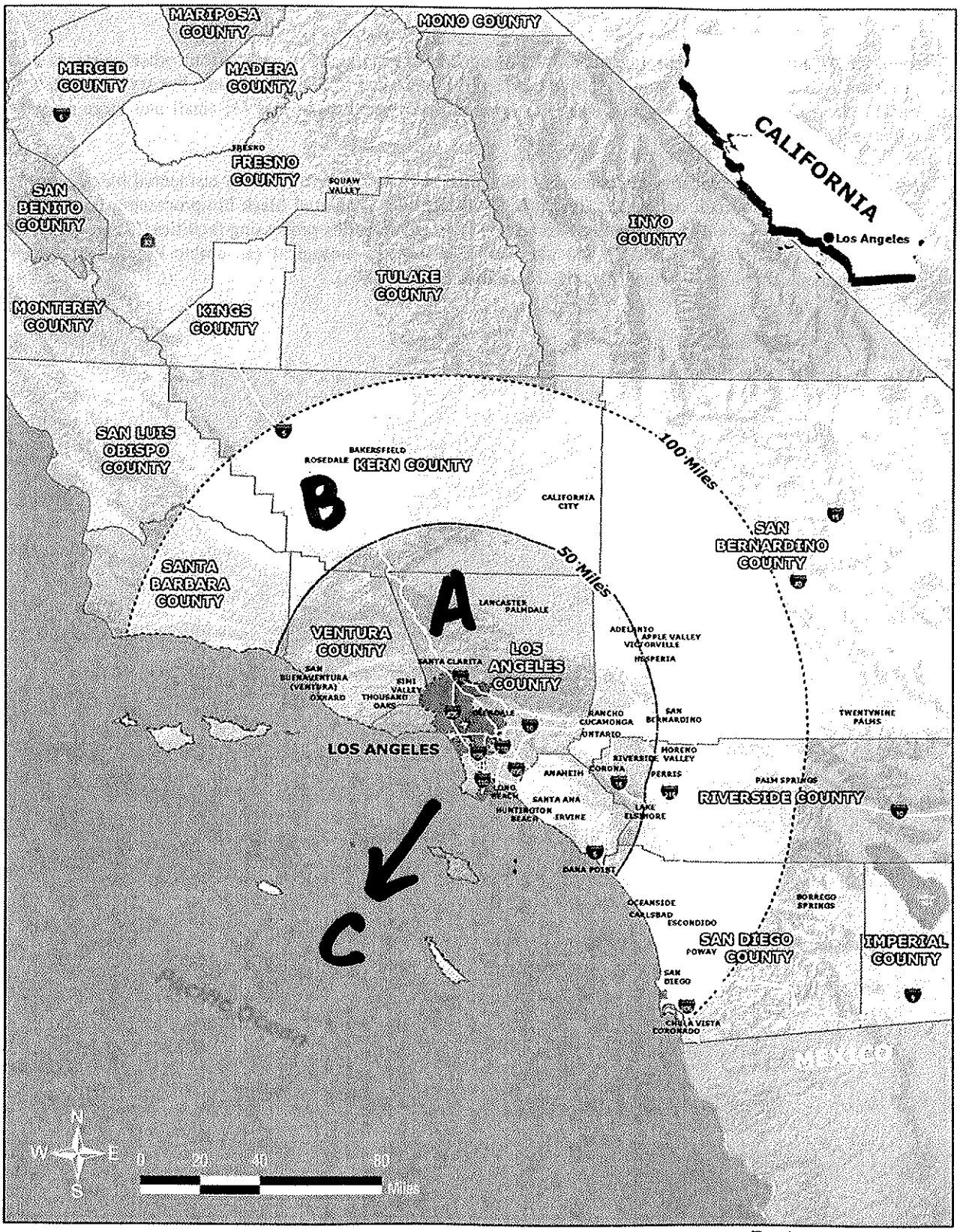


City of Los Angeles Wastesheds/Collection Districts

FIGURE 2

SWRP | City of Los Angeles | Draft Environmental Impact Report

REGIONAL OPTIONS



CITY OF LOS ANGELES SANITATION DEPARTMENT OF PUBLIC WORKS

Project Study Area

FIGURE 1

SWRP | City of Los Angeles | Draft Environmental Impact Report

---------- Forwarded message ----------
From: **Joyce Dillard** <dillardjoyce@yahoo.com>
Date: Thu, Sep 16, 2010 at 3:45 PM
Subject: Comments to SWIRP due 9.16.2010
To: Reina Pereira <reina.pereira@lacity.org>

Comments to SWIRP due 9.16.2010

A project with 100 mile radius buffer needs to incorporate more than the City of Los Angeles environmental impacts. If property with ownership in the City of Los Angeles name, but in another incorporated city or unincorporated County of Los Angeles region, then the project should be revealed to the public of that region.

Joint Powers Authority, if being contemplated, should be addressed in a regional setting, not just the City of Los Angeles.

If the100 mile radius includes desert territory, then those Interested Parties in desert environmental issues need to have the opportunity to input and comment on the effects of such a project.

Recycling centers should be addressed through the General Plan and Community Plans. Urban Design Guidelines are in draft form through the City of Los Angeles Department of Planning.

An ordinance is prepared known as the Common Land Use Findings Ordinance and is in the environmental review process.

Growth and Infrastructure Reports should be reviewed in relationship to the expected 30% increase in recyclable tonnage to almost 100% recyclable wastesheds.

The General Plan and its Elements need to be updated.

Any landfill projects or carbon sequestration projects should be environmentally reviewed on a case-by-case basis. Agencies and the public in the effected areas should be notified and have time to comment on the project, the environmental impacts and the mitigations. Not all carbon sequestration projects are viable in geology prone to earthquakes.

Transportation, congestion and greenhouse gas emission effects need to be addressed as more recycling centers are planned.

Long-term operations and maintenance issues need to be addressed as discontinuance or neglect impacts the environment.

Zoning approaches are not clear considering the draft Urban Design Guideline issuance and other proposed planning ordinances.

Public-Private Partnerships and their effects on all categories should be addressed.

Conversion of waste to energy IE methane should be discussed as well as the planned transportation of the fuel. Transmission of fuel i.e. pipelines and pipeline safety should be addressed.

Solid Waste to Energy needs to be addressed as a source for the Department of Water and Power, a utility. Transmission of any product or by-product should be included as well as their impacts. Any discussion or project that may fall under the California Transmission Group should be addressed.

Air quality and its impacts need long-term review for any conversion of solid waste to another product.

Additional water needs should be addressed including any use for digester gas production or solar thermal production.

Jurisdictions need to be defined and the Los Angeles Department of Water and Power may need to address those needs in their planning including the Integrated Resource Plan.

Joyce Dillard

P.O. Box 31377

Los Angeles, CA 90031

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200 N. Spring Street
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Los Angeles, CA 90012
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Fax (213) 626-5431

City of Los Angeles

JANICE HAHN
Councilwoman
Fifteenth District

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WATTS OFFICE
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Los Angeles, CA 90012
213-473-5128
Fax 213-473-5132

WILMINGTON OFFICE
544 N. Avalon Blvd.
Wilmington, CA 90744
310-233-7201

September 9, 2010

Ms. Reina Pereira, P.E
Senior Environmental Engineer
Dept. of Public Works, Bureau of Sanitation
1149 South Broadway Avenue, 8th Floor
Los Angeles, CA 90015

Dear Ms. Pereira:

I wanted to bring some concerns to your attention regarding the Solid Waste Integrated Resources Plan (SWIRP) Initial Study that I received from Ms. JoAnn Wysocki, a resident of the community of Wilmington.

In the attached packet, Ms. Wysocki brings up some great points on the need to address chronic issues, such as illegal dumping, in our long term vision for waste reduction in the City of Los Angeles and that an outreach meeting in the Harbor Area would have been appreciated.

I would like to see her remarks included as part of the public comment you received from your community outreach meetings. Also, please respond directly in writing to Ms. Wysocki via US mail at 1006 King Avenue, Wilmington, CA 90744.

Thank you for taking the time to outreach to the residents in my district. If you have any additional questions regarding this request, please do not hesitate to contact my Wilmington community advocate, Celina Luna, at (310) 732-4515 or via email at celina.luna@lacity.org.

Sincerely,

JANICE HAHN
Councilwoman, 15th District
City of Los Angeles

JH: cl

EIR 10 026 BS
September 7, 2010

Thank you for the opportunity to comment on the notice of preparation for EIR 10 026 BS Solid Waste Integrated Resource Plan (SWIRP).

It is unfortunate an Initial Study was not prepared for this project of such a magnitude. I checked with the Wilmington Public Library since it had even less information that was sent out on August 12, 2010. An Initial Study sent to all the City's public libraries, would have given your responders a background to make more meaningful comments. Yes I understand this matter has been before the public since April of 2007. But not everyone had the opportunity/opportunities to attend the informational public meetings on this matter.

When the EIR for this project is complete, copies will be circulated to all City public libraries? No matter how many volumes? Yes?

It is also unfortunate that not more than one scoping meeting could have been held. It would have been adequate: the Valley, downtown City Hall, East Los Angeles and the Harbor area.

Though your information letter is dated August 12, 2010, the mailing was delivered much later than to make an August 26th meeting. Especially with adequate time for preparation.

The two maps accompanying the information letter do not make it clear where there are/or will be trash collection/separation stations and facilities. This is one of the most important areas to be

addressed in the EIR. Adequate truck storage, truck routes, waste storage and waste disposal locations. None of the 15 Council Districts will accept such facilities without assurances that waste will truly be managed on a "CITY WIDE BASIS."

What type of waste handling, storage, processing, and disposal facilities will be discussed? Will alternatives to all proposed solutions be presented? The City's attempt to locate a landfill, in an immediately Valley residential area, should be a warning to the Bureau of Sanitation,

2013 is only 3 years away. If the City's goal is to achieve 70 percent landfill diversion for solid waste what is the current 2010 landfill diversion? And when did it start (what years)?

The City's goal is to achieve 90% landfill diversion Solid waste by 2025. This is 20% percent in 12 years assuming the district's statistics are attainable.

What types and % percentage of solid wastes are to be planned for?

Residential
Multi-family units
Busines wastes (cardboard, papa, packaging)
Construction Wastes
Food wastes
Recyclables
Tires
Illegally dumped wastes

III

What are the percentage of each type of wastes? What percentage of each type of waste is produced in each Council District? What percentage of each type can be recycled? What percentage of each type of waste must be landfilled?

2 Illegally dumped waste such as furniture and tires must be addressed. Particularly the cost to the City (i.e. the taxpayer).

Least but not last discuss the cost of this project and how it is to be paid for!

The City is rapidly becoming enclosed by residential multi-family and business construction. Is there land for recycling and solid waste infrastructure (without the use of eminent domain)?

Just as one can be sue Los Angeles City communities will balk at taking trash / solid waste transfer station's / facilities, Santa Barbara, Kern, San Bernardino, Riverside and San Diego counties will not wish to take Los Angeles City's solid wastes. See map Project Area #1.

The EIR needs to discuss:

1. Scavengers of the black and blue bins and the cost to the City. A cost that must be made up from other funds.
2. The efforts of the private recycling companies and a possible joint effort with the Department of Sanitation.

IV

3. Plastic bags – use and disposal.
4. Illegal dumping
5. Packaging since business is INTER state not INTRA state (California)
6. A time line for the writing, printing, distribution, comment from the public, hearings, final EIR public meetings necessary action from the City Council, implementation of the proposal
7. Qualifications of the HDR firm and Los Angeles City staff doing the EIR.
8. The cost of advertising for this project to the general public needs to remember more of Los Angeles City residents read the Los Angeles Times Torrance Daily Breeze and the Valley News then the Daily Journal. The adds placed in the Daily Journal may meet the letter of the law, but does not meet the spirit of community outreach.
9. Telephone numbers to reach Los Angeles City staff in particular.

The EIR needs to address anticipated Los Angeles city population growth in regards to solid waste management. So long as population grows, solid waste will increase. It may be politically incorrect, but if there is

V illegal immigration there will be an increase in solid waste and illegal dumping. Does education reach those who dumps and do not recycle?

In addition to public hearings the Bureau of Sanitation needs to reach out and work with the various Community Councils.

To Ann Wyszochi
1006 King Avenue
Wilmington
California 90744-3204

cc: file copy
15th District Council Office San Pedro
Mayor's office San Pedro

Ricardo Hong

213-485-3605

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CITY OF LOS ANGELES
CALIFORNIA

ANTONIO R. VILLARAIGOSA
MAYOR

Reina Perera

DEPARTMENT OF
PUBLIC WORKS

BUREAU OF SANITATION

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SOLID RESOURCES
SUPPORT SERVICES DIVISION

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1149 S. BROADWAY, 8TH FLOOR
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TEL: (213) 485-3605
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August 12, 2010

NOTICE OF PREPARATION AND PUBLIC SCOPING MEETING FOR DRAFT PROGRAM ENVIRONMENTAL IMPACT REPORT

DOCUMENT No. : EIR-10-026-BS

PROJECT NAME: Solid Waste Integrated Resources Plan (SWIRP)

PROJECT LOCATION/ADDRESS: Refer to attached Project Description

COMMUNITY PLANNING AREA: City-wide/All Community Planning Areas

COUNCIL DISTRICT: City-wide/All Council Districts

DUE DATE FOR PUBLIC COMMENTS: September 16, 2010

PROJECT DESCRIPTION: The Solid Waste Integrated Resources Plan (SWIRP) is a long-range master plan for solid waste management in the City of Los Angeles (City). SWIRP proposes an approach for the City to achieve a goal of diverting 70 percent of the solid waste from landfills by 2013 and 90 percent diversion by 2025. These targeted diversion rates would be implemented through an enhancement of existing policies and programs, implementation of new policies and programs, and the development of future facilities to meet the City's recycling and solid waste infrastructure needs over a 20-year planning period. It is assumed that the facilities would be within a 100-mile radius of the City. Specific locations for these facilities have not been identified at this time; rather SWIRP notes the number and type of facilities that would be required over the next 20 year planning period. *Please see attached project description for additional information*

REQUESTED LAND USE ENTITLEMENTS: No land use entitlement requests are associated with the proposed project. SWIRP is a policy document.

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED: An Initial Study was not prepared for the project, thus the Program Environmental Impact Report (PEIR) for the project will address all of the environmental issue areas, including: aesthetics, agricultural resources, air quality, biological resources, cultural resources, geology/soils, global climate change/greenhouse gases, hazards/hazardous materials, hydrology/water quality, land use/planning, mineral resources, noise, population/housing, public services/utilities, recreation and transportation/traffic.

The enclosed materials reflect the scope of the proposed project (subject to change) which may be of interest to you and/or the organization you represent. A PEIR will be prepared by the Department of Public Works, Bureau of Sanitation. The Bureau of Sanitation welcomes all comments regarding the environmental impacts of the proposed project. **Written comments must be submitted to the office by September 16, 2010.**

Please direct your comments to:

Ms. Reina Pereira, P.E., Senior Environmental Engineer
City of Los Angeles
Department of Public Works, Bureau of Sanitation
Public Works Building (PWB) MS 521
1149 South Broadway, 8th Floor
Los Angeles, CA 90015

Or you can e-mail your comments to: reina.pereira@lacity.org and note subject as:
SWIRP EIR NOP Comments

PEIR SCOPING MEETING: Two PEIR scoping meetings will be held on August 26, 2010. The 1:30 p.m. session is for public agencies and the 6:30 p.m. session will be for all interested parties. The scoping meetings will be held at the following location:

City of Los Angeles, Bureau of Sanitation
Public Works Building
Sub-basement Room #6
1149 South Broadway
Los Angeles, CA 90015

Please allow adequate time to check-in at the front security desk prior to the meeting.

Solid Waste Integrated Resources Plan
Project Description

The Solid Waste Integrated Resources Plan (SWIRP) is a long-range master plan for solid waste management in the City of Los Angeles (City). SWIRP proposes an approach for the City to achieve a goal of diverting 70 percent of the solid waste from landfills by 2013 and 90 percent diversion by 2025. These targeted diversion rates would be implemented through an enhancement of existing policies and programs, implementation of new policies and programs, and the development of future facilities to meet the City's recycling and solid waste infrastructure needs over a 20-year planning period.

Project Location

SWIRP addresses the handling of solid waste for the City, which covers approximately 498 square miles and is home to approximately 3.8 million residents. The programs and policies identified in SWIRP would apply to all residential, commercial, industrial and institutional generators in the City. SWIRP also identifies a variety of facilities that will need to be constructed to meet the City's recycling and solid waste infrastructure requirements over the 20-year planning period. For the purposes of this EIR, it is assumed that the facilities would be within a 100-mile radius of the City, as shown on Figure 1. Specific locations for these facilities have not been identified at this time; rather SWIRP notes the number and type of facilities that would be required over the next 20 years. The City organized the SWIRP stakeholder process throughout the City and held workshops in each of the City's six collection districts or "wastesheds." These wastesheds are shown on Figure 2 and include East Valley, West Valley, Western, North Central, South Los Angeles, and Harbor.

Project Objectives

The objectives of SWIRP represent City policies and the guiding principles identified during the stakeholder process and are as follows:

- Achieve 70 percent landfill diversion rate for solid waste by 2013;
- Achieve 90 percent landfill diversion rate for solid waste by 2025;
- Protect public health and the environment;
- Make the City a leader for zero waste practices;
- Promote manufacturer and consumer responsibility;
- Provide incentives for reducing, reusing and recycling;
- Increase recycling by providing convenient opportunities for residents, businesses and institutions;
- Find solutions that are both economically efficient and environmentally preferable;
- Promote education and outreach to decrease wasteful consumption and to increase recycling;
- Invest in new, safe technologies; and
- Provide solutions that are equitable from a geographic, economic and environmental perspective.

Project Components

To reach the City's goals of 70 percent diversion by 2013 and 90 percent diversion by 2025, SWIRP recommends a series of policies, programs and facilities to be implemented over the next 20 years.

Expansion of Existing Programs

The City has many successful programs in place for managing solid waste and diverting waste from landfills. SWIRP would expand these programs, as appropriate, to further increase solid waste management and landfill diversion. These programs are managed by the City's Bureau of Sanitation (BOS) Solid Resources Divisions which have the responsibility for the collection, disposal, and recycling of over 1.7 million tons per year of solid resources for the residents of the City.

Downstream Policies and Programs

SWIRP recommends a number of "downstream" policies and programs that will need to be implemented to achieve zero waste. Downstream policies and programs address materials after they are generated. They address collection, processing, recycling and disposal. The City has identified additional downstream programs that will be needed to achieve zero waste, including programs designed for single-family residences, multi-family residences, commercial generators and construction and demolition (C&D) sites.

Mandatory Participation Programs

SWIRP recommends a number of mandatory participation programs that will need to be implemented to achieve zero waste. These include mandatory recycling, mandatory organics separation, requiring resource recovery centers at transfer stations and landfills, enforcement through recycling ambassadors and direct technical assistance and increased diversion requirements at C&D facilities.

Upstream Policies

"Upstream" is a way of describing policies that address waste prior to the point of generation. Upstream policies would affect design of the product or package prior to manufacturing. Extended Producer Responsibility (EPR) is a strategy for encouraging manufacturers to take responsibility for the end-of-life of their products. These initiatives seek to encourage manufacturers to design their products or packaging with less waste or with materials that are easy to recycle.

Processing Facilities

An essential component of SWIRP is the identification and development of future facilities to meet the City's recycling and solid waste infrastructure needs over the 20-year planning period. Facility types include blue bin, green bin and black bin processing facilities. SWIRP does not identify specific locations for any of these facilities; but rather identifies the number of facility types and the anticipated time frames for phasing in the development of these facilities.

Blue bin facilities capable of processing source-separated recyclable and reusable materials, including materials recovered from the BOS blue bin program and source-separated commercial recycling. Other facilities for source separated materials were also discussed within this category, including resource recovery centers for self-hauled materials. Green bin facilities are capable of processing yard trimmings,

APPENDIX B.3

SCOPING SUMMARY REPORT

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Solid Waste Integrated Resources Plan

Program Environmental Impact Report

Scoping Meetings Summary Report



August 26, 2010
1:30 p.m. and 6: 30 p.m.

City of Los Angeles, Bureau of Sanitation
Public Works Building
1149 South Broadway
Los Angeles, CA 90015

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Attachments

Attachment A Notice of Preparation/Meeting Announcement
Attachment B Scoping Meeting Agendas
Attachment C Scoping Meeting Presentation
Attachment D Scoping Meeting Sign-In Sheets

Executive Summary

The City of Los Angeles held two scoping meetings on August 26, 2010. The purpose of the meetings was to provide an overview of the Solid Waste Integrated Resources Plan (SWIRP) and to solicit input on the Program Environmental Impact Report (PEIR). The meeting was noticed via first-class mail, electronic mail, and also postings via web pages, agendas, and newspapers. A total of 23 people signed in and a total of 27 oral comments or questions were posed at the meetings. Attachments to this scoping summary report include the meeting announcement, presentation, and copies of the sign-in sheets.

1.0 Meeting Information

This section provides a summary of the meeting location and logistics, noticing for the meeting, the purpose of the meeting, number of attendees, and team personnel in attendance.

1.1 Scoping Meetings Logistics

The City of Los Angeles held two scoping meetings on August 26, 2010. The first meeting was held at 1:30 p.m. in Sub-basement Conference Room 7, at the Department of Public Works Building, 1149 South Broadway, Los Angeles, CA 90015. The second meeting was held at 6:30 p.m. in Conference Room 150, also at the same address. The 1:30 p.m. meeting room was set up in a classroom-style setting and the 6:30 p.m. meeting room was set up in a round table type of format. Basic refreshments were served at each meeting.

1.2 Announcement of the Scoping Meetings

The scoping meeting was publicized in conjunction with the Notice of Preparation (NOP) announcement for the Program EIR. The combined NOP/Meeting Announcement was sent via first class mail to 1,136 interested parties and via electronic mail to another 1,356 interested parties. In addition to the mailing, the City published the announcement in the *Los Angeles Times* on August 19, 2010. The City also announced the meetings on the ZERO Waste Website (www.zerowaste.lacity.org) and to the members of the ZERO Waste Facebook page (http://www.facebook.com/LARECYCLES). A copy of the NOP, which includes the invitation to the scoping meeting, is included as Attachment A.

1.3 Purpose and Goal of the Scoping Meetings

The purpose of the meeting was to provide members of the public and other interested parties with an opportunity to learn about the project and to provide input on the scope and content of the Draft PEIR.

1.4 Format of the Scoping Meetings

Both of the scoping meetings had a similar format and included a presentation followed by a question and comment period. Copies of the agendas are provided in Attachment B and the PowerPoint presentation is included as Attachment C. The same presentation was given at each scoping meeting.

A total of 14 people signed in for the 1:30 meeting (two of which were project team members) and nine people signed in for the 6:30 meeting. Sign-in sheets for the meetings are included in Attachment D.

1.5 Personnel at the Scoping Meetings

The person in charge of the meeting was Reina Pereira, P.E., City of Los Angeles, Bureau of Sanitation, Senior Environmental Engineer. Presenters at the meeting, in addition to Ms. Pereira,

included Ruth Abbe, HDR, Zero Waste Planning Leader and Sophia Habl Mitchell, HDR, Environmental Project Manager. The following personnel attended the meeting.

City of Los Angeles – Bureau of Sanitation

- Reina Pereira, P.E., Senior Environmental Engineer
- Martin Ruiz, Environmental Engineer Associate II
- Ron Milo, Environmental Engineer Associate II
- Paul Gomez, Public Relations Specialist II

Consultants – HDR, Inc.

- Ruth Abbe, Zero Waste Planning Leader
- Sophia Habl Mitchell, Environmental Project Manager
- Michelle Leonard, Southern California Solid Waste Business Class Leader

2.0 Comments Received at Scoping Meetings

This section summarizes the comments that were received at the scoping meetings.

2.1 Oral Comments Received at Meetings

The following oral comments/questions were received at the 1:30 p.m. meeting:

- Request that Draft PEIR review period be increased from 45 days to 60 or 90 days.
- When does the choice of facility sites go into the environmental process?
- Consider recommending that surfaces at facilities be cement, not asphalt, as to minimize debris collection and potential for nuisance birds.
- Consider recommending landscaping at future facilities.
- Request for additional information regarding the City Council approval of the zoning ordinance for the siting of alternative technology facilities.
- Statement regarding the term "mitigation" and that it is not always a cure for the impact.
- Question regarding timeline of the Draft PEIR availability.
- Request that scoping presentation be made available on ZERO Waste website.

The following oral comments/questions were received at the 6:30 p.m. meeting:

- What is the water source for these alternative technology projects?
- Where will these alternative technology facilities be located?
- Clarification on schedule of Draft PEIR.
- Seismic concerns related to any potential alternative technology sites.
- Relationship between Project EIR and Program EIR.
- Notification process for Draft PEIR.
- Notification process used for NOP and scoping meeting
- Are there any federal approvals required? Will this project be fast-tracked with federal approval in any way?
- Relationship to the Western Wasteshed/Watershed Coalition. Will they be informed of the impacts?
- Concerns with future impacts in counties outside the City limits and within the 100-mile radius, like Kern County.
- What is the budget for the PEIR?
- What thresholds will be used for the PEIR analysis?

- The Draft PEIR should include siting parameters to minimize environmental impacts and maximize efficiency?
- Concern regarding the lack of specificity as to future sites at this time.
- Coordination with the California Transmission Planning Group will be required for any transmission corridor upgrades due to alternative technologies that produce power.
- Desire to have solid waste taken care of locally, not exported out of area.
- Concern that 100-mile analysis buffer means City will export waste outside the area.
- More information on greenhouse gas analysis.
- Economic impacts/benefits (e.g., job creation).
- Comments regarding different levels of recycling throughout the City. Some communities not participating.

2.2 Written Comments Received at Meetings

No written comments were received during the two meetings. However, all oral commenters and meeting attendees were encouraged to submit their comments in writing, either on the comment sheet or via separate letter, and submit by September 16, 2010.

ATTACHMENT A

Notice of Preparation/ Meeting Announcement

CITY OF LOS ANGELES
CALIFORNIA

BOARD OF
PUBLIC WORKS
—
COMMISSIONERS
—
CYNTHIA M. RUIZ
PRESIDENT

ANDREA A. ALARCÓN
VICE PRESIDENT

PAULA A. DANIELS
PRESIDENT PRO TEMPORE

STEVEN T. NUTTER

VALERIE LYNNE SHAW

ANTONIO R. VILLARAIGOSA
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DEPARTMENT OF
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BUREAU OF SANITATION
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ENRIQUE C. ZALDIVAR
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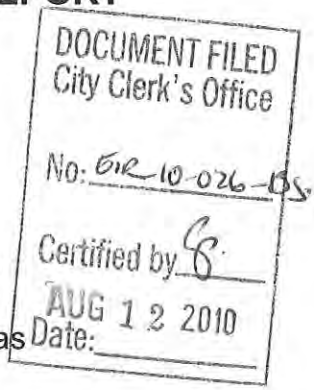
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August 12, 2010

NOTICE OF PREPARATION AND PUBLIC SCOPING MEETING FOR DRAFT PROGRAM ENVIRONMENTAL IMPACT REPORT



DOCUMENT No. : EIR-10-026-BS

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Mandatory Participation Programs

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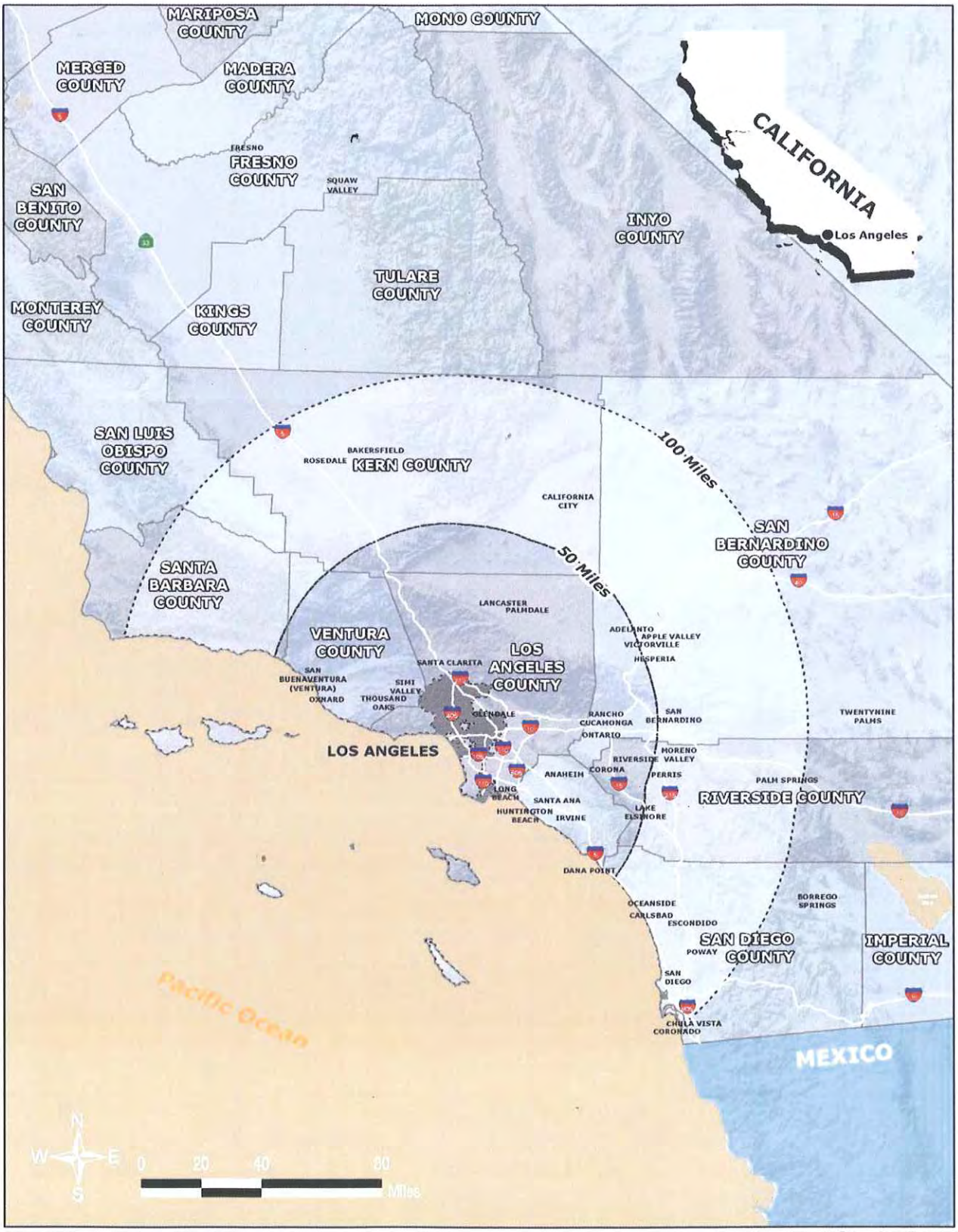
Processing Facilities

An essential component of SWIRP is the identification and development of future facilities to meet the City's recycling and solid waste infrastructure needs over the 20-year planning period. Facility types include blue bin, green bin and black bin processing facilities. SWIRP does not identify specific locations for any of these facilities; but rather identifies the number of facility types and the anticipated time frames for phasing in the development of these facilities.

Blue bin facilities capable of processing source-separated recyclable and reusable materials, including materials recovered from the BOS blue bin program and source-separated commercial recycling. Other facilities for source separated materials were also discussed within this category, including resource recovery centers for self-hauled materials. Green bin facilities are capable of processing yard trimmings,

food scraps and other compostable materials, either source-separated or sorted from other waste at a processing facility. Potential green and blue bin facilities identified in SWIRP include, but are not limited to: (1) clean materials recovery facilities; (2) resource recovery centers; and (3) small and large scale composting facilities.

Black bin facilities are capable of processing municipal solid waste (MSW) from residential black bins, commercial waste sources, or residue from processing facilities. Potential black bin processing facilities identified in SWIPR include, but are not limited to: (1) mixed materials processing facilities; (2) advanced thermal recycling (waste-to-energy); (3) alternative technology–biological (anaerobic digestion); and (4) alternative technology–thermal (plasma arc/gasification/pyrolysis).

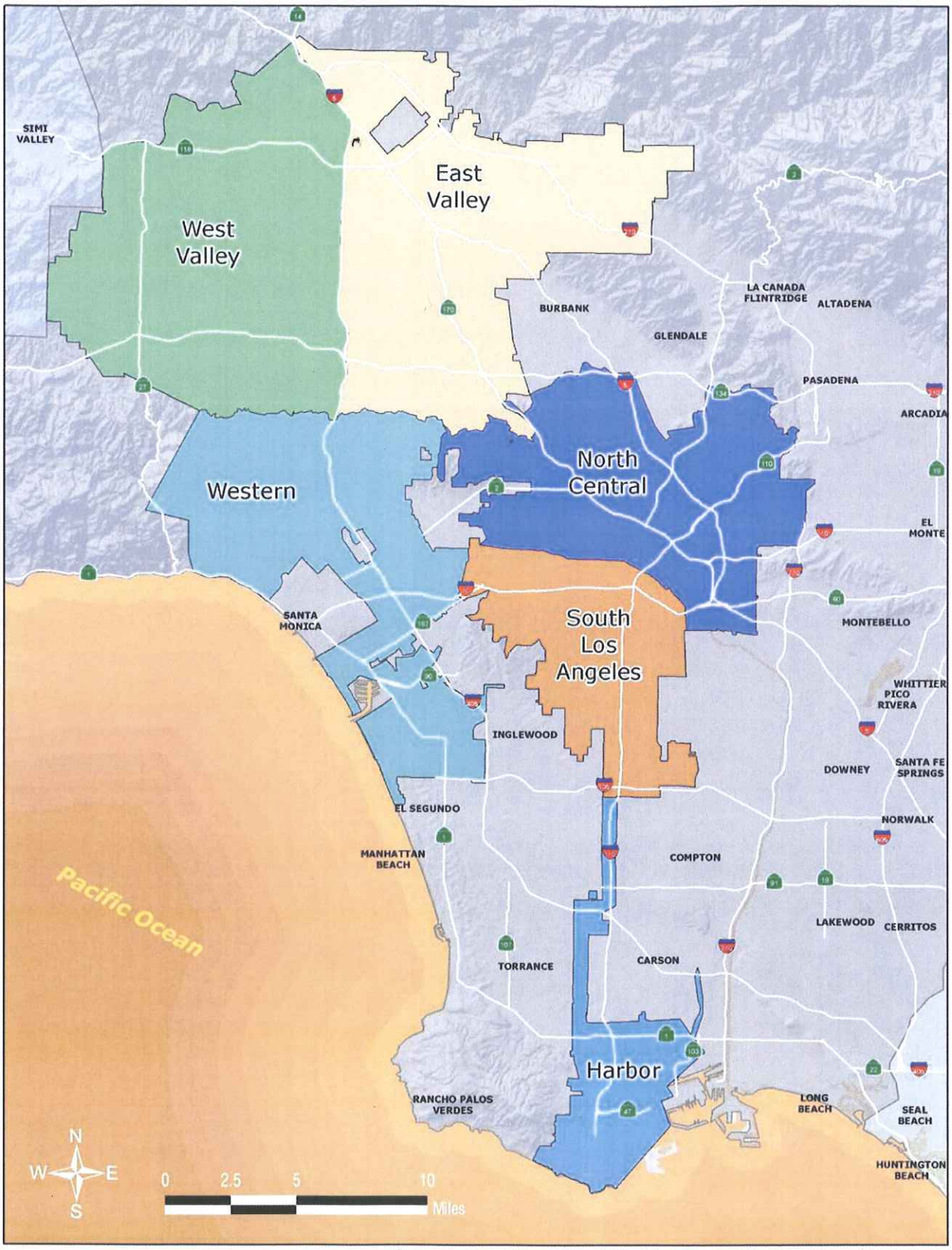


CITY OF LOS ANGELES
SANITATION
DEPARTMENT OF PUBLIC WORKS

Project Study Area

FIGURE 1

SWIRP | City of Los Angeles | Draft Environmental Impact Report



CITY OF LOS ANGELES
SANITATION
DEPARTMENT OF PUBLIC WORKS

City of Los Angeles Wastesheds/Collection Districts

FIGURE 2

SWIRP | City of Los Angeles | Draft Environmental Impact Report

ATTACHMENT B

Scoping Meeting Agendas

Public Input Form
Scoping Meeting (Public Agencies)
Solid Waste Integrated Resources Plan

August 26, 2010

This form allows you to make comments on what you believe should be addressed in the Program Environmental Impact Report (PEIR). You may submit your comments at this scoping meeting or by mail, fax, or email to the Lead Agency Contact listed below. Written comments on the Notice of Preparation (NOP) for the Program Environmental Impact Report will be accepted until **September 16, 2010 at 5:00 P.M.**

Comments: _____

_____

_____

_____

_____

_____

_____

You may also indicate if you would like to receive notices for hearings on the project. If you wish to receive a notice, please be sure to include your name and full mailing address. The PEIR will be available at local libraries and the City website and offices.

Name: _____

Mailing Address: _____

City/State/ZIP: _____

Lead Agency Contact:

Ms. Reina Pereira, P.E., Senior Environmental Engineer
City of Los Angeles
Department of Public Works, Bureau of Sanitation
Public Works Building (PWB) MS 521
1149 South Broadway, 8th Floor
Los Angeles, CA 90015
Phone: (213) 458-3296
Fax: (213) 485-2961
Reina.Pereira@lacity.org

AGENDA

Scoping Meeting (Public Agencies)
Solid Waste Integrated Resources Plan

August 26, 2010

I.	**Welcome, Introductions and Meeting Objectives** *Reina Pereira, City of Los Angeles*	**1:30 p.m.**
II.	**Presentation of the Proposed Project** *Ruth Abbe, HDR*	**1:35 p.m.**
III.	**Environmental Review Process** *Sophia Mitchell, HDR*	**1:45 p.m.**
IV.	**Questions/Comments** *All Presenters*	**2:00 p.m.**

Public Input Form
Scoping Meeting (All Interested Parties)
Solid Waste Integrated Resources Plan

August 26, 2010

This form allows you to make comments on what you believe should be addressed in the Program Environmental Impact Report (PEIR). You may submit your comments at this scoping meeting or by mail, fax or email to the Lead Agency Contact listed below. Written comments on the Notice of Preparation (NOP) for the Program Environmental Impact Report will be accepted until **September 16, 2010 at 5:00 P.M.**

Comments: _____

_____

_____

_____

_____

_____

_____

You may also indicate if you would like to receive notices for hearings on the project. If you wish to receive a notice, please be sure to include your name and full mailing address. The PEIR will be available at local libraries and the City website and offices.

Name: _____

Mailing Address: _____

City/State/ZIP: _____

Lead Agency Contact:

Ms. Reina Pereira, P.E., Senior Environmental Engineer
City of Los Angeles
Department of Public Works, Bureau of Sanitation
Public Works Building (PWB) MS 521
1149 South Broadway, 8th Floor
Los Angeles, CA 90015
Phone: (213) 458-3296
Fax: (213) 485-2961
Reina.Pereira@lacity.org

AGENDA

Scoping Meeting (All Interested Parties)
Solid Waste Integrated Resources Plan

August 26, 2010

I.	**Welcome, Introductions and Meeting Objectives** *Reina Pereira, City of Los Angeles*	**6:30 p.m.**
II.	**Presentation of the Proposed Project** *Ruth Abbe, HDR*	**6:35 p.m.**
III.	**Environmental Review Process** *Sophia Mitchell, HDR*	**6:45 p.m.**
IV.	**Questions/Comments** *All Presenters*	**7:00 p.m.**

ATTACHMENT C

Scoping Meeting Presentation

Solid Waste Integrated Resources Plan (SWIRP)

Program Environmental Impact Report

Scoping Meeting

City of Los Angeles
August 26, 2010

Presenters

- Reina Pereira, City of Los Angeles
  - Welcome and Introductions
  - Meeting Objectives
- Ruth Abbe, HDR
  - Project Objectives and Overview
- Sophia Mitchell, HDR
  - Environmental Review Process

SWIRP SCHEDULE

2007 -2008	2008 – 2010	2010-2011	2012-2013
Tasks: Public Outreach & Stakeholder Guiding Principles Events: Regional Workshops, Citywide Conferences	Tasks: Policy, Program & Facility Plan Events: Regional Workshops, Citywide Conference	Tasks: Environmental Impact Report Events: Public hearings on draft and final EIR, Regional Workshops	Tasks: Financial Plan & Implementation Plan Events: Regional Workshops, Citywide Conference

Meeting Objectives

- Provide overview of the project
- Solicit input on scope of PEIR
  - Environmental topics to be addressed
  - Alternatives to be evaluated
  - Written comments due September 16, 2010

Proposed Project

Proposed Project

The Solid Waste Integrated Resources Plan (SWIRP) is a 20-year plan that includes Policies, Programs and Facilities to achieve waste diversion goals.

- Achieve a goal of diverting 70 percent of the solid waste from landfills by 2013 and 90 percent by 2025.
- Protect public health and the environment.
- Make the City a leader for zero waste practices.

Project Objectives

- Promote manufacturer and consumer responsibility.
- Provide incentives for reducing, reusing and recycling.
- Increase recycling.
- Find solutions that are economically efficient and environmentally preferable.

Project Objectives Cont'd.

- Promote education and outreach to decrease wasteful consumption and to increase recycling.
- Invest in new, safe technologies.
- Provide solutions that are equitable (geographic, economic, environmental).

Project Objectives Cont'd.

Expansion of Existing Programs.

Expand existing programs, as appropriate, to further increase solid waste management and landfill diversion.

Sample programs:
- Three bin collection for single-family homes
- Expand recycling for multi-family buildings
- LAUSD blue-bin recycling program
- Restaurant food scrap collection

Proposed Project

Downstream Programs and Policies

Addresses collection, processing, recycling and disposal.

Sample programs:
- Recycling ambassadors
- Bulky item reuse
- Food scrap program
- Modify multi-family refuse and recycling rates

Proposed Project

Mandatory Participation Programs

Implement mandatory recycling and organics separation programs. Require resource recovery centers at transfer stations and landfills.

Sample programs:
- Mandatory recycling separation
- Mandatory organics separation
- Direct technical assistance
- Increase diversion at construction/demolition facilities

Proposed Project

Upstream Policies

Policies that address waste prior to the point of generation.

Sample policies:

- Advocate for legislation to make businesses responsible for their products and packaging
- Producer responsibility for toxics and difficult to recycle material
- Single-use bag ban

Proposed Project

Processing Facilities

- Identification and development of future facilities to meet the City's recycling and solid waste infrastructure needs over the 20-year planning period.
- SWIRP does not determine where these facilities would be located, rather, identifies the likely number of facilities.

Proposed Project

Facility Types

Blue and Green Bin Processing Facilities

- Clean Material Recycling Facilities (MRFs)
- Composting
- Resource Recovery Centers

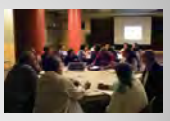
Black Bin Processing Facilities

- Mixed Material Processing (MMP)
- Advanced Thermal Recycling
- Alternative Technology (Biological, Thermal, other)

Proposed Project

SWIRP is a Stakeholder-driven Planning Process

- 42 regional workshops and 3 citywide conferences during Phase 1
- 21 regional workshops and 1 citywide conference during Phase 2
- 109 key constituent interviews
- 27 house meetings
- 75 business meetings



Stakeholder Involvement

Environmental Review Process

COUNTING DOWN TO ZERO WASTE PLAN
Solid Waste Integrated Resource Plan

- Development of Program Environmental Impact Report (PEIR) pursuant to the California Environmental Quality Act (CEQA)
- Circulated Notice of Preparation
- ***Hold Scoping Meeting***

Environmental Process

- Prepare Technical Studies and Draft PEIR
- Circulate Draft PEIR for review (45 days)
- Prepare response to public comments
- Produce Final PEIR
- Project and PEIR considered at Council hearing

Environmental Process Cont'd.

- Disclose potential impacts of project
- Inform decision-makers and the public
- Identify mitigation measures to reduce impacts

Purpose of Environmental Review

- Prepared for a series of actions that can be characterized as one large project
- Analysis will be programmatic in nature
- Additional CEQA analysis required

About Program EIRs

- Aesthetics
- Agricultural Resources
- Air Quality
- Biological Resources

Environmental Issue Areas

- Cultural Resources
- Geology and Soils
- Global Climate Change/Greenhouse Gases
- Hazards and Hazardous Materials

Environmental Issue Areas Cont'd.

- Hydrology and Water Quality
- Land Use and Planning
- Mineral Resources
- Noise

Environmental Issue Areas Cont'd.

Environmental Issue Areas Cont'd.

- Population and Housing
- Public Services and Utilities
- Recreation
- Traffic

PEIR Alternatives

- No Project/Local Landfill
- No Project/Long Haul-Rail
- No Project/Long Haul-Truck
- New Policies and Programs Only
- New Policies, Programs and Mandatory Requirements
- New Policies, Programs and Upstream Policies

Next Steps

- Collect NOP comments
  - Written comments due September 16, 2010
- Prepare Technical Studies and Draft PEIR
  - Now through Spring 2011
- Circulate Draft PEIR for 45-day public review
  - Opportunity for public comment

Next Steps Cont'd.

- Prepare Final PEIR and Response to Comments
  - Early Summer 2011
- Council Hearing
  - Summer 2011
  - Opportunity for public comment

Questions and Comments

COUNTING DOWN TO ZERO WASTE PLAN
Solid Waste Integrated Resource Plan

Lead Agency Contact

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ATTACHMENT D

Scoping Meeting Sign-In Sheets

Attendance rosters on file with the City of Los Angeles.

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APPENDIX C

AIR QUALITY MODELING DATA

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SWIRP URBEMIS Results
Readers Guide

The following table provides a break down of the URBEMIS (http://www.urbemis.com/software/URBEMIS2002%20User's%20Manual.pdf) modeling results future facilities as part of the SWIRP implementation. URBEMIS is an air quality modeling software, which is a land use emissions inventory model that is used to estimate greenhouse gas and criteria pollutant emissions under particular scenarios involving construction, area, and other sources. It has been designed specifically for California and uses California-specific road and construction emissions factors. The URBEMIS 2007 version 9.2.4 model uses the California Air Resources Board's EMFAC2007 model for on-road vehicle emissions and the OFFROAD2007 model for off-road vehicle emissions. The table is organized to allow the reader to locate specific air quality information by page number. URBEMIS provides emissions results in pounds per day for winter and summer; and in tons per year (annual). If the emissions output for a particular facility's construction phases and/or operational phase exceeds the thresholds of significance identified by the air district, URBEMIS allows for the input of "mitigation". The results are then shown as "unmitigated" and "mitigated".

Facility	Season/Time Period	Summary*		Detailed Analysis Calculations*		Modeling Assumptions*	
		Construction Phase (2012/2013)	Operational Phase	Construction Phase	Operational Phase	Construction Phase	Operational Phase
Clean Material Recovery (pages 6-47) Land use assumptions (input data) can be found on page 13 (summary of land uses)	Summer	Page 3 provides a summary of the emissions results (the total emissions) for 2012 and 2013 construction phases. The results are shown as "unmitigated" construction emissions and "mitigated" construction emissions. See modeling assumptions for mitigation page numbers.	Page 3 provides a summary of the results (the total emissions) post construction. "Area" source emissions are combined with "operation" emissions for the totals.	Pages 4 and 5 provide the unmitigated calculations for identifying total emissions; followed by the mitigated construction emission calculations.	Pages 13 through 15 provide the unmitigated calculations for operation phase based on Land Uses, Vehicle Fleet Mix, and Travel Conditions	Pages 3 through 7 provide the unmitigated construction phase assumptions used to determine total emissions. Pages 7 through 12 provide the mitigated construction phase assumptions used to determine emissions totals upon the implementation of mitigation measures.	Air districts provide default data embedded in URBEMS. The defaults vary from district to district based on the air quality within the air basin. The defaults include standard weather information in the region and vehicle trips based on acreage or square footage of the project. There were no changes to the URBEMIS defaults.
	Winter	Page 17 provides a summary of the emissions results (the total emissions) for 2012 and 2013 construction phases. The results are shown as "unmitigated" construction emissions and "mitigated" construction emissions. See modeling assumptions for mitigation page numbers.	Page 17 provides a summary of the results (the total emissions) post construction. "Area" source emissions are combined with "operation" emissions for the totals.	Pages 18 and 19 provide the unmitigated calculations for identifying total emissions. Various construction phase assumptions are found on pages 19 through 21; followed by the mitigated construction emission calculations.	Pages 27 through 29 provide the unmitigated calculations for operation phase based on Land Uses, Vehicle Fleet Mix, and Travel Conditions	Pages 17 through 21 provide the unmitigated construction phase assumptions used to determine total emissions. Pages 21- 27 provide the mitigated construction phase assumptions used to determine emissions totals upon the implementation of mitigation measures.	There were no changes to the URBEMIS defaults.
	Annual	Page 31 provides a summary of the emissions results (the total emissions) for 2012 and 2013 construction phases. The results are shown as "unmitigated" construction emissions and "mitigated" construction emissions. See modeling assumptions for mitigation page numbers.	Page 31 provides a summary of the results (the total emissions) post construction. "Area" source emissions are combined with "operation" emissions for the totals.	Pages 32 and 33 provide the unmitigated calculations for identifying total emissions. The construction phase assumptions are found on pages 19 through 21; followed by the mitigated construction emission calculations.	Pages 41 through 42 provide the unmitigated operation phase based on Land Uses, Vehicle Fleet Mix, and Travel Conditions	Pages 31 through 35 provide the unmitigated construction phase assumptions used to determine total emissions. Pages 35- 41 provide the mitigated construction phase assumptions used to determine emissions totals upon the implementation of mitigation measures.	There were no changes to the URBEMIS defaults.
Composting (pages 48-88) Land use assumptions (input data) can be found on page 56 (summary of land uses)	Summer	Page 45 provides a summary of the emissions results (the total emissions) for 2012 and 2013 construction phases. The results are shown as "unmitigated" construction emissions and "mitigated" construction emissions. See modeling assumptions for mitigation page numbers.	Page 45 provides a summary of the results (the total emissions) post construction. "Area" source emissions are combined with "operation" emissions for the totals.	Pages 46 and 47 provide the unmitigated calculations for identifying total emissions. Various construction phase assumptions are found on pages 47 through 49; followed by the mitigated construction emission calculations.	Pages 55 through 57 provide the unmitigated calculations for operation phase based on Land Uses, Vehicle Fleet Mix, and Travel Conditions.	Pages 45 through 49 provide the unmitigated construction phase assumptions used to determine total emissions. Pages 49-54 provide the mitigated construction phase assumptions used to determine emissions totals upon the implementation of mitigation measures.	Page 55 provides the unmitigated operations phase detailed "Area Source" report.
	Winter	Page 59 provides a summary of the emissions results (the total emissions) for 2012 and 2013 construction phases. The results are shown as "unmitigated" construction emissions and "mitigated" construction emissions. See modeling assumptions for mitigation page numbers.	Page 59 provides a summary of the results (the total emissions) post construction. "Area" source emissions are combined with "operation" emissions for the totals.	Pages 60 and 61 provide the unmitigated calculations for identifying total emissions. Various construction phase assumptions are found on pages 61 through 63; followed by the mitigated construction emission calculations.		Pages 59 through 63 provide the unmitigated construction phase assumptions used to determine total emissions. Pages 63 through 68 provide the mitigated construction phase assumptions used to determine emissions totals upon the implementation of mitigation measures.	Page 69 provides the unmitigated operations phase detailed "Area Source" report

Facility	Season/Time Period	Summary*		Detailed Analysis Calculations*		Modeling Assumptions*	
		Construction Phase (2012/2013)	Operational Phase	Construction Phase	Operational Phase	Construction Phase	Operational Phase
Composting (pages 48-88) Land use assumptions (input data) can be found on page 56 (summary of land uses) (Continued)	Annual	Page 71 provides a summary of the emissions results (the total emissions) for 2012 and 2013 construction phases. The results are shown as "unmitigated" construction emissions and "mitigated" construction emissions. See modeling assumptions for mitigation page numbers.	Page 71 provides a summary of the results (the total emissions) post construction. "Area" source emissions are combined with "operation" emissions for the totals.	Pages 72 and 73 provide the unmitigated calculations for identifying total emissions. Various construction phase assumptions are found on pages through 73 through 75; followed by the mitigated construction emission calculations..	Pages 81 through 83 provide the unmitigated calculations for operation phase based on Land Uses, Vehicle Fleet Mix, and Travel Conditions.	Pages 71 through 75 provide the unmitigated construction phase assumptions used to determine total emissions. Pages through 75 provide 80 the mitigated construction phase assumptions used to determine emissions totals upon the implementation of mitigation measures.	Page 81 provides the unmitigated operations phase detailed "Area Source" report
Resource Recovery Centers (pages 89-127) Land use assumptions (input data) can be found on page 95 (summary of land uses)	Summer	Page 86 provides a summary of the emissions results (the total emissions) for 2012 and 2013 construction phases. The results are shown as "unmitigated" construction emissions and "mitigated" construction emissions. See modeling assumptions for mitigation page numbers.	Page 86 provides a summary of the results (the total emissions) post construction. "Area" source emissions are combined with "operation" emissions for the totals.	Pages 87 and 88 provide the unmitigated calculations for identifying total emissions. Various construction phase assumptions are found on pages through 88 through 90; followed by the mitigated construction emission calculations.	Pages 95 through 97 provide the unmitigated calculations for operation phase based on Land Uses, Vehicle Fleet Mix, and Travel Conditions.	Pages 86 through 90 provide the unmitigated construction phase assumptions used to determine total emissions. Pages 90 through 95 provide the mitigated construction phase assumptions used to determine emissions totals upon the implementation of mitigation measures.	There were no changes to the URBEMIS defaults.
	Winter	Page 99 provides a summary of the emissions results (the total emissions) for 2012 and 2013 construction phases. The results are shown as "unmitigated" construction emissions and "mitigated" construction emissions. See modeling assumptions for mitigation page numbers.	Page 99 provides a summary of the results (the total emissions) post construction. "Area" source emissions are combined with "operation" emissions for the totals.	Pages 100 and 101 provide the unmitigated calculations for identifying total emissions. Various construction phase assumptions are found on pages 101 through 103; followed by the mitigated construction emission calculations.	Pages 108 through 110 provide the unmitigated calculations for operation phase based on Land Uses, Vehicle Fleet Mix, and Travel Conditions.	Pages 99 through 103 provide the unmitigated construction phase assumptions used to determine total emissions. Pages 103 through 108 provide the mitigated construction phase assumptions used to determine emissions totals upon the implementation of mitigation measures.	There were no changes to the URBEMIS defaults.
	Annual	Page 112 provides a summary of the emissions results (the total emissions) for 2012 and 2013 construction phases. The results are shown as "unmitigated" construction emissions and "mitigated" construction emissions. See modeling assumptions for mitigation page numbers.	Page 112 provides a summary of the results (the total emissions) post construction. "Area" source emissions are combined with "operation" emissions for the totals.	Pages 113 and 114 provide the unmitigated calculations for identifying total emissions. Various construction phase assumptions are found on pages 114 through 116; followed by the mitigated construction emission calculations.	Pages 121 through 123 provide the unmitigated calculations for operation phase based on Land Uses, Vehicle Fleet Mix, and Travel Conditions.	Pages 112 through 116 provide the unmitigated construction phase assumptions used to determine total emissions. Pages 116 through 120 provide the mitigated construction phase assumptions used to determine emissions totals upon the implementation of mitigation measures.	There were no changes to the URBEMIS defaults.
Mixed Material Processing (pages 128-169) Land use assumptions (input data) can be found on page 135 (summary of land uses)	Summer	Page 125 provides a summary of the emissions results (the total emissions) for 2012 and 2013 construction phases. The results are shown as "unmitigated" construction emissions and "mitigated" construction emissions. See modeling assumptions column to the right for mitigation page numbers.	Page 125 provides a summary of the results (the total emissions) post construction. "Area" source emissions are combined with "operation" emissions for the totals.	Pages 126 and 127 provide the unmitigated calculations for identifying total emissions. Various construction phase assumptions are found on pages 127 through 129; followed by the mitigated construction emission calculations.	Pages 135 and 136 provide the unmitigated calculations for operation phase based on Land Uses, Vehicle Fleet Mix, and Travel Conditions.	Pages 125 through 129 provide the unmitigated construction phase assumptions used to determine total emissions. Pages 129 through 135 provide the mitigated construction phase assumptions used to determine emissions totals upon the implementation of mitigation measures.	There were no changes to the URBEMIS defaults.
	Winter	Page 139 provides a summary of the emissions results (the total emissions) for 2012 and 2013 construction phases. The results are shown as "unmitigated" construction emissions and "mitigated" construction emissions. See modeling assumptions column to the right for mitigation page numbers.	Page 139 provides a summary of the results (the total emissions) post construction. "Area" source emissions are combined with "operation" emissions for the totals.	Pages 140 and 141 provide the unmitigated calculations for identifying total emissions. Various construction phase assumptions are found on pages 141 through 143; followed by the mitigated construction emission calculations.	Pages 149 and 150 provide the unmitigated operation phase based on Land Uses, Vehicle Fleet Mix, and Travel Conditions.	Pages 139 through 143 provide the unmitigated construction phase assumptions used to determine total emissions. Pages 143 through 149 provide the mitigated construction phase assumptions used to determine emissions totals upon the implementation of mitigation measures.	There were no changes to the URBEMIS defaults.

Facility	Season/Time Period	Summary*		Detailed Analysis Calculations*		Modeling Assumptions*	
		Construction Phase (2012/2013)	Operational Phase	Construction Phase	Operational Phase	Construction Phase	Operational Phase
Mixed Material Processing (pages 128-169) Land use assumptions (input data) can be found on page 135 (summary of land uses) (Continued)	Annual	Page 153 provides a summary of the emissions results (the total emissions) for 2012 and 2013 construction phases. The results are shown as "unmitigated" construction emissions and "mitigated" construction emissions. See modeling assumptions column to the right for mitigation page numbers.	Page 153 provides a summary of the results (the total emissions) post construction. "Area" source emissions are combined with "operation" emissions for the totals.	Pages 154 and 155 provide the unmitigated calculations for identifying total emissions. Various construction phase assumptions are found on pages 155 through 157; followed by the mitigated construction emission calculations.	Pages 163 and 164 provide the unmitigated operation phase based on Land Uses, Vehicle Fleet Mix, and Travel Conditions.	Pages 153 through 157 provide the unmitigated construction phase assumptions used to determine total emissions. Pages 157 through 163 provide the mitigated construction phase assumptions used to determine emissions totals upon the implementation of mitigation measures.	There were no changes to the URBEMIS defaults.
Advanced Thermal Recycling (pages 170-211) Land use assumptions (input data) can be found on page 177 (summary of land uses)	Summer	Page 167 provides a summary of the emissions results (the total emissions) for 2012 and 2013 construction phases. The results are shown as "unmitigated" construction emissions and "mitigated" construction emissions. See modeling assumptions column to the right for mitigation page numbers.	Page 167 provides a summary of the results (the total emissions) post construction. "Area" source emissions are combined with "operation" emissions for the totals.	Pages 168 and 169 provide the unmitigated calculations for identifying total emissions. Various construction phase assumptions are found on pages 169 through 171; followed by the mitigated construction emission calculations..	Pages 177 and 178 provide the unmitigated operation phase based on Land Uses, Vehicle Fleet Mix, and Travel Conditions.	Pages 167 through 171 provide the unmitigated construction phase assumptions used to determine total emissions. Pages 171 through 177 provide the mitigated construction phase assumptions used to determine emissions totals upon the implementation of mitigation measures.	There were no changes to the URBEMIS defaults.
	Winter	Page 181 provides a summary of the emissions results (the total emissions) for 2012 and 2013 construction phases. The results are shown as "unmitigated" construction emissions and "mitigated" construction emissions. See modeling assumptions column to the right for mitigation page numbers.	Page 181 provides a summary of the results (the total emissions) post construction. "Area" source emissions are combined with "operation" emissions for the totals.	Pages 182 and 183 provide the unmitigated calculations for identifying total emissions. Various construction phase assumptions are found on pages 183 through 185; followed by the mitigated construction emission calculations.	Pages 191 and 192 provide the unmitigated operation phase based on Land Uses, Vehicle Fleet Mix, and Travel Conditions.	Pages 181 through 185 provide the unmitigated construction phase assumptions used to determine total emissions. Pages 185 through 191 provide the mitigated construction phase assumptions used to determine emissions totals upon the implementation of mitigation measures.	There were no changes to the URBEMIS defaults.
	Annual	Page 195 provides a summary of the emissions results (the total emissions) for 2012 and 2013 construction phases. The results are shown as "unmitigated" construction emissions and "mitigated" construction emissions. See modeling assumptions column to the right for mitigation page numbers.	Page 195 provides a summary of the results (the total emissions) post construction. "Area" source emissions are combined with "operation" emissions for the totals.	Pages 196 and 197 provide the unmitigated calculations for identifying total emissions. Various construction phase assumptions are found on pages 197 through 199; followed by the mitigated construction emission calculations.	Pages 205 and 206 provide the unmitigated operation phase based on Land Uses, Vehicle Fleet Mix, and Travel Conditions.	Pages 167 through 171 provide the unmitigated construction phase assumptions used to determine total emissions. Pages 171 through 177 provide the mitigated construction phase assumptions used to determine emissions totals upon the implementation of mitigation measures.	There were no changes to the URBEMIS defaults.
Alternative Technology – Biological (Anaerobic Digestion) (pages 212-255) Land use assumptions (input data) can be found on page 221 (summary of land uses)	Summer	Page 209 provides a summary of the emissions results (the total emissions) for 2012 and 2013 construction phases. The results are shown as "unmitigated" construction emissions and "mitigated" construction emissions. See modeling assumptions column to the right for mitigation page numbers.	Page 209 provides a summary of the results (the total emissions) post construction. "Area" source emissions are combined with "operation" emissions for the totals.	Pages 210 and 211 provide the unmitigated calculations for identifying total emissions. Various construction phase assumptions are found on pages 212 through 214; followed by the mitigated construction emission calculations.	Pages 220 through 222 provide the unmitigated operation phase based on Land Uses, Vehicle Fleet Mix, and Travel Conditions.	Pages 209 through 214 provide the unmitigated construction phase assumptions used to determine total emissions. Pages 214 through 220 provide the mitigated construction phase assumptions used to determine emissions totals upon the implementation of mitigation measures.	There were no changes to the URBEMIS defaults.
	Winter	Page 224 provides a summary of the emissions results (the total emissions) for 2012 and 2013 construction phases. The results are shown as "unmitigated" construction emissions and "mitigated" construction emissions. See modeling assumptions column to the right for mitigation page numbers.	Page 224 provides a summary of the results (the total emissions) post construction. "Area" source emissions are combined with "operation" emissions for the totals.	Pages 225 through 227 provide the unmitigated calculations for identifying total emissions. Various construction phase assumptions are found on pages 231 through 235; followed by the mitigated construction emission calculations.	Pages 236 and 237 provide the unmitigated operation phase based on Land Uses, Vehicle Fleet Mix, and Travel Conditions.	Pages 224 through 229 provide the unmitigated construction phase assumptions used to determine total emissions. Pages 229 through 236 provide the mitigated construction phase assumptions used to determine emissions totals upon the implementation of mitigation measures.	

Facility	Season/Time Period	Summary*		Detailed Analysis Calculations*		Modeling Assumptions*	
		Construction Phase (2012/2013)	Operational Phase	Construction Phase	Operational Phase	Construction Phase	Operational Phase
Alternative Technology – Biological (Anaerobic Digestion) (pages 212-255) Land use assumptions (input data) can be found on page 221 (summary of land uses) (Continued)	Annual	Page 239 provides a summary of the emissions results (the total emissions) for 2012 and 2013 construction phases. The results are shown as "unmitigated" construction emissions and "mitigated" construction emissions. See modeling assumptions column to the right for mitigation page numbers.	Page 239 provides a summary of the results (the total emissions) post construction. "Area" source emissions are combined with "operation" emissions for the totals.	Pages 240 and 241 provide the unmitigated calculations for identifying total emissions. Various construction phase assumptions are found on pages 241 through 243; followed by the mitigated construction emission calculations	Pages 249 and 250 provide the unmitigated operation phase based on Land Uses, Vehicle Fleet Mix, and Travel Conditions.	Pages 239 through 243 provide the unmitigated construction phase assumptions used to determine total emissions. Pages 243 through 248 provide the mitigated construction phase assumptions used to determine emissions totals upon the implementation of mitigation measures.	There were no changes to the URBEMIS defaults.
Alternative Technology – Thermal (Plasma Arc, Gasification, Pyrolisis, and Other) (pages 256-297) Land use assumptions (input data) can be found on page 263 (summary of land uses)	Summer	Page 253 provides a summary of the emissions results (the total emissions) for 2012 and 2013 construction phases. The results are shown as "unmitigated" construction emissions and "mitigated" construction emissions. See modeling assumptions column to the right for mitigation page numbers.	Page 253provides a summary of the results (the total emissions) post construction. "Area" source emissions are combined with "operation" emissions for the totals.	Pages 254 and 255provide the unmitigated calculations for identifying total emissions. Various construction phase assumptions are found on pages 255 through 257; followed by the mitigated construction emission calculations	Pages 263 and 264 provide the unmitigated operation phase based on Land Uses, Vehicle Fleet Mix, and Travel Conditions.	Pages 259 through 262 provide the unmitigated construction phase assumptions used to determine total emissions. Pages 243 through 248 provide the mitigated construction phase assumptions used to determine emissions totals upon the implementation of mitigation measures.	There were no changes to the URBEMIS defaults.
	Winter	Page 267 provides a summary of the emissions results (the total emissions) for 2012 and 2013 construction phases. The results are shown as "unmitigated" construction emissions and "mitigated" construction emissions. See modeling assumptions column to the right for mitigation page numbers.	Page 267 provides a summary of the results (the total emissions) post construction. "Area" source emissions are combined with "operation" emissions for the totals.	Pages 268 through 271 provide the unmitigated calculations for identifying total emissions. Various construction phase assumptions are found on pages 269 through 271; followed by the mitigated construction emission calculations.	Pages 263 and 264 provide the unmitigated operation phase based on Land Uses, Vehicle Fleet Mix, and Travel Conditions.	Pages 253 through 257 provide the unmitigated construction phase assumptions used to determine total emissions. Pages 273 through 274 provide the mitigated construction phase assumptions used to determine emissions totals upon the implementation of mitigation measures.	There were no changes to the URBEMIS defaults.
	Annual	Page 267 provides a summary of the emissions results (the total emissions) for 2012 and 2013 construction phases. The results are shown as "unmitigated" construction emissions and "mitigated" construction emissions. See modeling assumptions column to the right for mitigation page numbers.	Page 267 provides a summary of the results (the total emissions) post construction. "Area" source emissions are combined with "operation" emissions for the totals.	Pages 268 and 269 provide the unmitigated calculations for identifying total emissions. Various construction phase assumptions are found on pages 269 through 271; followed by the mitigated construction emission calculations.	Pages 277 and 278 provide the unmitigated operation phase based on Land Uses, Vehicle Fleet Mix, and Travel Conditions.	Pages 267 through 271 provide the unmitigated construction phase assumptions used to determine total emissions. Pages 271 through 277 provide the mitigated construction phase assumptions used to determine emissions totals upon the implementation of mitigation measures.	There were no changes to the URBEMIS defaults.
		Page 281 provides a summary of the emissions results (the total emissions) for 2012 and 2013 construction phases. The results are shown as "unmitigated" construction emissions and "mitigated" construction emissions. See modeling assumptions column to the right for mitigation page numbers.	Page 281 provides a summary of the results (the total emissions) post construction. "Area" source emissions are combined with "operation" emissions for the totals.	Pages 281 and 282 provide the unmitigated calculations for identifying total emissions. Various construction phase assumptions are found on pages 283 through 285; followed by the mitigated construction emission calculations.	Pages 291 and 292 provide the unmitigated operation phase based on Land Uses, Vehicle Fleet Mix, and Travel Conditions.	Pages 281 through 285 provide the unmitigated construction phase assumptions used to determine total emissions. Pages 285 through 291 provide the mitigated construction phase assumptions used to determine emissions totals upon the implementation of mitigation measures.	There were no changes to the URBEMIS defaults.

*Refers the page numbers located in the right hand corner of the document.

Clean Material Recovery Facilities

10/15/2010 10:12:04 AM

Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name:

Project Name: LA SWIRP - Material Recovery Facilities

Project Location: Los Angeles County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

10/15/2010 10:12:04 AM

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2012 TOTALS (lbs/day unmitigated)	4.93	30.23	35.91	0.05	35.01	1.70	36.08	7.31	1.56	8.30	6,626.99
2012 TOTALS (lbs/day mitigated)	4.93	26.12	35.91	0.05	7.94	1.08	9.02	1.66	0.99	2.65	6,626.99
2013 TOTALS (lbs/day unmitigated)	203.00	27.60	33.70	0.05	0.20	1.52	1.72	0.07	1.39	1.46	6,626.76
2013 TOTALS (lbs/day mitigated)	182.71	23.74	33.70	0.05	0.20	0.66	0.85	0.07	0.60	0.67	6,626.76

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	1.23	0.83	2.23	0.00	0.01	0.01	969.25

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	2.75	21.33	14.21	0.04	3.78	1.32	4,210.31

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	3.98	22.16	16.44	0.04	3.79	1.33	5,179.56

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Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 3/26/2012-6/20/2012 Active Days: 63	2.72	22.00	12.46	0.00	**35.01**	1.08	**36.08**	**7.31**	0.99	**8.30**	2,371.61
Mass Grading 03/24/2012-06/20/2012	2.72	22.00	12.46	0.00	35.01	1.08	36.08	7.31	0.99	8.30	2,371.61
Mass Grading Dust	0.00	0.00	0.00	0.00	35.00	0.00	35.00	7.31	0.00	7.31	0.00
Mass Grading Off Road Diesel	2.69	21.95	11.51	0.00	0.00	1.07	1.07	0.00	0.99	0.99	2,247.32
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.03	0.05	0.95	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.29
Time Slice 6/25/2012-8/1/2012 Active Days: 28	2.72	22.00	12.46	0.00	**35.01**	1.08	**36.08**	**7.31**	0.99	**8.30**	2,371.61
Fine Grading 06/23/2012-08/01/2012	2.72	22.00	12.46	0.00	35.01	1.08	36.08	7.31	0.99	8.30	2,371.61
Fine Grading Dust	0.00	0.00	0.00	0.00	35.00	0.00	35.00	7.31	0.00	7.31	0.00
Fine Grading Off Road Diesel	2.69	21.95	11.51	0.00	0.00	1.07	1.07	0.00	0.99	0.99	2,247.32
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.03	0.05	0.95	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.29
Time Slice 8/6/2012-8/15/2012 Active Days: 8	1.83	15.30	8.96	0.00	0.01	0.74	0.74	0.00	0.68	0.68	1,838.93
Trenching 08/04/2012-08/15/2012	1.83	15.30	8.96	0.00	0.01	0.74	0.74	0.00	0.68	0.68	1,838.93
Trenching Off Road Diesel	1.80	15.24	8.01	0.00	0.00	0.73	0.73	0.00	0.67	0.67	1,714.64
Trenching Worker Trips	0.03	0.05	0.95	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.29
Time Slice 8/20/2012-8/29/2012 Active Days: 8	3.06	16.25	11.61	0.01	0.02	1.32	1.34	0.01	1.21	1.22	1,816.46
Asphalt 08/18/2012-08/29/2012	3.06	16.25	11.61	0.01	0.02	1.32	1.34	0.01	1.21	1.22	1,816.46
Paving Off-Gas	0.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.34	14.35	8.99	0.00	0.00	1.24	1.24	0.00	1.14	1.14	1,272.04
Paving On Road Diesel	0.15	1.79	0.72	0.00	0.01	0.07	0.08	0.00	0.07	0.07	295.84
Paving Worker Trips	0.06	0.11	1.89	0.00	0.01	0.01	0.02	0.00	0.01	0.01	248.59

Time Slice 9/3/2012-12/31/2012 Active Days: 86	4.93	**30.23**	**35.91**	**0.05**	0.20	**1.70**	1.90	0.07	**1.56**	1.63	**6,626.99**
Building 09/01/2012-04/24/2013	4.93	30.23	35.91	0.05	0.20	1.70	1.90	0.07	1.56	1.63	6,626.99
Building Off Road Diesel	3.14	14.81	10.52	0.00	0.00	1.04	1.04	0.00	0.95	0.95	1,621.20
Building Vendor Trips	1.36	14.59	11.10	0.03	0.11	0.61	0.72	0.04	0.56	0.60	3,126.46
Building Worker Trips	0.44	0.82	14.29	0.02	0.09	0.05	0.14	0.03	0.04	0.08	1,879.33
Time Slice 1/1/2013-4/24/2013 Active Days: 82	4.51	27.60	33.70	**0.05**	0.20	1.52	1.72	0.07	1.39	1.46	6,626.76
Building 09/01/2012-04/24/2013	4.51	27.60	33.70	0.05	0.20	1.52	1.72	0.07	1.39	1.46	6,626.76
Building Off Road Diesel	2.88	13.91	10.20	0.00	0.00	0.93	0.93	0.00	0.86	0.86	1,621.20
Building Vendor Trips	1.23	12.94	10.19	0.03	0.11	0.54	0.64	0.04	0.49	0.53	3,126.47
Building Worker Trips	0.40	0.76	13.31	0.02	0.09	0.05	0.14	0.03	0.04	0.08	1,879.09
Time Slice 4/29/2013-5/22/2013 Active Days: 18	**203.00**	0.12	2.08	0.00	0.01	0.01	0.02	0.01	0.01	0.01	294.34
Coating 04/27/2013-05/22/2013	203.00	0.12	2.08	0.00	0.01	0.01	0.02	0.01	0.01	0.01	294.34
Architectural Coating	202.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.06	0.12	2.08	0.00	0.01	0.01	0.02	0.01	0.01	0.01	294.34

Phase Assumptions

Phase: Fine Grading 6/23/2012 - 8/1/2012 - Default Fine Site Grading/Excavation Description

Total Acres Disturbed: 7

Maximum Daily Acreage Disturbed: 1.75

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 3/24/2012 - 6/20/2012 - Default Mass Site Grading/Excavation Description

Total Acres Disturbed: 7

Maximum Daily Acreage Disturbed: 1.75

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Trenching 8/4/2012 - 8/15/2012 - Default Trenching Description

Off-Road Equipment:

2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

1 Other General Industrial Equipment (238 hp) operating at a 0.51 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 0 hours per day

Phase: Paving 8/18/2012 - 8/29/2012 - Default Paving Description

Acres to be Paved: 1.75

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

1 Paving Equipment (104 hp) operating at a 0.53 load factor for 8 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

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Phase: Building Construction 9/1/2012 - 4/24/2013 - Default Building Construction Description

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 6 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

3 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Architectural Coating 4/27/2013 - 5/22/2013 - Default Architectural Coating Description

Rule: Residential Interior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 100

Rule: Residential Interior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 50

Rule: Residential Exterior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 100

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 3/26/2012-6/20/2012 Active Days: 63	2.72	22.00	12.46	0.00	7.94	1.08	9.02	1.66	0.99	2.65	2,371.61
Mass Grading 03/24/2012-06/20/2012	2.72	22.00	12.46	0.00	7.94	1.08	9.02	1.66	0.99	2.65	2,371.61
Mass Grading Dust	0.00	0.00	0.00	0.00	7.94	0.00	7.94	1.66	0.00	1.66	0.00
Mass Grading Off Road Diesel	2.69	21.95	11.51	0.00	0.00	1.07	1.07	0.00	0.99	0.99	2,247.32
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.03	0.05	0.95	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.29

Time Slice 6/25/2012-8/1/2012 Active Days: 28	2.72	22.00	12.46	0.00	7.94	1.08	9.02	1.66	0.99	2.65	2,371.61
Fine Grading 06/23/2012-08/01/2012	2.72	22.00	12.46	0.00	7.94	1.08	9.02	1.66	0.99	2.65	2,371.61
Fine Grading Dust	0.00	0.00	0.00	0.00	7.94	0.00	7.94	1.66	0.00	1.66	0.00
Fine Grading Off Road Diesel	2.69	21.95	11.51	0.00	0.00	1.07	1.07	0.00	0.99	0.99	2,247.32
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.03	0.05	0.95	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.29
Time Slice 8/6/2012-8/15/2012 Active Days: 8	1.83	11.07	8.96	0.00	0.01	0.06	0.06	0.00	0.05	0.06	1,838.93
Trenching 08/04/2012-08/15/2012	1.83	11.07	8.96	0.00	0.01	0.06	0.06	0.00	0.05	0.06	1,838.93
Trenching Off Road Diesel	1.80	11.01	8.01	0.00	0.00	0.05	0.05	0.00	0.05	0.05	1,714.64
Trenching Worker Trips	0.03	0.05	0.95	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.29
Time Slice 8/20/2012-8/29/2012 Active Days: 8	3.06	12.27	11.61	0.01	0.02	0.17	0.19	0.01	0.16	0.17	1,816.46
Asphalt 08/18/2012-08/29/2012	3.06	12.27	11.61	0.01	0.02	0.17	0.19	0.01	0.16	0.17	1,816.46
Paving Off-Gas	0.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.34	10.37	8.99	0.00	0.00	0.09	0.09	0.00	0.09	0.09	1,272.04
Paving On Road Diesel	0.15	1.79	0.72	0.00	0.01	0.07	0.08	0.00	0.07	0.07	295.84
Paving Worker Trips	0.06	0.11	1.89	0.00	0.01	0.01	0.02	0.00	0.01	0.01	248.59
Time Slice 9/3/2012-12/31/2012 Active Days: 86	4.93	26.12	**35.91**	**0.05**	0.20	0.74	0.94	0.07	0.67	0.74	**6,626.99**
Building 09/01/2012-04/24/2013	4.93	26.12	35.91	0.05	0.20	0.74	0.94	0.07	0.67	0.74	6,626.99
Building Off Road Diesel	3.14	10.70	10.52	0.00	0.00	0.08	0.08	0.00	0.07	0.07	1,621.20
Building Vendor Trips	1.36	14.59	11.10	0.03	0.11	0.61	0.72	0.04	0.56	0.60	3,126.46
Building Worker Trips	0.44	0.82	14.29	0.02	0.09	0.05	0.14	0.03	0.04	0.08	1,879.33

Time Slice 1/1/2013-4/24/2013 Active Days: 82	4.51	23.74	33.70	**0.05**	0.20	0.66	0.85	0.07	0.60	0.67	6,626.76
Building 09/01/2012-04/24/2013	4.51	23.74	33.70	0.05	0.20	0.66	0.85	0.07	0.60	0.67	6,626.76
Building Off Road Diesel	2.88	10.05	10.20	0.00	0.00	0.07	0.07	0.00	0.06	0.06	1,621.20
Building Vendor Trips	1.23	12.94	10.19	0.03	0.11	0.54	0.64	0.04	0.49	0.53	3,126.47
Building Worker Trips	0.40	0.76	13.31	0.02	0.09	0.05	0.14	0.03	0.04	0.08	1,879.09
Time Slice 4/29/2013-5/22/2013 Active Days: 18	182.71	0.12	2.08	0.00	0.01	0.01	0.02	0.01	0.01	0.01	294.34
Coating 04/27/2013-05/22/2013	182.71	0.12	2.08	0.00	0.01	0.01	0.02	0.01	0.01	0.01	294.34
Architectural Coating	182.65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.06	0.12	2.08	0.00	0.01	0.01	0.02	0.01	0.01	0.01	294.34

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 6/23/2012 - 8/1/2012 - Default Fine Site Grading/Excavation Description

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

The following mitigation measures apply to Phase: Mass Grading 3/24/2012 - 6/20/2012 - Default Mass Site Grading/Excavation Description

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

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For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

The following mitigation measures apply to Phase: Trenching 8/4/2012 - 8/15/2012 - Default Trenching Description

For Excavators, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Excavators, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Excavators, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Other General Industrial Equipment, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Other General Industrial Equipment, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Other General Industrial Equipment, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Tractors/Loaders/Backhoes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Paving 8/18/2012 - 8/29/2012 - Default Paving Description

For Cement and Mortar Mixers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Cement and Mortar Mixers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Cement and Mortar Mixers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Pavers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

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For Pavers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Pavers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Paving Equipment, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Paving Equipment, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Paving Equipment, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Rollers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Rollers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Rollers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Tractors/Loaders/Backhoes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Building Construction 9/1/2012 - 4/24/2013 - Default Building Construction Description

For Cranes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Cranes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Cranes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Forklifts, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Forklifts, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Forklifts, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Generator Sets, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Generator Sets, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Generator Sets, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Tractors/Loaders/Backhoes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Welders, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Welders, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Welders, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Architectural Coating 4/27/2013 - 5/22/2013 - Default Architectural Coating Description

For Residential Architectural Coating Measures, the Residential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Residential Architectural Coating Measures, the Residential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Nonresidential Architectural Coating Measures, the Nonresidential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

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For Nonresidential Architectural Coating Measures, the Nonresidential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
General light industry	2.75	21.33	14.21	0.04	3.78	1.32	4,210.31
TOTALS (lbs/day, unmitigated)	2.75	21.33	14.21	0.04	3.78	1.32	4,210.31

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2012 Temperature (F): 80 Season: Summer

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
General light industry		0.87	1000 sq ft	180.00	156.60	1,679.54
					156.60	1,679.54

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	51.3	0.6	99.2	0.2
Light Truck < 3750 lbs	0.0	1.5	97.0	1.5

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Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Truck 3751-5750 lbs	0.0	0.4	99.6	0.0
Med Truck 5751-8500 lbs	0.0	1.0	99.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	0.0	0.0	86.7	13.3
Lite-Heavy Truck 10,001-14,000 lbs	0.0	0.0	60.0	40.0
Med-Heavy Truck 14,001-33,000 lbs	0.0	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	48.7	0.0	0.0	100.0
Other Bus	0.0	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	100.0
Motorcycle	0.0	60.9	39.1	0.0
School Bus	0.0	0.0	0.0	100.0
Motor Home	0.0	0.0	87.5	12.5

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	12.7	7.0	9.5	13.3	7.4	8.9
Rural Trip Length (miles)	17.6	12.1	14.9	15.4	9.6	12.6
Trip speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
General light industry				50.0	25.0	25.0

Operational Changes to Defaults

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Urbemis 2007 Version 9.2.4

Combined Winter Emissions Reports (Pounds/Day)

File Name:

Project Name: LA SWIRP - Material Recovery Facilities

Project Location: Los Angeles County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

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Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2012 TOTALS (lbs/day unmitigated)	4.93	30.23	35.91	0.05	35.01	1.70	36.08	7.31	1.56	8.30	6,626.99
2012 TOTALS (lbs/day mitigated)	4.93	26.12	35.91	0.05	7.94	1.08	9.02	1.66	0.99	2.65	6,626.99
2013 TOTALS (lbs/day unmitigated)	203.00	27.60	33.70	0.05	0.20	1.52	1.72	0.07	1.39	1.46	6,626.76
2013 TOTALS (lbs/day mitigated)	182.71	23.74	33.70	0.05	0.20	0.66	0.85	0.07	0.60	0.67	6,626.76

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	1.11	0.81	0.68	0.00	0.00	0.00	966.44

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	2.46	23.62	13.69	0.04	3.78	1.32	4,130.41

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	3.57	24.43	14.37	0.04	3.78	1.32	5,096.85

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Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 3/26/2012-6/20/2012 Active Days: 63	2.72	22.00	12.46	0.00	**35.01**	1.08	**36.08**	**7.31**	0.99	**8.30**	2,371.61
Mass Grading 03/24/2012-06/20/2012	2.72	22.00	12.46	0.00	35.01	1.08	36.08	7.31	0.99	8.30	2,371.61
Mass Grading Dust	0.00	0.00	0.00	0.00	35.00	0.00	35.00	7.31	0.00	7.31	0.00
Mass Grading Off Road Diesel	2.69	21.95	11.51	0.00	0.00	1.07	1.07	0.00	0.99	0.99	2,247.32
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.03	0.05	0.95	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.29
Time Slice 6/25/2012-8/1/2012 Active Days: 28	2.72	22.00	12.46	0.00	**35.01**	1.08	**36.08**	**7.31**	0.99	**8.30**	2,371.61
Fine Grading 06/23/2012-08/01/2012	2.72	22.00	12.46	0.00	35.01	1.08	36.08	7.31	0.99	8.30	2,371.61
Fine Grading Dust	0.00	0.00	0.00	0.00	35.00	0.00	35.00	7.31	0.00	7.31	0.00
Fine Grading Off Road Diesel	2.69	21.95	11.51	0.00	0.00	1.07	1.07	0.00	0.99	0.99	2,247.32
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.03	0.05	0.95	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.29
Time Slice 8/6/2012-8/15/2012 Active Days: 8	1.83	15.30	8.96	0.00	0.01	0.74	0.74	0.00	0.68	0.68	1,838.93
Trenching 08/04/2012-08/15/2012	1.83	15.30	8.96	0.00	0.01	0.74	0.74	0.00	0.68	0.68	1,838.93
Trenching Off Road Diesel	1.80	15.24	8.01	0.00	0.00	0.73	0.73	0.00	0.67	0.67	1,714.64
Trenching Worker Trips	0.03	0.05	0.95	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.29
Time Slice 8/20/2012-8/29/2012 Active Days: 8	3.06	16.25	11.61	0.01	0.02	1.32	1.34	0.01	1.21	1.22	1,816.46
Asphalt 08/18/2012-08/29/2012	3.06	16.25	11.61	0.01	0.02	1.32	1.34	0.01	1.21	1.22	1,816.46
Paving Off-Gas	0.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.34	14.35	8.99	0.00	0.00	1.24	1.24	0.00	1.14	1.14	1,272.04
Paving On Road Diesel	0.15	1.79	0.72	0.00	0.01	0.07	0.08	0.00	0.07	0.07	295.84
Paving Worker Trips	0.06	0.11	1.89	0.00	0.01	0.01	0.02	0.00	0.01	0.01	248.59

Time Slice 9/3/2012-12/31/2012 Active Days: 86	4.93	**30.23**	**35.91**	**0.05**	0.20	**1.70**	1.90	0.07	**1.56**	1.63	**6,626.99**
Building 09/01/2012-04/24/2013	4.93	30.23	35.91	0.05	0.20	1.70	1.90	0.07	1.56	1.63	6,626.99
Building Off Road Diesel	3.14	14.81	10.52	0.00	0.00	1.04	1.04	0.00	0.95	0.95	1,621.20
Building Vendor Trips	1.36	14.59	11.10	0.03	0.11	0.61	0.72	0.04	0.56	0.60	3,126.46
Building Worker Trips	0.44	0.82	14.29	0.02	0.09	0.05	0.14	0.03	0.04	0.08	1,879.33
Time Slice 1/1/2013-4/24/2013 Active Days: 82	4.51	27.60	33.70	**0.05**	0.20	1.52	1.72	0.07	1.39	1.46	6,626.76
Building 09/01/2012-04/24/2013	4.51	27.60	33.70	0.05	0.20	1.52	1.72	0.07	1.39	1.46	6,626.76
Building Off Road Diesel	2.88	13.91	10.20	0.00	0.00	0.93	0.93	0.00	0.86	0.86	1,621.20
Building Vendor Trips	1.23	12.94	10.19	0.03	0.11	0.54	0.64	0.04	0.49	0.53	3,126.47
Building Worker Trips	0.40	0.76	13.31	0.02	0.09	0.05	0.14	0.03	0.04	0.08	1,879.09
Time Slice 4/29/2013-5/22/2013 Active Days: 18	**203.00**	0.12	2.08	0.00	0.01	0.01	0.02	0.01	0.01	0.01	294.34
Coating 04/27/2013-05/22/2013	203.00	0.12	2.08	0.00	0.01	0.01	0.02	0.01	0.01	0.01	294.34
Architectural Coating	202.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.06	0.12	2.08	0.00	0.01	0.01	0.02	0.01	0.01	0.01	294.34

Phase Assumptions

Phase: Fine Grading 6/23/2012 - 8/1/2012 - Default Fine Site Grading/Excavation Description

Total Acres Disturbed: 7

Maximum Daily Acreage Disturbed: 1.75

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 3/24/2012 - 6/20/2012 - Default Mass Site Grading/Excavation Description

Total Acres Disturbed: 7

Maximum Daily Acreage Disturbed: 1.75

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Trenching 8/4/2012 - 8/15/2012 - Default Trenching Description

Off-Road Equipment:

2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

1 Other General Industrial Equipment (238 hp) operating at a 0.51 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 0 hours per day

Phase: Paving 8/18/2012 - 8/29/2012 - Default Paving Description

Acres to be Paved: 1.75

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

1 Paving Equipment (104 hp) operating at a 0.53 load factor for 8 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

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Phase: Building Construction 9/1/2012 - 4/24/2013 - Default Building Construction Description

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 6 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

3 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Architectural Coating 4/27/2013 - 5/22/2013 - Default Architectural Coating Description

Rule: Residential Interior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 100

Rule: Residential Interior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 50

Rule: Residential Exterior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 100

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Winter Pounds Per Day, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 3/26/2012-6/20/2012 Active Days: 63	2.72	22.00	12.46	0.00	7.94	1.08	9.02	1.66	0.99	2.65	2,371.61
Mass Grading 03/24/2012-06/20/2012	2.72	22.00	12.46	0.00	7.94	1.08	9.02	1.66	0.99	2.65	2,371.61
Mass Grading Dust	0.00	0.00	0.00	0.00	7.94	0.00	7.94	1.66	0.00	1.66	0.00
Mass Grading Off Road Diesel	2.69	21.95	11.51	0.00	0.00	1.07	1.07	0.00	0.99	0.99	2,247.32
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.03	0.05	0.95	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.29

Time Slice 6/25/2012-8/1/2012 Active Days: 28	2.72	22.00	12.46	0.00	7.94	1.08	9.02	1.66	0.99	2.65	2,371.61
Fine Grading 06/23/2012-08/01/2012	2.72	22.00	12.46	0.00	7.94	1.08	9.02	1.66	0.99	2.65	2,371.61
Fine Grading Dust	0.00	0.00	0.00	0.00	7.94	0.00	7.94	1.66	0.00	1.66	0.00
Fine Grading Off Road Diesel	2.69	21.95	11.51	0.00	0.00	1.07	1.07	0.00	0.99	0.99	2,247.32
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.03	0.05	0.95	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.29
Time Slice 8/6/2012-8/15/2012 Active Days: 8	1.83	11.07	8.96	0.00	0.01	0.06	0.06	0.00	0.05	0.06	1,838.93
Trenching 08/04/2012-08/15/2012	1.83	11.07	8.96	0.00	0.01	0.06	0.06	0.00	0.05	0.06	1,838.93
Trenching Off Road Diesel	1.80	11.01	8.01	0.00	0.00	0.05	0.05	0.00	0.05	0.05	1,714.64
Trenching Worker Trips	0.03	0.05	0.95	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.29
Time Slice 8/20/2012-8/29/2012 Active Days: 8	3.06	12.27	11.61	0.01	0.02	0.17	0.19	0.01	0.16	0.17	1,816.46
Asphalt 08/18/2012-08/29/2012	3.06	12.27	11.61	0.01	0.02	0.17	0.19	0.01	0.16	0.17	1,816.46
Paving Off-Gas	0.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.34	10.37	8.99	0.00	0.00	0.09	0.09	0.00	0.09	0.09	1,272.04
Paving On Road Diesel	0.15	1.79	0.72	0.00	0.01	0.07	0.08	0.00	0.07	0.07	295.84
Paving Worker Trips	0.06	0.11	1.89	0.00	0.01	0.01	0.02	0.00	0.01	0.01	248.59
Time Slice 9/3/2012-12/31/2012 Active Days: 86	4.93	26.12	**35.91**	**0.05**	0.20	0.74	0.94	0.07	0.67	0.74	**6,626.99**
Building 09/01/2012-04/24/2013	4.93	26.12	35.91	0.05	0.20	0.74	0.94	0.07	0.67	0.74	6,626.99
Building Off Road Diesel	3.14	10.70	10.52	0.00	0.00	0.08	0.08	0.00	0.07	0.07	1,621.20
Building Vendor Trips	1.36	14.59	11.10	0.03	0.11	0.61	0.72	0.04	0.56	0.60	3,126.46
Building Worker Trips	0.44	0.82	14.29	0.02	0.09	0.05	0.14	0.03	0.04	0.08	1,879.33

Time Slice 1/1/2013-4/24/2013 Active Days: 82	4.51	23.74	33.70	**0.05**	0.20	0.66	0.85	0.07	0.60	0.67	6,626.76
Building 09/01/2012-04/24/2013	4.51	23.74	33.70	0.05	0.20	0.66	0.85	0.07	0.60	0.67	6,626.76
Building Off Road Diesel	2.88	10.05	10.20	0.00	0.00	0.07	0.07	0.00	0.06	0.06	1,621.20
Building Vendor Trips	1.23	12.94	10.19	0.03	0.11	0.54	0.64	0.04	0.49	0.53	3,126.47
Building Worker Trips	0.40	0.76	13.31	0.02	0.09	0.05	0.14	0.03	0.04	0.08	1,879.09
Time Slice 4/29/2013-5/22/2013 Active Days: 18	182.71	0.12	2.08	0.00	0.01	0.01	0.02	0.01	0.01	0.01	294.34
Coating 04/27/2013-05/22/2013	182.71	0.12	2.08	0.00	0.01	0.01	0.02	0.01	0.01	0.01	294.34
Architectural Coating	182.65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.06	0.12	2.08	0.00	0.01	0.01	0.02	0.01	0.01	0.01	294.34

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 6/23/2012 - 8/1/2012 - Default Fine Site Grading/Excavation Description

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

The following mitigation measures apply to Phase: Mass Grading 3/24/2012 - 6/20/2012 - Default Mass Site Grading/Excavation Description

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

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For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

The following mitigation measures apply to Phase: Trenching 8/4/2012 - 8/15/2012 - Default Trenching Description

For Excavators, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Excavators, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Excavators, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Other General Industrial Equipment, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Other General Industrial Equipment, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Other General Industrial Equipment, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Tractors/Loaders/Backhoes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Paving 8/18/2012 - 8/29/2012 - Default Paving Description

For Cement and Mortar Mixers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Cement and Mortar Mixers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Cement and Mortar Mixers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Pavers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

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For Pavers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Pavers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Paving Equipment, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Paving Equipment, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Paving Equipment, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Rollers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Rollers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Rollers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Tractors/Loaders/Backhoes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Building Construction 9/1/2012 - 4/24/2013 - Default Building Construction Description

For Cranes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Cranes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Cranes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Forklifts, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Forklifts, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Forklifts, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Generator Sets, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Generator Sets, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Generator Sets, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Tractors/Loaders/Backhoes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Welders, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Welders, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Welders, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Architectural Coating 4/27/2013 - 5/22/2013 - Default Architectural Coating Description

For Residential Architectural Coating Measures, the Residential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Residential Architectural Coating Measures, the Residential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Nonresidential Architectural Coating Measures, the Nonresidential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

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For Nonresidential Architectural Coating Measures, the Nonresidential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
General light industry	2.46	23.62	13.69	0.04	3.78	1.32	4,130.41
TOTALS (lbs/day, unmitigated)	2.46	23.62	13.69	0.04	3.78	1.32	4,130.41

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2012 Temperature (F): 60 Season: Winter

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
General light industry		0.87	1000 sq ft	180.00	156.60	1,679.54
					156.60	1,679.54

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	51.3	0.6	99.2	0.2
Light Truck < 3750 lbs	0.0	1.5	97.0	1.5

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Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Truck 3751-5750 lbs	0.0	0.4	99.6	0.0
Med Truck 5751-8500 lbs	0.0	1.0	99.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	0.0	0.0	86.7	13.3
Lite-Heavy Truck 10,001-14,000 lbs	0.0	0.0	60.0	40.0
Med-Heavy Truck 14,001-33,000 lbs	0.0	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	48.7	0.0	0.0	100.0
Other Bus	0.0	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	100.0
Motorcycle	0.0	60.9	39.1	0.0
School Bus	0.0	0.0	0.0	100.0
Motor Home	0.0	0.0	87.5	12.5

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	12.7	7.0	9.5	13.3	7.4	8.9
Rural Trip Length (miles)	17.6	12.1	14.9	15.4	9.6	12.6
Trip speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
General light industry				50.0	25.0	25.0

Operational Changes to Defaults

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Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name:

Project Name: LA SWIRP - Material Recovery Facilities

Project Location: Los Angeles County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

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Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2012 TOTALS (tons/year unmitigated)	0.36	2.43	2.19	0.00	1.60	0.13	1.73	0.34	0.12	0.46	407.49
2012 TOTALS (tons/year mitigated)	0.36	2.22	2.19	0.00	0.37	0.08	0.45	0.08	0.07	0.15	407.49
Percent Reduction	0.00	8.64	0.00	0.00	76.90	37.28	73.92	76.61	37.36	66.31	0.00
2013 TOTALS (tons/year unmitigated)	2.01	1.13	1.40	0.00	0.01	0.06	0.07	0.00	0.06	0.06	274.35
2013 TOTALS (tons/year mitigated)	1.83	0.97	1.40	0.00	0.01	0.03	0.04	0.00	0.02	0.03	274.35
Percent Reduction	9.08	13.97	0.00	0.00	0.00	56.63	50.04	0.00	56.87	54.16	0.00

A CONSTRUCTION EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
TOTALS (tons/year, unmitigated)		0.22	0.15	0.40	0.00	0.00	0.00		176.89		

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	0.48	4.03	2.56	0.01	0.69	0.24	763.52

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	0.70	4.18	2.96	0.01	0.69	0.24	940.41

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Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2012	0.36	2.43	2.19	0.00	1.60	0.13	1.73	0.34	0.12	0.46	407.49
Mass Grading 03/24/2012-06/20/2012	0.09	0.69	0.39	0.00	1.10	0.03	1.14	0.23	0.03	0.26	74.71
Mass Grading Dust	0.00	0.00	0.00	0.00	1.10	0.00	1.10	0.23	0.00	0.23	0.00
Mass Grading Off Road Diesel	0.08	0.69	0.36	0.00	0.00	0.03	0.03	0.00	0.03	0.03	70.79
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.92
Fine Grading 06/23/2012-08/01/2012	0.04	0.31	0.17	0.00	0.49	0.02	0.51	0.10	0.01	0.12	33.20
Fine Grading Dust	0.00	0.00	0.00	0.00	0.49	0.00	0.49	0.10	0.00	0.10	0.00
Fine Grading Off Road Diesel	0.04	0.31	0.16	0.00	0.00	0.02	0.02	0.00	0.01	0.01	31.46
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.74
Trenching 08/04/2012-08/15/2012	0.01	0.06	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.36
Trenching Off Road Diesel	0.01	0.06	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.86
Trenching Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50
Asphalt 08/18/2012-08/29/2012	0.01	0.06	0.05	0.00	0.00	0.01	0.01	0.00	0.00	0.00	7.27
Paving Off-Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.01	0.06	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.09
Paving On Road Diesel	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.18
Paving Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.99

Building 09/01/2012-04/24/2013	0.21	1.30	1.54	0.00	0.01	0.07	0.08	0.00	0.07	0.07	284.96
Building Off Road Diesel	0.13	0.64	0.45	0.00	0.00	0.04	0.04	0.00	0.04	0.04	69.71
Building Vendor Trips	0.06	0.63	0.48	0.00	0.00	0.03	0.03	0.00	0.02	0.03	134.44
Building Worker Trips	0.02	0.04	0.61	0.00	0.00	0.00	0.01	0.00	0.00	0.00	80.81
2013	2.01	1.13	1.40	0.00	0.01	0.06	0.07	0.00	0.06	0.06	274.35
Building 09/01/2012-04/24/2013	0.18	1.13	1.38	0.00	0.01	0.06	0.07	0.00	0.06	0.06	271.70
Building Off Road Diesel	0.12	0.57	0.42	0.00	0.00	0.04	0.04	0.00	0.04	0.04	66.47
Building Vendor Trips	0.05	0.53	0.42	0.00	0.00	0.02	0.03	0.00	0.02	0.02	128.19
Building Worker Trips	0.02	0.03	0.55	0.00	0.00	0.00	0.01	0.00	0.00	0.00	77.04
Coating 04/27/2013-05/22/2013	1.83	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.65
Architectural Coating	1.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.65

Phase Assumptions

Phase: Fine Grading 6/23/2012 - 8/1/2012 - Default Fine Site Grading/Excavation Description

Total Acres Disturbed: 7

Maximum Daily Acreage Disturbed: 1.75

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 3/24/2012 - 6/20/2012 - Default Mass Site Grading/Excavation Description

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Total Acres Disturbed: 7

Maximum Daily Acreage Disturbed: 1.75

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Trenching 8/4/2012 - 8/15/2012 - Default Trenching Description

Off-Road Equipment:

2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

1 Other General Industrial Equipment (238 hp) operating at a 0.51 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 0 hours per day

Phase: Paving 8/18/2012 - 8/29/2012 - Default Paving Description

Acres to be Paved: 1.75

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

1 Paving Equipment (104 hp) operating at a 0.53 load factor for 8 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Building Construction 9/1/2012 - 4/24/2013 - Default Building Construction Description

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 6 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

3 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Architectural Coating 4/27/2013 - 5/22/2013 - Default Architectural Coating Description

Rule: Residential Interior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 100

Rule: Residential Interior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 50

Rule: Residential Exterior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 100

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2012	0.36	2.22	2.19	0.00	0.37	0.08	0.45	0.08	0.07	0.15	407.49
Mass Grading 03/24/2012-06/20/2012	0.09	0.69	0.39	0.00	0.25	0.03	0.28	0.05	0.03	0.08	74.71
Mass Grading Dust	0.00	0.00	0.00	0.00	0.25	0.00	0.25	0.05	0.00	0.05	0.00
Mass Grading Off Road Diesel	0.08	0.69	0.36	0.00	0.00	0.03	0.03	0.00	0.03	0.03	70.79
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.92

Fine Grading 06/23/2012-08/01/2012	0.04	0.31	0.17	0.00	0.11	0.02	0.13	0.02	0.01	0.04	33.20
Fine Grading Dust	0.00	0.00	0.00	0.00	0.11	0.00	0.11	0.02	0.00	0.02	0.00
Fine Grading Off Road Diesel	0.04	0.31	0.16	0.00	0.00	0.02	0.02	0.00	0.01	0.01	31.46
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.74
Trenching 08/04/2012-08/15/2012	0.01	0.04	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.36
Trenching Off Road Diesel	0.01	0.04	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.86
Trenching Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50
Asphalt 08/18/2012-08/29/2012	0.01	0.05	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.27
Paving Off-Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.01	0.04	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.09
Paving On Road Diesel	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.18
Paving Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.99
Building 09/01/2012-04/24/2013	0.21	1.12	1.54	0.00	0.01	0.03	0.04	0.00	0.03	0.03	284.96
Building Off Road Diesel	0.13	0.46	0.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	69.71
Building Vendor Trips	0.06	0.63	0.48	0.00	0.00	0.03	0.03	0.00	0.02	0.03	134.44
Building Worker Trips	0.02	0.04	0.61	0.00	0.00	0.00	0.01	0.00	0.00	0.00	80.81

2013	1.83	0.97	1.40	0.00	0.01	0.03	0.04	0.00	0.02	0.03	274.35
Building 09/01/2012-04/24/2013	0.18	0.97	1.38	0.00	0.01	0.03	0.04	0.00	0.02	0.03	271.70
Building Off Road Diesel	0.12	0.41	0.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	66.47
Building Vendor Trips	0.05	0.53	0.42	0.00	0.00	0.02	0.03	0.00	0.02	0.02	128.19
Building Worker Trips	0.02	0.03	0.55	0.00	0.00	0.00	0.01	0.00	0.00	0.00	77.04
Coating 04/27/2013-05/22/2013	1.64	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.65
Architectural Coating	1.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.65

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 6/23/2012 - 8/1/2012 - Default Fine Site Grading/Excavation Description

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

The following mitigation measures apply to Phase: Mass Grading 3/24/2012 - 6/20/2012 - Default Mass Site Grading/Excavation Description

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

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The following mitigation measures apply to Phase: Trenching 8/4/2012 - 8/15/2012 - Default Trenching Description

For Excavators, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Excavators, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Excavators, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Other General Industrial Equipment, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Other General Industrial Equipment, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Other General Industrial Equipment, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Tractors/Loaders/Backhoes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Paving 8/18/2012 - 8/29/2012 - Default Paving Description

For Cement and Mortar Mixers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Cement and Mortar Mixers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Cement and Mortar Mixers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Pavers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Pavers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Pavers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Paving Equipment, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Paving Equipment, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Paving Equipment, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Rollers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Rollers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Rollers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Tractors/Loaders/Backhoes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Building Construction 9/1/2012 - 4/24/2013 - Default Building Construction Description

For Cranes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Cranes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Cranes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Forklifts, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Forklifts, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Forklifts, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Generator Sets, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Generator Sets, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Generator Sets, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Tractors/Loaders/Backhoes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Welders, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Welders, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Welders, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Architectural Coating 4/27/2013 - 5/22/2013 - Default Architectural Coating Description

For Residential Architectural Coating Measures, the Residential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Residential Architectural Coating Measures, the Residential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Nonresidential Architectural Coating Measures, the Nonresidential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Nonresidential Architectural Coating Measures, the Nonresidential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
General light industry	0.48	4.03	2.56	0.01	0.69	0.24	763.52
TOTALS (tons/year, unmitigated)	0.48	4.03	2.56	0.01	0.69	0.24	763.52

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2012 Season: Annual

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
General light industry		0.87	1000 sq ft	180.00	156.60	1,679.54
					156.60	1,679.54

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	51.3	0.6	99.2	0.2
Light Truck < 3750 lbs	0.0	1.5	97.0	1.5
Light Truck 3751-5750 lbs	0.0	0.4	99.6	0.0
Med Truck 5751-8500 lbs	0.0	1.0	99.0	0.0

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Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Lite-Heavy Truck 8501-10,000 lbs	0.0	0.0	86.7	13.3
Lite-Heavy Truck 10,001-14,000 lbs	0.0	0.0	60.0	40.0
Med-Heavy Truck 14,001-33,000 lbs	0.0	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	48.7	0.0	0.0	100.0
Other Bus	0.0	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	100.0
Motorcycle	0.0	60.9	39.1	0.0
School Bus	0.0	0.0	0.0	100.0
Motor Home	0.0	0.0	87.5	12.5

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	12.7	7.0	9.5	13.3	7.4	8.9
Rural Trip Length (miles)	17.6	12.1	14.9	15.4	9.6	12.6
Trip speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
General light industry				50.0	25.0	25.0

Operational Changes to Defaults

Composting

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Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name:

Project Name: LA SWIRP - Composting Facility

Project Location: Los Angeles County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

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Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2012 TOTALS (lbs/day unmitigated)	5.12	29.68	17.42	0.01	150.01	1.54	151.55	31.33	1.42	32.75	3,162.85
2012 TOTALS (lbs/day mitigated)	5.12	29.68	17.42	0.01	34.02	1.54	35.56	7.11	1.42	8.52	3,162.85
2013 TOTALS (lbs/day unmitigated)	3.38	14.13	10.59	0.00	0.00	0.94	0.94	0.00	0.87	0.87	1,704.62
2013 TOTALS (lbs/day mitigated)	3.05	10.28	10.59	0.00	0.00	0.08	0.08	0.00	0.07	0.07	1,704.62

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	0.20	0.83	2.23	0.00	0.01	0.01	969.25

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	4.89	56.74	24.90	0.09	6.74	2.93	9,620.38

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	5.09	57.57	27.13	0.09	6.75	2.94	10,589.63

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Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 3/26/2012-6/20/2012 Active Days: 63	3.74	**29.68**	**17.42**	0.00	**150.01**	**1.54**	**151.55**	**31.33**	**1.42**	**32.75**	**3,162.85**
Mass Grading 03/24/2012-06/20/2012	3.74	29.68	17.42	0.00	150.01	1.54	151.55	31.33	1.42	32.75	3,162.85
Mass Grading Dust	0.00	0.00	0.00	0.00	150.00	0.00	150.00	31.33	0.00	31.33	0.00
Mass Grading Off Road Diesel	3.71	29.61	16.24	0.00	0.00	1.54	1.54	0.00	1.42	1.42	3,007.48
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.04	0.07	1.18	0.00	0.01	0.00	0.01	0.00	0.00	0.01	155.37
Time Slice 6/25/2012-8/1/2012 Active Days: 28	3.74	**29.68**	**17.42**	0.00	**150.01**	**1.54**	**151.55**	**31.33**	**1.42**	**32.75**	**3,162.85**
Fine Grading 06/23/2012-08/01/2012	3.74	29.68	17.42	0.00	150.01	1.54	151.55	31.33	1.42	32.75	3,162.85
Fine Grading Dust	0.00	0.00	0.00	0.00	150.00	0.00	150.00	31.33	0.00	31.33	0.00
Fine Grading Off Road Diesel	3.71	29.61	16.24	0.00	0.00	1.54	1.54	0.00	1.42	1.42	3,007.48
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.04	0.07	1.18	0.00	0.01	0.00	0.01	0.00	0.00	0.01	155.37
Time Slice 8/6/2012-8/15/2012 Active Days: 8	1.83	15.30	8.96	0.00	0.01	0.74	0.74	0.00	0.68	0.68	1,838.93
Trenching 08/04/2012-08/15/2012	1.83	15.30	8.96	0.00	0.01	0.74	0.74	0.00	0.68	0.68	1,838.93
Trenching Off Road Diesel	1.80	15.24	8.01	0.00	0.00	0.73	0.73	0.00	0.67	0.67	1,714.64
Trenching Worker Trips	0.03	0.05	0.95	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.29
Time Slice 8/20/2012-8/29/2012 Active Days: 8	**5.12**	21.26	13.09	**0.01**	0.05	1.49	1.54	0.02	1.37	1.39	2,648.38
Asphalt 08/18/2012-08/29/2012	5.12	21.26	13.09	0.01	0.05	1.49	1.54	0.02	1.37	1.39	2,648.38
Paving Off-Gas	2.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.23	13.48	8.10	0.00	0.00	1.17	1.17	0.00	1.07	1.07	1,131.92
Paving On Road Diesel	0.65	7.67	3.10	0.01	0.04	0.31	0.36	0.01	0.29	0.30	1,267.87
Paving Worker Trips	0.06	0.11	1.89	0.00	0.01	0.01	0.02	0.00	0.01	0.01	248.59

Time Slice 9/3/2012-12/31/2012 Active Days: 86	3.17	15.07	10.94	0.00	0.00	1.05	1.05	0.00	0.96	0.97	1,704.63
Building 09/01/2012-04/24/2013	3.17	15.07	10.94	0.00	0.00	1.05	1.05	0.00	0.96	0.97	1,704.63
Building Off Road Diesel	3.14	14.81	10.52	0.00	0.00	1.04	1.04	0.00	0.95	0.95	1,621.20
Building Vendor Trips	0.02	0.24	0.18	0.00	0.00	0.01	0.01	0.00	0.01	0.01	52.11
Building Worker Trips	0.01	0.01	0.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	31.32
Time Slice 1/1/2013-4/24/2013 Active Days: 82	2.90	14.13	10.59	0.00	0.00	0.94	0.94	0.00	0.87	0.87	1,704.62
Building 09/01/2012-04/24/2013	2.90	14.13	10.59	0.00	0.00	0.94	0.94	0.00	0.87	0.87	1,704.62
Building Off Road Diesel	2.88	13.91	10.20	0.00	0.00	0.93	0.93	0.00	0.86	0.86	1,621.20
Building Vendor Trips	0.02	0.22	0.17	0.00	0.00	0.01	0.01	0.00	0.01	0.01	52.11
Building Worker Trips	0.01	0.01	0.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	31.32
Time Slice 4/29/2013-5/22/2013 Active Days: 18	3.38	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.91
Coating 04/27/2013-05/22/2013	3.38	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.91
Architectural Coating	3.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.91

Phase Assumptions

Phase: Fine Grading 6/23/2012 - 8/1/2012 - Default Fine Site Grading/Excavation Description

Total Acres Disturbed: 30

Maximum Daily Acreage Disturbed: 7.5

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 8 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 8 hours per day

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2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 3/24/2012 - 6/20/2012 - Default Mass Site Grading/Excavation Description

Total Acres Disturbed: 30

Maximum Daily Acreage Disturbed: 7.5

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 8 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 8 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Trenching 8/4/2012 - 8/15/2012 - Default Trenching Description

Off-Road Equipment:

2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

1 Other General Industrial Equipment (238 hp) operating at a 0.51 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 0 hours per day

Phase: Paving 8/18/2012 - 8/29/2012 - Default Paving Description

Acres to be Paved: 7.5

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

2 Paving Equipment (104 hp) operating at a 0.53 load factor for 6 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

Phase: Building Construction 9/1/2012 - 4/24/2013 - Default Building Construction Description

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Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 6 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

3 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Architectural Coating 4/27/2013 - 5/22/2013 - Default Architectural Coating Description

Rule: Residential Interior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 100

Rule: Residential Interior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 50

Rule: Residential Exterior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 100

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 3/26/2012-6/20/2012 Active Days: 63	3.74	**29.68**	**17.42**	0.00	34.02	**1.54**	35.56	7.11	**1.42**	8.52	**3,162.85**
Mass Grading 03/24/2012-06/20/2012	3.74	29.68	17.42	0.00	34.02	1.54	35.56	7.11	1.42	8.52	3,162.85
Mass Grading Dust	0.00	0.00	0.00	0.00	34.01	0.00	34.01	7.10	0.00	7.10	0.00
Mass Grading Off Road Diesel	3.71	29.61	16.24	0.00	0.00	1.54	1.54	0.00	1.42	1.42	3,007.48
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.04	0.07	1.18	0.00	0.01	0.00	0.01	0.00	0.00	0.01	155.37

Time Slice 6/25/2012-8/1/2012 Active Days: 28	3.74	**29.68**	**17.42**	0.00	34.02	**1.54**	35.56	7.11	**1.42**	8.52	**3,162.85**
Fine Grading 06/23/2012-08/01/2012	3.74	29.68	17.42	0.00	34.02	1.54	35.56	7.11	1.42	8.52	3,162.85
Fine Grading Dust	0.00	0.00	0.00	0.00	34.01	0.00	34.01	7.10	0.00	7.10	0.00
Fine Grading Off Road Diesel	3.71	29.61	16.24	0.00	0.00	1.54	1.54	0.00	1.42	1.42	3,007.48
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.04	0.07	1.18	0.00	0.01	0.00	0.01	0.00	0.00	0.01	155.37
Time Slice 8/6/2012-8/15/2012 Active Days: 8	1.83	11.07	8.96	0.00	0.01	0.06	0.06	0.00	0.05	0.06	1,838.93
Trenching 08/04/2012-08/15/2012	1.83	11.07	8.96	0.00	0.01	0.06	0.06	0.00	0.05	0.06	1,838.93
Trenching Off Road Diesel	1.80	11.01	8.01	0.00	0.00	0.05	0.05	0.00	0.05	0.05	1,714.64
Trenching Worker Trips	0.03	0.05	0.95	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.29
Time Slice 8/20/2012-8/29/2012 Active Days: 8	**5.12**	17.52	13.09	**0.01**	0.05	0.41	0.46	0.02	0.37	0.39	2,648.38
Asphalt 08/18/2012-08/29/2012	5.12	17.52	13.09	0.01	0.05	0.41	0.46	0.02	0.37	0.39	2,648.38
Paving Off-Gas	2.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.23	9.74	8.10	0.00	0.00	0.09	0.09	0.00	0.08	0.08	1,131.92
Paving On Road Diesel	0.65	7.67	3.10	0.01	0.04	0.31	0.36	0.01	0.29	0.30	1,267.87
Paving Worker Trips	0.06	0.11	1.89	0.00	0.01	0.01	0.02	0.00	0.01	0.01	248.59
Time Slice 9/3/2012-12/31/2012 Active Days: 86	3.17	10.96	10.94	0.00	0.00	0.09	0.09	0.00	0.08	0.08	1,704.63
Building 09/01/2012-04/24/2013	3.17	10.96	10.94	0.00	0.00	0.09	0.09	0.00	0.08	0.08	1,704.63
Building Off Road Diesel	3.14	10.70	10.52	0.00	0.00	0.08	0.08	0.00	0.07	0.07	1,621.20
Building Vendor Trips	0.02	0.24	0.18	0.00	0.00	0.01	0.01	0.00	0.01	0.01	52.11
Building Worker Trips	0.01	0.01	0.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	31.32

Time Slice 1/1/2013-4/24/2013 Active Days: 82	2.90	10.28	10.59	0.00	0.00	0.08	0.08	0.00	0.07	0.07	1,704.62
Building 09/01/2012-04/24/2013	2.90	10.28	10.59	0.00	0.00	0.08	0.08	0.00	0.07	0.07	1,704.62
Building Off Road Diesel	2.88	10.05	10.20	0.00	0.00	0.07	0.07	0.00	0.06	0.06	1,621.20
Building Vendor Trips	0.02	0.22	0.17	0.00	0.00	0.01	0.01	0.00	0.01	0.01	52.11
Building Worker Trips	0.01	0.01	0.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	31.32
Time Slice 4/29/2013-5/22/2013 Active Days: 18	3.05	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.91
Coating 04/27/2013-05/22/2013	3.05	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.91
Architectural Coating	3.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.91

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 6/23/2012 - 8/1/2012 - Default Fine Site Grading/Excavation Description

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

The following mitigation measures apply to Phase: Mass Grading 3/24/2012 - 6/20/2012 - Default Mass Site Grading/Excavation Description

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

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For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

The following mitigation measures apply to Phase: Trenching 8/4/2012 - 8/15/2012 - Default Trenching Description

For Excavators, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Excavators, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Excavators, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Other General Industrial Equipment, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Other General Industrial Equipment, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Other General Industrial Equipment, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Tractors/Loaders/Backhoes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Paving 8/18/2012 - 8/29/2012 - Default Paving Description

For Cement and Mortar Mixers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Cement and Mortar Mixers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Cement and Mortar Mixers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Pavers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

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For Pavers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Pavers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Paving Equipment, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Paving Equipment, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Paving Equipment, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Rollers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Rollers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Rollers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Building Construction 9/1/2012 - 4/24/2013 - Default Building Construction Description

For Cranes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Cranes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Cranes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Forklifts, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Forklifts, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Forklifts, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Generator Sets, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

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NOX: 15% PM10: 50% PM25: 50%

For Generator Sets, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Generator Sets, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Tractors/Loaders/Backhoes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Welders, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Welders, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Welders, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Architectural Coating 4/27/2013 - 5/22/2013 - Default Architectural Coating Description

For Residential Architectural Coating Measures, the Residential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Residential Architectural Coating Measures, the Residential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Nonresidential Architectural Coating Measures, the Nonresidential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Nonresidential Architectural Coating Measures, the Nonresidential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

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Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.06	0.81	0.68	0.00	0.00	0.00	966.44
Hearth - No Summer Emissions							
Landscape	0.12	0.02	1.55	0.00	0.01	0.01	2.81
Consumer Products	0.00						
Architectural Coatings	0.02						
TOTALS (lbs/day, unmitigated)	0.20	0.83	2.23	0.00	0.01	0.01	969.25

Area Source Changes to Defaults

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
General light industry	4.89	56.74	24.90	0.09	6.74	2.93	9,620.38
TOTALS (lbs/day, unmitigated)	4.89	56.74	24.90	0.09	6.74	2.93	9,620.38

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2012 Temperature (F): 80 Season: Summer

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

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Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
General light industry		78.00	1000 sq ft	3.00	234.00	2,509.65
					234.00	2,509.65

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	12.0	0.6	99.2	0.2
Light Truck < 3750 lbs	0.0	1.5	97.0	1.5
Light Truck 3751-5750 lbs	0.0	0.4	99.6	0.0
Med Truck 5751-8500 lbs	0.0	1.0	99.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	0.0	0.0	86.7	13.3
Lite-Heavy Truck 10,001-14,000 lbs	0.0	0.0	60.0	40.0
Med-Heavy Truck 14,001-33,000 lbs	0.0	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	88.0	0.0	0.0	100.0
Other Bus	0.0	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	100.0
Motorcycle	0.0	60.9	39.1	0.0
School Bus	0.0	0.0	0.0	100.0
Motor Home	0.0	0.0	87.5	12.5

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	12.7	7.0	9.5	13.3	7.4	8.9

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Rural Trip Length (miles)	17.6	12.1	14.9	15.4	9.6	12.6
Trip speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
General light industry				50.0	25.0	25.0

Operational Changes to Defaults

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Urbemis 2007 Version 9.2.4

Combined Winter Emissions Reports (Pounds/Day)

File Name:

Project Name: LA SWIRP - Composting Facility

Project Location: Los Angeles County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

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Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2012 TOTALS (lbs/day unmitigated)	5.12	29.68	17.42	0.01	150.01	1.54	151.55	31.33	1.42	32.75	3,162.85
2012 TOTALS (lbs/day mitigated)	5.12	29.68	17.42	0.01	34.02	1.54	35.56	7.11	1.42	8.52	3,162.85
2013 TOTALS (lbs/day unmitigated)	3.38	14.13	10.59	0.00	0.00	0.94	0.94	0.00	0.87	0.87	1,704.62
2013 TOTALS (lbs/day mitigated)	3.05	10.28	10.59	0.00	0.00	0.08	0.08	0.00	0.07	0.07	1,704.62

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	0.08	0.81	0.68	0.00	0.00	0.00	966.44

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	4.91	62.71	24.71	0.09	6.74	2.93	9,592.45

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	4.99	63.52	25.39	0.09	6.74	2.93	10,558.89

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Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

Time Slice 3/26/2012-6/20/2012 Active Days: 63	3.74	**29.68**	**17.42**	0.00	**150.01**	**1.54**	**151.55**	**31.33**	**1.42**	**32.75**	**3,162.85**
Mass Grading 03/24/2012-06/20/2012	3.74	29.68	17.42	0.00	150.01	1.54	151.55	31.33	1.42	32.75	3,162.85
Mass Grading Dust	0.00	0.00	0.00	0.00	150.00	0.00	150.00	31.33	0.00	31.33	0.00
Mass Grading Off Road Diesel	3.71	29.61	16.24	0.00	0.00	1.54	1.54	0.00	1.42	1.42	3,007.48
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.04	0.07	1.18	0.00	0.01	0.00	0.01	0.00	0.00	0.01	155.37
Time Slice 6/25/2012-8/1/2012 Active Days: 28	3.74	**29.68**	**17.42**	0.00	**150.01**	**1.54**	**151.55**	**31.33**	**1.42**	**32.75**	**3,162.85**
Fine Grading 06/23/2012-08/01/2012	3.74	29.68	17.42	0.00	150.01	1.54	151.55	31.33	1.42	32.75	3,162.85
Fine Grading Dust	0.00	0.00	0.00	0.00	150.00	0.00	150.00	31.33	0.00	31.33	0.00
Fine Grading Off Road Diesel	3.71	29.61	16.24	0.00	0.00	1.54	1.54	0.00	1.42	1.42	3,007.48
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.04	0.07	1.18	0.00	0.01	0.00	0.01	0.00	0.00	0.01	155.37
Time Slice 8/6/2012-8/15/2012 Active Days: 8	1.83	15.30	8.96	0.00	0.01	0.74	0.74	0.00	0.68	0.68	1,838.93
Trenching 08/04/2012-08/15/2012	1.83	15.30	8.96	0.00	0.01	0.74	0.74	0.00	0.68	0.68	1,838.93
Trenching Off Road Diesel	1.80	15.24	8.01	0.00	0.00	0.73	0.73	0.00	0.67	0.67	1,714.64
Trenching Worker Trips	0.03	0.05	0.95	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.29
Time Slice 8/20/2012-8/29/2012 Active Days: 8	**5.12**	21.26	13.09	**0.01**	0.05	1.49	1.54	0.02	1.37	1.39	2,648.38
Asphalt 08/18/2012-08/29/2012	5.12	21.26	13.09	0.01	0.05	1.49	1.54	0.02	1.37	1.39	2,648.38
Paving Off-Gas	2.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.23	13.48	8.10	0.00	0.00	1.17	1.17	0.00	1.07	1.07	1,131.92
Paving On Road Diesel	0.65	7.67	3.10	0.01	0.04	0.31	0.36	0.01	0.29	0.30	1,267.87
Paving Worker Trips	0.06	0.11	1.89	0.00	0.01	0.01	0.02	0.00	0.01	0.01	248.59

Time Slice 9/3/2012-12/31/2012 Active Days: 86	3.17	15.07	10.94	0.00	0.00	1.05	1.05	0.00	0.96	0.97	1,704.63
Building 09/01/2012-04/24/2013	3.17	15.07	10.94	0.00	0.00	1.05	1.05	0.00	0.96	0.97	1,704.63
Building Off Road Diesel	3.14	14.81	10.52	0.00	0.00	1.04	1.04	0.00	0.95	0.95	1,621.20
Building Vendor Trips	0.02	0.24	0.18	0.00	0.00	0.01	0.01	0.00	0.01	0.01	52.11
Building Worker Trips	0.01	0.01	0.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	31.32
Time Slice 1/1/2013-4/24/2013 Active Days: 82	2.90	14.13	10.59	0.00	0.00	0.94	0.94	0.00	0.87	0.87	1,704.62
Building 09/01/2012-04/24/2013	2.90	14.13	10.59	0.00	0.00	0.94	0.94	0.00	0.87	0.87	1,704.62
Building Off Road Diesel	2.88	13.91	10.20	0.00	0.00	0.93	0.93	0.00	0.86	0.86	1,621.20
Building Vendor Trips	0.02	0.22	0.17	0.00	0.00	0.01	0.01	0.00	0.01	0.01	52.11
Building Worker Trips	0.01	0.01	0.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	31.32
Time Slice 4/29/2013-5/22/2013 Active Days: 18	3.38	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.91
Coating 04/27/2013-05/22/2013	3.38	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.91
Architectural Coating	3.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.91

Phase Assumptions

Phase: Fine Grading 6/23/2012 - 8/1/2012 - Default Fine Site Grading/Excavation Description

Total Acres Disturbed: 30

Maximum Daily Acreage Disturbed: 7.5

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 8 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 8 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 3/24/2012 - 6/20/2012 - Default Mass Site Grading/Excavation Description

Total Acres Disturbed: 30

Maximum Daily Acreage Disturbed: 7.5

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 8 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 8 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Trenching 8/4/2012 - 8/15/2012 - Default Trenching Description

Off-Road Equipment:

2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

1 Other General Industrial Equipment (238 hp) operating at a 0.51 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 0 hours per day

Phase: Paving 8/18/2012 - 8/29/2012 - Default Paving Description

Acres to be Paved: 7.5

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

2 Paving Equipment (104 hp) operating at a 0.53 load factor for 6 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

Phase: Building Construction 9/1/2012 - 4/24/2013 - Default Building Construction Description

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Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 6 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

3 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Architectural Coating 4/27/2013 - 5/22/2013 - Default Architectural Coating Description

Rule: Residential Interior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 100

Rule: Residential Interior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 50

Rule: Residential Exterior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 100

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Winter Pounds Per Day, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 3/26/2012-6/20/2012 Active Days: 63	3.74	**29.68**	**17.42**	0.00	34.02	**1.54**	35.56	7.11	**1.42**	8.52	**3,162.85**
Mass Grading 03/24/2012-06/20/2012	3.74	29.68	17.42	0.00	34.02	1.54	35.56	7.11	1.42	8.52	3,162.85
Mass Grading Dust	0.00	0.00	0.00	0.00	34.01	0.00	34.01	7.10	0.00	7.10	0.00
Mass Grading Off Road Diesel	3.71	29.61	16.24	0.00	0.00	1.54	1.54	0.00	1.42	1.42	3,007.48
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.04	0.07	1.18	0.00	0.01	0.00	0.01	0.00	0.00	0.01	155.37

Time Slice 6/25/2012-8/1/2012 Active Days: 28	3.74	**29.68**	**17.42**	0.00	34.02	**1.54**	35.56	7.11	**1.42**	8.52	**3,162.85**
Fine Grading 06/23/2012-08/01/2012	3.74	29.68	17.42	0.00	34.02	1.54	35.56	7.11	1.42	8.52	3,162.85
Fine Grading Dust	0.00	0.00	0.00	0.00	34.01	0.00	34.01	7.10	0.00	7.10	0.00
Fine Grading Off Road Diesel	3.71	29.61	16.24	0.00	0.00	1.54	1.54	0.00	1.42	1.42	3,007.48
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.04	0.07	1.18	0.00	0.01	0.00	0.01	0.00	0.00	0.01	155.37
Time Slice 8/6/2012-8/15/2012 Active Days: 8	1.83	11.07	8.96	0.00	0.01	0.06	0.06	0.00	0.05	0.06	1,838.93
Trenching 08/04/2012-08/15/2012	1.83	11.07	8.96	0.00	0.01	0.06	0.06	0.00	0.05	0.06	1,838.93
Trenching Off Road Diesel	1.80	11.01	8.01	0.00	0.00	0.05	0.05	0.00	0.05	0.05	1,714.64
Trenching Worker Trips	0.03	0.05	0.95	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.29
Time Slice 8/20/2012-8/29/2012 Active Days: 8	**5.12**	17.52	13.09	**0.01**	0.05	0.41	0.46	0.02	0.37	0.39	2,648.38
Asphalt 08/18/2012-08/29/2012	5.12	17.52	13.09	0.01	0.05	0.41	0.46	0.02	0.37	0.39	2,648.38
Paving Off-Gas	2.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.23	9.74	8.10	0.00	0.00	0.09	0.09	0.00	0.08	0.08	1,131.92
Paving On Road Diesel	0.65	7.67	3.10	0.01	0.04	0.31	0.36	0.01	0.29	0.30	1,267.87
Paving Worker Trips	0.06	0.11	1.89	0.00	0.01	0.01	0.02	0.00	0.01	0.01	248.59
Time Slice 9/3/2012-12/31/2012 Active Days: 86	3.17	10.96	10.94	0.00	0.00	0.09	0.09	0.00	0.08	0.08	1,704.63
Building 09/01/2012-04/24/2013	3.17	10.96	10.94	0.00	0.00	0.09	0.09	0.00	0.08	0.08	1,704.63
Building Off Road Diesel	3.14	10.70	10.52	0.00	0.00	0.08	0.08	0.00	0.07	0.07	1,621.20
Building Vendor Trips	0.02	0.24	0.18	0.00	0.00	0.01	0.01	0.00	0.01	0.01	52.11
Building Worker Trips	0.01	0.01	0.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	31.32

Time Slice 1/1/2013-4/24/2013 Active Days: 82	2.90	10.28	10.59	0.00	0.00	0.08	0.08	0.00	0.07	0.07	1,704.62
Building 09/01/2012-04/24/2013	2.90	10.28	10.59	0.00	0.00	0.08	0.08	0.00	0.07	0.07	1,704.62
Building Off Road Diesel	2.88	10.05	10.20	0.00	0.00	0.07	0.07	0.00	0.06	0.06	1,621.20
Building Vendor Trips	0.02	0.22	0.17	0.00	0.00	0.01	0.01	0.00	0.01	0.01	52.11
Building Worker Trips	0.01	0.01	0.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	31.32
Time Slice 4/29/2013-5/22/2013 Active Days: 18	3.05	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.91
Coating 04/27/2013-05/22/2013	3.05	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.91
Architectural Coating	3.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.91

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 6/23/2012 - 8/1/2012 - Default Fine Site Grading/Excavation Description

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

The following mitigation measures apply to Phase: Mass Grading 3/24/2012 - 6/20/2012 - Default Mass Site Grading/Excavation Description

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

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For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

The following mitigation measures apply to Phase: Trenching 8/4/2012 - 8/15/2012 - Default Trenching Description

For Excavators, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Excavators, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Excavators, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Other General Industrial Equipment, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Other General Industrial Equipment, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Other General Industrial Equipment, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Tractors/Loaders/Backhoes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Paving 8/18/2012 - 8/29/2012 - Default Paving Description

For Cement and Mortar Mixers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Cement and Mortar Mixers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Cement and Mortar Mixers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Pavers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

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For Pavers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Pavers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Paving Equipment, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Paving Equipment, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Paving Equipment, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Rollers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Rollers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Rollers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Building Construction 9/1/2012 - 4/24/2013 - Default Building Construction Description

For Cranes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Cranes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Cranes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Forklifts, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Forklifts, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Forklifts, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Generator Sets, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

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NOX: 15% PM10: 50% PM25: 50%

For Generator Sets, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Generator Sets, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Tractors/Loaders/Backhoes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Welders, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Welders, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Welders, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Architectural Coating 4/27/2013 - 5/22/2013 - Default Architectural Coating Description

For Residential Architectural Coating Measures, the Residential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Residential Architectural Coating Measures, the Residential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Nonresidential Architectural Coating Measures, the Nonresidential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Nonresidential Architectural Coating Measures, the Nonresidential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

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Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.06	0.81	0.68	0.00	0.00	0.00	966.44
Hearth	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping - No Winter Emissions							
Consumer Products	0.00						
Architectural Coatings	0.02						
TOTALS (lbs/day, unmitigated)	0.08	0.81	0.68	0.00	0.00	0.00	966.44

Area Source Changes to Defaults

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Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name:

Project Name: LA SWIRP - Composting Facility

Project Location: Los Angeles County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

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Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2012 TOTALS (tons/year unmitigated)	0.33	2.14	1.35	0.00	6.83	0.12	6.95	1.43	0.11	1.54	235.16
2012 TOTALS (tons/year mitigated)	0.33	1.94	1.35	0.00	1.55	0.08	1.62	0.32	0.07	0.39	235.16
Percent Reduction	0.00	9.73	0.00	0.00	77.32	38.88	76.63	77.31	38.89	74.46	0.00
2013 TOTALS (tons/year unmitigated)	0.15	0.58	0.43	0.00	0.00	0.04	0.04	0.00	0.04	0.04	69.93
2013 TOTALS (tons/year mitigated)	0.15	0.42	0.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	69.93
Percent Reduction	2.04	27.30	0.00	0.00	0.00	91.53	91.21	0.00	91.54	91.42	0.00

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	0.03	0.15	0.40	0.00	0.00	0.00	176.89

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	0.89	10.72	4.53	0.02	1.23	0.54	1,754.02

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	0.92	10.87	4.93	0.02	1.23	0.54	1,930.91

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Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2012	0.33	2.14	1.35	0.00	6.83	0.12	6.95	1.43	0.11	1.54	235.16
Mass Grading 03/24/2012-06/20/2012	0.12	0.93	0.55	0.00	4.73	0.05	4.77	0.99	0.04	1.03	99.63
Mass Grading Dust	0.00	0.00	0.00	0.00	4.73	0.00	4.73	0.99	0.00	0.99	0.00
Mass Grading Off Road Diesel	0.12	0.93	0.51	0.00	0.00	0.05	0.05	0.00	0.04	0.04	94.74
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.89
Fine Grading 06/23/2012-08/01/2012	0.05	0.42	0.24	0.00	2.10	0.02	2.12	0.44	0.02	0.46	44.28
Fine Grading Dust	0.00	0.00	0.00	0.00	2.10	0.00	2.10	0.44	0.00	0.44	0.00
Fine Grading Off Road Diesel	0.05	0.41	0.23	0.00	0.00	0.02	0.02	0.00	0.02	0.02	42.10
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.18
Trenching 08/04/2012-08/15/2012	0.01	0.06	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.36
Trenching Off Road Diesel	0.01	0.06	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.86
Trenching Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50
Asphalt 08/18/2012-08/29/2012	0.02	0.09	0.05	0.00	0.00	0.01	0.01	0.00	0.01	0.01	10.59
Paving Off-Gas	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.01	0.05	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.53
Paving On Road Diesel	0.00	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.07
Paving Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.99

Building 09/01/2012-04/24/2013	0.14	0.65	0.47	0.00	0.00	0.05	0.05	0.00	0.04	0.04	73.30
Building Off Road Diesel	0.13	0.64	0.45	0.00	0.00	0.04	0.04	0.00	0.04	0.04	69.71
Building Vendor Trips	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.24
Building Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.35
2013	0.15	0.58	0.43	0.00	0.00	0.04	0.04	0.00	0.04	0.04	69.93
Building 09/01/2012-04/24/2013	0.12	0.58	0.43	0.00	0.00	0.04	0.04	0.00	0.04	0.04	69.89
Building Off Road Diesel	0.12	0.57	0.42	0.00	0.00	0.04	0.04	0.00	0.04	0.04	66.47
Building Vendor Trips	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.14
Building Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.28
Coating 04/27/2013-05/22/2013	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04
Architectural Coating	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04

Phase Assumptions

Phase: Fine Grading 6/23/2012 - 8/1/2012 - Default Fine Site Grading/Excavation Description

Total Acres Disturbed: 30

Maximum Daily Acreage Disturbed: 7.5

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 8 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 8 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 3/24/2012 - 6/20/2012 - Default Mass Site Grading/Excavation Description

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Total Acres Disturbed: 30

Maximum Daily Acreage Disturbed: 7.5

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 8 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 8 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Trenching 8/4/2012 - 8/15/2012 - Default Trenching Description

Off-Road Equipment:

2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

1 Other General Industrial Equipment (238 hp) operating at a 0.51 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 0 hours per day

Phase: Paving 8/18/2012 - 8/29/2012 - Default Paving Description

Acres to be Paved: 7.5

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

2 Paving Equipment (104 hp) operating at a 0.53 load factor for 6 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

Phase: Building Construction 9/1/2012 - 4/24/2013 - Default Building Construction Description

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 6 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day

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1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

3 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Architectural Coating 4/27/2013 - 5/22/2013 - Default Architectural Coating Description

Rule: Residential Interior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 100

Rule: Residential Interior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 50

Rule: Residential Exterior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 100

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2012	0.33	1.94	1.35	0.00	1.55	0.08	1.62	0.32	0.07	0.39	235.16
Mass Grading 03/24/2012-06/20/2012	0.12	0.93	0.55	0.00	1.07	0.05	1.12	0.22	0.04	0.27	99.63
Mass Grading Dust	0.00	0.00	0.00	0.00	1.07	0.00	1.07	0.22	0.00	0.22	0.00
Mass Grading Off Road Diesel	0.12	0.93	0.51	0.00	0.00	0.05	0.05	0.00	0.04	0.04	94.74
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.89

Fine Grading 06/23/2012-08/01/2012	0.05	0.42	0.24	0.00	0.48	0.02	0.50	0.10	0.02	0.12	44.28
Fine Grading Dust	0.00	0.00	0.00	0.00	0.48	0.00	0.48	0.10	0.00	0.10	0.00
Fine Grading Off Road Diesel	0.05	0.41	0.23	0.00	0.00	0.02	0.02	0.00	0.02	0.02	42.10
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.18
Trenching 08/04/2012-08/15/2012	0.01	0.04	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.36
Trenching Off Road Diesel	0.01	0.04	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.86
Trenching Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50
Asphalt 08/18/2012-08/29/2012	0.02	0.07	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.59
Paving Off-Gas	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.01	0.04	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.53
Paving On Road Diesel	0.00	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.07
Paving Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.99
Building 09/01/2012-04/24/2013	0.14	0.47	0.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	73.30
Building Off Road Diesel	0.13	0.46	0.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	69.71
Building Vendor Trips	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.24
Building Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.35

2013	0.15	0.42	0.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	69.93
Building 09/01/2012-04/24/2013	0.12	0.42	0.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	69.89
Building Off Road Diesel	0.12	0.41	0.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	66.47
Building Vendor Trips	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.14
Building Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.28
Coating 04/27/2013-05/22/2013	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04
Architectural Coating	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 6/23/2012 - 8/1/2012 - Default Fine Site Grading/Excavation Description

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

The following mitigation measures apply to Phase: Mass Grading 3/24/2012 - 6/20/2012 - Default Mass Site Grading/Excavation Description

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

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The following mitigation measures apply to Phase: Trenching 8/4/2012 - 8/15/2012 - Default Trenching Description

For Excavators, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Excavators, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Excavators, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Other General Industrial Equipment, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Other General Industrial Equipment, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Other General Industrial Equipment, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Tractors/Loaders/Backhoes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Paving 8/18/2012 - 8/29/2012 - Default Paving Description

For Cement and Mortar Mixers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Cement and Mortar Mixers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Cement and Mortar Mixers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Pavers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Pavers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

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For Pavers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Paving Equipment, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Paving Equipment, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Paving Equipment, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Rollers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Rollers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Rollers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Building Construction 9/1/2012 - 4/24/2013 - Default Building Construction Description

For Cranes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Cranes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Cranes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Forklifts, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Forklifts, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Forklifts, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Generator Sets, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Generator Sets, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

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PM10: 85% PM25: 85%

For Generator Sets, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Tractors/Loaders/Backhoes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Welders, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Welders, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Welders, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Architectural Coating 4/27/2013 - 5/22/2013 - Default Architectural Coating Description

For Residential Architectural Coating Measures, the Residential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Residential Architectural Coating Measures, the Residential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Nonresidential Architectural Coating Measures, the Nonresidential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Nonresidential Architectural Coating Measures, the Nonresidential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

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Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.01	0.15	0.12	0.00	0.00	0.00	176.38
Hearth	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscape	0.02	0.00	0.28	0.00	0.00	0.00	0.51
Consumer Products	0.00						
Architectural Coatings	0.00						
TOTALS (tons/year, unmitigated)	0.03	0.15	0.40	0.00	0.00	0.00	176.89

Area Source Changes to Defaults

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
General light industry	0.89	10.72	4.53	0.02	1.23	0.54	1,754.02
TOTALS (tons/year, unmitigated)	0.89	10.72	4.53	0.02	1.23	0.54	1,754.02

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2012 Season: Annual

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

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Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
General light industry		78.00	1000 sq ft	3.00	234.00	2,509.65
					234.00	2,509.65

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	12.0	0.6	99.2	0.2
Light Truck < 3750 lbs	0.0	1.5	97.0	1.5
Light Truck 3751-5750 lbs	0.0	0.4	99.6	0.0
Med Truck 5751-8500 lbs	0.0	1.0	99.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	0.0	0.0	86.7	13.3
Lite-Heavy Truck 10,001-14,000 lbs	0.0	0.0	60.0	40.0
Med-Heavy Truck 14,001-33,000 lbs	0.0	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	88.0	0.0	0.0	100.0
Other Bus	0.0	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	100.0
Motorcycle	0.0	60.9	39.1	0.0
School Bus	0.0	0.0	0.0	100.0
Motor Home	0.0	0.0	87.5	12.5

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	12.7	7.0	9.5	13.3	7.4	8.9

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Rural Trip Length (miles)	17.6	12.1	14.9	15.4	9.6	12.6
Trip speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
General light industry				50.0	25.0	25.0

Operational Changes to Defaults

Resource Recovery Centers

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Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: Z:\PROJECT\CA Projects\City of Los Angeles Zero Waste Project\AQ Modeling\URBEMIS\Resource Recovery Center\LA SWIRP_Resource Recovery Center.urb924

Project Name: LA SWIRP - Resource Recovery Center

Project Location: Los Angeles County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

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Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2012 TOTALS (lbs/day unmitigated)	2.72	22.00	12.46	0.01	12.01	1.08	13.08	2.51	0.99	3.50	2,371.61
2012 TOTALS (lbs/day mitigated)	2.72	22.00	12.46	0.01	2.73	1.08	3.80	0.57	0.99	1.56	2,371.61
2013 TOTALS (lbs/day unmitigated)	58.65	11.25	11.27	0.01	0.06	0.60	0.65	0.02	0.55	0.57	2,339.44
2013 TOTALS (lbs/day mitigated)	58.65	9.22	11.27	0.01	0.06	0.20	0.26	0.02	0.18	0.20	2,339.44

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	0.48	0.83	2.23	0.00	0.01	0.01	969.25

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	6.05	69.57	30.62	0.11	8.29	3.60	11,808.93

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	6.53	70.40	32.85	0.11	8.30	3.61	12,778.18

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2

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Time Slice 3/26/2012-6/20/2012 Active Days: 63	2.72	**22.00**	**12.46**	0.00	**12.01**	**1.08**	**13.08**	**2.51**	**0.99**	**3.50**	**2,371.61**
Mass Grading 03/24/2012-06/20/2012	2.72	22.00	12.46	0.00	12.01	1.08	13.08	2.51	0.99	3.50	2,371.61
Mass Grading Dust	0.00	0.00	0.00	0.00	12.00	0.00	12.00	2.51	0.00	2.51	0.00
Mass Grading Off Road Diesel	2.69	21.95	11.51	0.00	0.00	1.07	1.07	0.00	0.99	0.99	2,247.32
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.03	0.05	0.95	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.29
Time Slice 6/25/2012-8/1/2012 Active Days: 28	2.72	**22.00**	**12.46**	0.00	**12.01**	**1.08**	**13.08**	**2.51**	**0.99**	**3.50**	**2,371.61**
Fine Grading 06/23/2012-08/01/2012	2.72	22.00	12.46	0.00	12.01	1.08	13.08	2.51	0.99	3.50	2,371.61
Fine Grading Dust	0.00	0.00	0.00	0.00	12.00	0.00	12.00	2.51	0.00	2.51	0.00
Fine Grading Off Road Diesel	2.69	21.95	11.51	0.00	0.00	1.07	1.07	0.00	0.99	0.99	2,247.32
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.03	0.05	0.95	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.29
Time Slice 8/6/2012-8/15/2012 Active Days: 8	1.83	15.30	8.96	0.00	0.01	0.74	0.74	0.00	0.68	0.68	1,838.93
Trenching 08/04/2012-08/15/2012	1.83	15.30	8.96	0.00	0.01	0.74	0.74	0.00	0.68	0.68	1,838.93
Trenching Off Road Diesel	1.80	15.24	8.01	0.00	0.00	0.73	0.73	0.00	0.67	0.67	1,714.64
Trenching Worker Trips	0.03	0.05	0.95	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.29
Time Slice 8/20/2012-8/29/2012 Active Days: 8	2.00	11.35	8.75	0.00	0.01	0.94	0.95	0.00	0.87	0.87	1,298.17
Asphalt 08/18/2012-08/29/2012	2.00	11.35	8.75	0.00	0.01	0.94	0.95	0.00	0.87	0.87	1,298.17
Paving Off-Gas	0.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.72	10.64	6.84	0.00	0.00	0.91	0.91	0.00	0.84	0.84	979.23
Paving On Road Diesel	0.05	0.61	0.25	0.00	0.00	0.03	0.03	0.00	0.02	0.02	101.43
Paving Worker Trips	0.05	0.10	1.65	0.00	0.01	0.01	0.02	0.00	0.00	0.01	217.52

Time Slice 9/3/2012-12/31/2012 Active Days: 86	1.55	12.33	11.90	**0.01**	0.06	0.68	0.73	0.02	0.62	0.64	2,339.50
Building 09/01/2012-04/24/2013	1.55	12.33	11.90	0.01	0.06	0.68	0.73	0.02	0.62	0.64	2,339.50
Building Off Road Diesel	1.03	7.87	4.56	0.00	0.00	0.49	0.49	0.00	0.45	0.45	893.39
Building Vendor Trips	0.39	4.22	3.21	0.01	0.03	0.18	0.21	0.01	0.16	0.17	903.20
Building Worker Trips	0.13	0.24	4.13	0.01	0.03	0.01	0.04	0.01	0.01	0.02	542.92
Time Slice 1/1/2013-4/24/2013 Active Days: 82	1.42	11.25	11.27	**0.01**	0.06	0.60	0.65	0.02	0.55	0.57	2,339.44
Building 09/01/2012-04/24/2013	1.42	11.25	11.27	0.01	0.06	0.60	0.65	0.02	0.55	0.57	2,339.44
Building Off Road Diesel	0.95	7.29	4.48	0.00	0.00	0.43	0.43	0.00	0.39	0.39	893.39
Building Vendor Trips	0.36	3.74	2.95	0.01	0.03	0.15	0.19	0.01	0.14	0.15	903.20
Building Worker Trips	0.12	0.22	3.84	0.01	0.03	0.01	0.04	0.01	0.01	0.02	542.85
Time Slice 4/29/2013-5/22/2013 Active Days: 18	**58.65**	0.03	0.60	0.00	0.00	0.00	0.01	0.00	0.00	0.00	85.03
Coating 04/27/2013-05/22/2013	58.65	0.03	0.60	0.00	0.00	0.00	0.01	0.00	0.00	0.00	85.03
Architectural Coating	58.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.02	0.03	0.60	0.00	0.00	0.00	0.01	0.00	0.00	0.00	85.03

Phase Assumptions

Phase: Fine Grading 6/23/2012 - 8/1/2012 - Default Fine Site Grading/Excavation Description

Total Acres Disturbed: 2.39

Maximum Daily Acreage Disturbed: 0.6

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 3/24/2012 - 6/20/2012 - Default Mass Site Grading/Excavation Description

Total Acres Disturbed: 2.39

Maximum Daily Acreage Disturbed: 0.6

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Trenching 8/4/2012 - 8/15/2012 - Default Trenching Description

Off-Road Equipment:

2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

1 Other General Industrial Equipment (238 hp) operating at a 0.51 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 0 hours per day

Phase: Paving 8/18/2012 - 8/29/2012 - Default Paving Description

Acres to be Paved: 0.6

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Building Construction 9/1/2012 - 4/24/2013 - Default Building Construction Description

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Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 4 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Phase: Architectural Coating 4/27/2013 - 5/22/2013 - Default Architectural Coating Description

Rule: Residential Interior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 100

Rule: Residential Interior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 50

Rule: Residential Exterior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 100

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 3/26/2012-6/20/2012 Active Days: 63	2.72	**22.00**	**12.46**	0.00	2.73	**1.08**	3.80	0.57	**0.99**	1.56	**2,371.61**
Mass Grading 03/24/2012-06/20/2012	2.72	22.00	12.46	0.00	2.73	1.08	3.80	0.57	0.99	1.56	2,371.61
Mass Grading Dust	0.00	0.00	0.00	0.00	2.72	0.00	2.72	0.57	0.00	0.57	0.00
Mass Grading Off Road Diesel	2.69	21.95	11.51	0.00	0.00	1.07	1.07	0.00	0.99	0.99	2,247.32
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.03	0.05	0.95	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.29

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Time Slice 6/25/2012-8/1/2012 Active Days: 28	2.72	**22.00**	**12.46**	0.00	2.73	**1.08**	3.80	0.57	**0.99**	1.56	**2,371.61**
Fine Grading 06/23/2012-08/01/2012	2.72	22.00	12.46	0.00	2.73	1.08	3.80	0.57	0.99	1.56	2,371.61
Fine Grading Dust	0.00	0.00	0.00	0.00	2.72	0.00	2.72	0.57	0.00	0.57	0.00
Fine Grading Off Road Diesel	2.69	21.95	11.51	0.00	0.00	1.07	1.07	0.00	0.99	0.99	2,247.32
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.03	0.05	0.95	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.29
Time Slice 8/6/2012-8/15/2012 Active Days: 8	1.83	11.07	8.96	0.00	0.01	0.06	0.06	0.00	0.05	0.06	1,838.93
Trenching 08/04/2012-08/15/2012	1.83	11.07	8.96	0.00	0.01	0.06	0.06	0.00	0.05	0.06	1,838.93
Trenching Off Road Diesel	1.80	11.01	8.01	0.00	0.00	0.05	0.05	0.00	0.05	0.05	1,714.64
Trenching Worker Trips	0.03	0.05	0.95	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.29
Time Slice 8/20/2012-8/29/2012 Active Days: 8	2.00	8.40	8.75	0.00	0.01	0.10	0.11	0.00	0.09	0.10	1,298.17
Asphalt 08/18/2012-08/29/2012	2.00	8.40	8.75	0.00	0.01	0.10	0.11	0.00	0.09	0.10	1,298.17
Paving Off-Gas	0.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.72	7.69	6.84	0.00	0.00	0.07	0.07	0.00	0.06	0.06	979.23
Paving On Road Diesel	0.05	0.61	0.25	0.00	0.00	0.03	0.03	0.00	0.02	0.02	101.43
Paving Worker Trips	0.05	0.10	1.65	0.00	0.01	0.01	0.02	0.00	0.00	0.01	217.52
Time Slice 9/3/2012-12/31/2012 Active Days: 86	1.55	10.14	11.90	**0.01**	0.06	0.23	0.28	0.02	0.21	0.23	2,339.50
Building 09/01/2012-04/24/2013	1.55	10.14	11.90	0.01	0.06	0.23	0.28	0.02	0.21	0.23	2,339.50
Building Off Road Diesel	1.03	5.69	4.56	0.00	0.00	0.04	0.04	0.00	0.03	0.03	893.39
Building Vendor Trips	0.39	4.22	3.21	0.01	0.03	0.18	0.21	0.01	0.16	0.17	903.20
Building Worker Trips	0.13	0.24	4.13	0.01	0.03	0.01	0.04	0.01	0.01	0.02	542.92

Time Slice 1/1/2013-4/24/2013 Active Days: 82	1.42	9.22	11.27	**0.01**	0.06	0.20	0.26	0.02	0.18	0.20	2,339.44
Building 09/01/2012-04/24/2013	1.42	9.22	11.27	0.01	0.06	0.20	0.26	0.02	0.18	0.20	2,339.44
Building Off Road Diesel	0.95	5.27	4.48	0.00	0.00	0.03	0.03	0.00	0.03	0.03	893.39
Building Vendor Trips	0.36	3.74	2.95	0.01	0.03	0.15	0.19	0.01	0.14	0.15	903.20
Building Worker Trips	0.12	0.22	3.84	0.01	0.03	0.01	0.04	0.01	0.01	0.02	542.85
Time Slice 4/29/2013-5/22/2013 Active Days: 18	**58.65**	0.03	0.60	0.00	0.00	0.00	0.01	0.00	0.00	0.00	85.03
Coating 04/27/2013-05/22/2013	58.65	0.03	0.60	0.00	0.00	0.00	0.01	0.00	0.00	0.00	85.03
Architectural Coating	58.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.02	0.03	0.60	0.00	0.00	0.00	0.01	0.00	0.00	0.00	85.03

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 6/23/2012 - 8/1/2012 - Default Fine Site Grading/Excavation Description

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

The following mitigation measures apply to Phase: Mass Grading 3/24/2012 - 6/20/2012 - Default Mass Site Grading/Excavation Description

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

The following mitigation measures apply to Phase: Trenching 8/4/2012 - 8/15/2012 - Default Trenching Description

For Excavators, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Excavators, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Excavators, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Other General Industrial Equipment, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Other General Industrial Equipment, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Other General Industrial Equipment, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Tractors/Loaders/Backhoes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Paving 8/18/2012 - 8/29/2012 - Default Paving Description

For Cement and Mortar Mixers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Cement and Mortar Mixers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Cement and Mortar Mixers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Pavers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Pavers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Pavers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Rollers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Rollers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Rollers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Tractors/Loaders/Backhoes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Building Construction 9/1/2012 - 4/24/2013 - Default Building Construction Description

For Cranes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Cranes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Cranes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Forklifts, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Forklifts, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Forklifts, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Tractors/Loaders/Backhoes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

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NOX: 15% PM10: 50% PM25: 50%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.06	0.81	0.68	0.00	0.00	0.00	966.44
Hearth - No Summer Emissions							
Landscape	0.12	0.02	1.55	0.00	0.01	0.01	2.81
Consumer Products	0.00						
Architectural Coatings	0.30						
TOTALS (lbs/day, unmitigated)	0.48	0.83	2.23	0.00	0.01	0.01	969.25

Area Source Changes to Defaults

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
General heavy industry	6.05	69.57	30.62	0.11	8.29	3.60	11,808.93
TOTALS (lbs/day, unmitigated)	6.05	69.57	30.62	0.11	8.29	3.60	11,808.93

Operational Settings:

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Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2012 Temperature (F): 80 Season: Summer

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
General heavy industry		4.65	1000 sq ft	52.00	241.80	3,091.41
					241.80	3,091.41

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	12.4	0.6	99.2	0.2
Light Truck < 3750 lbs	0.0	1.5	97.0	1.5
Light Truck 3751-5750 lbs	0.0	0.4	99.6	0.0
Med Truck 5751-8500 lbs	0.0	1.0	99.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	0.0	0.0	86.7	13.3
Lite-Heavy Truck 10,001-14,000 lbs	0.0	0.0	60.0	40.0
Med-Heavy Truck 14,001-33,000 lbs	0.0	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	87.6	0.0	0.0	100.0
Other Bus	0.0	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	100.0
Motorcycle	0.0	60.9	39.1	0.0
School Bus	0.0	0.0	0.0	100.0
Motor Home	0.0	0.0	87.5	12.5

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Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	12.7	7.0	9.5	13.3	7.4	8.9
Rural Trip Length (miles)	17.6	12.1	14.9	15.4	9.6	12.6
Trip speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
General heavy industry				90.0	5.0	5.0

Operational Changes to Defaults

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Urbemis 2007 Version 9.2.4

Combined Winter Emissions Reports (Pounds/Day)

File Name: Z:\PROJECT\CA Projects\City of Los Angeles Zero Waste Project\AQ Modeling\URBEMIS\Resource Recovery Center\LA SWIRP_Resource Recovery Center.urb924

Project Name: LA SWIRP - Resource Recovery Center

Project Location: Los Angeles County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

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Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2012 TOTALS (lbs/day unmitigated)	2.72	22.00	12.46	0.01	12.01	1.08	13.08	2.51	0.99	3.50	2,371.61
2012 TOTALS (lbs/day mitigated)	2.72	22.00	12.46	0.01	2.73	1.08	3.80	0.57	0.99	1.56	2,371.61
2013 TOTALS (lbs/day unmitigated)	58.65	11.25	11.27	0.01	0.06	0.60	0.65	0.02	0.55	0.57	2,339.44
2013 TOTALS (lbs/day mitigated)	58.65	9.22	11.27	0.01	0.06	0.20	0.26	0.02	0.18	0.20	2,339.44

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	0.36	0.81	0.68	0.00	0.00	0.00	966.44

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	6.04	76.89	30.36	0.11	8.29	3.60	11,773.38

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	6.40	77.70	31.04	0.11	8.29	3.60	12,739.82

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2

Time Slice 3/26/2012-6/20/2012 Active Days: 63	2.72	**22.00**	**12.46**	0.00	**12.01**	**1.08**	**13.08**	**2.51**	**0.99**	**3.50**	**2,371.61**
Mass Grading 03/24/2012-06/20/2012	2.72	22.00	12.46	0.00	12.01	1.08	13.08	2.51	0.99	3.50	2,371.61
Mass Grading Dust	0.00	0.00	0.00	0.00	12.00	0.00	12.00	2.51	0.00	2.51	0.00
Mass Grading Off Road Diesel	2.69	21.95	11.51	0.00	0.00	1.07	1.07	0.00	0.99	0.99	2,247.32
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.03	0.05	0.95	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.29
Time Slice 6/25/2012-8/1/2012 Active Days: 28	2.72	**22.00**	**12.46**	0.00	**12.01**	**1.08**	**13.08**	**2.51**	**0.99**	**3.50**	**2,371.61**
Fine Grading 06/23/2012-08/01/2012	2.72	22.00	12.46	0.00	12.01	1.08	13.08	2.51	0.99	3.50	2,371.61
Fine Grading Dust	0.00	0.00	0.00	0.00	12.00	0.00	12.00	2.51	0.00	2.51	0.00
Fine Grading Off Road Diesel	2.69	21.95	11.51	0.00	0.00	1.07	1.07	0.00	0.99	0.99	2,247.32
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.03	0.05	0.95	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.29
Time Slice 8/6/2012-8/15/2012 Active Days: 8	1.83	15.30	8.96	0.00	0.01	0.74	0.74	0.00	0.68	0.68	1,838.93
Trenching 08/04/2012-08/15/2012	1.83	15.30	8.96	0.00	0.01	0.74	0.74	0.00	0.68	0.68	1,838.93
Trenching Off Road Diesel	1.80	15.24	8.01	0.00	0.00	0.73	0.73	0.00	0.67	0.67	1,714.64
Trenching Worker Trips	0.03	0.05	0.95	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.29
Time Slice 8/20/2012-8/29/2012 Active Days: 8	2.00	11.35	8.75	0.00	0.01	0.94	0.95	0.00	0.87	0.87	1,298.17
Asphalt 08/18/2012-08/29/2012	2.00	11.35	8.75	0.00	0.01	0.94	0.95	0.00	0.87	0.87	1,298.17
Paving Off-Gas	0.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.72	10.64	6.84	0.00	0.00	0.91	0.91	0.00	0.84	0.84	979.23
Paving On Road Diesel	0.05	0.61	0.25	0.00	0.00	0.03	0.03	0.00	0.02	0.02	101.43
Paving Worker Trips	0.05	0.10	1.65	0.00	0.01	0.01	0.02	0.00	0.00	0.01	217.52

Time Slice 9/3/2012-12/31/2012 Active Days: 86	1.55	12.33	11.90	**0.01**	0.06	0.68	0.73	0.02	0.62	0.64	2,339.50
Building 09/01/2012-04/24/2013	1.55	12.33	11.90	0.01	0.06	0.68	0.73	0.02	0.62	0.64	2,339.50
Building Off Road Diesel	1.03	7.87	4.56	0.00	0.00	0.49	0.49	0.00	0.45	0.45	893.39
Building Vendor Trips	0.39	4.22	3.21	0.01	0.03	0.18	0.21	0.01	0.16	0.17	903.20
Building Worker Trips	0.13	0.24	4.13	0.01	0.03	0.01	0.04	0.01	0.01	0.02	542.92
Time Slice 1/1/2013-4/24/2013 Active Days: 82	1.42	11.25	11.27	**0.01**	0.06	0.60	0.65	0.02	0.55	0.57	2,339.44
Building 09/01/2012-04/24/2013	1.42	11.25	11.27	0.01	0.06	0.60	0.65	0.02	0.55	0.57	2,339.44
Building Off Road Diesel	0.95	7.29	4.48	0.00	0.00	0.43	0.43	0.00	0.39	0.39	893.39
Building Vendor Trips	0.36	3.74	2.95	0.01	0.03	0.15	0.19	0.01	0.14	0.15	903.20
Building Worker Trips	0.12	0.22	3.84	0.01	0.03	0.01	0.04	0.01	0.01	0.02	542.85
Time Slice 4/29/2013-5/22/2013 Active Days: 18	**58.65**	0.03	0.60	0.00	0.00	0.00	0.01	0.00	0.00	0.00	85.03
Coating 04/27/2013-05/22/2013	58.65	0.03	0.60	0.00	0.00	0.00	0.01	0.00	0.00	0.00	85.03
Architectural Coating	58.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.02	0.03	0.60	0.00	0.00	0.00	0.01	0.00	0.00	0.00	85.03

Phase Assumptions

Phase: Fine Grading 6/23/2012 - 8/1/2012 - Default Fine Site Grading/Excavation Description

Total Acres Disturbed: 2.39

Maximum Daily Acreage Disturbed: 0.6

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 3/24/2012 - 6/20/2012 - Default Mass Site Grading/Excavation Description

Total Acres Disturbed: 2.39

Maximum Daily Acreage Disturbed: 0.6

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Trenching 8/4/2012 - 8/15/2012 - Default Trenching Description

Off-Road Equipment:

2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

1 Other General Industrial Equipment (238 hp) operating at a 0.51 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 0 hours per day

Phase: Paving 8/18/2012 - 8/29/2012 - Default Paving Description

Acres to be Paved: 0.6

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Building Construction 9/1/2012 - 4/24/2013 - Default Building Construction Description

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Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 4 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Phase: Architectural Coating 4/27/2013 - 5/22/2013 - Default Architectural Coating Description

Rule: Residential Interior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 100

Rule: Residential Interior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 50

Rule: Residential Exterior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 100

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Winter Pounds Per Day, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 3/26/2012-6/20/2012 Active Days: 63	2.72	**22.00**	**12.46**	0.00	2.73	**1.08**	3.80	0.57	**0.99**	1.56	**2,371.61**
Mass Grading 03/24/2012-06/20/2012	2.72	22.00	12.46	0.00	2.73	1.08	3.80	0.57	0.99	1.56	2,371.61
Mass Grading Dust	0.00	0.00	0.00	0.00	2.72	0.00	2.72	0.57	0.00	0.57	0.00
Mass Grading Off Road Diesel	2.69	21.95	11.51	0.00	0.00	1.07	1.07	0.00	0.99	0.99	2,247.32
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.03	0.05	0.95	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.29

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Time Slice 6/25/2012-8/1/2012 Active Days: 28	2.72	**22.00**	**12.46**	0.00	2.73	**1.08**	3.80	0.57	**0.99**	1.56	**2,371.61**
Fine Grading 06/23/2012-08/01/2012	2.72	22.00	12.46	0.00	2.73	1.08	3.80	0.57	0.99	1.56	2,371.61
Fine Grading Dust	0.00	0.00	0.00	0.00	2.72	0.00	2.72	0.57	0.00	0.57	0.00
Fine Grading Off Road Diesel	2.69	21.95	11.51	0.00	0.00	1.07	1.07	0.00	0.99	0.99	2,247.32
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.03	0.05	0.95	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.29
Time Slice 8/6/2012-8/15/2012 Active Days: 8	1.83	11.07	8.96	0.00	0.01	0.06	0.06	0.00	0.05	0.06	1,838.93
Trenching 08/04/2012-08/15/2012	1.83	11.07	8.96	0.00	0.01	0.06	0.06	0.00	0.05	0.06	1,838.93
Trenching Off Road Diesel	1.80	11.01	8.01	0.00	0.00	0.05	0.05	0.00	0.05	0.05	1,714.64
Trenching Worker Trips	0.03	0.05	0.95	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.29
Time Slice 8/20/2012-8/29/2012 Active Days: 8	2.00	8.40	8.75	0.00	0.01	0.10	0.11	0.00	0.09	0.10	1,298.17
Asphalt 08/18/2012-08/29/2012	2.00	8.40	8.75	0.00	0.01	0.10	0.11	0.00	0.09	0.10	1,298.17
Paving Off-Gas	0.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.72	7.69	6.84	0.00	0.00	0.07	0.07	0.00	0.06	0.06	979.23
Paving On Road Diesel	0.05	0.61	0.25	0.00	0.00	0.03	0.03	0.00	0.02	0.02	101.43
Paving Worker Trips	0.05	0.10	1.65	0.00	0.01	0.01	0.02	0.00	0.00	0.01	217.52
Time Slice 9/3/2012-12/31/2012 Active Days: 86	1.55	10.14	11.90	**0.01**	0.06	0.23	0.28	0.02	0.21	0.23	2,339.50
Building 09/01/2012-04/24/2013	1.55	10.14	11.90	0.01	0.06	0.23	0.28	0.02	0.21	0.23	2,339.50
Building Off Road Diesel	1.03	5.69	4.56	0.00	0.00	0.04	0.04	0.00	0.03	0.03	893.39
Building Vendor Trips	0.39	4.22	3.21	0.01	0.03	0.18	0.21	0.01	0.16	0.17	903.20
Building Worker Trips	0.13	0.24	4.13	0.01	0.03	0.01	0.04	0.01	0.01	0.02	542.92

Time Slice 1/1/2013-4/24/2013 Active Days: 82	1.42	9.22	11.27	**0.01**	0.06	0.20	0.26	0.02	0.18	0.20	2,339.44
Building 09/01/2012-04/24/2013	1.42	9.22	11.27	0.01	0.06	0.20	0.26	0.02	0.18	0.20	2,339.44
Building Off Road Diesel	0.95	5.27	4.48	0.00	0.00	0.03	0.03	0.00	0.03	0.03	893.39
Building Vendor Trips	0.36	3.74	2.95	0.01	0.03	0.15	0.19	0.01	0.14	0.15	903.20
Building Worker Trips	0.12	0.22	3.84	0.01	0.03	0.01	0.04	0.01	0.01	0.02	542.85
Time Slice 4/29/2013-5/22/2013 Active Days: 18	**58.65**	0.03	0.60	0.00	0.00	0.00	0.01	0.00	0.00	0.00	85.03
Coating 04/27/2013-05/22/2013	58.65	0.03	0.60	0.00	0.00	0.00	0.01	0.00	0.00	0.00	85.03
Architectural Coating	58.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.02	0.03	0.60	0.00	0.00	0.00	0.01	0.00	0.00	0.00	85.03

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 6/23/2012 - 8/1/2012 - Default Fine Site Grading/Excavation Description

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

The following mitigation measures apply to Phase: Mass Grading 3/24/2012 - 6/20/2012 - Default Mass Site Grading/Excavation Description

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

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For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

The following mitigation measures apply to Phase: Trenching 8/4/2012 - 8/15/2012 - Default Trenching Description

For Excavators, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Excavators, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Excavators, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Other General Industrial Equipment, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Other General Industrial Equipment, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Other General Industrial Equipment, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Tractors/Loaders/Backhoes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Paving 8/18/2012 - 8/29/2012 - Default Paving Description

For Cement and Mortar Mixers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Cement and Mortar Mixers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Cement and Mortar Mixers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Pavers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Pavers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Pavers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Rollers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Rollers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Rollers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Tractors/Loaders/Backhoes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Building Construction 9/1/2012 - 4/24/2013 - Default Building Construction Description

For Cranes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Cranes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Cranes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Forklifts, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Forklifts, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Forklifts, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Tractors/Loaders/Backhoes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

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NOX: 15% PM10: 50% PM25: 50%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.06	0.81	0.68	0.00	0.00	0.00	966.44
Hearth	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping - No Winter Emissions							
Consumer Products	0.00						
Architectural Coatings	0.30						
TOTALS (lbs/day, unmitigated)	0.36	0.81	0.68	0.00	0.00	0.00	966.44

Area Source Changes to Defaults

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
General heavy industry	6.04	76.89	30.36	0.11	8.29	3.60	11,773.38
TOTALS (lbs/day, unmitigated)	6.04	76.89	30.36	0.11	8.29	3.60	11,773.38

Operational Settings:

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Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2012 Temperature (F): 60 Season: Winter

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
General heavy industry		4.65	1000 sq ft	52.00	241.80	3,091.41
					241.80	3,091.41

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	12.4	0.6	99.2	0.2
Light Truck < 3750 lbs	0.0	1.5	97.0	1.5
Light Truck 3751-5750 lbs	0.0	0.4	99.6	0.0
Med Truck 5751-8500 lbs	0.0	1.0	99.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	0.0	0.0	86.7	13.3
Lite-Heavy Truck 10,001-14,000 lbs	0.0	0.0	60.0	40.0
Med-Heavy Truck 14,001-33,000 lbs	0.0	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	87.6	0.0	0.0	100.0
Other Bus	0.0	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	100.0
Motorcycle	0.0	60.9	39.1	0.0
School Bus	0.0	0.0	0.0	100.0
Motor Home	0.0	0.0	87.5	12.5

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Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	12.7	7.0	9.5	13.3	7.4	8.9
Rural Trip Length (miles)	17.6	12.1	14.9	15.4	9.6	12.6
Trip speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
General heavy industry				90.0	5.0	5.0

Operational Changes to Defaults

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Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: Z:\PROJECT\CA Projects\City of Los Angeles Zero Waste Project\AQ Modeling\URBEMIS\Resource Recovery Center\LA SWIRP_Resource Recovery Center.urb924

Project Name: LA SWIRP - Resource Recovery Center

Project Location: Los Angeles County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

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Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2012 TOTALS (tons/year unmitigated)	0.21	1.64	1.15	0.00	0.55	0.08	0.63	0.12	0.08	0.19	221.06
2012 TOTALS (tons/year mitigated)	0.21	1.51	1.15	0.00	0.13	0.06	0.19	0.03	0.05	0.08	221.06
Percent Reduction	0.00	7.49	0.00	0.00	76.93	29.95	70.65	76.67	29.98	57.82	0.00
2013 TOTALS (tons/year unmitigated)	0.59	0.46	0.47	0.00	0.00	0.02	0.03	0.00	0.02	0.02	96.68
2013 TOTALS (tons/year mitigated)	0.59	0.38	0.47	0.00	0.00	0.01	0.01	0.00	0.01	0.01	96.68
Percent Reduction	0.00	17.98	0.00	0.00	0.00	66.13	60.29	0.00	66.34	63.99	0.00

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	0.09	0.15	0.40	0.00	0.00	0.00	176.89

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	1.10	13.14	5.57	0.02	1.51	0.66	2,152.97

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	1.19	13.29	5.97	0.02	1.51	0.66	2,329.86

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

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	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2012	0.21	1.64	1.15	0.00	0.55	0.08	0.63	0.12	0.08	0.19	221.06
Mass Grading 03/24/2012-06/20/2012	0.09	0.69	0.39	0.00	0.38	0.03	0.41	0.08	0.03	0.11	74.71
Mass Grading Dust	0.00	0.00	0.00	0.00	0.38	0.00	0.38	0.08	0.00	0.08	0.00
Mass Grading Off Road Diesel	0.08	0.69	0.36	0.00	0.00	0.03	0.03	0.00	0.03	0.03	70.79
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.92
Fine Grading 06/23/2012-08/01/2012	0.04	0.31	0.17	0.00	0.17	0.02	0.18	0.04	0.01	0.05	33.20
Fine Grading Dust	0.00	0.00	0.00	0.00	0.17	0.00	0.17	0.04	0.00	0.04	0.00
Fine Grading Off Road Diesel	0.04	0.31	0.16	0.00	0.00	0.02	0.02	0.00	0.01	0.01	31.46
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.74
Trenching 08/04/2012-08/15/2012	0.01	0.06	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.36
Trenching Off Road Diesel	0.01	0.06	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.86
Trenching Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50
Asphalt 08/18/2012-08/29/2012	0.01	0.05	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.19
Paving Off-Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.01	0.04	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.92
Paving On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.41
Paving Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.87

Building 09/01/2012-04/24/2013	0.07	0.53	0.51	0.00	0.00	0.03	0.03	0.00	0.03	0.03	100.60
Building Off Road Diesel	0.04	0.34	0.20	0.00	0.00	0.02	0.02	0.00	0.02	0.02	38.42
Building Vendor Trips	0.02	0.18	0.14	0.00	0.00	0.01	0.01	0.00	0.01	0.01	38.84
Building Worker Trips	0.01	0.01	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	23.35
2013	0.59	0.46	0.47	0.00	0.00	0.02	0.03	0.00	0.02	0.02	96.68
Building 09/01/2012-04/24/2013	0.06	0.46	0.46	0.00	0.00	0.02	0.03	0.00	0.02	0.02	95.92
Building Off Road Diesel	0.04	0.30	0.18	0.00	0.00	0.02	0.02	0.00	0.02	0.02	36.63
Building Vendor Trips	0.01	0.15	0.12	0.00	0.00	0.01	0.01	0.00	0.01	0.01	37.03
Building Worker Trips	0.00	0.01	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	22.26
Coating 04/27/2013-05/22/2013	0.53	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.77
Architectural Coating	0.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.77

Phase Assumptions

Phase: Fine Grading 6/23/2012 - 8/1/2012 - Default Fine Site Grading/Excavation Description

Total Acres Disturbed: 2.39

Maximum Daily Acreage Disturbed: 0.6

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 3/24/2012 - 6/20/2012 - Default Mass Site Grading/Excavation Description

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Total Acres Disturbed: 2.39

Maximum Daily Acreage Disturbed: 0.6

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Trenching 8/4/2012 - 8/15/2012 - Default Trenching Description

Off-Road Equipment:

2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

1 Other General Industrial Equipment (238 hp) operating at a 0.51 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 0 hours per day

Phase: Paving 8/18/2012 - 8/29/2012 - Default Paving Description

Acres to be Paved: 0.6

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Building Construction 9/1/2012 - 4/24/2013 - Default Building Construction Description

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 4 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Phase: Architectural Coating 4/27/2013 - 5/22/2013 - Default Architectural Coating Description

Rule: Residential Interior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 100

Rule: Residential Interior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 50

Rule: Residential Exterior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 100

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2012	0.21	1.51	1.15	0.00	0.13	0.06	0.19	0.03	0.05	0.08	221.06
Mass Grading 03/24/2012-06/20/2012	0.09	0.69	0.39	0.00	0.09	0.03	0.12	0.02	0.03	0.05	74.71
Mass Grading Dust	0.00	0.00	0.00	0.00	0.09	0.00	0.09	0.02	0.00	0.02	0.00
Mass Grading Off Road Diesel	0.08	0.69	0.36	0.00	0.00	0.03	0.03	0.00	0.03	0.03	70.79
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.92
Fine Grading 06/23/2012-08/01/2012	0.04	0.31	0.17	0.00	0.04	0.02	0.05	0.01	0.01	0.02	33.20
Fine Grading Dust	0.00	0.00	0.00	0.00	0.04	0.00	0.04	0.01	0.00	0.01	0.00
Fine Grading Off Road Diesel	0.04	0.31	0.16	0.00	0.00	0.02	0.02	0.00	0.01	0.01	31.46
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.74

Trenching 08/04/2012-08/15/2012	0.01	0.04	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.36
Trenching Off Road Diesel	0.01	0.04	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.86
Trenching Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50
Asphalt 08/18/2012-08/29/2012	0.01	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.19
Paving Off-Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.01	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.92
Paving On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.41
Paving Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.87
Building 09/01/2012-04/24/2013	0.07	0.44	0.51	0.00	0.00	0.01	0.01	0.00	0.01	0.01	100.60
Building Off Road Diesel	0.04	0.24	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	38.42
Building Vendor Trips	0.02	0.18	0.14	0.00	0.00	0.01	0.01	0.00	0.01	0.01	38.84
Building Worker Trips	0.01	0.01	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	23.35
2013	0.59	0.38	0.47	0.00	0.00	0.01	0.01	0.00	0.01	0.01	96.68
Building 09/01/2012-04/24/2013	0.06	0.38	0.46	0.00	0.00	0.01	0.01	0.00	0.01	0.01	95.92
Building Off Road Diesel	0.04	0.22	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	36.63
Building Vendor Trips	0.01	0.15	0.12	0.00	0.00	0.01	0.01	0.00	0.01	0.01	37.03
Building Worker Trips	0.00	0.01	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	22.26
Coating 04/27/2013-05/22/2013	0.53	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.77
Architectural Coating	0.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.77

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 6/23/2012 - 8/1/2012 - Default Fine Site Grading/Excavation Description

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

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For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

The following mitigation measures apply to Phase: Mass Grading 3/24/2012 - 6/20/2012 - Default Mass Site Grading/Excavation Description

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

The following mitigation measures apply to Phase: Trenching 8/4/2012 - 8/15/2012 - Default Trenching Description

For Excavators, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Excavators, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Excavators, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Other General Industrial Equipment, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Other General Industrial Equipment, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Other General Industrial Equipment, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Tractors/Loaders/Backhoes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

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For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Paving 8/18/2012 - 8/29/2012 - Default Paving Description

For Cement and Mortar Mixers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Cement and Mortar Mixers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Cement and Mortar Mixers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Pavers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Pavers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Pavers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Rollers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Rollers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Rollers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Tractors/Loaders/Backhoes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Building Construction 9/1/2012 - 4/24/2013 - Default Building Construction Description

For Cranes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Cranes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Cranes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Forklifts, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Forklifts, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Forklifts, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Tractors/Loaders/Backhoes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

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Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.01	0.15	0.12	0.00	0.00	0.00	176.38
Hearth	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscape	0.02	0.00	0.28	0.00	0.00	0.00	0.51
Consumer Products	0.00						
Architectural Coatings	0.06						
TOTALS (tons/year, unmitigated)	0.09	0.15	0.40	0.00	0.00	0.00	176.89

Area Source Changes to Defaults

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
General heavy industry	1.10	13.14	5.57	0.02	1.51	0.66	2,152.97
TOTALS (tons/year, unmitigated)	1.10	13.14	5.57	0.02	1.51	0.66	2,152.97

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2012 Season: Annual

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

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Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
General heavy industry		4.65	1000 sq ft	52.00	241.80	3,091.41
					241.80	3,091.41

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	12.4	0.6	99.2	0.2
Light Truck < 3750 lbs	0.0	1.5	97.0	1.5
Light Truck 3751-5750 lbs	0.0	0.4	99.6	0.0
Med Truck 5751-8500 lbs	0.0	1.0	99.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	0.0	0.0	86.7	13.3
Lite-Heavy Truck 10,001-14,000 lbs	0.0	0.0	60.0	40.0
Med-Heavy Truck 14,001-33,000 lbs	0.0	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	87.6	0.0	0.0	100.0
Other Bus	0.0	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	100.0
Motorcycle	0.0	60.9	39.1	0.0
School Bus	0.0	0.0	0.0	100.0
Motor Home	0.0	0.0	87.5	12.5

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	12.7	7.0	9.5	13.3	7.4	8.9

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Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Rural Trip Length (miles)	17.6	12.1	14.9	15.4	9.6	12.6
Trip speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
General heavy industry				90.0	5.0	5.0

Operational Changes to Defaults

Mixed Material Processing

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Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: Z:\PROJECT\CA Projects\City of Los Angeles Zero Waste Project\AQ Modeling\URBEMIS\Mixed Material Processing\LA SWIRP - Mixed Material Procession.urb924

Project Name: LA SWIRP - Mixed Material Processing

Project Location: Los Angeles County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

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Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2012 TOTALS (lbs/day unmitigated)	4.68	28.09	32.38	0.04	30.01	1.61	31.08	6.27	1.47	7.26	5,931.74
2012 TOTALS (lbs/day mitigated)	4.68	23.98	32.38	0.04	6.81	1.08	7.88	1.42	0.99	2.41	5,931.74
2013 TOTALS (lbs/day unmitigated)	174.81	25.70	30.44	0.04	0.17	1.44	1.61	0.06	1.32	1.38	5,931.55
2013 TOTALS (lbs/day mitigated)	157.33	21.84	30.44	0.04	0.17	0.58	0.75	0.06	0.52	0.58	5,931.55

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	1.09	0.83	2.23	0.00	0.01	0.01	969.25

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	4.80	47.58	26.18	0.08	7.01	2.70	8,716.59

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	5.89	48.41	28.41	0.08	7.02	2.71	9,685.84

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Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 3/26/2012-6/20/2012 Active Days: 63	2.72	22.00	12.46	0.00	**30.01**	1.08	**31.08**	**6.27**	0.99	**7.26**	2,371.61
Mass Grading 03/24/2012-06/20/2012	2.72	22.00	12.46	0.00	30.01	1.08	31.08	6.27	0.99	7.26	2,371.61
Mass Grading Dust	0.00	0.00	0.00	0.00	30.00	0.00	30.00	6.27	0.00	6.27	0.00
Mass Grading Off Road Diesel	2.69	21.95	11.51	0.00	0.00	1.07	1.07	0.00	0.99	0.99	2,247.32
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.03	0.05	0.95	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.29
Time Slice 6/25/2012-8/1/2012 Active Days: 28	2.72	22.00	12.46	0.00	**30.01**	1.08	**31.08**	**6.27**	0.99	**7.26**	2,371.61
Fine Grading 06/23/2012-08/01/2012	2.72	22.00	12.46	0.00	30.01	1.08	31.08	6.27	0.99	7.26	2,371.61
Fine Grading Dust	0.00	0.00	0.00	0.00	30.00	0.00	30.00	6.27	0.00	6.27	0.00
Fine Grading Off Road Diesel	2.69	21.95	11.51	0.00	0.00	1.07	1.07	0.00	0.99	0.99	2,247.32
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.03	0.05	0.95	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.29
Time Slice 8/6/2012-8/15/2012 Active Days: 8	1.83	15.30	8.96	0.00	0.01	0.74	0.74	0.00	0.68	0.68	1,838.93
Trenching 08/04/2012-08/15/2012	1.83	15.30	8.96	0.00	0.01	0.74	0.74	0.00	0.68	0.68	1,838.93
Trenching Off Road Diesel	1.80	15.24	8.01	0.00	0.00	0.73	0.73	0.00	0.67	0.67	1,714.64
Trenching Worker Trips	0.03	0.05	0.95	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.29
Time Slice 8/20/2012-8/29/2012 Active Days: 8	2.96	15.99	11.50	0.00	0.02	1.31	1.33	0.01	1.20	1.21	1,774.20
Asphalt 08/18/2012-08/29/2012	2.96	15.99	11.50	0.00	0.02	1.31	1.33	0.01	1.20	1.21	1,774.20
Paving Off-Gas	0.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.34	14.35	8.99	0.00	0.00	1.24	1.24	0.00	1.14	1.14	1,272.04
Paving On Road Diesel	0.13	1.53	0.62	0.00	0.01	0.06	0.07	0.00	0.06	0.06	253.57
Paving Worker Trips	0.06	0.11	1.89	0.00	0.01	0.01	0.02	0.00	0.01	0.01	248.59

Time Slice 9/3/2012-12/31/2012 Active Days: 86	4.68	**28.09**	**32.38**	**0.04**	0.17	**1.61**	1.78	0.06	**1.47**	1.53	**5,931.74**
Building 09/01/2012-04/24/2013	4.68	28.09	32.38	0.04	0.17	1.61	1.78	0.06	1.47	1.53	5,931.74
Building Off Road Diesel	3.14	14.81	10.52	0.00	0.00	1.04	1.04	0.00	0.95	0.95	1,621.20
Building Vendor Trips	1.17	12.56	9.56	0.03	0.09	0.53	0.62	0.03	0.48	0.51	2,692.23
Building Worker Trips	0.38	0.71	12.31	0.02	0.08	0.04	0.12	0.03	0.04	0.06	1,618.32
Time Slice 1/1/2013-4/24/2013 Active Days: 82	4.28	25.70	30.44	**0.04**	0.17	1.44	1.61	0.06	1.32	1.38	5,931.55
Building 09/01/2012-04/24/2013	4.28	25.70	30.44	0.04	0.17	1.44	1.61	0.06	1.32	1.38	5,931.55
Building Off Road Diesel	2.88	13.91	10.20	0.00	0.00	0.93	0.93	0.00	0.86	0.86	1,621.20
Building Vendor Trips	1.06	11.14	8.78	0.03	0.09	0.46	0.56	0.03	0.42	0.45	2,692.24
Building Worker Trips	0.34	0.65	11.46	0.02	0.08	0.04	0.12	0.03	0.04	0.06	1,618.11
Time Slice 4/29/2013-5/22/2013 Active Days: 18	**174.81**	0.10	1.79	0.00	0.01	0.01	0.02	0.00	0.01	0.01	253.46
Coating 04/27/2013-05/22/2013	174.81	0.10	1.79	0.00	0.01	0.01	0.02	0.00	0.01	0.01	253.46
Architectural Coating	174.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.05	0.10	1.79	0.00	0.01	0.01	0.02	0.00	0.01	0.01	253.46

Phase Assumptions

Phase: Fine Grading 6/23/2012 - 8/1/2012 - Default Fine Site Grading/Excavation Description

Total Acres Disturbed: 6

Maximum Daily Acreage Disturbed: 1.5

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 3/24/2012 - 6/20/2012 - Default Mass Site Grading/Excavation Description

Total Acres Disturbed: 6

Maximum Daily Acreage Disturbed: 1.5

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Trenching 8/4/2012 - 8/15/2012 - Default Trenching Description

Off-Road Equipment:

2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

1 Other General Industrial Equipment (238 hp) operating at a 0.51 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 0 hours per day

Phase: Paving 8/18/2012 - 8/29/2012 - Default Paving Description

Acres to be Paved: 1.5

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

1 Paving Equipment (104 hp) operating at a 0.53 load factor for 8 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

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Phase: Building Construction 9/1/2012 - 4/24/2013 - Default Building Construction Description

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 6 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

3 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Architectural Coating 4/27/2013 - 5/22/2013 - Default Architectural Coating Description

Rule: Residential Interior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 100

Rule: Residential Interior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 50

Rule: Residential Exterior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 100

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 3/26/2012-6/20/2012 Active Days: 63	2.72	22.00	12.46	0.00	6.81	1.08	7.88	1.42	0.99	2.41	2,371.61
Mass Grading 03/24/2012-06/20/2012	2.72	22.00	12.46	0.00	6.81	1.08	7.88	1.42	0.99	2.41	2,371.61
Mass Grading Dust	0.00	0.00	0.00	0.00	6.80	0.00	6.80	1.42	0.00	1.42	0.00
Mass Grading Off Road Diesel	2.69	21.95	11.51	0.00	0.00	1.07	1.07	0.00	0.99	0.99	2,247.32
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.03	0.05	0.95	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.29

Time Slice 6/25/2012-8/1/2012 Active Days: 28	2.72	22.00	12.46	0.00	6.81	1.08	7.88	1.42	0.99	2.41	2,371.61
Fine Grading 06/23/2012-08/01/2012	2.72	22.00	12.46	0.00	6.81	1.08	7.88	1.42	0.99	2.41	2,371.61
Fine Grading Dust	0.00	0.00	0.00	0.00	6.80	0.00	6.80	1.42	0.00	1.42	0.00
Fine Grading Off Road Diesel	2.69	21.95	11.51	0.00	0.00	1.07	1.07	0.00	0.99	0.99	2,247.32
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.03	0.05	0.95	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.29
Time Slice 8/6/2012-8/15/2012 Active Days: 8	1.83	11.07	8.96	0.00	0.01	0.06	0.06	0.00	0.05	0.06	1,838.93
Trenching 08/04/2012-08/15/2012	1.83	11.07	8.96	0.00	0.01	0.06	0.06	0.00	0.05	0.06	1,838.93
Trenching Off Road Diesel	1.80	11.01	8.01	0.00	0.00	0.05	0.05	0.00	0.05	0.05	1,714.64
Trenching Worker Trips	0.03	0.05	0.95	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.29
Time Slice 8/20/2012-8/29/2012 Active Days: 8	2.96	12.01	11.50	0.00	0.02	0.16	0.18	0.01	0.15	0.16	1,774.20
Asphalt 08/18/2012-08/29/2012	2.96	12.01	11.50	0.00	0.02	0.16	0.18	0.01	0.15	0.16	1,774.20
Paving Off-Gas	0.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.34	10.37	8.99	0.00	0.00	0.09	0.09	0.00	0.09	0.09	1,272.04
Paving On Road Diesel	0.13	1.53	0.62	0.00	0.01	0.06	0.07	0.00	0.06	0.06	253.57
Paving Worker Trips	0.06	0.11	1.89	0.00	0.01	0.01	0.02	0.00	0.01	0.01	248.59
Time Slice 9/3/2012-12/31/2012 Active Days: 86	4.68	23.98	**32.38**	**0.04**	0.17	0.65	0.82	0.06	0.59	0.65	**5,931.74**
Building 09/01/2012-04/24/2013	4.68	23.98	32.38	0.04	0.17	0.65	0.82	0.06	0.59	0.65	5,931.74
Building Off Road Diesel	3.14	10.70	10.52	0.00	0.00	0.08	0.08	0.00	0.07	0.07	1,621.20
Building Vendor Trips	1.17	12.56	9.56	0.03	0.09	0.53	0.62	0.03	0.48	0.51	2,692.23
Building Worker Trips	0.38	0.71	12.31	0.02	0.08	0.04	0.12	0.03	0.04	0.06	1,618.32

Time Slice 1/1/2013-4/24/2013 Active Days: 82	4.28	21.84	30.44	**0.04**	0.17	0.58	0.75	0.06	0.52	0.58	5,931.55
Building 09/01/2012-04/24/2013	4.28	21.84	30.44	0.04	0.17	0.58	0.75	0.06	0.52	0.58	5,931.55
Building Off Road Diesel	2.88	10.05	10.20	0.00	0.00	0.07	0.07	0.00	0.06	0.06	1,621.20
Building Vendor Trips	1.06	11.14	8.78	0.03	0.09	0.46	0.56	0.03	0.42	0.45	2,692.24
Building Worker Trips	0.34	0.65	11.46	0.02	0.08	0.04	0.12	0.03	0.04	0.06	1,618.11
Time Slice 4/29/2013-5/22/2013 Active Days: 18	157.33	0.10	1.79	0.00	0.01	0.01	0.02	0.00	0.01	0.01	253.46
Coating 04/27/2013-05/22/2013	157.33	0.10	1.79	0.00	0.01	0.01	0.02	0.00	0.01	0.01	253.46
Architectural Coating	157.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.05	0.10	1.79	0.00	0.01	0.01	0.02	0.00	0.01	0.01	253.46

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 6/23/2012 - 8/1/2012 - Default Fine Site Grading/Excavation Description

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

The following mitigation measures apply to Phase: Mass Grading 3/24/2012 - 6/20/2012 - Default Mass Site Grading/Excavation Description

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

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For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

The following mitigation measures apply to Phase: Trenching 8/4/2012 - 8/15/2012 - Default Trenching Description

For Excavators, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Excavators, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Excavators, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Other General Industrial Equipment, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Other General Industrial Equipment, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Other General Industrial Equipment, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Tractors/Loaders/Backhoes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Paving 8/18/2012 - 8/29/2012 - Default Paving Description

For Cement and Mortar Mixers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Cement and Mortar Mixers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Cement and Mortar Mixers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Pavers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

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For Pavers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Pavers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Paving Equipment, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Paving Equipment, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Paving Equipment, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Rollers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Rollers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Rollers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Tractors/Loaders/Backhoes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Building Construction 9/1/2012 - 4/24/2013 - Default Building Construction Description

For Cranes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Cranes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Cranes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Forklifts, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Forklifts, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Forklifts, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Generator Sets, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Generator Sets, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Generator Sets, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Tractors/Loaders/Backhoes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Welders, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Welders, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Welders, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Architectural Coating 4/27/2013 - 5/22/2013 - Default Architectural Coating Description

For Residential Architectural Coating Measures, the Residential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Residential Architectural Coating Measures, the Residential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Nonresidential Architectural Coating Measures, the Nonresidential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

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For Nonresidential Architectural Coating Measures, the Nonresidential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
General light industry	4.80	47.58	26.18	0.08	7.01	2.70	8,716.59
TOTALS (lbs/day, unmitigated)	4.80	47.58	26.18	0.08	7.01	2.70	8,716.59

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2012 Temperature (F): 80 Season: Summer

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
General light industry		1.75	1000 sq ft	155.00	271.25	2,909.16
					271.25	2,909.16

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	36.8	0.6	99.2	0.2
Light Truck < 3750 lbs	0.0	1.5	97.0	1.5

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Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Truck 3751-5750 lbs	0.0	0.4	99.6	0.0
Med Truck 5751-8500 lbs	0.0	1.0	99.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	0.0	0.0	86.7	13.3
Lite-Heavy Truck 10,001-14,000 lbs	0.0	0.0	60.0	40.0
Med-Heavy Truck 14,001-33,000 lbs	0.0	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	63.2	0.0	0.0	100.0
Other Bus	0.0	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	100.0
Motorcycle	0.0	60.9	39.1	0.0
School Bus	0.0	0.0	0.0	100.0
Motor Home	0.0	0.0	87.5	12.5

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	12.7	7.0	9.5	13.3	7.4	8.9
Rural Trip Length (miles)	17.6	12.1	14.9	15.4	9.6	12.6
Trip speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
General light industry				50.0	25.0	25.0

Operational Changes to Defaults

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Urbemis 2007 Version 9.2.4

Combined Winter Emissions Reports (Pounds/Day)

File Name: Z:\PROJECT\CA Projects\City of Los Angeles Zero Waste Project\AQ Modeling\URBEMIS\Mixed Material Processing\LA SWIRP - Mixed Material Procession.urb924

Project Name: LA SWIRP - Mixed Material Processing

Project Location: Los Angeles County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

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Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2012 TOTALS (lbs/day unmitigated)	4.68	28.09	32.38	0.04	30.01	1.61	31.08	6.27	1.47	7.26	5,931.74
2012 TOTALS (lbs/day mitigated)	4.68	23.98	32.38	0.04	6.81	1.08	7.88	1.42	0.99	2.41	5,931.74
2013 TOTALS (lbs/day unmitigated)	174.81	25.70	30.44	0.04	0.17	1.44	1.61	0.06	1.32	1.38	5,931.55
2013 TOTALS (lbs/day mitigated)	157.33	21.84	30.44	0.04	0.17	0.58	0.75	0.06	0.52	0.58	5,931.55

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	0.97	0.81	0.68	0.00	0.00	0.00	966.44

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	4.65	52.63	25.53	0.08	7.01	2.70	8,617.31

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	5.62	53.44	26.21	0.08	7.01	2.70	9,583.75

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Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 3/26/2012-6/20/2012 Active Days: 63	2.72	22.00	12.46	0.00	**30.01**	1.08	**31.08**	**6.27**	0.99	**7.26**	2,371.61
Mass Grading 03/24/2012-06/20/2012	2.72	22.00	12.46	0.00	30.01	1.08	31.08	6.27	0.99	7.26	2,371.61
Mass Grading Dust	0.00	0.00	0.00	0.00	30.00	0.00	30.00	6.27	0.00	6.27	0.00
Mass Grading Off Road Diesel	2.69	21.95	11.51	0.00	0.00	1.07	1.07	0.00	0.99	0.99	2,247.32
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.03	0.05	0.95	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.29
Time Slice 6/25/2012-8/1/2012 Active Days: 28	2.72	22.00	12.46	0.00	**30.01**	1.08	**31.08**	**6.27**	0.99	**7.26**	2,371.61
Fine Grading 06/23/2012-08/01/2012	2.72	22.00	12.46	0.00	30.01	1.08	31.08	6.27	0.99	7.26	2,371.61
Fine Grading Dust	0.00	0.00	0.00	0.00	30.00	0.00	30.00	6.27	0.00	6.27	0.00
Fine Grading Off Road Diesel	2.69	21.95	11.51	0.00	0.00	1.07	1.07	0.00	0.99	0.99	2,247.32
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.03	0.05	0.95	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.29
Time Slice 8/6/2012-8/15/2012 Active Days: 8	1.83	15.30	8.96	0.00	0.01	0.74	0.74	0.00	0.68	0.68	1,838.93
Trenching 08/04/2012-08/15/2012	1.83	15.30	8.96	0.00	0.01	0.74	0.74	0.00	0.68	0.68	1,838.93
Trenching Off Road Diesel	1.80	15.24	8.01	0.00	0.00	0.73	0.73	0.00	0.67	0.67	1,714.64
Trenching Worker Trips	0.03	0.05	0.95	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.29
Time Slice 8/20/2012-8/29/2012 Active Days: 8	2.96	15.99	11.50	0.00	0.02	1.31	1.33	0.01	1.20	1.21	1,774.20
Asphalt 08/18/2012-08/29/2012	2.96	15.99	11.50	0.00	0.02	1.31	1.33	0.01	1.20	1.21	1,774.20
Paving Off-Gas	0.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.34	14.35	8.99	0.00	0.00	1.24	1.24	0.00	1.14	1.14	1,272.04
Paving On Road Diesel	0.13	1.53	0.62	0.00	0.01	0.06	0.07	0.00	0.06	0.06	253.57
Paving Worker Trips	0.06	0.11	1.89	0.00	0.01	0.01	0.02	0.00	0.01	0.01	248.59

Time Slice 9/3/2012-12/31/2012 Active Days: 86	4.68	**28.09**	**32.38**	**0.04**	0.17	**1.61**	1.78	0.06	**1.47**	1.53	**5,931.74**
Building 09/01/2012-04/24/2013	4.68	28.09	32.38	0.04	0.17	1.61	1.78	0.06	1.47	1.53	5,931.74
Building Off Road Diesel	3.14	14.81	10.52	0.00	0.00	1.04	1.04	0.00	0.95	0.95	1,621.20
Building Vendor Trips	1.17	12.56	9.56	0.03	0.09	0.53	0.62	0.03	0.48	0.51	2,692.23
Building Worker Trips	0.38	0.71	12.31	0.02	0.08	0.04	0.12	0.03	0.04	0.06	1,618.32
Time Slice 1/1/2013-4/24/2013 Active Days: 82	4.28	25.70	30.44	**0.04**	0.17	1.44	1.61	0.06	1.32	1.38	5,931.55
Building 09/01/2012-04/24/2013	4.28	25.70	30.44	0.04	0.17	1.44	1.61	0.06	1.32	1.38	5,931.55
Building Off Road Diesel	2.88	13.91	10.20	0.00	0.00	0.93	0.93	0.00	0.86	0.86	1,621.20
Building Vendor Trips	1.06	11.14	8.78	0.03	0.09	0.46	0.56	0.03	0.42	0.45	2,692.24
Building Worker Trips	0.34	0.65	11.46	0.02	0.08	0.04	0.12	0.03	0.04	0.06	1,618.11
Time Slice 4/29/2013-5/22/2013 Active Days: 18	**174.81**	0.10	1.79	0.00	0.01	0.01	0.02	0.00	0.01	0.01	253.46
Coating 04/27/2013-05/22/2013	174.81	0.10	1.79	0.00	0.01	0.01	0.02	0.00	0.01	0.01	253.46
Architectural Coating	174.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.05	0.10	1.79	0.00	0.01	0.01	0.02	0.00	0.01	0.01	253.46

Phase Assumptions

Phase: Fine Grading 6/23/2012 - 8/1/2012 - Default Fine Site Grading/Excavation Description

Total Acres Disturbed: 6

Maximum Daily Acreage Disturbed: 1.5

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 3/24/2012 - 6/20/2012 - Default Mass Site Grading/Excavation Description

Total Acres Disturbed: 6

Maximum Daily Acreage Disturbed: 1.5

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Trenching 8/4/2012 - 8/15/2012 - Default Trenching Description

Off-Road Equipment:

2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

1 Other General Industrial Equipment (238 hp) operating at a 0.51 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 0 hours per day

Phase: Paving 8/18/2012 - 8/29/2012 - Default Paving Description

Acres to be Paved: 1.5

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

1 Paving Equipment (104 hp) operating at a 0.53 load factor for 8 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

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Phase: Building Construction 9/1/2012 - 4/24/2013 - Default Building Construction Description

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 6 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

3 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Architectural Coating 4/27/2013 - 5/22/2013 - Default Architectural Coating Description

Rule: Residential Interior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 100

Rule: Residential Interior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 50

Rule: Residential Exterior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 100

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Winter Pounds Per Day, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 3/26/2012-6/20/2012 Active Days: 63	2.72	22.00	12.46	0.00	6.81	1.08	7.88	1.42	0.99	2.41	2,371.61
Mass Grading 03/24/2012-06/20/2012	2.72	22.00	12.46	0.00	6.81	1.08	7.88	1.42	0.99	2.41	2,371.61
Mass Grading Dust	0.00	0.00	0.00	0.00	6.80	0.00	6.80	1.42	0.00	1.42	0.00
Mass Grading Off Road Diesel	2.69	21.95	11.51	0.00	0.00	1.07	1.07	0.00	0.99	0.99	2,247.32
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.03	0.05	0.95	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.29

Time Slice 6/25/2012-8/1/2012 Active Days: 28	2.72	22.00	12.46	0.00	6.81	1.08	7.88	1.42	0.99	2.41	2,371.61
Fine Grading 06/23/2012-08/01/2012	2.72	22.00	12.46	0.00	6.81	1.08	7.88	1.42	0.99	2.41	2,371.61
Fine Grading Dust	0.00	0.00	0.00	0.00	6.80	0.00	6.80	1.42	0.00	1.42	0.00
Fine Grading Off Road Diesel	2.69	21.95	11.51	0.00	0.00	1.07	1.07	0.00	0.99	0.99	2,247.32
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.03	0.05	0.95	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.29
Time Slice 8/6/2012-8/15/2012 Active Days: 8	1.83	11.07	8.96	0.00	0.01	0.06	0.06	0.00	0.05	0.06	1,838.93
Trenching 08/04/2012-08/15/2012	1.83	11.07	8.96	0.00	0.01	0.06	0.06	0.00	0.05	0.06	1,838.93
Trenching Off Road Diesel	1.80	11.01	8.01	0.00	0.00	0.05	0.05	0.00	0.05	0.05	1,714.64
Trenching Worker Trips	0.03	0.05	0.95	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.29
Time Slice 8/20/2012-8/29/2012 Active Days: 8	2.96	12.01	11.50	0.00	0.02	0.16	0.18	0.01	0.15	0.16	1,774.20
Asphalt 08/18/2012-08/29/2012	2.96	12.01	11.50	0.00	0.02	0.16	0.18	0.01	0.15	0.16	1,774.20
Paving Off-Gas	0.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.34	10.37	8.99	0.00	0.00	0.09	0.09	0.00	0.09	0.09	1,272.04
Paving On Road Diesel	0.13	1.53	0.62	0.00	0.01	0.06	0.07	0.00	0.06	0.06	253.57
Paving Worker Trips	0.06	0.11	1.89	0.00	0.01	0.01	0.02	0.00	0.01	0.01	248.59
Time Slice 9/3/2012-12/31/2012 Active Days: 86	4.68	23.98	**32.38**	**0.04**	0.17	0.65	0.82	0.06	0.59	0.65	**5,931.74**
Building 09/01/2012-04/24/2013	4.68	23.98	32.38	0.04	0.17	0.65	0.82	0.06	0.59	0.65	5,931.74
Building Off Road Diesel	3.14	10.70	10.52	0.00	0.00	0.08	0.08	0.00	0.07	0.07	1,621.20
Building Vendor Trips	1.17	12.56	9.56	0.03	0.09	0.53	0.62	0.03	0.48	0.51	2,692.23
Building Worker Trips	0.38	0.71	12.31	0.02	0.08	0.04	0.12	0.03	0.04	0.06	1,618.32

Time Slice 1/1/2013-4/24/2013 Active Days: 82	4.28	21.84	30.44	**0.04**	0.17	0.58	0.75	0.06	0.52	0.58	5,931.55
Building 09/01/2012-04/24/2013	4.28	21.84	30.44	0.04	0.17	0.58	0.75	0.06	0.52	0.58	5,931.55
Building Off Road Diesel	2.88	10.05	10.20	0.00	0.00	0.07	0.07	0.00	0.06	0.06	1,621.20
Building Vendor Trips	1.06	11.14	8.78	0.03	0.09	0.46	0.56	0.03	0.42	0.45	2,692.24
Building Worker Trips	0.34	0.65	11.46	0.02	0.08	0.04	0.12	0.03	0.04	0.06	1,618.11
Time Slice 4/29/2013-5/22/2013 Active Days: 18	157.33	0.10	1.79	0.00	0.01	0.01	0.02	0.00	0.01	0.01	253.46
Coating 04/27/2013-05/22/2013	157.33	0.10	1.79	0.00	0.01	0.01	0.02	0.00	0.01	0.01	253.46
Architectural Coating	157.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.05	0.10	1.79	0.00	0.01	0.01	0.02	0.00	0.01	0.01	253.46

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 6/23/2012 - 8/1/2012 - Default Fine Site Grading/Excavation Description

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

The following mitigation measures apply to Phase: Mass Grading 3/24/2012 - 6/20/2012 - Default Mass Site Grading/Excavation Description

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

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For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

The following mitigation measures apply to Phase: Trenching 8/4/2012 - 8/15/2012 - Default Trenching Description

For Excavators, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Excavators, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Excavators, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Other General Industrial Equipment, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Other General Industrial Equipment, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Other General Industrial Equipment, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Tractors/Loaders/Backhoes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Paving 8/18/2012 - 8/29/2012 - Default Paving Description

For Cement and Mortar Mixers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Cement and Mortar Mixers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Cement and Mortar Mixers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Pavers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Pavers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Pavers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Paving Equipment, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Paving Equipment, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Paving Equipment, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Rollers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Rollers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Rollers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Tractors/Loaders/Backhoes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Building Construction 9/1/2012 - 4/24/2013 - Default Building Construction Description

For Cranes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Cranes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Cranes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Forklifts, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Forklifts, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Forklifts, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Generator Sets, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Generator Sets, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Generator Sets, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Tractors/Loaders/Backhoes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Welders, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Welders, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Welders, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Architectural Coating 4/27/2013 - 5/22/2013 - Default Architectural Coating Description

For Residential Architectural Coating Measures, the Residential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Residential Architectural Coating Measures, the Residential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Nonresidential Architectural Coating Measures, the Nonresidential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

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For Nonresidential Architectural Coating Measures, the Nonresidential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
General light industry	4.65	52.63	25.53	0.08	7.01	2.70	8,617.31
TOTALS (lbs/day, unmitigated)	4.65	52.63	25.53	0.08	7.01	2.70	8,617.31

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2012 Temperature (F): 60 Season: Winter

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
General light industry		1.75	1000 sq ft	155.00	271.25	2,909.16
					271.25	2,909.16

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	36.8	0.6	99.2	0.2
Light Truck < 3750 lbs	0.0	1.5	97.0	1.5

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Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Truck 3751-5750 lbs	0.0	0.4	99.6	0.0
Med Truck 5751-8500 lbs	0.0	1.0	99.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	0.0	0.0	86.7	13.3
Lite-Heavy Truck 10,001-14,000 lbs	0.0	0.0	60.0	40.0
Med-Heavy Truck 14,001-33,000 lbs	0.0	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	63.2	0.0	0.0	100.0
Other Bus	0.0	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	100.0
Motorcycle	0.0	60.9	39.1	0.0
School Bus	0.0	0.0	0.0	100.0
Motor Home	0.0	0.0	87.5	12.5

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	12.7	7.0	9.5	13.3	7.4	8.9
Rural Trip Length (miles)	17.6	12.1	14.9	15.4	9.6	12.6
Trip speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
General light industry				50.0	25.0	25.0

Operational Changes to Defaults

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Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: Z:\PROJECT\CA Projects\City of Los Angeles Zero Waste Project\AQ Modeling\URBEMIS\Mixed Material Processing\LA SWIRP - Mixed Material Procession.urb924

Project Name: LA SWIRP - Mixed Material Processing

Project Location: Los Angeles County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

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Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2012 TOTALS (tons/year unmitigated)	0.34	2.33	2.04	0.00	1.37	0.13	1.50	0.29	0.12	0.40	377.43
2012 TOTALS (tons/year mitigated)	0.34	2.12	2.04	0.00	0.32	0.08	0.39	0.07	0.07	0.14	377.43
Percent Reduction	0.00	8.98	0.00	0.00	76.89	38.46	73.66	76.61	38.53	65.67	0.00
2013 TOTALS (tons/year unmitigated)	1.75	1.05	1.26	0.00	0.01	0.06	0.07	0.00	0.05	0.06	245.47
2013 TOTALS (tons/year mitigated)	1.59	0.90	1.26	0.00	0.01	0.02	0.03	0.00	0.02	0.02	245.47
Percent Reduction	8.99	15.00	0.00	0.00	0.00	59.85	53.45	0.00	60.09	57.47	0.00

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	0.20	0.15	0.40	0.00	0.00	0.00	176.89

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	0.87	8.99	4.74	0.01	1.28	0.49	1,584.74

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	1.07	9.14	5.14	0.01	1.28	0.49	1,761.63

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Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2012	0.34	2.33	2.04	0.00	1.37	0.13	1.50	0.29	0.12	0.40	377.43
Mass Grading 03/24/2012-06/20/2012	0.09	0.69	0.39	0.00	0.95	0.03	0.98	0.20	0.03	0.23	74.71
Mass Grading Dust	0.00	0.00	0.00	0.00	0.95	0.00	0.95	0.20	0.00	0.20	0.00
Mass Grading Off Road Diesel	0.08	0.69	0.36	0.00	0.00	0.03	0.03	0.00	0.03	0.03	70.79
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.92
Fine Grading 06/23/2012-08/01/2012	0.04	0.31	0.17	0.00	0.42	0.02	0.44	0.09	0.01	0.10	33.20
Fine Grading Dust	0.00	0.00	0.00	0.00	0.42	0.00	0.42	0.09	0.00	0.09	0.00
Fine Grading Off Road Diesel	0.04	0.31	0.16	0.00	0.00	0.02	0.02	0.00	0.01	0.01	31.46
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.74
Trenching 08/04/2012-08/15/2012	0.01	0.06	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.36
Trenching Off Road Diesel	0.01	0.06	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.86
Trenching Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50
Asphalt 08/18/2012-08/29/2012	0.01	0.06	0.05	0.00	0.00	0.01	0.01	0.00	0.00	0.00	7.10
Paving Off-Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.01	0.06	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.09
Paving On Road Diesel	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.01
Paving Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.99

Building 09/01/2012-04/24/2013	0.20	1.21	1.39	0.00	0.01	0.07	0.08	0.00	0.06	0.07	255.06
Building Off Road Diesel	0.13	0.64	0.45	0.00	0.00	0.04	0.04	0.00	0.04	0.04	69.71
Building Vendor Trips	0.05	0.54	0.41	0.00	0.00	0.02	0.03	0.00	0.02	0.02	115.77
Building Worker Trips	0.02	0.03	0.53	0.00	0.00	0.00	0.01	0.00	0.00	0.00	69.59
2013	1.75	1.05	1.26	0.00	0.01	0.06	0.07	0.00	0.05	0.06	245.47
Building 09/01/2012-04/24/2013	0.18	1.05	1.25	0.00	0.01	0.06	0.07	0.00	0.05	0.06	243.19
Building Off Road Diesel	0.12	0.57	0.42	0.00	0.00	0.04	0.04	0.00	0.04	0.04	66.47
Building Vendor Trips	0.04	0.46	0.36	0.00	0.00	0.02	0.02	0.00	0.02	0.02	110.38
Building Worker Trips	0.01	0.03	0.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	66.34
Coating 04/27/2013-05/22/2013	1.57	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.28
Architectural Coating	1.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.28

Phase Assumptions

Phase: Fine Grading 6/23/2012 - 8/1/2012 - Default Fine Site Grading/Excavation Description

Total Acres Disturbed: 6

Maximum Daily Acreage Disturbed: 1.5

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 3/24/2012 - 6/20/2012 - Default Mass Site Grading/Excavation Description

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Total Acres Disturbed: 6

Maximum Daily Acreage Disturbed: 1.5

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Trenching 8/4/2012 - 8/15/2012 - Default Trenching Description

Off-Road Equipment:

2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

1 Other General Industrial Equipment (238 hp) operating at a 0.51 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 0 hours per day

Phase: Paving 8/18/2012 - 8/29/2012 - Default Paving Description

Acres to be Paved: 1.5

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

1 Paving Equipment (104 hp) operating at a 0.53 load factor for 8 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Building Construction 9/1/2012 - 4/24/2013 - Default Building Construction Description

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 6 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

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1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

3 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Architectural Coating 4/27/2013 - 5/22/2013 - Default Architectural Coating Description

Rule: Residential Interior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 100

Rule: Residential Interior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 50

Rule: Residential Exterior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 100

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2012	0.34	2.12	2.04	0.00	0.32	0.08	0.39	0.07	0.07	0.14	377.43
Mass Grading 03/24/2012-06/20/2012	0.09	0.69	0.39	0.00	0.21	0.03	0.25	0.04	0.03	0.08	74.71
Mass Grading Dust	0.00	0.00	0.00	0.00	0.21	0.00	0.21	0.04	0.00	0.04	0.00
Mass Grading Off Road Diesel	0.08	0.69	0.36	0.00	0.00	0.03	0.03	0.00	0.03	0.03	70.79
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.92

Fine Grading 06/23/2012-08/01/2012	0.04	0.31	0.17	0.00	0.10	0.02	0.11	0.02	0.01	0.03	33.20
Fine Grading Dust	0.00	0.00	0.00	0.00	0.10	0.00	0.10	0.02	0.00	0.02	0.00
Fine Grading Off Road Diesel	0.04	0.31	0.16	0.00	0.00	0.02	0.02	0.00	0.01	0.01	31.46
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.74
Trenching 08/04/2012-08/15/2012	0.01	0.04	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.36
Trenching Off Road Diesel	0.01	0.04	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.86
Trenching Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50
Asphalt 08/18/2012-08/29/2012	0.01	0.05	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.10
Paving Off-Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.01	0.04	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.09
Paving On Road Diesel	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.01
Paving Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.99
Building 09/01/2012-04/24/2013	0.20	1.03	1.39	0.00	0.01	0.03	0.04	0.00	0.03	0.03	255.06
Building Off Road Diesel	0.13	0.46	0.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	69.71
Building Vendor Trips	0.05	0.54	0.41	0.00	0.00	0.02	0.03	0.00	0.02	0.02	115.77
Building Worker Trips	0.02	0.03	0.53	0.00	0.00	0.00	0.01	0.00	0.00	0.00	69.59

2013	1.59	0.90	1.26	0.00	0.01	0.02	0.03	0.00	0.02	0.02	245.47
Building 09/01/2012-04/24/2013	0.18	0.90	1.25	0.00	0.01	0.02	0.03	0.00	0.02	0.02	243.19
Building Off Road Diesel	0.12	0.41	0.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	66.47
Building Vendor Trips	0.04	0.46	0.36	0.00	0.00	0.02	0.02	0.00	0.02	0.02	110.38
Building Worker Trips	0.01	0.03	0.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	66.34
Coating 04/27/2013-05/22/2013	1.42	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.28
Architectural Coating	1.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.28

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 6/23/2012 - 8/1/2012 - Default Fine Site Grading/Excavation Description

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

The following mitigation measures apply to Phase: Mass Grading 3/24/2012 - 6/20/2012 - Default Mass Site Grading/Excavation Description

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

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The following mitigation measures apply to Phase: Trenching 8/4/2012 - 8/15/2012 - Default Trenching Description

For Excavators, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Excavators, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Excavators, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Other General Industrial Equipment, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Other General Industrial Equipment, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Other General Industrial Equipment, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Tractors/Loaders/Backhoes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Paving 8/18/2012 - 8/29/2012 - Default Paving Description

For Cement and Mortar Mixers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Cement and Mortar Mixers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Cement and Mortar Mixers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Pavers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Pavers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Pavers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Paving Equipment, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Paving Equipment, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Paving Equipment, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Rollers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Rollers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Rollers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Tractors/Loaders/Backhoes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Building Construction 9/1/2012 - 4/24/2013 - Default Building Construction Description

For Cranes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Cranes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Cranes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Forklifts, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Forklifts, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Forklifts, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Generator Sets, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Generator Sets, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Generator Sets, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Tractors/Loaders/Backhoes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Welders, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Welders, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Welders, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Architectural Coating 4/27/2013 - 5/22/2013 - Default Architectural Coating Description

For Residential Architectural Coating Measures, the Residential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Residential Architectural Coating Measures, the Residential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Nonresidential Architectural Coating Measures, the Nonresidential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Nonresidential Architectural Coating Measures, the Nonresidential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
General light industry	0.87	8.99	4.74	0.01	1.28	0.49	1,584.74
TOTALS (tons/year, unmitigated)	0.87	8.99	4.74	0.01	1.28	0.49	1,584.74

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2012 Season: Annual

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
General light industry		1.75	1000 sq ft	155.00	271.25	2,909.16
					271.25	2,909.16

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	36.8	0.6	99.2	0.2
Light Truck < 3750 lbs	0.0	1.5	97.0	1.5
Light Truck 3751-5750 lbs	0.0	0.4	99.6	0.0
Med Truck 5751-8500 lbs	0.0	1.0	99.0	0.0

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Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Lite-Heavy Truck 8501-10,000 lbs	0.0	0.0	86.7	13.3
Lite-Heavy Truck 10,001-14,000 lbs	0.0	0.0	60.0	40.0
Med-Heavy Truck 14,001-33,000 lbs	0.0	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	63.2	0.0	0.0	100.0
Other Bus	0.0	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	100.0
Motorcycle	0.0	60.9	39.1	0.0
School Bus	0.0	0.0	0.0	100.0
Motor Home	0.0	0.0	87.5	12.5

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	12.7	7.0	9.5	13.3	7.4	8.9
Rural Trip Length (miles)	17.6	12.1	14.9	15.4	9.6	12.6
Trip speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
General light industry				50.0	25.0	25.0

Operational Changes to Defaults

Advanced Thermal Recycling

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Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: Z:\PROJECT\CA Projects\City of Los Angeles Zero Waste Project\AQ Modeling\URBEMIS\Advanced Thermal Recycling\LA SWIRP - Advanced Thermal Recycling.urb924

Project Name: LA SWIRP - Advanced Thermal Recycling

Project Location: Los Angeles County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

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Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2012 TOTALS (lbs/day unmitigated)	5.72	37.08	47.19	0.07	50.01	1.99	51.08	10.44	1.83	11.43	8,851.78
2012 TOTALS (lbs/day mitigated)	5.72	32.97	47.19	0.07	11.34	1.08	12.42	2.37	0.99	3.36	8,851.78
2013 TOTALS (lbs/day unmitigated)	293.23	33.69	44.15	0.07	0.28	1.78	2.06	0.10	1.63	1.73	8,851.46
2013 TOTALS (lbs/day mitigated)	263.91	29.83	44.15	0.07	0.28	0.92	1.20	0.10	0.84	0.94	8,851.46

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	1.70	0.83	2.23	0.00	0.01	0.01	969.25

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	16.26	189.67	79.76	0.30	21.65	9.64	31,736.41

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	17.96	190.50	81.99	0.30	21.66	9.65	32,705.66

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Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 3/26/2012-6/20/2012 Active Days: 63	2.72	22.00	12.46	0.00	**50.01**	1.08	**51.08**	**10.44**	0.99	**11.43**	2,371.61
Mass Grading 03/24/2012-06/20/2012	2.72	22.00	12.46	0.00	50.01	1.08	51.08	10.44	0.99	11.43	2,371.61
Mass Grading Dust	0.00	0.00	0.00	0.00	50.00	0.00	50.00	10.44	0.00	10.44	0.00
Mass Grading Off Road Diesel	2.69	21.95	11.51	0.00	0.00	1.07	1.07	0.00	0.99	0.99	2,247.32
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.03	0.05	0.95	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.29
Time Slice 6/25/2012-8/1/2012 Active Days: 28	2.72	22.00	12.46	0.00	**50.01**	1.08	**51.08**	**10.44**	0.99	**11.43**	2,371.61
Fine Grading 06/23/2012-08/01/2012	2.72	22.00	12.46	0.00	50.01	1.08	51.08	10.44	0.99	11.43	2,371.61
Fine Grading Dust	0.00	0.00	0.00	0.00	50.00	0.00	50.00	10.44	0.00	10.44	0.00
Fine Grading Off Road Diesel	2.69	21.95	11.51	0.00	0.00	1.07	1.07	0.00	0.99	0.99	2,247.32
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.03	0.05	0.95	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.29
Time Slice 8/6/2012-8/15/2012 Active Days: 8	1.83	15.30	8.96	0.00	0.01	0.74	0.74	0.00	0.68	0.68	1,838.93
Trenching 08/04/2012-08/15/2012	1.83	15.30	8.96	0.00	0.01	0.74	0.74	0.00	0.68	0.68	1,838.93
Trenching Off Road Diesel	1.80	15.24	8.01	0.00	0.00	0.73	0.73	0.00	0.67	0.67	1,714.64
Trenching Worker Trips	0.03	0.05	0.95	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.29
Time Slice 8/20/2012-8/29/2012 Active Days: 8	3.34	17.01	11.92	0.01	0.03	1.35	1.38	0.01	1.24	1.25	1,943.25
Asphalt 08/18/2012-08/29/2012	3.34	17.01	11.92	0.01	0.03	1.35	1.38	0.01	1.24	1.25	1,943.25
Paving Off-Gas	0.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.34	14.35	8.99	0.00	0.00	1.24	1.24	0.00	1.14	1.14	1,272.04
Paving On Road Diesel	0.22	2.56	1.03	0.00	0.01	0.10	0.12	0.00	0.10	0.10	422.62
Paving Worker Trips	0.06	0.11	1.89	0.00	0.01	0.01	0.02	0.00	0.01	0.01	248.59

Time Slice 9/3/2012-12/31/2012 Active Days: 86	5.72	**37.08**	**47.19**	**0.07**	0.28	**1.99**	2.28	0.10	**1.83**	1.92	**8,851.78**
Building 09/01/2012-04/24/2013	5.72	37.08	47.19	0.07	0.28	1.99	2.28	0.10	1.83	1.92	8,851.78
Building Off Road Diesel	3.14	14.81	10.52	0.00	0.00	1.04	1.04	0.00	0.95	0.95	1,621.20
Building Vendor Trips	1.96	21.08	16.03	0.04	0.16	0.88	1.04	0.05	0.81	0.86	4,515.99
Building Worker Trips	0.63	1.19	20.64	0.03	0.13	0.07	0.20	0.05	0.06	0.11	2,714.59
Time Slice 1/1/2013-4/24/2013 Active Days: 82	5.23	33.69	44.15	**0.07**	0.28	1.78	2.06	0.10	1.63	1.73	8,851.46
Building 09/01/2012-04/24/2013	5.23	33.69	44.15	0.07	0.28	1.78	2.06	0.10	1.63	1.73	8,851.46
Building Off Road Diesel	2.88	13.91	10.20	0.00	0.00	0.93	0.93	0.00	0.86	0.86	1,621.20
Building Vendor Trips	1.78	18.69	14.73	0.04	0.16	0.77	0.93	0.05	0.71	0.76	4,516.02
Building Worker Trips	0.58	1.09	19.22	0.03	0.13	0.07	0.20	0.05	0.06	0.11	2,714.25
Time Slice 4/29/2013-5/22/2013 Active Days: 18	**293.23**	0.17	3.01	0.00	0.02	0.01	0.03	0.01	0.01	0.02	425.16
Coating 04/27/2013-05/22/2013	293.23	0.17	3.01	0.00	0.02	0.01	0.03	0.01	0.01	0.02	425.16
Architectural Coating	293.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.09	0.17	3.01	0.00	0.02	0.01	0.03	0.01	0.01	0.02	425.16

Phase Assumptions

Phase: Fine Grading 6/23/2012 - 8/1/2012 - Default Fine Site Grading/Excavation Description

Total Acres Disturbed: 10

Maximum Daily Acreage Disturbed: 2.5

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 3/24/2012 - 6/20/2012 - Default Mass Site Grading/Excavation Description

Total Acres Disturbed: 10

Maximum Daily Acreage Disturbed: 2.5

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Trenching 8/4/2012 - 8/15/2012 - Default Trenching Description

Off-Road Equipment:

2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

1 Other General Industrial Equipment (238 hp) operating at a 0.51 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 0 hours per day

Phase: Paving 8/18/2012 - 8/29/2012 - Default Paving Description

Acres to be Paved: 2.5

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

1 Paving Equipment (104 hp) operating at a 0.53 load factor for 8 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

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Phase: Building Construction 9/1/2012 - 4/24/2013 - Default Building Construction Description

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 6 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

3 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Architectural Coating 4/27/2013 - 5/22/2013 - Default Architectural Coating Description

Rule: Residential Interior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 100

Rule: Residential Interior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 50

Rule: Residential Exterior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 100

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 3/26/2012-6/20/2012 Active Days: 63	2.72	22.00	12.46	0.00	11.34	1.08	12.42	2.37	0.99	3.36	2,371.61
Mass Grading 03/24/2012-06/20/2012	2.72	22.00	12.46	0.00	11.34	1.08	12.42	2.37	0.99	3.36	2,371.61
Mass Grading Dust	0.00	0.00	0.00	0.00	11.34	0.00	11.34	2.37	0.00	2.37	0.00
Mass Grading Off Road Diesel	2.69	21.95	11.51	0.00	0.00	1.07	1.07	0.00	0.99	0.99	2,247.32
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.03	0.05	0.95	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.29

Time Slice 6/25/2012-8/1/2012 Active Days: 28	2.72	22.00	12.46	0.00	11.34	1.08	12.42	2.37	0.99	3.36	2,371.61
Fine Grading 06/23/2012-08/01/2012	2.72	22.00	12.46	0.00	11.34	1.08	12.42	2.37	0.99	3.36	2,371.61
Fine Grading Dust	0.00	0.00	0.00	0.00	11.34	0.00	11.34	2.37	0.00	2.37	0.00
Fine Grading Off Road Diesel	2.69	21.95	11.51	0.00	0.00	1.07	1.07	0.00	0.99	0.99	2,247.32
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.03	0.05	0.95	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.29
Time Slice 8/6/2012-8/15/2012 Active Days: 8	1.83	11.07	8.96	0.00	0.01	0.06	0.06	0.00	0.05	0.06	1,838.93
Trenching 08/04/2012-08/15/2012	1.83	11.07	8.96	0.00	0.01	0.06	0.06	0.00	0.05	0.06	1,838.93
Trenching Off Road Diesel	1.80	11.01	8.01	0.00	0.00	0.05	0.05	0.00	0.05	0.05	1,714.64
Trenching Worker Trips	0.03	0.05	0.95	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.29
Time Slice 8/20/2012-8/29/2012 Active Days: 8	3.34	13.03	11.92	0.01	0.03	0.20	0.23	0.01	0.19	0.20	1,943.25
Asphalt 08/18/2012-08/29/2012	3.34	13.03	11.92	0.01	0.03	0.20	0.23	0.01	0.19	0.20	1,943.25
Paving Off-Gas	0.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.34	10.37	8.99	0.00	0.00	0.09	0.09	0.00	0.09	0.09	1,272.04
Paving On Road Diesel	0.22	2.56	1.03	0.00	0.01	0.10	0.12	0.00	0.10	0.10	422.62
Paving Worker Trips	0.06	0.11	1.89	0.00	0.01	0.01	0.02	0.00	0.01	0.01	248.59
Time Slice 9/3/2012-12/31/2012 Active Days: 86	5.72	32.97	**47.19**	**0.07**	0.28	1.03	1.32	0.10	0.94	1.04	**8,851.78**
Building 09/01/2012-04/24/2013	5.72	32.97	47.19	0.07	0.28	1.03	1.32	0.10	0.94	1.04	8,851.78
Building Off Road Diesel	3.14	10.70	10.52	0.00	0.00	0.08	0.08	0.00	0.07	0.07	1,621.20
Building Vendor Trips	1.96	21.08	16.03	0.04	0.16	0.88	1.04	0.05	0.81	0.86	4,515.99
Building Worker Trips	0.63	1.19	20.64	0.03	0.13	0.07	0.20	0.05	0.06	0.11	2,714.59

Time Slice 1/1/2013-4/24/2013 Active Days: 82	5.23	29.83	44.15	**0.07**	0.28	0.92	1.20	0.10	0.84	0.94	8,851.46
Building 09/01/2012-04/24/2013	5.23	29.83	44.15	0.07	0.28	0.92	1.20	0.10	0.84	0.94	8,851.46
Building Off Road Diesel	2.88	10.05	10.20	0.00	0.00	0.07	0.07	0.00	0.06	0.06	1,621.20
Building Vendor Trips	1.78	18.69	14.73	0.04	0.16	0.77	0.93	0.05	0.71	0.76	4,516.02
Building Worker Trips	0.58	1.09	19.22	0.03	0.13	0.07	0.20	0.05	0.06	0.11	2,714.25
Time Slice 4/29/2013-5/22/2013 Active Days: 18	263.91	0.17	3.01	0.00	0.02	0.01	0.03	0.01	0.01	0.02	425.16
Coating 04/27/2013-05/22/2013	263.91	0.17	3.01	0.00	0.02	0.01	0.03	0.01	0.01	0.02	425.16
Architectural Coating	263.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.09	0.17	3.01	0.00	0.02	0.01	0.03	0.01	0.01	0.02	425.16

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 6/23/2012 - 8/1/2012 - Default Fine Site Grading/Excavation Description

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

The following mitigation measures apply to Phase: Mass Grading 3/24/2012 - 6/20/2012 - Default Mass Site Grading/Excavation Description

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

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For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

The following mitigation measures apply to Phase: Trenching 8/4/2012 - 8/15/2012 - Default Trenching Description

For Excavators, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Excavators, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Excavators, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Other General Industrial Equipment, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Other General Industrial Equipment, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Other General Industrial Equipment, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Tractors/Loaders/Backhoes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Paving 8/18/2012 - 8/29/2012 - Default Paving Description

For Cement and Mortar Mixers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Cement and Mortar Mixers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Cement and Mortar Mixers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Pavers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

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For Pavers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Pavers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Paving Equipment, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Paving Equipment, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Paving Equipment, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Rollers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Rollers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Rollers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Tractors/Loaders/Backhoes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Building Construction 9/1/2012 - 4/24/2013 - Default Building Construction Description

For Cranes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Cranes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Cranes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Forklifts, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Forklifts, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Forklifts, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Generator Sets, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Generator Sets, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Generator Sets, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Tractors/Loaders/Backhoes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Welders, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Welders, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Welders, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Architectural Coating 4/27/2013 - 5/22/2013 - Default Architectural Coating Description

For Residential Architectural Coating Measures, the Residential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Residential Architectural Coating Measures, the Residential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Nonresidential Architectural Coating Measures, the Nonresidential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

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For Nonresidential Architectural Coating Measures, the Nonresidential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
General light industry	16.26	189.67	79.76	0.30	21.65	9.64	31,736.41
TOTALS (lbs/day, unmitigated)	16.26	189.67	79.76	0.30	21.65	9.64	31,736.41

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2012 Temperature (F): 80 Season: Summer

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
General light industry		2.82	1000 sq ft	260.00	733.20	7,863.57
					733.20	7,863.57

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	6.0	0.6	99.2	0.2
Light Truck < 3750 lbs	0.0	1.5	97.0	1.5

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Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Truck 3751-5750 lbs	0.0	0.4	99.6	0.0
Med Truck 5751-8500 lbs	0.0	1.0	99.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	0.0	0.0	86.7	13.3
Lite-Heavy Truck 10,001-14,000 lbs	0.0	0.0	60.0	40.0
Med-Heavy Truck 14,001-33,000 lbs	0.0	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	94.0	0.0	0.0	100.0
Other Bus	0.0	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	100.0
Motorcycle	0.0	60.9	39.1	0.0
School Bus	0.0	0.0	0.0	100.0
Motor Home	0.0	0.0	87.5	12.5

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	12.7	7.0	9.5	13.3	7.4	8.9
Rural Trip Length (miles)	17.6	12.1	14.9	15.4	9.6	12.6
Trip speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
General light industry				50.0	25.0	25.0

Operational Changes to Defaults

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Urbemis 2007 Version 9.2.4

Combined Winter Emissions Reports (Pounds/Day)

File Name: Z:\PROJECT\CA Projects\City of Los Angeles Zero Waste Project\AQ Modeling\URBEMIS\Advanced Thermal Recycling\LA SWIRP - Advanced Thermal Recycling.urb924

Project Name: LA SWIRP - Advanced Thermal Recycling

Project Location: Los Angeles County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

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Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2012 TOTALS (lbs/day unmitigated)	5.72	37.08	47.19	0.07	50.01	1.99	51.08	10.44	1.83	11.43	8,851.78
2012 TOTALS (lbs/day mitigated)	5.72	32.97	47.19	0.07	11.34	1.08	12.42	2.37	0.99	3.36	8,851.78
2013 TOTALS (lbs/day unmitigated)	293.23	33.69	44.15	0.07	0.28	1.78	2.06	0.10	1.63	1.73	8,851.46
2013 TOTALS (lbs/day mitigated)	263.91	29.83	44.15	0.07	0.28	0.92	1.20	0.10	0.84	0.94	8,851.46

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	1.58	0.81	0.68	0.00	0.00	0.00	966.44

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	16.23	209.59	79.47	0.30	21.65	9.64	31,692.65

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	17.81	210.40	80.15	0.30	21.65	9.64	32,659.09

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Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 3/26/2012-6/20/2012 Active Days: 63	2.72	22.00	12.46	0.00	**50.01**	1.08	**51.08**	**10.44**	0.99	**11.43**	2,371.61
Mass Grading 03/24/2012-06/20/2012	2.72	22.00	12.46	0.00	50.01	1.08	51.08	10.44	0.99	11.43	2,371.61
Mass Grading Dust	0.00	0.00	0.00	0.00	50.00	0.00	50.00	10.44	0.00	10.44	0.00
Mass Grading Off Road Diesel	2.69	21.95	11.51	0.00	0.00	1.07	1.07	0.00	0.99	0.99	2,247.32
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.03	0.05	0.95	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.29
Time Slice 6/25/2012-8/1/2012 Active Days: 28	2.72	22.00	12.46	0.00	**50.01**	1.08	**51.08**	**10.44**	0.99	**11.43**	2,371.61
Fine Grading 06/23/2012-08/01/2012	2.72	22.00	12.46	0.00	50.01	1.08	51.08	10.44	0.99	11.43	2,371.61
Fine Grading Dust	0.00	0.00	0.00	0.00	50.00	0.00	50.00	10.44	0.00	10.44	0.00
Fine Grading Off Road Diesel	2.69	21.95	11.51	0.00	0.00	1.07	1.07	0.00	0.99	0.99	2,247.32
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.03	0.05	0.95	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.29
Time Slice 8/6/2012-8/15/2012 Active Days: 8	1.83	15.30	8.96	0.00	0.01	0.74	0.74	0.00	0.68	0.68	1,838.93
Trenching 08/04/2012-08/15/2012	1.83	15.30	8.96	0.00	0.01	0.74	0.74	0.00	0.68	0.68	1,838.93
Trenching Off Road Diesel	1.80	15.24	8.01	0.00	0.00	0.73	0.73	0.00	0.67	0.67	1,714.64
Trenching Worker Trips	0.03	0.05	0.95	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.29
Time Slice 8/20/2012-8/29/2012 Active Days: 8	3.34	17.01	11.92	0.01	0.03	1.35	1.38	0.01	1.24	1.25	1,943.25
Asphalt 08/18/2012-08/29/2012	3.34	17.01	11.92	0.01	0.03	1.35	1.38	0.01	1.24	1.25	1,943.25
Paving Off-Gas	0.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.34	14.35	8.99	0.00	0.00	1.24	1.24	0.00	1.14	1.14	1,272.04
Paving On Road Diesel	0.22	2.56	1.03	0.00	0.01	0.10	0.12	0.00	0.10	0.10	422.62
Paving Worker Trips	0.06	0.11	1.89	0.00	0.01	0.01	0.02	0.00	0.01	0.01	248.59

Time Slice 9/3/2012-12/31/2012 Active Days: 86	5.72	**37.08**	**47.19**	**0.07**	0.28	**1.99**	2.28	0.10	**1.83**	1.92	**8,851.78**
Building 09/01/2012-04/24/2013	5.72	37.08	47.19	0.07	0.28	1.99	2.28	0.10	1.83	1.92	8,851.78
Building Off Road Diesel	3.14	14.81	10.52	0.00	0.00	1.04	1.04	0.00	0.95	0.95	1,621.20
Building Vendor Trips	1.96	21.08	16.03	0.04	0.16	0.88	1.04	0.05	0.81	0.86	4,515.99
Building Worker Trips	0.63	1.19	20.64	0.03	0.13	0.07	0.20	0.05	0.06	0.11	2,714.59
Time Slice 1/1/2013-4/24/2013 Active Days: 82	5.23	33.69	44.15	**0.07**	0.28	1.78	2.06	0.10	1.63	1.73	8,851.46
Building 09/01/2012-04/24/2013	5.23	33.69	44.15	0.07	0.28	1.78	2.06	0.10	1.63	1.73	8,851.46
Building Off Road Diesel	2.88	13.91	10.20	0.00	0.00	0.93	0.93	0.00	0.86	0.86	1,621.20
Building Vendor Trips	1.78	18.69	14.73	0.04	0.16	0.77	0.93	0.05	0.71	0.76	4,516.02
Building Worker Trips	0.58	1.09	19.22	0.03	0.13	0.07	0.20	0.05	0.06	0.11	2,714.25
Time Slice 4/29/2013-5/22/2013 Active Days: 18	**293.23**	0.17	3.01	0.00	0.02	0.01	0.03	0.01	0.01	0.02	425.16
Coating 04/27/2013-05/22/2013	293.23	0.17	3.01	0.00	0.02	0.01	0.03	0.01	0.01	0.02	425.16
Architectural Coating	293.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.09	0.17	3.01	0.00	0.02	0.01	0.03	0.01	0.01	0.02	425.16

Phase Assumptions

Phase: Fine Grading 6/23/2012 - 8/1/2012 - Default Fine Site Grading/Excavation Description

Total Acres Disturbed: 10

Maximum Daily Acreage Disturbed: 2.5

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 3/24/2012 - 6/20/2012 - Default Mass Site Grading/Excavation Description

Total Acres Disturbed: 10

Maximum Daily Acreage Disturbed: 2.5

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Trenching 8/4/2012 - 8/15/2012 - Default Trenching Description

Off-Road Equipment:

2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

1 Other General Industrial Equipment (238 hp) operating at a 0.51 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 0 hours per day

Phase: Paving 8/18/2012 - 8/29/2012 - Default Paving Description

Acres to be Paved: 2.5

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

1 Paving Equipment (104 hp) operating at a 0.53 load factor for 8 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

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Phase: Building Construction 9/1/2012 - 4/24/2013 - Default Building Construction Description

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 6 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

3 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Architectural Coating 4/27/2013 - 5/22/2013 - Default Architectural Coating Description

Rule: Residential Interior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 100

Rule: Residential Interior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 50

Rule: Residential Exterior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 100

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Winter Pounds Per Day, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 3/26/2012-6/20/2012 Active Days: 63	2.72	22.00	12.46	0.00	11.34	1.08	12.42	2.37	0.99	3.36	2,371.61
Mass Grading 03/24/2012-06/20/2012	2.72	22.00	12.46	0.00	11.34	1.08	12.42	2.37	0.99	3.36	2,371.61
Mass Grading Dust	0.00	0.00	0.00	0.00	11.34	0.00	11.34	2.37	0.00	2.37	0.00
Mass Grading Off Road Diesel	2.69	21.95	11.51	0.00	0.00	1.07	1.07	0.00	0.99	0.99	2,247.32
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.03	0.05	0.95	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.29

Time Slice 6/25/2012-8/1/2012 Active Days: 28	2.72	22.00	12.46	0.00	11.34	1.08	12.42	2.37	0.99	3.36	2,371.61
Fine Grading 06/23/2012-08/01/2012	2.72	22.00	12.46	0.00	11.34	1.08	12.42	2.37	0.99	3.36	2,371.61
Fine Grading Dust	0.00	0.00	0.00	0.00	11.34	0.00	11.34	2.37	0.00	2.37	0.00
Fine Grading Off Road Diesel	2.69	21.95	11.51	0.00	0.00	1.07	1.07	0.00	0.99	0.99	2,247.32
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.03	0.05	0.95	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.29
Time Slice 8/6/2012-8/15/2012 Active Days: 8	1.83	11.07	8.96	0.00	0.01	0.06	0.06	0.00	0.05	0.06	1,838.93
Trenching 08/04/2012-08/15/2012	1.83	11.07	8.96	0.00	0.01	0.06	0.06	0.00	0.05	0.06	1,838.93
Trenching Off Road Diesel	1.80	11.01	8.01	0.00	0.00	0.05	0.05	0.00	0.05	0.05	1,714.64
Trenching Worker Trips	0.03	0.05	0.95	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.29
Time Slice 8/20/2012-8/29/2012 Active Days: 8	3.34	13.03	11.92	0.01	0.03	0.20	0.23	0.01	0.19	0.20	1,943.25
Asphalt 08/18/2012-08/29/2012	3.34	13.03	11.92	0.01	0.03	0.20	0.23	0.01	0.19	0.20	1,943.25
Paving Off-Gas	0.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.34	10.37	8.99	0.00	0.00	0.09	0.09	0.00	0.09	0.09	1,272.04
Paving On Road Diesel	0.22	2.56	1.03	0.00	0.01	0.10	0.12	0.00	0.10	0.10	422.62
Paving Worker Trips	0.06	0.11	1.89	0.00	0.01	0.01	0.02	0.00	0.01	0.01	248.59
Time Slice 9/3/2012-12/31/2012 Active Days: 86	5.72	32.97	**47.19**	**0.07**	0.28	1.03	1.32	0.10	0.94	1.04	**8,851.78**
Building 09/01/2012-04/24/2013	5.72	32.97	47.19	0.07	0.28	1.03	1.32	0.10	0.94	1.04	8,851.78
Building Off Road Diesel	3.14	10.70	10.52	0.00	0.00	0.08	0.08	0.00	0.07	0.07	1,621.20
Building Vendor Trips	1.96	21.08	16.03	0.04	0.16	0.88	1.04	0.05	0.81	0.86	4,515.99
Building Worker Trips	0.63	1.19	20.64	0.03	0.13	0.07	0.20	0.05	0.06	0.11	2,714.59

Time Slice 1/1/2013-4/24/2013 Active Days: 82	5.23	29.83	44.15	**0.07**	0.28	0.92	1.20	0.10	0.84	0.94	8,851.46
Building 09/01/2012-04/24/2013	5.23	29.83	44.15	0.07	0.28	0.92	1.20	0.10	0.84	0.94	8,851.46
Building Off Road Diesel	2.88	10.05	10.20	0.00	0.00	0.07	0.07	0.00	0.06	0.06	1,621.20
Building Vendor Trips	1.78	18.69	14.73	0.04	0.16	0.77	0.93	0.05	0.71	0.76	4,516.02
Building Worker Trips	0.58	1.09	19.22	0.03	0.13	0.07	0.20	0.05	0.06	0.11	2,714.25
Time Slice 4/29/2013-5/22/2013 Active Days: 18	263.91	0.17	3.01	0.00	0.02	0.01	0.03	0.01	0.01	0.02	425.16
Coating 04/27/2013-05/22/2013	263.91	0.17	3.01	0.00	0.02	0.01	0.03	0.01	0.01	0.02	425.16
Architectural Coating	263.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.09	0.17	3.01	0.00	0.02	0.01	0.03	0.01	0.01	0.02	425.16

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 6/23/2012 - 8/1/2012 - Default Fine Site Grading/Excavation Description

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

The following mitigation measures apply to Phase: Mass Grading 3/24/2012 - 6/20/2012 - Default Mass Site Grading/Excavation Description

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

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For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

The following mitigation measures apply to Phase: Trenching 8/4/2012 - 8/15/2012 - Default Trenching Description

For Excavators, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Excavators, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Excavators, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Other General Industrial Equipment, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Other General Industrial Equipment, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Other General Industrial Equipment, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Tractors/Loaders/Backhoes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Paving 8/18/2012 - 8/29/2012 - Default Paving Description

For Cement and Mortar Mixers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Cement and Mortar Mixers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Cement and Mortar Mixers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Pavers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Pavers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Pavers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Paving Equipment, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Paving Equipment, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Paving Equipment, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Rollers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Rollers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Rollers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Tractors/Loaders/Backhoes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Building Construction 9/1/2012 - 4/24/2013 - Default Building Construction Description

For Cranes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Cranes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Cranes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Forklifts, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Forklifts, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Forklifts, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Generator Sets, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Generator Sets, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Generator Sets, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Tractors/Loaders/Backhoes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Welders, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Welders, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Welders, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Architectural Coating 4/27/2013 - 5/22/2013 - Default Architectural Coating Description

For Residential Architectural Coating Measures, the Residential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Residential Architectural Coating Measures, the Residential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Nonresidential Architectural Coating Measures, the Nonresidential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

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For Nonresidential Architectural Coating Measures, the Nonresidential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
General light industry	16.23	209.59	79.47	0.30	21.65	9.64	31,692.65
TOTALS (lbs/day, unmitigated)	16.23	209.59	79.47	0.30	21.65	9.64	31,692.65

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2012 Temperature (F): 60 Season: Winter

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
General light industry		2.82	1000 sq ft	260.00	733.20	7,863.57
					733.20	7,863.57

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	6.0	0.6	99.2	0.2
Light Truck < 3750 lbs	0.0	1.5	97.0	1.5

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Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Truck 3751-5750 lbs	0.0	0.4	99.6	0.0
Med Truck 5751-8500 lbs	0.0	1.0	99.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	0.0	0.0	86.7	13.3
Lite-Heavy Truck 10,001-14,000 lbs	0.0	0.0	60.0	40.0
Med-Heavy Truck 14,001-33,000 lbs	0.0	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	94.0	0.0	0.0	100.0
Other Bus	0.0	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	100.0
Motorcycle	0.0	60.9	39.1	0.0
School Bus	0.0	0.0	0.0	100.0
Motor Home	0.0	0.0	87.5	12.5

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	12.7	7.0	9.5	13.3	7.4	8.9
Rural Trip Length (miles)	17.6	12.1	14.9	15.4	9.6	12.6
Trip speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
General light industry				50.0	25.0	25.0

Operational Changes to Defaults

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Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: Z:\PROJECT\CA Projects\City of Los Angeles Zero Waste Project\AQ Modeling\URBEMIS\Advanced Thermal Recycling\LA SWIRP - Advanced Thermal Recycling.urb924

Project Name: LA SWIRP - Advanced Thermal Recycling

Project Location: Los Angeles County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

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Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2012 TOTALS (tons/year unmitigated)	0.39	2.72	2.68	0.00	2.29	0.14	2.43	0.48	0.13	0.61	503.66
2012 TOTALS (tons/year mitigated)	0.39	2.52	2.68	0.00	0.53	0.09	0.62	0.11	0.09	0.20	503.66
Percent Reduction	0.00	7.69	0.00	0.00	76.90	33.95	74.37	76.62	34.04	67.47	0.00
2013 TOTALS (tons/year unmitigated)	2.85	1.38	1.84	0.00	0.01	0.07	0.08	0.00	0.07	0.07	366.74
2013 TOTALS (tons/year mitigated)	2.59	1.22	1.84	0.00	0.01	0.04	0.05	0.00	0.03	0.04	366.74
Percent Reduction	9.25	11.44	0.00	0.00	0.00	48.30	41.56	0.00	48.56	45.74	0.00

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	0.31	0.15	0.40	0.00	0.00	0.00	176.89

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	2.97	35.83	14.54	0.05	3.95	1.76	5,789.23

	____	NOx	CO	SO2	PM10	PM2.5	CO2

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Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2012	0.39	2.72	2.68	0.00	2.29	0.14	2.43	0.48	0.13	0.61	503.66
Mass Grading 03/24/2012-06/20/2012	0.09	0.69	0.39	0.00	1.58	0.03	1.61	0.33	0.03	0.36	74.71
Mass Grading Dust	0.00	0.00	0.00	0.00	1.58	0.00	1.58	0.33	0.00	0.33	0.00
Mass Grading Off Road Diesel	0.08	0.69	0.36	0.00	0.00	0.03	0.03	0.00	0.03	0.03	70.79
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.92
Fine Grading 06/23/2012-08/01/2012	0.04	0.31	0.17	0.00	0.70	0.02	0.72	0.15	0.01	0.16	33.20
Fine Grading Dust	0.00	0.00	0.00	0.00	0.70	0.00	0.70	0.15	0.00	0.15	0.00
Fine Grading Off Road Diesel	0.04	0.31	0.16	0.00	0.00	0.02	0.02	0.00	0.01	0.01	31.46
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.74
Trenching 08/04/2012-08/15/2012	0.01	0.06	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.36
Trenching Off Road Diesel	0.01	0.06	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.86
Trenching Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50
Asphalt 08/18/2012-08/29/2012	0.01	0.07	0.05	0.00	0.00	0.01	0.01	0.00	0.00	0.01	7.77
Paving Off-Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.01	0.06	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.09
Paving On Road Diesel	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.69
Paving Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.99

Building 09/01/2012-04/24/2013	0.25	1.59	2.03	0.00	0.01	0.09	0.10	0.00	0.08	0.08	380.63
Building Off Road Diesel	0.13	0.64	0.45	0.00	0.00	0.04	0.04	0.00	0.04	0.04	69.71
Building Vendor Trips	0.08	0.91	0.69	0.00	0.01	0.04	0.04	0.00	0.03	0.04	194.19
Building Worker Trips	0.03	0.05	0.89	0.00	0.01	0.00	0.01	0.00	0.00	0.00	116.73
2013	2.85	1.38	1.84	0.00	0.01	0.07	0.08	0.00	0.07	0.07	366.74
Building 09/01/2012-04/24/2013	0.21	1.38	1.81	0.00	0.01	0.07	0.08	0.00	0.07	0.07	362.91
Building Off Road Diesel	0.12	0.57	0.42	0.00	0.00	0.04	0.04	0.00	0.04	0.04	66.47
Building Vendor Trips	0.07	0.77	0.60	0.00	0.01	0.03	0.04	0.00	0.03	0.03	185.16
Building Worker Trips	0.02	0.04	0.79	0.00	0.01	0.00	0.01	0.00	0.00	0.00	111.28
Coating 04/27/2013-05/22/2013	2.64	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.83
Architectural Coating	2.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.83

Phase Assumptions

Phase: Fine Grading 6/23/2012 - 8/1/2012 - Default Fine Site Grading/Excavation Description

Total Acres Disturbed: 10

Maximum Daily Acreage Disturbed: 2.5

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 3/24/2012 - 6/20/2012 - Default Mass Site Grading/Excavation Description

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Total Acres Disturbed: 10

Maximum Daily Acreage Disturbed: 2.5

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Trenching 8/4/2012 - 8/15/2012 - Default Trenching Description

Off-Road Equipment:

2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

1 Other General Industrial Equipment (238 hp) operating at a 0.51 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 0 hours per day

Phase: Paving 8/18/2012 - 8/29/2012 - Default Paving Description

Acres to be Paved: 2.5

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

1 Paving Equipment (104 hp) operating at a 0.53 load factor for 8 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Building Construction 9/1/2012 - 4/24/2013 - Default Building Construction Description

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 6 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

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1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

3 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Architectural Coating 4/27/2013 - 5/22/2013 - Default Architectural Coating Description

Rule: Residential Interior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 100

Rule: Residential Interior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 50

Rule: Residential Exterior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 100

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2012	0.39	2.52	2.68	0.00	0.53	0.09	0.62	0.11	0.09	0.20	503.66
Mass Grading 03/24/2012-06/20/2012	0.09	0.69	0.39	0.00	0.36	0.03	0.39	0.07	0.03	0.11	74.71
Mass Grading Dust	0.00	0.00	0.00	0.00	0.36	0.00	0.36	0.07	0.00	0.07	0.00
Mass Grading Off Road Diesel	0.08	0.69	0.36	0.00	0.00	0.03	0.03	0.00	0.03	0.03	70.79
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.92

Fine Grading 06/23/2012-08/01/2012	0.04	0.31	0.17	0.00	0.16	0.02	0.17	0.03	0.01	0.05	33.20
Fine Grading Dust	0.00	0.00	0.00	0.00	0.16	0.00	0.16	0.03	0.00	0.03	0.00
Fine Grading Off Road Diesel	0.04	0.31	0.16	0.00	0.00	0.02	0.02	0.00	0.01	0.01	31.46
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.74
Trenching 08/04/2012-08/15/2012	0.01	0.04	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.36
Trenching Off Road Diesel	0.01	0.04	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.86
Trenching Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50
Asphalt 08/18/2012-08/29/2012	0.01	0.05	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.77
Paving Off-Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.01	0.04	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.09
Paving On Road Diesel	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.69
Paving Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.99
Building 09/01/2012-04/24/2013	0.25	1.42	2.03	0.00	0.01	0.04	0.06	0.00	0.04	0.04	380.63
Building Off Road Diesel	0.13	0.46	0.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	69.71
Building Vendor Trips	0.08	0.91	0.69	0.00	0.01	0.04	0.04	0.00	0.03	0.04	194.19
Building Worker Trips	0.03	0.05	0.89	0.00	0.01	0.00	0.01	0.00	0.00	0.00	116.73

2013	2.59	1.22	1.84	0.00	0.01	0.04	0.05	0.00	0.03	0.04	366.74
Building 09/01/2012-04/24/2013	0.21	1.22	1.81	0.00	0.01	0.04	0.05	0.00	0.03	0.04	362.91
Building Off Road Diesel	0.12	0.41	0.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	66.47
Building Vendor Trips	0.07	0.77	0.60	0.00	0.01	0.03	0.04	0.00	0.03	0.03	185.16
Building Worker Trips	0.02	0.04	0.79	0.00	0.01	0.00	0.01	0.00	0.00	0.00	111.28
Coating 04/27/2013-05/22/2013	2.38	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.83
Architectural Coating	2.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.83

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 6/23/2012 - 8/1/2012 - Default Fine Site Grading/Excavation Description

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

The following mitigation measures apply to Phase: Mass Grading 3/24/2012 - 6/20/2012 - Default Mass Site Grading/Excavation Description

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

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The following mitigation measures apply to Phase: Trenching 8/4/2012 - 8/15/2012 - Default Trenching Description

For Excavators, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Excavators, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Excavators, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Other General Industrial Equipment, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Other General Industrial Equipment, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Other General Industrial Equipment, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Tractors/Loaders/Backhoes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Paving 8/18/2012 - 8/29/2012 - Default Paving Description

For Cement and Mortar Mixers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Cement and Mortar Mixers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Cement and Mortar Mixers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Pavers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Pavers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Pavers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Paving Equipment, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Paving Equipment, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Paving Equipment, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Rollers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Rollers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Rollers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Tractors/Loaders/Backhoes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Building Construction 9/1/2012 - 4/24/2013 - Default Building Construction Description

For Cranes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Cranes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Cranes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Forklifts, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Forklifts, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Forklifts, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Generator Sets, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Generator Sets, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Generator Sets, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Tractors/Loaders/Backhoes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Welders, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Welders, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Welders, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Architectural Coating 4/27/2013 - 5/22/2013 - Default Architectural Coating Description

For Residential Architectural Coating Measures, the Residential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Residential Architectural Coating Measures, the Residential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Nonresidential Architectural Coating Measures, the Nonresidential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Nonresidential Architectural Coating Measures, the Nonresidential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
General light industry	2.97	35.83	14.54	0.05	3.95	1.76	5,789.23
TOTALS (tons/year, unmitigated)	2.97	35.83	14.54	0.05	3.95	1.76	5,789.23

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2012 Season: Annual

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
General light industry		2.82	1000 sq ft	260.00	733.20	7,863.57
					733.20	7,863.57

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	6.0	0.6	99.2	0.2
Light Truck < 3750 lbs	0.0	1.5	97.0	1.5
Light Truck 3751-5750 lbs	0.0	0.4	99.6	0.0
Med Truck 5751-8500 lbs	0.0	1.0	99.0	0.0

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Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Lite-Heavy Truck 8501-10,000 lbs	0.0	0.0	86.7	13.3
Lite-Heavy Truck 10,001-14,000 lbs	0.0	0.0	60.0	40.0
Med-Heavy Truck 14,001-33,000 lbs	0.0	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	94.0	0.0	0.0	100.0
Other Bus	0.0	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	100.0
Motorcycle	0.0	60.9	39.1	0.0
School Bus	0.0	0.0	0.0	100.0
Motor Home	0.0	0.0	87.5	12.5

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	12.7	7.0	9.5	13.3	7.4	8.9
Rural Trip Length (miles)	17.6	12.1	14.9	15.4	9.6	12.6
Trip speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
General light industry				50.0	25.0	25.0

Operational Changes to Defaults

Alternative Technology – Biological (Anaerobic Digestion)

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Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: Z:\PROJECT\CA Projects\City of Los Angeles Zero Waste Project\AQ Modeling\URBEMIS\Alternative Tech_Bio\LA SWIRP - Alternative Technology_Bio.urb924

Project Name: LA SWIRP - Alternative Technology - Biological

Project Location: Los Angeles County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

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Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2012 TOTALS (lbs/day unmitigated)	4.93	31.22	35.91	0.05	35.01	2.04	36.08	7.31	1.88	8.30	6,626.99
2012 TOTALS (lbs/day mitigated)	4.93	26.12	35.91	0.05	7.94	1.08	9.02	1.66	0.99	2.65	6,626.99
2013 TOTALS (lbs/day unmitigated)	203.00	27.60	33.70	0.05	0.20	1.52	1.72	0.07	1.39	1.46	6,626.76
2013 TOTALS (lbs/day mitigated)	182.71	23.74	33.70	0.05	0.20	0.66	0.85	0.07	0.60	0.67	6,626.76

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	1.23	0.83	2.23	0.00	0.01	0.01	969.25

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	5.83	65.85	28.96	0.10	7.84	3.41	11,174.14

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	7.06	66.68	31.19	0.10	7.85	3.42	12,143.39

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Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 3/26/2012-6/20/2012 Active Days: 63	2.72	22.00	12.46	0.00	**35.01**	1.08	**36.08**	**7.31**	0.99	**8.30**	2,371.61
Mass Grading 03/24/2012-06/20/2012	2.72	22.00	12.46	0.00	35.01	1.08	36.08	7.31	0.99	8.30	2,371.61
Mass Grading Dust	0.00	0.00	0.00	0.00	35.00	0.00	35.00	7.31	0.00	7.31	0.00
Mass Grading Off Road Diesel	2.69	21.95	11.51	0.00	0.00	1.07	1.07	0.00	0.99	0.99	2,247.32
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.03	0.05	0.95	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.29
Time Slice 6/25/2012-8/1/2012 Active Days: 28	2.72	22.00	12.46	0.00	**35.01**	1.08	**36.08**	**7.31**	0.99	**8.30**	2,371.61
Fine Grading 06/23/2012-08/01/2012	2.72	22.00	12.46	0.00	35.01	1.08	36.08	7.31	0.99	8.30	2,371.61
Fine Grading Dust	0.00	0.00	0.00	0.00	35.00	0.00	35.00	7.31	0.00	7.31	0.00
Fine Grading Off Road Diesel	2.69	21.95	11.51	0.00	0.00	1.07	1.07	0.00	0.99	0.99	2,247.32
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.03	0.05	0.95	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.29
Time Slice 8/6/2012-8/14/2012 Active Days: 7	1.83	15.30	8.96	0.00	0.01	0.74	0.74	0.00	0.68	0.68	1,838.93
Trenching 08/04/2012-08/15/2012	1.83	15.30	8.96	0.00	0.01	0.74	0.74	0.00	0.68	0.68	1,838.93
Trenching Off Road Diesel	1.80	15.24	8.01	0.00	0.00	0.73	0.73	0.00	0.67	0.67	1,714.64
Trenching Worker Trips	0.03	0.05	0.95	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.29

Time Slice 8/15/2012-8/15/2012 Active Days: 1	4.77	**31.22**	20.43	0.01	0.03	**2.04**	2.07	0.01	**1.88**	1.89	3,601.61
Asphalt 08/15/2012-08/29/2012	2.94	15.92	11.47	0.00	0.02	1.31	1.33	0.01	1.20	1.21	1,762.67
Paving Off-Gas	0.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.34	14.35	8.99	0.00	0.00	1.24	1.24	0.00	1.14	1.14	1,272.04
Paving On Road Diesel	0.12	1.46	0.59	0.00	0.01	0.06	0.07	0.00	0.05	0.06	242.05
Paving Worker Trips	0.06	0.11	1.89	0.00	0.01	0.01	0.02	0.00	0.01	0.01	248.59
Trenching 08/04/2012-08/15/2012	1.83	15.30	8.96	0.00	0.01	0.74	0.74	0.00	0.68	0.68	1,838.93
Trenching Off Road Diesel	1.80	15.24	8.01	0.00	0.00	0.73	0.73	0.00	0.67	0.67	1,714.64
Trenching Worker Trips	0.03	0.05	0.95	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.29
Time Slice 8/16/2012-8/29/2012 Active Days: 10	2.94	15.92	11.47	0.00	0.02	1.31	1.33	0.01	1.20	1.21	1,762.67
Asphalt 08/15/2012-08/29/2012	2.94	15.92	11.47	0.00	0.02	1.31	1.33	0.01	1.20	1.21	1,762.67
Paving Off-Gas	0.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.34	14.35	8.99	0.00	0.00	1.24	1.24	0.00	1.14	1.14	1,272.04
Paving On Road Diesel	0.12	1.46	0.59	0.00	0.01	0.06	0.07	0.00	0.05	0.06	242.05
Paving Worker Trips	0.06	0.11	1.89	0.00	0.01	0.01	0.02	0.00	0.01	0.01	248.59
Time Slice 9/3/2012-12/31/2012 Active Days: 86	4.93	30.23	**35.91**	**0.05**	0.20	1.70	1.90	0.07	1.56	1.63	**6,626.99**
Building 09/01/2012-04/24/2013	4.93	30.23	35.91	0.05	0.20	1.70	1.90	0.07	1.56	1.63	6,626.99
Building Off Road Diesel	3.14	14.81	10.52	0.00	0.00	1.04	1.04	0.00	0.95	0.95	1,621.20
Building Vendor Trips	1.36	14.59	11.10	0.03	0.11	0.61	0.72	0.04	0.56	0.60	3,126.46
Building Worker Trips	0.44	0.82	14.29	0.02	0.09	0.05	0.14	0.03	0.04	0.08	1,879.33

Time Slice 1/1/2013-4/24/2013 Active Days: 82	4.51	27.60	33.70	**0.05**	0.20	1.52	1.72	0.07	1.39	1.46	6,626.76
Building 09/01/2012-04/24/2013	4.51	27.60	33.70	0.05	0.20	1.52	1.72	0.07	1.39	1.46	6,626.76
Building Off Road Diesel	2.88	13.91	10.20	0.00	0.00	0.93	0.93	0.00	0.86	0.86	1,621.20
Building Vendor Trips	1.23	12.94	10.19	0.03	0.11	0.54	0.64	0.04	0.49	0.53	3,126.47
Building Worker Trips	0.40	0.76	13.31	0.02	0.09	0.05	0.14	0.03	0.04	0.08	1,879.09
Time Slice 4/29/2013-5/22/2013 Active Days: 18	**203.00**	0.12	2.08	0.00	0.01	0.01	0.02	0.01	0.01	0.01	294.34
Coating 04/27/2013-05/22/2013	203.00	0.12	2.08	0.00	0.01	0.01	0.02	0.01	0.01	0.01	294.34
Architectural Coating	202.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.06	0.12	2.08	0.00	0.01	0.01	0.02	0.01	0.01	0.01	294.34

Phase Assumptions

Phase: Fine Grading 6/23/2012 - 8/1/2012 - Default Fine Site Grading/Excavation Description

Total Acres Disturbed: 7

Maximum Daily Acreage Disturbed: 1.75

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 3/24/2012 - 6/20/2012 - Default Mass Site Grading/Excavation Description

Total Acres Disturbed: 7

Maximum Daily Acreage Disturbed: 1.75

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Trenching 8/4/2012 - 8/15/2012 - Default Trenching Description

Off-Road Equipment:

2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

1 Other General Industrial Equipment (238 hp) operating at a 0.51 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 0 hours per day

Phase: Paving 8/15/2012 - 8/29/2012 - Default Paving Description

Acres to be Paved: 1.75

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

1 Paving Equipment (104 hp) operating at a 0.53 load factor for 8 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Building Construction 9/1/2012 - 4/24/2013 - Default Building Construction Description

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 6 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

3 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Architectural Coating 4/27/2013 - 5/22/2013 - Default Architectural Coating Description

Rule: Residential Interior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 100

Rule: Residential Interior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 50

Rule: Residential Exterior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 100

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 3/26/2012-6/20/2012 Active Days: 63	2.72	22.00	12.46	0.00	7.94	1.08	9.02	1.66	0.99	2.65	2,371.61
Mass Grading 03/24/2012-06/20/2012	2.72	22.00	12.46	0.00	7.94	1.08	9.02	1.66	0.99	2.65	2,371.61
Mass Grading Dust	0.00	0.00	0.00	0.00	7.94	0.00	7.94	1.66	0.00	1.66	0.00
Mass Grading Off Road Diesel	2.69	21.95	11.51	0.00	0.00	1.07	1.07	0.00	0.99	0.99	2,247.32
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.03	0.05	0.95	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.29

Time Slice 6/25/2012-8/1/2012 Active Days: 28	2.72	22.00	12.46	0.00	7.94	1.08	9.02	1.66	0.99	2.65	2,371.61
Fine Grading 06/23/2012-08/01/2012	2.72	22.00	12.46	0.00	7.94	1.08	9.02	1.66	0.99	2.65	2,371.61
Fine Grading Dust	0.00	0.00	0.00	0.00	7.94	0.00	7.94	1.66	0.00	1.66	0.00
Fine Grading Off Road Diesel	2.69	21.95	11.51	0.00	0.00	1.07	1.07	0.00	0.99	0.99	2,247.32
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.03	0.05	0.95	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.29
Time Slice 8/6/2012-8/14/2012 Active Days: 7	1.83	11.07	8.96	0.00	0.01	0.06	0.06	0.00	0.05	0.06	1,838.93
Trenching 08/04/2012-08/15/2012	1.83	11.07	8.96	0.00	0.01	0.06	0.06	0.00	0.05	0.06	1,838.93
Trenching Off Road Diesel	1.80	11.01	8.01	0.00	0.00	0.05	0.05	0.00	0.05	0.05	1,714.64
Trenching Worker Trips	0.03	0.05	0.95	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.29
Time Slice 8/15/2012-8/15/2012 Active Days: 1	4.77	23.01	20.43	0.01	0.03	0.22	0.24	0.01	0.20	0.21	3,601.61
Asphalt 08/15/2012-08/29/2012	2.94	11.94	11.47	0.00	0.02	0.16	0.18	0.01	0.15	0.15	1,762.67
Paving Off-Gas	0.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.34	10.37	8.99	0.00	0.00	0.09	0.09	0.00	0.09	0.09	1,272.04
Paving On Road Diesel	0.12	1.46	0.59	0.00	0.01	0.06	0.07	0.00	0.05	0.06	242.05
Paving Worker Trips	0.06	0.11	1.89	0.00	0.01	0.01	0.02	0.00	0.01	0.01	248.59
Trenching 08/04/2012-08/15/2012	1.83	11.07	8.96	0.00	0.01	0.06	0.06	0.00	0.05	0.06	1,838.93
Trenching Off Road Diesel	1.80	11.01	8.01	0.00	0.00	0.05	0.05	0.00	0.05	0.05	1,714.64
Trenching Worker Trips	0.03	0.05	0.95	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.29

Time Slice 8/16/2012-8/29/2012 Active Days: 10	2.94	11.94	11.47	0.00	0.02	0.16	0.18	0.01	0.15	0.15	1,762.67
Asphalt 08/15/2012-08/29/2012	2.94	11.94	11.47	0.00	0.02	0.16	0.18	0.01	0.15	0.15	1,762.67
Paving Off-Gas	0.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.34	10.37	8.99	0.00	0.00	0.09	0.09	0.00	0.09	0.09	1,272.04
Paving On Road Diesel	0.12	1.46	0.59	0.00	0.01	0.06	0.07	0.00	0.05	0.06	242.05
Paving Worker Trips	0.06	0.11	1.89	0.00	0.01	0.01	0.02	0.00	0.01	0.01	248.59
Time Slice 9/3/2012-12/31/2012 Active Days: 86	4.93	26.12	**35.91**	**0.05**	0.20	0.74	0.94	0.07	0.67	0.74	**6,626.99**
Building 09/01/2012-04/24/2013	4.93	26.12	35.91	0.05	0.20	0.74	0.94	0.07	0.67	0.74	6,626.99
Building Off Road Diesel	3.14	10.70	10.52	0.00	0.00	0.08	0.08	0.00	0.07	0.07	1,621.20
Building Vendor Trips	1.36	14.59	11.10	0.03	0.11	0.61	0.72	0.04	0.56	0.60	3,126.46
Building Worker Trips	0.44	0.82	14.29	0.02	0.09	0.05	0.14	0.03	0.04	0.08	1,879.33
Time Slice 1/1/2013-4/24/2013 Active Days: 82	4.51	23.74	33.70	**0.05**	0.20	0.66	0.85	0.07	0.60	0.67	6,626.76
Building 09/01/2012-04/24/2013	4.51	23.74	33.70	0.05	0.20	0.66	0.85	0.07	0.60	0.67	6,626.76
Building Off Road Diesel	2.88	10.05	10.20	0.00	0.00	0.07	0.07	0.00	0.06	0.06	1,621.20
Building Vendor Trips	1.23	12.94	10.19	0.03	0.11	0.54	0.64	0.04	0.49	0.53	3,126.47
Building Worker Trips	0.40	0.76	13.31	0.02	0.09	0.05	0.14	0.03	0.04	0.08	1,879.09
Time Slice 4/29/2013-5/22/2013 Active Days: 18	182.71	0.12	2.08	0.00	0.01	0.01	0.02	0.01	0.01	0.01	294.34
Coating 04/27/2013-05/22/2013	182.71	0.12	2.08	0.00	0.01	0.01	0.02	0.01	0.01	0.01	294.34
Architectural Coating	182.65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.06	0.12	2.08	0.00	0.01	0.01	0.02	0.01	0.01	0.01	294.34

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 6/23/2012 - 8/1/2012 - Default Fine Site Grading/Excavation Description

10/15/2010 10:00:11 AM

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

The following mitigation measures apply to Phase: Mass Grading 3/24/2012 - 6/20/2012 - Default Mass Site Grading/Excavation Description

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

The following mitigation measures apply to Phase: Trenching 8/4/2012 - 8/15/2012 - Default Trenching Description

For Excavators, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Excavators, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Excavators, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Other General Industrial Equipment, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Other General Industrial Equipment, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Other General Industrial Equipment, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

10/15/2010 10:00:11 AM

For Tractors/Loaders/Backhoes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Paving 8/15/2012 - 8/29/2012 - Default Paving Description

For Cement and Mortar Mixers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Cement and Mortar Mixers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Cement and Mortar Mixers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Pavers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Pavers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Pavers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Paving Equipment, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Paving Equipment, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Paving Equipment, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Rollers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Rollers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Rollers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Tractors/Loaders/Backhoes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Building Construction 9/1/2012 - 4/24/2013 - Default Building Construction Description

For Cranes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Cranes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Cranes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Forklifts, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Forklifts, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Forklifts, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Generator Sets, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Generator Sets, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Generator Sets, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Tractors/Loaders/Backhoes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

10/15/2010 10:00:11 AM

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Welders, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Welders, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Welders, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Architectural Coating 4/27/2013 - 5/22/2013 - Default Architectural Coating Description

For Residential Architectural Coating Measures, the Residential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Residential Architectural Coating Measures, the Residential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Nonresidential Architectural Coating Measures, the Nonresidential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Nonresidential Architectural Coating Measures, the Nonresidential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
General heavy industry	5.83	65.85	28.96	0.10	7.84	3.41	11,174.14
TOTALS (lbs/day, unmitigated)	5.83	65.85	28.96	0.10	7.84	3.41	11,174.14

Operational Settings:

10/15/2010 10:00:11 AM

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2012 Temperature (F): 80 Season: Summer

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
General heavy industry		1.27	1000 sq ft	180.00	228.60	2,922.65
					228.60	2,922.65

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	12.3	0.6	99.2	0.2
Light Truck < 3750 lbs	0.0	1.5	97.0	1.5
Light Truck 3751-5750 lbs	0.0	0.4	99.6	0.0
Med Truck 5751-8500 lbs	0.0	1.0	99.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	0.0	0.0	86.7	13.3
Lite-Heavy Truck 10,001-14,000 lbs	0.0	0.0	60.0	40.0
Med-Heavy Truck 14,001-33,000 lbs	0.0	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	87.7	0.0	0.0	100.0
Other Bus	0.0	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	100.0
Motorcycle	0.0	60.9	39.1	0.0
School Bus	0.0	0.0	0.0	100.0
Motor Home	0.0	0.0	87.5	12.5

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Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	12.7	7.0	9.5	13.3	7.4	8.9
Rural Trip Length (miles)	17.6	12.1	14.9	15.4	9.6	12.6
Trip speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
General heavy industry				90.0	5.0	5.0

Operational Changes to Defaults

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Urbemis 2007 Version 9.2.4

Combined Winter Emissions Reports (Pounds/Day)

File Name: Z:\PROJECT\CA Projects\City of Los Angeles Zero Waste Project\AQ Modeling\URBEMIS\Alternative Tech_Bio\LA SWIRP - Alternative Technology_Bio.urb924

Project Name: LA SWIRP - Alternative Technology - Biological

Project Location: Los Angeles County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

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Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2012 TOTALS (lbs/day unmitigated)	4.93	31.22	35.91	0.05	35.01	2.04	36.08	7.31	1.88	8.30	6,626.99
2012 TOTALS (lbs/day mitigated)	4.93	26.12	35.91	0.05	7.94	1.08	9.02	1.66	0.99	2.65	6,626.99
2013 TOTALS (lbs/day unmitigated)	203.00	27.60	33.70	0.05	0.20	1.52	1.72	0.07	1.39	1.46	6,626.76
2013 TOTALS (lbs/day mitigated)	182.71	23.74	33.70	0.05	0.20	0.66	0.85	0.07	0.60	0.67	6,626.76

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	1.11	0.81	0.68	0.00	0.00	0.00	966.44

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	5.77	72.78	28.72	0.10	7.84	3.41	11,140.80

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	6.88	73.59	29.40	0.10	7.84	3.41	12,107.24

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Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 3/26/2012-6/20/2012 Active Days: 63	2.72	22.00	12.46	0.00	**35.01**	1.08	**36.08**	**7.31**	0.99	**8.30**	2,371.61
Mass Grading 03/24/2012-06/20/2012	2.72	22.00	12.46	0.00	35.01	1.08	36.08	7.31	0.99	8.30	2,371.61
Mass Grading Dust	0.00	0.00	0.00	0.00	35.00	0.00	35.00	7.31	0.00	7.31	0.00
Mass Grading Off Road Diesel	2.69	21.95	11.51	0.00	0.00	1.07	1.07	0.00	0.99	0.99	2,247.32
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.03	0.05	0.95	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.29
Time Slice 6/25/2012-8/1/2012 Active Days: 28	2.72	22.00	12.46	0.00	**35.01**	1.08	**36.08**	**7.31**	0.99	**8.30**	2,371.61
Fine Grading 06/23/2012-08/01/2012	2.72	22.00	12.46	0.00	35.01	1.08	36.08	7.31	0.99	8.30	2,371.61
Fine Grading Dust	0.00	0.00	0.00	0.00	35.00	0.00	35.00	7.31	0.00	7.31	0.00
Fine Grading Off Road Diesel	2.69	21.95	11.51	0.00	0.00	1.07	1.07	0.00	0.99	0.99	2,247.32
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.03	0.05	0.95	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.29
Time Slice 8/6/2012-8/14/2012 Active Days: 7	1.83	15.30	8.96	0.00	0.01	0.74	0.74	0.00	0.68	0.68	1,838.93
Trenching 08/04/2012-08/15/2012	1.83	15.30	8.96	0.00	0.01	0.74	0.74	0.00	0.68	0.68	1,838.93
Trenching Off Road Diesel	1.80	15.24	8.01	0.00	0.00	0.73	0.73	0.00	0.67	0.67	1,714.64
Trenching Worker Trips	0.03	0.05	0.95	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.29

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Time Slice 8/15/2012-8/15/2012 Active Days: 1	4.77	**31.22**	20.43	0.01	0.03	**2.04**	2.07	0.01	**1.88**	1.89	3,601.61
Asphalt 08/15/2012-08/29/2012	2.94	15.92	11.47	0.00	0.02	1.31	1.33	0.01	1.20	1.21	1,762.67
Paving Off-Gas	0.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.34	14.35	8.99	0.00	0.00	1.24	1.24	0.00	1.14	1.14	1,272.04
Paving On Road Diesel	0.12	1.46	0.59	0.00	0.01	0.06	0.07	0.00	0.05	0.06	242.05
Paving Worker Trips	0.06	0.11	1.89	0.00	0.01	0.01	0.02	0.00	0.01	0.01	248.59
Trenching 08/04/2012-08/15/2012	1.83	15.30	8.96	0.00	0.01	0.74	0.74	0.00	0.68	0.68	1,838.93
Trenching Off Road Diesel	1.80	15.24	8.01	0.00	0.00	0.73	0.73	0.00	0.67	0.67	1,714.64
Trenching Worker Trips	0.03	0.05	0.95	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.29
Time Slice 8/16/2012-8/29/2012 Active Days: 10	2.94	15.92	11.47	0.00	0.02	1.31	1.33	0.01	1.20	1.21	1,762.67
Asphalt 08/15/2012-08/29/2012	2.94	15.92	11.47	0.00	0.02	1.31	1.33	0.01	1.20	1.21	1,762.67
Paving Off-Gas	0.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.34	14.35	8.99	0.00	0.00	1.24	1.24	0.00	1.14	1.14	1,272.04
Paving On Road Diesel	0.12	1.46	0.59	0.00	0.01	0.06	0.07	0.00	0.05	0.06	242.05
Paving Worker Trips	0.06	0.11	1.89	0.00	0.01	0.01	0.02	0.00	0.01	0.01	248.59
Time Slice 9/3/2012-12/31/2012 Active Days: 86	4.93	30.23	**35.91**	**0.05**	0.20	1.70	1.90	0.07	1.56	1.63	**6,626.99**
Building 09/01/2012-04/24/2013	4.93	30.23	35.91	0.05	0.20	1.70	1.90	0.07	1.56	1.63	6,626.99
Building Off Road Diesel	3.14	14.81	10.52	0.00	0.00	1.04	1.04	0.00	0.95	0.95	1,621.20
Building Vendor Trips	1.36	14.59	11.10	0.03	0.11	0.61	0.72	0.04	0.56	0.60	3,126.46
Building Worker Trips	0.44	0.82	14.29	0.02	0.09	0.05	0.14	0.03	0.04	0.08	1,879.33

Time Slice 1/1/2013-4/24/2013 Active Days: 82	4.51	27.60	33.70	**0.05**	0.20	1.52	1.72	0.07	1.39	1.46	6,626.76
Building 09/01/2012-04/24/2013	4.51	27.60	33.70	0.05	0.20	1.52	1.72	0.07	1.39	1.46	6,626.76
Building Off Road Diesel	2.88	13.91	10.20	0.00	0.00	0.93	0.93	0.00	0.86	0.86	1,621.20
Building Vendor Trips	1.23	12.94	10.19	0.03	0.11	0.54	0.64	0.04	0.49	0.53	3,126.47
Building Worker Trips	0.40	0.76	13.31	0.02	0.09	0.05	0.14	0.03	0.04	0.08	1,879.09
Time Slice 4/29/2013-5/22/2013 Active Days: 18	**203.00**	0.12	2.08	0.00	0.01	0.01	0.02	0.01	0.01	0.01	294.34
Coating 04/27/2013-05/22/2013	203.00	0.12	2.08	0.00	0.01	0.01	0.02	0.01	0.01	0.01	294.34
Architectural Coating	202.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.06	0.12	2.08	0.00	0.01	0.01	0.02	0.01	0.01	0.01	294.34

Phase Assumptions

Phase: Fine Grading 6/23/2012 - 8/1/2012 - Default Fine Site Grading/Excavation Description

Total Acres Disturbed: 7

Maximum Daily Acreage Disturbed: 1.75

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 3/24/2012 - 6/20/2012 - Default Mass Site Grading/Excavation Description

Total Acres Disturbed: 7

Maximum Daily Acreage Disturbed: 1.75

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Trenching 8/4/2012 - 8/15/2012 - Default Trenching Description

Off-Road Equipment:

2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

1 Other General Industrial Equipment (238 hp) operating at a 0.51 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 0 hours per day

Phase: Paving 8/15/2012 - 8/29/2012 - Default Paving Description

Acres to be Paved: 1.75

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

1 Paving Equipment (104 hp) operating at a 0.53 load factor for 8 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Building Construction 9/1/2012 - 4/24/2013 - Default Building Construction Description

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 6 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

3 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Architectural Coating 4/27/2013 - 5/22/2013 - Default Architectural Coating Description

Rule: Residential Interior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 100

Rule: Residential Interior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 50

Rule: Residential Exterior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 100

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Winter Pounds Per Day, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 3/26/2012-6/20/2012 Active Days: 63	2.72	22.00	12.46	0.00	7.94	1.08	9.02	1.66	0.99	2.65	2,371.61
Mass Grading 03/24/2012-06/20/2012	2.72	22.00	12.46	0.00	7.94	1.08	9.02	1.66	0.99	2.65	2,371.61
Mass Grading Dust	0.00	0.00	0.00	0.00	7.94	0.00	7.94	1.66	0.00	1.66	0.00
Mass Grading Off Road Diesel	2.69	21.95	11.51	0.00	0.00	1.07	1.07	0.00	0.99	0.99	2,247.32
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.03	0.05	0.95	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.29

Time Slice 6/25/2012-8/1/2012 Active Days: 28	2.72	22.00	12.46	0.00	7.94	1.08	9.02	1.66	0.99	2.65	2,371.61
Fine Grading 06/23/2012-08/01/2012	2.72	22.00	12.46	0.00	7.94	1.08	9.02	1.66	0.99	2.65	2,371.61
Fine Grading Dust	0.00	0.00	0.00	0.00	7.94	0.00	7.94	1.66	0.00	1.66	0.00
Fine Grading Off Road Diesel	2.69	21.95	11.51	0.00	0.00	1.07	1.07	0.00	0.99	0.99	2,247.32
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.03	0.05	0.95	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.29
Time Slice 8/6/2012-8/14/2012 Active Days: 7	1.83	11.07	8.96	0.00	0.01	0.06	0.06	0.00	0.05	0.06	1,838.93
Trenching 08/04/2012-08/15/2012	1.83	11.07	8.96	0.00	0.01	0.06	0.06	0.00	0.05	0.06	1,838.93
Trenching Off Road Diesel	1.80	11.01	8.01	0.00	0.00	0.05	0.05	0.00	0.05	0.05	1,714.64
Trenching Worker Trips	0.03	0.05	0.95	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.29
Time Slice 8/15/2012-8/15/2012 Active Days: 1	4.77	23.01	20.43	0.01	0.03	0.22	0.24	0.01	0.20	0.21	3,601.61
Asphalt 08/15/2012-08/29/2012	2.94	11.94	11.47	0.00	0.02	0.16	0.18	0.01	0.15	0.15	1,762.67
Paving Off-Gas	0.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.34	10.37	8.99	0.00	0.00	0.09	0.09	0.00	0.09	0.09	1,272.04
Paving On Road Diesel	0.12	1.46	0.59	0.00	0.01	0.06	0.07	0.00	0.05	0.06	242.05
Paving Worker Trips	0.06	0.11	1.89	0.00	0.01	0.01	0.02	0.00	0.01	0.01	248.59
Trenching 08/04/2012-08/15/2012	1.83	11.07	8.96	0.00	0.01	0.06	0.06	0.00	0.05	0.06	1,838.93
Trenching Off Road Diesel	1.80	11.01	8.01	0.00	0.00	0.05	0.05	0.00	0.05	0.05	1,714.64
Trenching Worker Trips	0.03	0.05	0.95	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.29

Time Slice 8/16/2012-8/29/2012 Active Days: 10	2.94	11.94	11.47	0.00	0.02	0.16	0.18	0.01	0.15	0.15	1,762.67
Asphalt 08/15/2012-08/29/2012	2.94	11.94	11.47	0.00	0.02	0.16	0.18	0.01	0.15	0.15	1,762.67
Paving Off-Gas	0.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.34	10.37	8.99	0.00	0.00	0.09	0.09	0.00	0.09	0.09	1,272.04
Paving On Road Diesel	0.12	1.46	0.59	0.00	0.01	0.06	0.07	0.00	0.05	0.06	242.05
Paving Worker Trips	0.06	0.11	1.89	0.00	0.01	0.01	0.02	0.00	0.01	0.01	248.59
Time Slice 9/3/2012-12/31/2012 Active Days: 86	4.93	26.12	**35.91**	**0.05**	0.20	0.74	0.94	0.07	0.67	0.74	**6,626.99**
Building 09/01/2012-04/24/2013	4.93	26.12	35.91	0.05	0.20	0.74	0.94	0.07	0.67	0.74	6,626.99
Building Off Road Diesel	3.14	10.70	10.52	0.00	0.00	0.08	0.08	0.00	0.07	0.07	1,621.20
Building Vendor Trips	1.36	14.59	11.10	0.03	0.11	0.61	0.72	0.04	0.56	0.60	3,126.46
Building Worker Trips	0.44	0.82	14.29	0.02	0.09	0.05	0.14	0.03	0.04	0.08	1,879.33
Time Slice 1/1/2013-4/24/2013 Active Days: 82	4.51	23.74	33.70	**0.05**	0.20	0.66	0.85	0.07	0.60	0.67	6,626.76
Building 09/01/2012-04/24/2013	4.51	23.74	33.70	0.05	0.20	0.66	0.85	0.07	0.60	0.67	6,626.76
Building Off Road Diesel	2.88	10.05	10.20	0.00	0.00	0.07	0.07	0.00	0.06	0.06	1,621.20
Building Vendor Trips	1.23	12.94	10.19	0.03	0.11	0.54	0.64	0.04	0.49	0.53	3,126.47
Building Worker Trips	0.40	0.76	13.31	0.02	0.09	0.05	0.14	0.03	0.04	0.08	1,879.09
Time Slice 4/29/2013-5/22/2013 Active Days: 18	182.71	0.12	2.08	0.00	0.01	0.01	0.02	0.01	0.01	0.01	294.34
Coating 04/27/2013-05/22/2013	182.71	0.12	2.08	0.00	0.01	0.01	0.02	0.01	0.01	0.01	294.34
Architectural Coating	182.65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.06	0.12	2.08	0.00	0.01	0.01	0.02	0.01	0.01	0.01	294.34

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 6/23/2012 - 8/1/2012 - Default Fine Site Grading/Excavation Description

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For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

The following mitigation measures apply to Phase: Mass Grading 3/24/2012 - 6/20/2012 - Default Mass Site Grading/Excavation Description

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

The following mitigation measures apply to Phase: Trenching 8/4/2012 - 8/15/2012 - Default Trenching Description

For Excavators, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Excavators, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Excavators, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Other General Industrial Equipment, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Other General Industrial Equipment, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Other General Industrial Equipment, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

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For Tractors/Loaders/Backhoes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Paving 8/15/2012 - 8/29/2012 - Default Paving Description

For Cement and Mortar Mixers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Cement and Mortar Mixers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Cement and Mortar Mixers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Pavers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Pavers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Pavers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Paving Equipment, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Paving Equipment, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Paving Equipment, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Rollers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Rollers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Rollers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Tractors/Loaders/Backhoes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Building Construction 9/1/2012 - 4/24/2013 - Default Building Construction Description

For Cranes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Cranes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Cranes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Forklifts, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Forklifts, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Forklifts, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Generator Sets, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Generator Sets, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Generator Sets, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Tractors/Loaders/Backhoes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

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For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Welders, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Welders, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Welders, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Architectural Coating 4/27/2013 - 5/22/2013 - Default Architectural Coating Description

For Residential Architectural Coating Measures, the Residential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Residential Architectural Coating Measures, the Residential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Nonresidential Architectural Coating Measures, the Nonresidential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Nonresidential Architectural Coating Measures, the Nonresidential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
General heavy industry	5.77	72.78	28.72	0.10	7.84	3.41	11,140.80
TOTALS (lbs/day, unmitigated)	5.77	72.78	28.72	0.10	7.84	3.41	11,140.80

Operational Settings:

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Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2012 Temperature (F): 60 Season: Winter

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
General heavy industry		1.27	1000 sq ft	180.00	228.60	2,922.65
					228.60	2,922.65

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	12.3	0.6	99.2	0.2
Light Truck < 3750 lbs	0.0	1.5	97.0	1.5
Light Truck 3751-5750 lbs	0.0	0.4	99.6	0.0
Med Truck 5751-8500 lbs	0.0	1.0	99.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	0.0	0.0	86.7	13.3
Lite-Heavy Truck 10,001-14,000 lbs	0.0	0.0	60.0	40.0
Med-Heavy Truck 14,001-33,000 lbs	0.0	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	87.7	0.0	0.0	100.0
Other Bus	0.0	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	100.0
Motorcycle	0.0	60.9	39.1	0.0
School Bus	0.0	0.0	0.0	100.0
Motor Home	0.0	0.0	87.5	12.5

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Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	12.7	7.0	9.5	13.3	7.4	8.9
Rural Trip Length (miles)	17.6	12.1	14.9	15.4	9.6	12.6
Trip speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
General heavy industry				90.0	5.0	5.0

Operational Changes to Defaults

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Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: Z:\PROJECT\CA Projects\City of Los Angeles Zero Waste Project\AQ Modeling\URBEMIS\Alternative Tech_Bio\LA SWIRP - Alternative Technology_Bio.urb924

Project Name: LA SWIRP - Alternative Technology - Biological

Project Location: Los Angeles County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

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Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2012 TOTALS (tons/year unmitigated)	0.36	2.45	2.21	0.00	1.60	0.13	1.73	0.34	0.12	0.46	409.92
2012 TOTALS (tons/year mitigated)	0.36	2.23	2.21	0.00	0.37	0.08	0.45	0.08	0.08	0.15	409.92
Percent Reduction	0.00	8.80	0.00	0.00	76.90	38.04	73.94	76.61	38.12	66.40	0.00
2013 TOTALS (tons/year unmitigated)	2.01	1.13	1.40	0.00	0.01	0.06	0.07	0.00	0.06	0.06	274.35
2013 TOTALS (tons/year mitigated)	1.83	0.97	1.40	0.00	0.01	0.03	0.04	0.00	0.02	0.03	274.35
Percent Reduction	9.08	13.97	0.00	0.00	0.00	56.63	50.04	0.00	56.87	54.16	0.00

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	0.22	0.15	0.40	0.00	0.00	0.00	176.89

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	1.06	12.44	5.27	0.02	1.43	0.62	2,037.25

	____	NOx	CO	SO2	PM10	PM2.5	CO2

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Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2012	0.36	2.45	2.21	0.00	1.60	0.13	1.73	0.34	0.12	0.46	409.92
Mass Grading 03/24/2012-06/20/2012	0.09	0.69	0.39	0.00	1.10	0.03	1.14	0.23	0.03	0.26	74.71
Mass Grading Dust	0.00	0.00	0.00	0.00	1.10	0.00	1.10	0.23	0.00	0.23	0.00
Mass Grading Off Road Diesel	0.08	0.69	0.36	0.00	0.00	0.03	0.03	0.00	0.03	0.03	70.79
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.92
Fine Grading 06/23/2012-08/01/2012	0.04	0.31	0.17	0.00	0.49	0.02	0.51	0.10	0.01	0.12	33.20
Fine Grading Dust	0.00	0.00	0.00	0.00	0.49	0.00	0.49	0.10	0.00	0.10	0.00
Fine Grading Off Road Diesel	0.04	0.31	0.16	0.00	0.00	0.02	0.02	0.00	0.01	0.01	31.46
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.74
Trenching 08/04/2012-08/15/2012	0.01	0.06	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.36
Trenching Off Road Diesel	0.01	0.06	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.86
Trenching Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50
Asphalt 08/15/2012-08/29/2012	0.02	0.09	0.06	0.00	0.00	0.01	0.01	0.00	0.01	0.01	9.69
Paving Off-Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.01	0.08	0.05	0.00	0.00	0.01	0.01	0.00	0.01	0.01	7.00
Paving On Road Diesel	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.33
Paving Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.37

Building 09/01/2012-04/24/2013	0.21	1.30	1.54	0.00	0.01	0.07	0.08	0.00	0.07	0.07	284.96
Building Off Road Diesel	0.13	0.64	0.45	0.00	0.00	0.04	0.04	0.00	0.04	0.04	69.71
Building Vendor Trips	0.06	0.63	0.48	0.00	0.00	0.03	0.03	0.00	0.02	0.03	134.44
Building Worker Trips	0.02	0.04	0.61	0.00	0.00	0.00	0.01	0.00	0.00	0.00	80.81
2013	2.01	1.13	1.40	0.00	0.01	0.06	0.07	0.00	0.06	0.06	274.35
Building 09/01/2012-04/24/2013	0.18	1.13	1.38	0.00	0.01	0.06	0.07	0.00	0.06	0.06	271.70
Building Off Road Diesel	0.12	0.57	0.42	0.00	0.00	0.04	0.04	0.00	0.04	0.04	66.47
Building Vendor Trips	0.05	0.53	0.42	0.00	0.00	0.02	0.03	0.00	0.02	0.02	128.19
Building Worker Trips	0.02	0.03	0.55	0.00	0.00	0.00	0.01	0.00	0.00	0.00	77.04
Coating 04/27/2013-05/22/2013	1.83	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.65
Architectural Coating	1.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.65

Phase Assumptions

Phase: Fine Grading 6/23/2012 - 8/1/2012 - Default Fine Site Grading/Excavation Description

Total Acres Disturbed: 7

Maximum Daily Acreage Disturbed: 1.75

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 3/24/2012 - 6/20/2012 - Default Mass Site Grading/Excavation Description

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Total Acres Disturbed: 7

Maximum Daily Acreage Disturbed: 1.75

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Trenching 8/4/2012 - 8/15/2012 - Default Trenching Description

Off-Road Equipment:

2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

1 Other General Industrial Equipment (238 hp) operating at a 0.51 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 0 hours per day

Phase: Paving 8/15/2012 - 8/29/2012 - Default Paving Description

Acres to be Paved: 1.75

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

1 Paving Equipment (104 hp) operating at a 0.53 load factor for 8 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Building Construction 9/1/2012 - 4/24/2013 - Default Building Construction Description

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 6 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

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1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

3 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Architectural Coating 4/27/2013 - 5/22/2013 - Default Architectural Coating Description

Rule: Residential Interior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 100

Rule: Residential Interior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 50

Rule: Residential Exterior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 100

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2012	0.36	2.23	2.21	0.00	0.37	0.08	0.45	0.08	0.08	0.15	409.92
Mass Grading 03/24/2012-06/20/2012	0.09	0.69	0.39	0.00	0.25	0.03	0.28	0.05	0.03	0.08	74.71
Mass Grading Dust	0.00	0.00	0.00	0.00	0.25	0.00	0.25	0.05	0.00	0.05	0.00
Mass Grading Off Road Diesel	0.08	0.69	0.36	0.00	0.00	0.03	0.03	0.00	0.03	0.03	70.79
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.92

Fine Grading 06/23/2012-08/01/2012	0.04	0.31	0.17	0.00	0.11	0.02	0.13	0.02	0.01	0.04	33.20
Fine Grading Dust	0.00	0.00	0.00	0.00	0.11	0.00	0.11	0.02	0.00	0.02	0.00
Fine Grading Off Road Diesel	0.04	0.31	0.16	0.00	0.00	0.02	0.02	0.00	0.01	0.01	31.46
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.74
Trenching 08/04/2012-08/15/2012	0.01	0.04	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.36
Trenching Off Road Diesel	0.01	0.04	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.86
Trenching Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50
Asphalt 08/15/2012-08/29/2012	0.02	0.07	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.69
Paving Off-Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.01	0.06	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.00
Paving On Road Diesel	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.33
Paving Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.37
Building 09/01/2012-04/24/2013	0.21	1.12	1.54	0.00	0.01	0.03	0.04	0.00	0.03	0.03	284.96
Building Off Road Diesel	0.13	0.46	0.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	69.71
Building Vendor Trips	0.06	0.63	0.48	0.00	0.00	0.03	0.03	0.00	0.02	0.03	134.44
Building Worker Trips	0.02	0.04	0.61	0.00	0.00	0.00	0.01	0.00	0.00	0.00	80.81

2013	1.83	0.97	1.40	0.00	0.01	0.03	0.04	0.00	0.02	0.03	274.35
Building 09/01/2012-04/24/2013	0.18	0.97	1.38	0.00	0.01	0.03	0.04	0.00	0.02	0.03	271.70
Building Off Road Diesel	0.12	0.41	0.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	66.47
Building Vendor Trips	0.05	0.53	0.42	0.00	0.00	0.02	0.03	0.00	0.02	0.02	128.19
Building Worker Trips	0.02	0.03	0.55	0.00	0.00	0.00	0.01	0.00	0.00	0.00	77.04
Coating 04/27/2013-05/22/2013	1.64	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.65
Architectural Coating	1.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.65

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 6/23/2012 - 8/1/2012 - Default Fine Site Grading/Excavation Description

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

The following mitigation measures apply to Phase: Mass Grading 3/24/2012 - 6/20/2012 - Default Mass Site Grading/Excavation Description

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

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The following mitigation measures apply to Phase: Trenching 8/4/2012 - 8/15/2012 - Default Trenching Description

For Excavators, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Excavators, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Excavators, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Other General Industrial Equipment, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Other General Industrial Equipment, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Other General Industrial Equipment, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Tractors/Loaders/Backhoes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Paving 8/15/2012 - 8/29/2012 - Default Paving Description

For Cement and Mortar Mixers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Cement and Mortar Mixers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Cement and Mortar Mixers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Pavers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Pavers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

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For Pavers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Paving Equipment, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Paving Equipment, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Paving Equipment, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Rollers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Rollers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Rollers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Tractors/Loaders/Backhoes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Building Construction 9/1/2012 - 4/24/2013 - Default Building Construction Description

For Cranes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Cranes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Cranes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Forklifts, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Forklifts, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Forklifts, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Generator Sets, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Generator Sets, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Generator Sets, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Tractors/Loaders/Backhoes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Welders, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Welders, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Welders, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Architectural Coating 4/27/2013 - 5/22/2013 - Default Architectural Coating Description

For Residential Architectural Coating Measures, the Residential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Residential Architectural Coating Measures, the Residential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Nonresidential Architectural Coating Measures, the Nonresidential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Nonresidential Architectural Coating Measures, the Nonresidential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
General heavy industry	1.06	12.44	5.27	0.02	1.43	0.62	2,037.25
TOTALS (tons/year, unmitigated)	1.06	12.44	5.27	0.02	1.43	0.62	2,037.25

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2012 Season: Annual

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
General heavy industry		1.27	1000 sq ft	180.00	228.60	2,922.65
					228.60	2,922.65

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	12.3	0.6	99.2	0.2
Light Truck < 3750 lbs	0.0	1.5	97.0	1.5
Light Truck 3751-5750 lbs	0.0	0.4	99.6	0.0
Med Truck 5751-8500 lbs	0.0	1.0	99.0	0.0

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Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Lite-Heavy Truck 8501-10,000 lbs	0.0	0.0	86.7	13.3
Lite-Heavy Truck 10,001-14,000 lbs	0.0	0.0	60.0	40.0
Med-Heavy Truck 14,001-33,000 lbs	0.0	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	87.7	0.0	0.0	100.0
Other Bus	0.0	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	100.0
Motorcycle	0.0	60.9	39.1	0.0
School Bus	0.0	0.0	0.0	100.0
Motor Home	0.0	0.0	87.5	12.5

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	12.7	7.0	9.5	13.3	7.4	8.9
Rural Trip Length (miles)	17.6	12.1	14.9	15.4	9.6	12.6
Trip speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
General heavy industry				90.0	5.0	5.0

Operational Changes to Defaults

Alternative Technology – Thermal (Plasma Arc, Gasification, Pyrolisis, and Others)

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Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: Z:\PROJECT\CA Projects\City of Los Angeles Zero Waste Project\AQ Modeling\URBEMIS\Alternative Tech_Thermal\LA SWIRP - Alternative Technology_Thermal.urb924

Project Name: LA SWIRP - Alternative Technology - Thermal

Project Location: Los Angeles County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

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Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2012 TOTALS (lbs/day unmitigated)	4.43	25.95	28.85	0.04	25.01	1.51	26.08	5.22	1.39	6.21	5,236.49
2012 TOTALS (lbs/day mitigated)	4.43	22.00	28.85	0.04	5.67	1.08	6.75	1.19	0.99	2.18	5,236.49
2013 TOTALS (lbs/day unmitigated)	146.61	23.80	27.18	0.04	0.14	1.36	1.50	0.05	1.24	1.29	5,236.33
2013 TOTALS (lbs/day mitigated)	131.96	19.94	27.18	0.04	0.14	0.49	0.64	0.05	0.45	0.50	5,236.33

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	0.94	0.83	2.23	0.00	0.01	0.01	969.25

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	3.43	36.28	17.42	0.06	4.71	1.94	6,339.54

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	4.37	37.11	19.65	0.06	4.72	1.95	7,308.79

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Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 3/26/2012-6/20/2012 Active Days: 63	2.72	22.00	12.46	0.00	**25.01**	1.08	**26.08**	**5.22**	0.99	**6.21**	2,371.61
Mass Grading 03/24/2012-06/20/2012	2.72	22.00	12.46	0.00	25.01	1.08	26.08	5.22	0.99	6.21	2,371.61
Mass Grading Dust	0.00	0.00	0.00	0.00	25.00	0.00	25.00	5.22	0.00	5.22	0.00
Mass Grading Off Road Diesel	2.69	21.95	11.51	0.00	0.00	1.07	1.07	0.00	0.99	0.99	2,247.32
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.03	0.05	0.95	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.29
Time Slice 6/25/2012-8/1/2012 Active Days: 28	2.72	22.00	12.46	0.00	**25.01**	1.08	**26.08**	**5.22**	0.99	**6.21**	2,371.61
Fine Grading 06/23/2012-08/01/2012	2.72	22.00	12.46	0.00	25.01	1.08	26.08	5.22	0.99	6.21	2,371.61
Fine Grading Dust	0.00	0.00	0.00	0.00	25.00	0.00	25.00	5.22	0.00	5.22	0.00
Fine Grading Off Road Diesel	2.69	21.95	11.51	0.00	0.00	1.07	1.07	0.00	0.99	0.99	2,247.32
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.03	0.05	0.95	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.29
Time Slice 8/6/2012-8/15/2012 Active Days: 8	1.83	15.30	8.96	0.00	0.01	0.74	0.74	0.00	0.68	0.68	1,838.93
Trenching 08/04/2012-08/15/2012	1.83	15.30	8.96	0.00	0.01	0.74	0.74	0.00	0.68	0.68	1,838.93
Trenching Off Road Diesel	1.80	15.24	8.01	0.00	0.00	0.73	0.73	0.00	0.67	0.67	1,714.64
Trenching Worker Trips	0.03	0.05	0.95	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.29
Time Slice 8/20/2012-8/29/2012 Active Days: 8	2.87	15.74	11.40	0.00	0.02	1.30	1.32	0.01	1.19	1.20	1,731.94
Asphalt 08/18/2012-08/29/2012	2.87	15.74	11.40	0.00	0.02	1.30	1.32	0.01	1.19	1.20	1,731.94
Paving Off-Gas	0.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.34	14.35	8.99	0.00	0.00	1.24	1.24	0.00	1.14	1.14	1,272.04
Paving On Road Diesel	0.11	1.28	0.52	0.00	0.01	0.05	0.06	0.00	0.05	0.05	211.31
Paving Worker Trips	0.06	0.11	1.89	0.00	0.01	0.01	0.02	0.00	0.01	0.01	248.59

Time Slice 9/3/2012-12/31/2012 Active Days: 86	4.43	**25.95**	**28.85**	**0.04**	0.14	**1.51**	1.66	0.05	**1.39**	1.44	**5,236.49**
Building 09/01/2012-04/24/2013	4.43	25.95	28.85	0.04	0.14	1.51	1.66	0.05	1.39	1.44	5,236.49
Building Off Road Diesel	3.14	14.81	10.52	0.00	0.00	1.04	1.04	0.00	0.95	0.95	1,621.20
Building Vendor Trips	0.98	10.54	8.02	0.02	0.08	0.44	0.52	0.03	0.40	0.43	2,258.00
Building Worker Trips	0.31	0.60	10.32	0.01	0.06	0.04	0.10	0.02	0.03	0.05	1,357.30
Time Slice 1/1/2013-4/24/2013 Active Days: 82	4.05	23.80	27.18	**0.04**	0.14	1.36	1.50	0.05	1.24	1.29	5,236.33
Building 09/01/2012-04/24/2013	4.05	23.80	27.18	0.04	0.14	1.36	1.50	0.05	1.24	1.29	5,236.33
Building Off Road Diesel	2.88	13.91	10.20	0.00	0.00	0.93	0.93	0.00	0.86	0.86	1,621.20
Building Vendor Trips	0.89	9.35	7.36	0.02	0.08	0.39	0.47	0.03	0.36	0.38	2,258.01
Building Worker Trips	0.29	0.55	9.61	0.01	0.06	0.04	0.10	0.02	0.03	0.05	1,357.12
Time Slice 4/29/2013-5/22/2013 Active Days: 18	**146.61**	0.09	1.51	0.00	0.01	0.01	0.02	0.00	0.00	0.01	212.58
Coating 04/27/2013-05/22/2013	146.61	0.09	1.51	0.00	0.01	0.01	0.02	0.00	0.00	0.01	212.58
Architectural Coating	146.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.05	0.09	1.51	0.00	0.01	0.01	0.02	0.00	0.00	0.01	212.58

Phase Assumptions

Phase: Fine Grading 6/23/2012 - 8/1/2012 - Default Fine Site Grading/Excavation Description

Total Acres Disturbed: 5

Maximum Daily Acreage Disturbed: 1.25

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 3/24/2012 - 6/20/2012 - Default Mass Site Grading/Excavation Description

Total Acres Disturbed: 5

Maximum Daily Acreage Disturbed: 1.25

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Trenching 8/4/2012 - 8/15/2012 - Default Trenching Description

Off-Road Equipment:

2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

1 Other General Industrial Equipment (238 hp) operating at a 0.51 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 0 hours per day

Phase: Paving 8/18/2012 - 8/29/2012 - Default Paving Description

Acres to be Paved: 1.25

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

1 Paving Equipment (104 hp) operating at a 0.53 load factor for 8 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

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Phase: Building Construction 9/1/2012 - 4/24/2013 - Default Building Construction Description

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 6 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

3 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Architectural Coating 4/27/2013 - 5/22/2013 - Default Architectural Coating Description

Rule: Residential Interior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 100

Rule: Residential Interior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 50

Rule: Residential Exterior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 100

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 3/26/2012-6/20/2012 Active Days: 63	2.72	22.00	12.46	0.00	5.67	1.08	6.75	1.19	0.99	2.18	2,371.61
Mass Grading 03/24/2012-06/20/2012	2.72	22.00	12.46	0.00	5.67	1.08	6.75	1.19	0.99	2.18	2,371.61
Mass Grading Dust	0.00	0.00	0.00	0.00	5.67	0.00	5.67	1.18	0.00	1.18	0.00
Mass Grading Off Road Diesel	2.69	21.95	11.51	0.00	0.00	1.07	1.07	0.00	0.99	0.99	2,247.32
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.03	0.05	0.95	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.29

Time Slice 6/25/2012-8/1/2012 Active Days: 28	2.72	22.00	12.46	0.00	5.67	1.08	6.75	1.19	0.99	2.18	2,371.61
Fine Grading 06/23/2012-08/01/2012	2.72	22.00	12.46	0.00	5.67	1.08	6.75	1.19	0.99	2.18	2,371.61
Fine Grading Dust	0.00	0.00	0.00	0.00	5.67	0.00	5.67	1.18	0.00	1.18	0.00
Fine Grading Off Road Diesel	2.69	21.95	11.51	0.00	0.00	1.07	1.07	0.00	0.99	0.99	2,247.32
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.03	0.05	0.95	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.29
Time Slice 8/6/2012-8/15/2012 Active Days: 8	1.83	11.07	8.96	0.00	0.01	0.06	0.06	0.00	0.05	0.06	1,838.93
Trenching 08/04/2012-08/15/2012	1.83	11.07	8.96	0.00	0.01	0.06	0.06	0.00	0.05	0.06	1,838.93
Trenching Off Road Diesel	1.80	11.01	8.01	0.00	0.00	0.05	0.05	0.00	0.05	0.05	1,714.64
Trenching Worker Trips	0.03	0.05	0.95	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.29
Time Slice 8/20/2012-8/29/2012 Active Days: 8	2.87	11.75	11.40	0.00	0.02	0.15	0.17	0.01	0.14	0.15	1,731.94
Asphalt 08/18/2012-08/29/2012	2.87	11.75	11.40	0.00	0.02	0.15	0.17	0.01	0.14	0.15	1,731.94
Paving Off-Gas	0.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.34	10.37	8.99	0.00	0.00	0.09	0.09	0.00	0.09	0.09	1,272.04
Paving On Road Diesel	0.11	1.28	0.52	0.00	0.01	0.05	0.06	0.00	0.05	0.05	211.31
Paving Worker Trips	0.06	0.11	1.89	0.00	0.01	0.01	0.02	0.00	0.01	0.01	248.59
Time Slice 9/3/2012-12/31/2012 Active Days: 86	4.43	21.84	**28.85**	**0.04**	0.14	0.56	0.70	0.05	0.51	0.56	**5,236.49**
Building 09/01/2012-04/24/2013	4.43	21.84	28.85	0.04	0.14	0.56	0.70	0.05	0.51	0.56	5,236.49
Building Off Road Diesel	3.14	10.70	10.52	0.00	0.00	0.08	0.08	0.00	0.07	0.07	1,621.20
Building Vendor Trips	0.98	10.54	8.02	0.02	0.08	0.44	0.52	0.03	0.40	0.43	2,258.00
Building Worker Trips	0.31	0.60	10.32	0.01	0.06	0.04	0.10	0.02	0.03	0.05	1,357.30

Time Slice 1/1/2013-4/24/2013 Active Days: 82	4.05	19.94	27.18	**0.04**	0.14	0.49	0.64	0.05	0.45	0.50	5,236.33
Building 09/01/2012-04/24/2013	4.05	19.94	27.18	0.04	0.14	0.49	0.64	0.05	0.45	0.50	5,236.33
Building Off Road Diesel	2.88	10.05	10.20	0.00	0.00	0.07	0.07	0.00	0.06	0.06	1,621.20
Building Vendor Trips	0.89	9.35	7.36	0.02	0.08	0.39	0.47	0.03	0.36	0.38	2,258.01
Building Worker Trips	0.29	0.55	9.61	0.01	0.06	0.04	0.10	0.02	0.03	0.05	1,357.12
Time Slice 4/29/2013-5/22/2013 Active Days: 18	131.96	0.09	1.51	0.00	0.01	0.01	0.02	0.00	0.00	0.01	212.58
Coating 04/27/2013-05/22/2013	131.96	0.09	1.51	0.00	0.01	0.01	0.02	0.00	0.00	0.01	212.58
Architectural Coating	131.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.05	0.09	1.51	0.00	0.01	0.01	0.02	0.00	0.00	0.01	212.58

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 6/23/2012 - 8/1/2012 - Default Fine Site Grading/Excavation Description

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

The following mitigation measures apply to Phase: Mass Grading 3/24/2012 - 6/20/2012 - Default Mass Site Grading/Excavation Description

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

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For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

The following mitigation measures apply to Phase: Trenching 8/4/2012 - 8/15/2012 - Default Trenching Description

For Excavators, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Excavators, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Excavators, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Other General Industrial Equipment, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Other General Industrial Equipment, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Other General Industrial Equipment, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Tractors/Loaders/Backhoes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Paving 8/18/2012 - 8/29/2012 - Default Paving Description

For Cement and Mortar Mixers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Cement and Mortar Mixers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Cement and Mortar Mixers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Pavers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

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For Pavers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Pavers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Paving Equipment, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Paving Equipment, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Paving Equipment, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Rollers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Rollers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Rollers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Tractors/Loaders/Backhoes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Building Construction 9/1/2012 - 4/24/2013 - Default Building Construction Description

For Cranes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Cranes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Cranes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Forklifts, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Forklifts, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Forklifts, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Generator Sets, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Generator Sets, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Generator Sets, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Tractors/Loaders/Backhoes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Welders, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Welders, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Welders, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Architectural Coating 4/27/2013 - 5/22/2013 - Default Architectural Coating Description

For Residential Architectural Coating Measures, the Residential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Residential Architectural Coating Measures, the Residential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Nonresidential Architectural Coating Measures, the Nonresidential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

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For Nonresidential Architectural Coating Measures, the Nonresidential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
General heavy industry	3.43	36.28	17.42	0.06	4.71	1.94	6,339.54
TOTALS (lbs/day, unmitigated)	3.43	36.28	17.42	0.06	4.71	1.94	6,339.54

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2012 Temperature (F): 80 Season: Summer

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
General heavy industry		1.45	1000 sq ft	130.00	188.50	1,838.65
					188.50	1,838.65

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	23.4	0.6	99.2	0.2
Light Truck < 3750 lbs	0.0	1.5	97.0	1.5

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Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Truck 3751-5750 lbs	0.0	0.4	99.6	0.0
Med Truck 5751-8500 lbs	0.0	1.0	99.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	0.0	0.0	86.7	13.3
Lite-Heavy Truck 10,001-14,000 lbs	0.0	0.0	60.0	40.0
Med-Heavy Truck 14,001-33,000 lbs	0.0	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	76.6	0.0	0.0	100.0
Other Bus	0.0	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	100.0
Motorcycle	0.0	60.9	39.1	0.0
School Bus	0.0	0.0	0.0	100.0
Motor Home	0.0	0.0	87.5	12.5

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	12.7	7.0	9.5	13.3	7.4	8.9
Rural Trip Length (miles)	17.6	12.1	14.9	15.4	9.6	12.6
Trip speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
General heavy industry				23.4	11.7	64.9

Operational Changes to Defaults

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Urbemis 2007 Version 9.2.4

Combined Winter Emissions Reports (Pounds/Day)

File Name: Z:\PROJECT\CA Projects\City of Los Angeles Zero Waste Project\AQ Modeling\URBEMIS\Alternative Tech_Thermal\LA SWIRP - Alternative Technology_Thermal.urb924

Project Name: LA SWIRP - Alternative Technology - Thermal

Project Location: Los Angeles County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

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Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2012 TOTALS (lbs/day unmitigated)	4.43	25.95	28.85	0.04	25.01	1.51	26.08	5.22	1.39	6.21	5,236.49
2012 TOTALS (lbs/day mitigated)	4.43	22.00	28.85	0.04	5.67	1.08	6.75	1.19	0.99	2.18	5,236.49
2013 TOTALS (lbs/day unmitigated)	146.61	23.80	27.18	0.04	0.14	1.36	1.50	0.05	1.24	1.29	5,236.33
2013 TOTALS (lbs/day mitigated)	131.96	19.94	27.18	0.04	0.14	0.49	0.64	0.05	0.45	0.50	5,236.33

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	0.82	0.81	0.68	0.00	0.00	0.00	966.44

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	3.34	40.12	17.18	0.06	4.71	1.94	6,299.64

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	4.16	40.93	17.86	0.06	4.71	1.94	7,266.08

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Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 3/26/2012-6/20/2012 Active Days: 63	2.72	22.00	12.46	0.00	**25.01**	1.08	**26.08**	**5.22**	0.99	**6.21**	2,371.61
Mass Grading 03/24/2012-06/20/2012	2.72	22.00	12.46	0.00	25.01	1.08	26.08	5.22	0.99	6.21	2,371.61
Mass Grading Dust	0.00	0.00	0.00	0.00	25.00	0.00	25.00	5.22	0.00	5.22	0.00
Mass Grading Off Road Diesel	2.69	21.95	11.51	0.00	0.00	1.07	1.07	0.00	0.99	0.99	2,247.32
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.03	0.05	0.95	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.29
Time Slice 6/25/2012-8/1/2012 Active Days: 28	2.72	22.00	12.46	0.00	**25.01**	1.08	**26.08**	**5.22**	0.99	**6.21**	2,371.61
Fine Grading 06/23/2012-08/01/2012	2.72	22.00	12.46	0.00	25.01	1.08	26.08	5.22	0.99	6.21	2,371.61
Fine Grading Dust	0.00	0.00	0.00	0.00	25.00	0.00	25.00	5.22	0.00	5.22	0.00
Fine Grading Off Road Diesel	2.69	21.95	11.51	0.00	0.00	1.07	1.07	0.00	0.99	0.99	2,247.32
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.03	0.05	0.95	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.29
Time Slice 8/6/2012-8/15/2012 Active Days: 8	1.83	15.30	8.96	0.00	0.01	0.74	0.74	0.00	0.68	0.68	1,838.93
Trenching 08/04/2012-08/15/2012	1.83	15.30	8.96	0.00	0.01	0.74	0.74	0.00	0.68	0.68	1,838.93
Trenching Off Road Diesel	1.80	15.24	8.01	0.00	0.00	0.73	0.73	0.00	0.67	0.67	1,714.64
Trenching Worker Trips	0.03	0.05	0.95	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.29
Time Slice 8/20/2012-8/29/2012 Active Days: 8	2.87	15.74	11.40	0.00	0.02	1.30	1.32	0.01	1.19	1.20	1,731.94
Asphalt 08/18/2012-08/29/2012	2.87	15.74	11.40	0.00	0.02	1.30	1.32	0.01	1.19	1.20	1,731.94
Paving Off-Gas	0.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.34	14.35	8.99	0.00	0.00	1.24	1.24	0.00	1.14	1.14	1,272.04
Paving On Road Diesel	0.11	1.28	0.52	0.00	0.01	0.05	0.06	0.00	0.05	0.05	211.31
Paving Worker Trips	0.06	0.11	1.89	0.00	0.01	0.01	0.02	0.00	0.01	0.01	248.59

Time Slice 9/3/2012-12/31/2012 Active Days: 86	4.43	**25.95**	**28.85**	**0.04**	0.14	**1.51**	1.66	0.05	**1.39**	1.44	**5,236.49**
Building 09/01/2012-04/24/2013	4.43	25.95	28.85	0.04	0.14	1.51	1.66	0.05	1.39	1.44	5,236.49
Building Off Road Diesel	3.14	14.81	10.52	0.00	0.00	1.04	1.04	0.00	0.95	0.95	1,621.20
Building Vendor Trips	0.98	10.54	8.02	0.02	0.08	0.44	0.52	0.03	0.40	0.43	2,258.00
Building Worker Trips	0.31	0.60	10.32	0.01	0.06	0.04	0.10	0.02	0.03	0.05	1,357.30
Time Slice 1/1/2013-4/24/2013 Active Days: 82	4.05	23.80	27.18	**0.04**	0.14	1.36	1.50	0.05	1.24	1.29	5,236.33
Building 09/01/2012-04/24/2013	4.05	23.80	27.18	0.04	0.14	1.36	1.50	0.05	1.24	1.29	5,236.33
Building Off Road Diesel	2.88	13.91	10.20	0.00	0.00	0.93	0.93	0.00	0.86	0.86	1,621.20
Building Vendor Trips	0.89	9.35	7.36	0.02	0.08	0.39	0.47	0.03	0.36	0.38	2,258.01
Building Worker Trips	0.29	0.55	9.61	0.01	0.06	0.04	0.10	0.02	0.03	0.05	1,357.12
Time Slice 4/29/2013-5/22/2013 Active Days: 18	**146.61**	0.09	1.51	0.00	0.01	0.01	0.02	0.00	0.00	0.01	212.58
Coating 04/27/2013-05/22/2013	146.61	0.09	1.51	0.00	0.01	0.01	0.02	0.00	0.00	0.01	212.58
Architectural Coating	146.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.05	0.09	1.51	0.00	0.01	0.01	0.02	0.00	0.00	0.01	212.58

Phase Assumptions

Phase: Fine Grading 6/23/2012 - 8/1/2012 - Default Fine Site Grading/Excavation Description

Total Acres Disturbed: 5

Maximum Daily Acreage Disturbed: 1.25

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 3/24/2012 - 6/20/2012 - Default Mass Site Grading/Excavation Description

Total Acres Disturbed: 5

Maximum Daily Acreage Disturbed: 1.25

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Trenching 8/4/2012 - 8/15/2012 - Default Trenching Description

Off-Road Equipment:

2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

1 Other General Industrial Equipment (238 hp) operating at a 0.51 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 0 hours per day

Phase: Paving 8/18/2012 - 8/29/2012 - Default Paving Description

Acres to be Paved: 1.25

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

1 Paving Equipment (104 hp) operating at a 0.53 load factor for 8 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

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Phase: Building Construction 9/1/2012 - 4/24/2013 - Default Building Construction Description

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 6 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

3 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Architectural Coating 4/27/2013 - 5/22/2013 - Default Architectural Coating Description

Rule: Residential Interior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 100

Rule: Residential Interior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 50

Rule: Residential Exterior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 100

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Winter Pounds Per Day, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 3/26/2012-6/20/2012 Active Days: 63	2.72	22.00	12.46	0.00	5.67	1.08	6.75	1.19	0.99	2.18	2,371.61
Mass Grading 03/24/2012-06/20/2012	2.72	22.00	12.46	0.00	5.67	1.08	6.75	1.19	0.99	2.18	2,371.61
Mass Grading Dust	0.00	0.00	0.00	0.00	5.67	0.00	5.67	1.18	0.00	1.18	0.00
Mass Grading Off Road Diesel	2.69	21.95	11.51	0.00	0.00	1.07	1.07	0.00	0.99	0.99	2,247.32
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.03	0.05	0.95	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.29

Time Slice 6/25/2012-8/1/2012 Active Days: 28	2.72	22.00	12.46	0.00	5.67	1.08	6.75	1.19	0.99	2.18	2,371.61
Fine Grading 06/23/2012-08/01/2012	2.72	22.00	12.46	0.00	5.67	1.08	6.75	1.19	0.99	2.18	2,371.61
Fine Grading Dust	0.00	0.00	0.00	0.00	5.67	0.00	5.67	1.18	0.00	1.18	0.00
Fine Grading Off Road Diesel	2.69	21.95	11.51	0.00	0.00	1.07	1.07	0.00	0.99	0.99	2,247.32
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.03	0.05	0.95	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.29
Time Slice 8/6/2012-8/15/2012 Active Days: 8	1.83	11.07	8.96	0.00	0.01	0.06	0.06	0.00	0.05	0.06	1,838.93
Trenching 08/04/2012-08/15/2012	1.83	11.07	8.96	0.00	0.01	0.06	0.06	0.00	0.05	0.06	1,838.93
Trenching Off Road Diesel	1.80	11.01	8.01	0.00	0.00	0.05	0.05	0.00	0.05	0.05	1,714.64
Trenching Worker Trips	0.03	0.05	0.95	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.29
Time Slice 8/20/2012-8/29/2012 Active Days: 8	2.87	11.75	11.40	0.00	0.02	0.15	0.17	0.01	0.14	0.15	1,731.94
Asphalt 08/18/2012-08/29/2012	2.87	11.75	11.40	0.00	0.02	0.15	0.17	0.01	0.14	0.15	1,731.94
Paving Off-Gas	0.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.34	10.37	8.99	0.00	0.00	0.09	0.09	0.00	0.09	0.09	1,272.04
Paving On Road Diesel	0.11	1.28	0.52	0.00	0.01	0.05	0.06	0.00	0.05	0.05	211.31
Paving Worker Trips	0.06	0.11	1.89	0.00	0.01	0.01	0.02	0.00	0.01	0.01	248.59
Time Slice 9/3/2012-12/31/2012 Active Days: 86	4.43	21.84	**28.85**	**0.04**	0.14	0.56	0.70	0.05	0.51	0.56	**5,236.49**
Building 09/01/2012-04/24/2013	4.43	21.84	28.85	0.04	0.14	0.56	0.70	0.05	0.51	0.56	5,236.49
Building Off Road Diesel	3.14	10.70	10.52	0.00	0.00	0.08	0.08	0.00	0.07	0.07	1,621.20
Building Vendor Trips	0.98	10.54	8.02	0.02	0.08	0.44	0.52	0.03	0.40	0.43	2,258.00
Building Worker Trips	0.31	0.60	10.32	0.01	0.06	0.04	0.10	0.02	0.03	0.05	1,357.30

Time Slice 1/1/2013-4/24/2013 Active Days: 82	4.05	19.94	27.18	**0.04**	0.14	0.49	0.64	0.05	0.45	0.50	5,236.33
Building 09/01/2012-04/24/2013	4.05	19.94	27.18	0.04	0.14	0.49	0.64	0.05	0.45	0.50	5,236.33
Building Off Road Diesel	2.88	10.05	10.20	0.00	0.00	0.07	0.07	0.00	0.06	0.06	1,621.20
Building Vendor Trips	0.89	9.35	7.36	0.02	0.08	0.39	0.47	0.03	0.36	0.38	2,258.01
Building Worker Trips	0.29	0.55	9.61	0.01	0.06	0.04	0.10	0.02	0.03	0.05	1,357.12
Time Slice 4/29/2013-5/22/2013 Active Days: 18	131.96	0.09	1.51	0.00	0.01	0.01	0.02	0.00	0.00	0.01	212.58
Coating 04/27/2013-05/22/2013	131.96	0.09	1.51	0.00	0.01	0.01	0.02	0.00	0.00	0.01	212.58
Architectural Coating	131.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.05	0.09	1.51	0.00	0.01	0.01	0.02	0.00	0.00	0.01	212.58

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 6/23/2012 - 8/1/2012 - Default Fine Site Grading/Excavation Description

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

The following mitigation measures apply to Phase: Mass Grading 3/24/2012 - 6/20/2012 - Default Mass Site Grading/Excavation Description

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

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For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

The following mitigation measures apply to Phase: Trenching 8/4/2012 - 8/15/2012 - Default Trenching Description

For Excavators, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Excavators, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Excavators, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Other General Industrial Equipment, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Other General Industrial Equipment, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Other General Industrial Equipment, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Tractors/Loaders/Backhoes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Paving 8/18/2012 - 8/29/2012 - Default Paving Description

For Cement and Mortar Mixers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Cement and Mortar Mixers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Cement and Mortar Mixers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Pavers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

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For Pavers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Pavers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Paving Equipment, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Paving Equipment, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Paving Equipment, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Rollers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Rollers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Rollers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Tractors/Loaders/Backhoes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Building Construction 9/1/2012 - 4/24/2013 - Default Building Construction Description

For Cranes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Cranes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Cranes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Forklifts, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Forklifts, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Forklifts, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Generator Sets, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Generator Sets, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Generator Sets, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Tractors/Loaders/Backhoes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Welders, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Welders, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Welders, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Architectural Coating 4/27/2013 - 5/22/2013 - Default Architectural Coating Description

For Residential Architectural Coating Measures, the Residential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Residential Architectural Coating Measures, the Residential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Nonresidential Architectural Coating Measures, the Nonresidential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

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For Nonresidential Architectural Coating Measures, the Nonresidential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
General heavy industry	3.34	40.12	17.18	0.06	4.71	1.94	6,299.64
TOTALS (lbs/day, unmitigated)	3.34	40.12	17.18	0.06	4.71	1.94	6,299.64

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2012 Temperature (F): 60 Season: Winter

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
General heavy industry		1.45	1000 sq ft	130.00	188.50	1,838.65
					188.50	1,838.65

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	23.4	0.6	99.2	0.2
Light Truck < 3750 lbs	0.0	1.5	97.0	1.5

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Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Truck 3751-5750 lbs	0.0	0.4	99.6	0.0
Med Truck 5751-8500 lbs	0.0	1.0	99.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	0.0	0.0	86.7	13.3
Lite-Heavy Truck 10,001-14,000 lbs	0.0	0.0	60.0	40.0
Med-Heavy Truck 14,001-33,000 lbs	0.0	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	76.6	0.0	0.0	100.0
Other Bus	0.0	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	100.0
Motorcycle	0.0	60.9	39.1	0.0
School Bus	0.0	0.0	0.0	100.0
Motor Home	0.0	0.0	87.5	12.5

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	12.7	7.0	9.5	13.3	7.4	8.9
Rural Trip Length (miles)	17.6	12.1	14.9	15.4	9.6	12.6
Trip speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
General heavy industry				23.4	11.7	64.9

Operational Changes to Defaults

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Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: Z:\PROJECT\CA Projects\City of Los Angeles Zero Waste Project\AQ Modeling\URBEMIS\Alternative Tech_Thermal\LA SWIRP - Alternative Technology_Thermal.urb924

Project Name: LA SWIRP - Alternative Technology - Thermal

Project Location: Los Angeles County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

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Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2012 TOTALS (tons/year unmitigated)	0.33	2.24	1.89	0.00	1.14	0.12	1.27	0.24	0.11	0.35	347.36
2012 TOTALS (tons/year mitigated)	0.33	2.03	1.89	0.00	0.26	0.07	0.34	0.06	0.07	0.12	347.36
Percent Reduction	0.00	9.35	0.00	0.00	76.89	39.72	73.30	76.60	39.78	64.86	0.00
2013 TOTALS (tons/year unmitigated)	1.49	0.98	1.13	0.00	0.01	0.06	0.06	0.00	0.05	0.05	216.60
2013 TOTALS (tons/year mitigated)	1.35	0.82	1.13	0.00	0.01	0.02	0.03	0.00	0.02	0.02	216.60
Percent Reduction	8.88	16.20	0.00	0.00	0.00	63.47	57.36	0.00	63.69	61.21	0.00

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	0.17	0.15	0.40	0.00	0.00	0.00	176.89

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	0.62	6.85	3.16	0.01	0.86	0.35	1,154.54

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	0.79	7.00	3.56	0.01	0.86	0.35	1,331.43

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Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2012	0.33	2.24	1.89	0.00	1.14	0.12	1.27	0.24	0.11	0.35	347.36
Mass Grading 03/24/2012-06/20/2012	0.09	0.69	0.39	0.00	0.79	0.03	0.82	0.16	0.03	0.20	74.71
Mass Grading Dust	0.00	0.00	0.00	0.00	0.79	0.00	0.79	0.16	0.00	0.16	0.00
Mass Grading Off Road Diesel	0.08	0.69	0.36	0.00	0.00	0.03	0.03	0.00	0.03	0.03	70.79
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.92
Fine Grading 06/23/2012-08/01/2012	0.04	0.31	0.17	0.00	0.35	0.02	0.37	0.07	0.01	0.09	33.20
Fine Grading Dust	0.00	0.00	0.00	0.00	0.35	0.00	0.35	0.07	0.00	0.07	0.00
Fine Grading Off Road Diesel	0.04	0.31	0.16	0.00	0.00	0.02	0.02	0.00	0.01	0.01	31.46
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.74
Trenching 08/04/2012-08/15/2012	0.01	0.06	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.36
Trenching Off Road Diesel	0.01	0.06	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.86
Trenching Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50
Asphalt 08/18/2012-08/29/2012	0.01	0.06	0.05	0.00	0.00	0.01	0.01	0.00	0.00	0.00	6.93
Paving Off-Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.01	0.06	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.09
Paving On Road Diesel	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.85
Paving Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.99

Building 09/01/2012-04/24/2013	0.19	1.12	1.24	0.00	0.01	0.07	0.07	0.00	0.06	0.06	225.17
Building Off Road Diesel	0.13	0.64	0.45	0.00	0.00	0.04	0.04	0.00	0.04	0.04	69.71
Building Vendor Trips	0.04	0.45	0.34	0.00	0.00	0.02	0.02	0.00	0.02	0.02	97.09
Building Worker Trips	0.01	0.03	0.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	58.36
2013	1.49	0.98	1.13	0.00	0.01	0.06	0.06	0.00	0.05	0.05	216.60
Building 09/01/2012-04/24/2013	0.17	0.98	1.11	0.00	0.01	0.06	0.06	0.00	0.05	0.05	214.69
Building Off Road Diesel	0.12	0.57	0.42	0.00	0.00	0.04	0.04	0.00	0.04	0.04	66.47
Building Vendor Trips	0.04	0.38	0.30	0.00	0.00	0.02	0.02	0.00	0.01	0.02	92.58
Building Worker Trips	0.01	0.02	0.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	55.64
Coating 04/27/2013-05/22/2013	1.32	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.91
Architectural Coating	1.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.91

Phase Assumptions

Phase: Fine Grading 6/23/2012 - 8/1/2012 - Default Fine Site Grading/Excavation Description

Total Acres Disturbed: 5

Maximum Daily Acreage Disturbed: 1.25

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 3/24/2012 - 6/20/2012 - Default Mass Site Grading/Excavation Description

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Total Acres Disturbed: 5

Maximum Daily Acreage Disturbed: 1.25

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Trenching 8/4/2012 - 8/15/2012 - Default Trenching Description

Off-Road Equipment:

2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

1 Other General Industrial Equipment (238 hp) operating at a 0.51 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 0 hours per day

Phase: Paving 8/18/2012 - 8/29/2012 - Default Paving Description

Acres to be Paved: 1.25

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

1 Paving Equipment (104 hp) operating at a 0.53 load factor for 8 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Building Construction 9/1/2012 - 4/24/2013 - Default Building Construction Description

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 6 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

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1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

3 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Architectural Coating 4/27/2013 - 5/22/2013 - Default Architectural Coating Description

Rule: Residential Interior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 100

Rule: Residential Interior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 50

Rule: Residential Exterior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 100

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2012	0.33	2.03	1.89	0.00	0.26	0.07	0.34	0.06	0.07	0.12	347.36
Mass Grading 03/24/2012-06/20/2012	0.09	0.69	0.39	0.00	0.18	0.03	0.21	0.04	0.03	0.07	74.71
Mass Grading Dust	0.00	0.00	0.00	0.00	0.18	0.00	0.18	0.04	0.00	0.04	0.00
Mass Grading Off Road Diesel	0.08	0.69	0.36	0.00	0.00	0.03	0.03	0.00	0.03	0.03	70.79
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.92

Fine Grading 06/23/2012-08/01/2012	0.04	0.31	0.17	0.00	0.08	0.02	0.09	0.02	0.01	0.03	33.20
Fine Grading Dust	0.00	0.00	0.00	0.00	0.08	0.00	0.08	0.02	0.00	0.02	0.00
Fine Grading Off Road Diesel	0.04	0.31	0.16	0.00	0.00	0.02	0.02	0.00	0.01	0.01	31.46
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.74
Trenching 08/04/2012-08/15/2012	0.01	0.04	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.36
Trenching Off Road Diesel	0.01	0.04	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.86
Trenching Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50
Asphalt 08/18/2012-08/29/2012	0.01	0.05	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.93
Paving Off-Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.01	0.04	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.09
Paving On Road Diesel	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.85
Paving Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.99
Building 09/01/2012-04/24/2013	0.19	0.94	1.24	0.00	0.01	0.02	0.03	0.00	0.02	0.02	225.17
Building Off Road Diesel	0.13	0.46	0.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	69.71
Building Vendor Trips	0.04	0.45	0.34	0.00	0.00	0.02	0.02	0.00	0.02	0.02	97.09
Building Worker Trips	0.01	0.03	0.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	58.36

2013	1.35	0.82	1.13	0.00	0.01	0.02	0.03	0.00	0.02	0.02	216.60
Building 09/01/2012-04/24/2013	0.17	0.82	1.11	0.00	0.01	0.02	0.03	0.00	0.02	0.02	214.69
Building Off Road Diesel	0.12	0.41	0.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	66.47
Building Vendor Trips	0.04	0.38	0.30	0.00	0.00	0.02	0.02	0.00	0.01	0.02	92.58
Building Worker Trips	0.01	0.02	0.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	55.64
Coating 04/27/2013-05/22/2013	1.19	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.91
Architectural Coating	1.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.91

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 6/23/2012 - 8/1/2012 - Default Fine Site Grading/Excavation Description

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

The following mitigation measures apply to Phase: Mass Grading 3/24/2012 - 6/20/2012 - Default Mass Site Grading/Excavation Description

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

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The following mitigation measures apply to Phase: Trenching 8/4/2012 - 8/15/2012 - Default Trenching Description

For Excavators, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Excavators, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Excavators, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Other General Industrial Equipment, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Other General Industrial Equipment, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Other General Industrial Equipment, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Tractors/Loaders/Backhoes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Paving 8/18/2012 - 8/29/2012 - Default Paving Description

For Cement and Mortar Mixers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Cement and Mortar Mixers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Cement and Mortar Mixers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Pavers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Pavers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Pavers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Paving Equipment, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Paving Equipment, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Paving Equipment, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Rollers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Rollers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Rollers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Tractors/Loaders/Backhoes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Building Construction 9/1/2012 - 4/24/2013 - Default Building Construction Description

For Cranes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Cranes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Cranes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Forklifts, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Forklifts, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Forklifts, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Generator Sets, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Generator Sets, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Generator Sets, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Tractors/Loaders/Backhoes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Welders, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Welders, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Welders, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Architectural Coating 4/27/2013 - 5/22/2013 - Default Architectural Coating Description

For Residential Architectural Coating Measures, the Residential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Residential Architectural Coating Measures, the Residential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Nonresidential Architectural Coating Measures, the Nonresidential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Nonresidential Architectural Coating Measures, the Nonresidential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
General heavy industry	0.62	6.85	3.16	0.01	0.86	0.35	1,154.54
TOTALS (tons/year, unmitigated)	0.62	6.85	3.16	0.01	0.86	0.35	1,154.54

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2012 Season: Annual

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
General heavy industry		1.45	1000 sq ft	130.00	188.50	1,838.65
					188.50	1,838.65

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	23.4	0.6	99.2	0.2
Light Truck < 3750 lbs	0.0	1.5	97.0	1.5
Light Truck 3751-5750 lbs	0.0	0.4	99.6	0.0
Med Truck 5751-8500 lbs	0.0	1.0	99.0	0.0

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Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Lite-Heavy Truck 8501-10,000 lbs	0.0	0.0	86.7	13.3
Lite-Heavy Truck 10,001-14,000 lbs	0.0	0.0	60.0	40.0
Med-Heavy Truck 14,001-33,000 lbs	0.0	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	76.6	0.0	0.0	100.0
Other Bus	0.0	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	100.0
Motorcycle	0.0	60.9	39.1	0.0
School Bus	0.0	0.0	0.0	100.0
Motor Home	0.0	0.0	87.5	12.5

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	12.7	7.0	9.5	13.3	7.4	8.9
Rural Trip Length (miles)	17.6	12.1	14.9	15.4	9.6	12.6
Trip speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
General heavy industry				23.4	11.7	64.9

Operational Changes to Defaults

APPENDIX D

FEDERAL AND STATE LISTED SPECIES DOCUMENTED IN THE PROJECT AREA

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FEDERALLY AND STATE-LISTED SPECIES DOCUMENTED WITHIN THE NINE COUNTIES THAT ENCOMPASS THE PROJECT STUDY AREA

KERN COUNTY

	Scientific Name/Common Name	Element Code	Federal Status	State Status	GRank	SRank	CDFG or CNPS
1	***Ambystoma californiense*** California tiger salamander	AAAAA01180	Threatened	Threatened	G2G3	S2S3	SC
2	***Ammospermophilus nelsoni*** Nelson's antelope squirrel	AMAFB04040		Threatened	G2	S2	
3	***Atriplex tularensis*** Bakersfield smallscale	PDCHE04240		Endangered	G1Q	S1.1	1B.1
4	***Batrachoseps simatus*** Kern Canyon slender salamander	AAAAD02080		Threatened	G2	S2	
5	***Batrachoseps stebbinsi*** Tehachapi slender salamander	AAAAD02090		Threatened	G2	S2	
6	***Buteo swainsoni*** Swainson's hawk	ABNKC19070		Threatened	G5	S2	
7	***Caulanthus californicus*** California jewel-flower	PDBRA31010	Endangered	Endangered	G1	S1.1	1B.1
8	***Charadrius alexandrinus nivosus*** western snowy plover	ABNNB03031	Threatened		G4T3	S2	SC
9	***Coccyzus americanus occidentalis*** western yellow-billed cuckoo	ABNRB02022	Candidate	Endangered	G5T3Q	S1	
10	***Deinandra arida*** Red Rock tarplant	PDAST4R010		Rare	G1	S1.2	1B.2
11	***Deinandra mohavensis*** Mojave tarplant	PDAST4R0K0		Endangered	G3	S3	1B.3
12	***Desmocerus californicus dimorphus*** valley elderberry longhorn beetle	IICOL48011	Threatened		G3T2	S2	
13	***Dipodomys ingens*** giant kangaroo rat	AMAFD03080	Endangered	Endangered	G2	S2	
14	***Dipodomys nitratoides nitratoides*** Tipton kangaroo rat	AMAFD03152	Endangered	Endangered	G3T1	S1	
15	***Empidonax traillii extimus*** southwestern willow flycatcher	ABPAE33043	Endangered	Endangered	G5T1T2	S1	
16	***Eremalche kernensis*** Kern mallow	PDMAL0C031	Endangered		G3?T1Q	S1.1	1B.1
17	***Eriastrum tracyi*** Tracy's eriastrum	PDPLM030C0		Rare	G1Q	S1.1	1B.2
18	***Euproserpinus euterpe*** Kern primrose sphinx moth	IILEX14020	Threatened		G1	S1	
19	***Fritillaria striata*** striped adobe-lily	PMLIL0V0K0		Threatened	G2	S2.1	1B.1
20	***Gambelia sila*** blunt-nosed leopard lizard	ARACF07010	Endangered	Endangered	G1	S1	
21	***Gila bicolor mohavensis*** Mohave tui chub	AFCJB1303H	Endangered	Endangered	G4T1	S1	
22	***Gopherus agassizii*** desert tortoise	ARAAF01010	Threatened	Threatened	G4	S2	
23	***Gulo gulo*** California wolverine	AMAJF03010		Threatened	G4	S2	

	Scientific Name/Common Name	Element Code	Federal Status	State Status	GRank	SRank	CDFG or CNPS
24	***Gymnogyps californianus*** California condor	ABNKA03010	Endangered	Endangered	G1	S1	
25	***Haliaeetus leucocephalus*** bald eagle	ABNKC10010	Delisted	Endangered	G5	S2	
26	***Monolopia congdonii*** San Joaquin woollythreads	PDASTA8010	Endangered		G3	S3.2	1B.2
27	***Nemacladus twisselmannii*** Twisselmann's nemacladus	PDCAM0F0D0		Rare	G1	S1.2	1B.2
28	***Opuntia basilaris var. treleasei*** Bakersfield cactus	PDCAC0D055	Endangered	Endangered	G5T2	S2.1	1B.1
29	***Pseudobahia peirsonii*** San Joaquin adobe sunburst	PDAST7P030	Threatened	Endangered	G2	S2.1	1B.1
30	***Sorex ornatus relictus*** Buena Vista Lake shrew	AMABA01102	Endangered		G5T1	S1	SC
31	***Thamnophis gigas*** giant garter snake	ARADB36150	Threatened	Threatened	G2G3	S2S3	
32	***Vireo bellii pusillus*** least Bell's vireo	ABPBW01114	Endangered	Endangered	G5T2	S2	
33	***Vulpes macrotis mutica*** San Joaquin kit fox	AMAJA03041	Endangered	Threatened	G4T2T3	S2S3	
34	***Xerospermophilus mohavensis*** Mohave ground squirrel	AMAFB05150		Threatened	G2G3	S2S3	

FEDERALLY AND STATE-LISTED SPECIES
DOCUMENTED WITHIN THE NINE COUNTIES
THAT ENCOMPASS THE PROJECT STUDY AREA

LOS ANGELES COUNTY

	Scientific Name/Common Name	Element Code	Federal Status	State Status	GRank	SRank	CDFG or CNPS
1	***Acmispon argophyllus var. adsurgens*** San Clemente Island bird's-foot trefoil	PDFAB2A041		Endangered	G5T1	S1.1	1B.1
2	***Acmispon dendroideus var. traskiae*** San Clemente Island lotus	PDFAB2A1G2	Endangered	Endangered	G4T2	S2.1	1B.1
3	***Ammospermophilus nelsoni*** Nelson's antelope squirrel	AMAFB04040		Threatened	G2	S2	
4	***Amphispiza belli clementeae*** San Clemente sage sparrow	ABPBX97024	Threatened		G5T1Q	S1	SC
5	***Anaxyrus californicus*** arroyo toad	AAABB01230	Endangered		G2G3	S2S3	SC
6	***Arenaria paludicola*** marsh sandwort	PDCAR040L0	Endangered	Endangered	G1	S1	1B.1
7	***Astragalus brauntonii*** Braunton's milk-vetch	PDFAB0F1G0	Endangered		G2	S2.1	1B.1
8	***Astragalus pycnostachyus var. lanosissimus*** Ventura Marsh milk-vetch	PDFAB0F7B1	Endangered	Endangered	G2T1	S1	1B.1
9	***Astragalus tener var. titi*** coastal dunes milk-vetch	PDFAB0F8R2	Endangered	Endangered	G1T1	S1.1	1B.1
10	***Berberis nevinii*** Nevin's barberry	PDBER060A0	Endangered	Endangered	G2	S2.2	1B.1
11	***Brodiaea filifolia*** thread-leaved brodiaea	PMLIL0C050	Threatened	Endangered	G2	S2.1	1B.1
12	***Buteo swainsoni*** Swainson's hawk	ABNKC19070		Threatened	G5	S2	
13	***Castilleja gleasonii*** Mt. Gleason paintbrush	PDSCR0D140		Rare	G2Q	S2.2	1B.2
14	***Castilleja grisea*** San Clemente Island paintbrush	PDSCR0D160	Endangered	Endangered	G3	S3	1B.2
15	***Catostomus santaanae*** Santa Ana sucker	AFCJC02190	Threatened		G1	S1	SC
16	***Cercocarpus traskiae*** Catalina Island mountain-mahogany	PDROS08030	Endangered	Endangered	G1	S1.1	1B.1
17	***Charadrius alexandrinus nivosus*** western snowy plover	ABNNB03031	Threatened		G4T3	S2	SC
18	***Chorizanthe parryi var. fernandina*** San Fernando Valley spineflower	PDPGN040J1	Candidate	Endangered	G2T1	S1.1	1B.1
19	***Coccyzus americanus occidentalis*** western yellow-billed cuckoo	ABNRB02022	Candidate	Endangered	G5T3Q	S1	
20	***Cordylanthus maritimus ssp. maritimus*** salt marsh bird's-beak	PDSCR0J0C2	Endangered	Endangered	G4?T2	S2.1	1B.2
21	***Deinandra minthornii*** Santa Susana tarplant	PDAST4R0J0		Rare	G2	S2.2	1B.2
22	***Delphinium variegatum ssp. kinkiense*** San Clemente Island larkspur	PDRAN0B1X3	Endangered	Endangered	G4T1	S1.1	1B.1
23	***Dipodomys merriami parvus*** San Bernardino kangaroo rat	AMAFD03143	Endangered		G5T1	S1	SC

	Scientific Name/Common Name	Element Code	Federal Status	State Status	GRank	SRank	CDFG or CNPS
24	***Dithyrea maritima*** beach spectaclepod	PDBRA10020		Threatened	G2	S2.1	1B.1
25	***Dodecahema leptoceras*** slender-horned spineflower	PDPGN0V010	Endangered	Endangered	G1	S1	1B.1
26	***Dudleya cymosa ssp. agourensis*** Agoura Hills dudleya	PDCRA040A7	Threatened		G5T1	S1.2	1B.2
27	***Dudleya cymosa ssp. marcescens*** marcescent dudleya	PDCRA040A3	Threatened	Rare	G5T2	S2.2	1B.2
28	***Dudleya cymosa ssp. ovatifolia*** Santa Monica dudleya	PDCRA040A5	Threatened		G5T2	S2.2	1B.2
29	***Empidonax traillii extimus*** southwestern willow flycatcher	ABPAE33043	Endangered	Endangered	G5T1T2	S1	
30	***Eucyclogobius newberryi*** tidewater goby	AFCQN04010	Endangered		G3	S2S3	SC
31	***Euphilotes battoides allyni*** El Segundo blue butterfly	IILEPG201B	Endangered		G5T1	S1	
32	***Galium catalinense ssp. acrispum*** San Clemente Island bedstraw	PDRUB0N0F1		Endangered	G4T2	S2.2	1B.2
33	***Gasterosteus aculeatus williamsoni*** unarmored threespine stickleback	AFCPA03011	Endangered	Endangered	G5T1	S1	
34	***Gila bicolor mohavensis*** Mohave tui chub	AFCJB1303H	Endangered	Endangered	G4T1	S1	
35	***Glaucopsyche lygdamus palosverdesensis*** Palos Verdes blue butterfly	IILEPG402A	Endangered		G5T1	S1	
36	***Gopherus agassizii*** desert tortoise	ARAAF01010	Threatened	Threatened	G4	S2	
37	***Gymnogyps californianus*** California condor	ABNKA03010	Endangered	Endangered	G1	S1	
38	***Haliaeetus leucocephalus*** bald eagle	ABNKC10010	Delisted	Endangered	G5	S2	
39	***Helianthemum greenei*** island rush-rose	PDCIS02090	Threatened		G2	S2.2	1B.2
40	***Lanius ludovicianus mearnsi*** San Clemente loggerhead shrike	ABPBR01036	Endangered		G4T1Q	S1	SC
41	***Laterallus jamaicensis coturniculus*** California black rail	ABNME03041		Threatened	G4T1	S1	
42	***Lithophragma maximum*** San Clemente Island woodland star	PDSAX0M070	Endangered	Endangered	G1	S1.1	1B.1
43	***Malacothamnus clementinus*** San Clemente Island bush-mallow	PDMAL0Q030	Endangered	Endangered	G1G3	S1S3.2	1B.1
44	***Nasturtium gambelii*** Gambel's water cress	PDBRA270V0	Endangered	Threatened	G1	S1	1B.1
45	***Navarretia fossalis*** Moran's nosegay	PDPLM0C080	Threatened		G1	S1	1B.1
46	***Oncorhynchus mykiss irideus*** southern steelhead - southern California DPS	AFCHA0209J	Endangered		G5T2Q	S2	SC

	Scientific Name/Common Name	Element Code	Federal Status	State Status	GRank	SRank	CDFG or CNPS
47	***Orcuttia californica*** California Orcutt grass	PMPOA4G010	Endangered	Endangered	G2	S2.1	1B.1
48	***Passerculus sandwichensis beldingi*** Belding's savannah sparrow	ABPBX99015		Endangered	G5T3	S3	
49	***Pentachaeta lyonii*** Lyon's pentachaeta	PDAST6X060	Endangered	Endangered	G2	S2	1B.1
50	***Perognathus longimembris pacificus*** Pacific pocket mouse	AMAFD01042	Endangered		G5T1	S1	SC
51	***Polioptila californica californica*** coastal California gnatcatcher	ABPBJ08081	Threatened		G3T2	S2	SC
52	***Rana draytonii*** California red-legged frog	AAABH01022	Threatened		G4T2T3	S2S3	SC
53	***Rana muscosa*** Sierra Madre yellow-legged frog	AAABH01330	Endangered		G1	S1	SC
54	***Sibara filifolia*** Santa Cruz Island rock cress	PDBRA2A020	Endangered		G1	S1.1	1B.1
55	***Sternula antillarum browni*** California least tern	ABNNM08103	Endangered	Endangered	G4T2T3Q	S2S3	
56	***Synthliboramphus hypoleucus*** Xantus' murrelet	ABNNN07010	Candidate	Threatened	G3G4	S3	
57	***Urocyon littoralis catalinae*** Santa Catalina Island fox	AMAJA04022	Endangered	Threatened	G1T1	S1	
58	***Urocyon littoralis clementae*** San Clemente Island fox	AMAJA04023		Threatened	G1T1	S1	
59	***Vireo bellii pusillus*** least Bell's vireo	ABPBW01114	Endangered	Endangered	G5T2	S2	
60	***Xantusia riversiana*** island night lizard	ARACK01020	Threatened		G1	S1	
61	***Xerospermophilus mohavensis*** Mohave ground squirrel	AMAFB05150		Threatened	G2G3	S2S3	

FEDERALLY AND STATE-LISTED SPECIES
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ORANGE COUNTY

	Scientific Name/Common Name	Element Code	Federal Status	State Status	GRank	SRank	CDFG or CNPS
1	***Anaxyrus californicus*** arroyo toad	AAABB01230	Endangered		G2G3	S2S3	SC
2	***Astragalus brauntonii*** Braunton's milk-vetch	PDFAB0F1G0	Endangered		G2	S2.1	1B.1
3	***Astragalus pycnostachyus var. lanosissimus*** Ventura Marsh milk-vetch	PDFAB0F7B1	Endangered	Endangered	G2T1	S1	1B.1
4	***Branchinecta sandiegonensis*** San Diego fairy shrimp	ICBRA03060	Endangered		G1	S1	
5	***Brodiaea filifolia*** thread-leaved brodiaea	PMLIL0C050	Threatened	Endangered	G2	S2.1	1B.1
6	***Catostomus santaanae*** Santa Ana sucker	AFCJC02190	Threatened		G1	S1	SC
7	***Charadrius alexandrinus nivosus*** western snowy plover	ABNNB03031	Threatened		G4T3	S2	SC
8	***Chorizanthe parryi var. fernandina*** San Fernando Valley spineflower	PDPGN040J1	Candidate	Endangered	G2T1	S1.1	1B.1
9	***Cordylanthus maritimus ssp. maritimus*** salt marsh bird's-beak	PDSCR0J0C2	Endangered	Endangered	G4?T2	S2.1	1B.2
10	***Dodecahema leptoceras*** slender-horned spineflower	PDPGN0V010	Endangered	Endangered	G1	S1	1B.1
11	***Dudleya cymosa ssp. ovatifolia*** Santa Monica dudleya	PDCRA040A5	Threatened		G5T2	S2.2	1B.2
12	***Dudleya stolonifera*** Laguna Beach dudleya	PDCRA040P0	Threatened	Threatened	G1	S1.1	1B.1
13	***Empidonax traillii extimus*** southwestern willow flycatcher	ABPAE33043	Endangered	Endangered	G5T1T2	S1	
14	***Eriastrum densifolium ssp. sanctorum*** Santa Ana River woollystar	PDPLM03035	Endangered	Endangered	G4T1	S1	1B.1
15	***Eucyclogobius newberryi*** tidewater goby	AFCQN04010	Endangered		G3	S2S3	SC
16	***Laterallus jamaicensis coturniculus*** California black rail	ABNME03041		Threatened	G4T1	S1	
17	***Nasturtium gambelii*** Gambel's water cress	PDBRA270V0	Endangered	Threatened	G1	S1	1B.1
18	***Passerculus sandwichensis beldingi*** Belding's savannah sparrow	ABPBX99015		Endangered	G5T3	S3	
19	***Perognathus longimembris pacificus*** Pacific pocket mouse	AMAFD01042	Endangered		G5T1	S1	SC
20	***Polioptila californica californica*** coastal California gnatcatcher	ABPBJ08081	Threatened		G3T2	S2	SC
21	***Rallus longirostris levipes*** light-footed clapper rail	ABNME05014	Endangered	Endangered	G5T1T2	S1	
22	***Sternula antillarum browni*** California least tern	ABNNM08103	Endangered	Endangered	G4T2T3Q	S2S3	
23	***Streptocephalus woottoni*** Riverside fairy shrimp	ICBRA07010	Endangered		G1	S1	

	Scientific Name/Common Name	Element Code	Federal Status	State Status	GRank	SRank	CDFG or CNPS
24	***Verbesina dissita*** big-leaved crownbeard	PDAST9R050	Threatened	Threatened	G2G3	S1.1	1B.1
25	***Vireo bellii pusillus*** least Bell's vireo	ABPBW01114	Endangered	Endangered	G5T2	S2	

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RIVERSIDE COUNTY

	Scientific Name/Common Name	Element Code	Federal Status	State Status	GRank	SRank	CDFG or CNPS
1	***Allium munzii*** Munz's onion	PMLIL022Z0	Endangered	Threatened	G1	S1	1B.1
2	***Ambrosia pumila*** San Diego ambrosia	PDAST0C0M0	Endangered		G1	S1.1	1B.1
3	***Ambystoma californiense*** California tiger salamander	AAAAA01180	Threatened	Threatened	G2G3	S2S3	SC
4	***Anaxyrus californicus*** arroyo toad	AAABB01230	Endangered		G2G3	S2S3	SC
5	***Arenaria paludicola*** marsh sandwort	PDCAR040L0	Endangered	Endangered	G1	S1	1B.1
6	***Astragalus lentiginosus var. coachellae*** Coachella Valley milk-vetch	PDFAB0FB97	Endangered		G5T2	S2	1B.2
7	***Astragalus tricarinatus*** triple-ribbed milk-vetch	PDFAB0F920	Endangered		G1	S1.2	1B.2
8	***Atriplex coronata var. notatior*** San Jacinto Valley crownscale	PDCHE040C2	Endangered		G4T1	S1.1	1B.1
9	***Batrachoseps major aridus*** desert slender salamander	AAAAD02042	Endangered	Endangered	G4T1	S1	
10	***Berberis nevinii*** Nevin's barberry	PDBER060A0	Endangered	Endangered	G2	S2.2	1B.1
11	***Branchinecta lynchi*** vernal pool fairy shrimp	ICBRA03030	Threatened		G3	S2S3	
12	***Brodiaea filifolia*** thread-leaved brodiaea	PMLIL0C050	Threatened	Endangered	G2	S2.1	1B.1
13	***Catostomus santaanae*** Santa Ana sucker	AFCJC02190	Threatened		G1	S1	SC
14	***Ceanothus ophiochilus*** Vail Lake ceanothus	PDRHA041M0	Threatened	Endangered	G1	S1.1	1B.1
15	***Charadrius alexandrinus nivosus*** western snowy plover	ABNNB03031	Threatened		G4T3	S2	SC
16	***Charina umbratica*** southern rubber boa	ARADA01011		Threatened	G5T2T3	S2S3	
17	***Coccyzus americanus occidentalis*** western yellow-billed cuckoo	ABNRB02022	Candidate	Endangered	G5T3Q	S1	
18	***Colaptes chrysoides*** gilded flicker	ABNYF10040		Endangered	G5	S1	
19	***Cordylanthus maritimus ssp. maritimus*** salt marsh bird's-beak	PDSCR0J0C2	Endangered	Endangered	G4?T2	S2.1	1B.2
20	***Cyprinodon macularius*** desert pupfish	AFCNB02060	Endangered	Endangered	G1	S1	
21	***Deinandra mohavensis*** Mojave tarplant	PDAST4R0K0		Endangered	G3	S3	1B.3
22	***Delphinium hesperium ssp. cuyamacae*** Cuyamaca larkspur	PDRAN0B0U1		Rare	G4T2	S2.1	1B.2
23	***Dipodomys merriami parvus*** San Bernardino kangaroo rat	AMAFD03143	Endangered		G5T1	S1	SC

	Scientific Name/Common Name	Element Code	Federal Status	State Status	GRank	SRank	CDFG or CNPS
24	***Dipodomys stephensi*** Stephens' kangaroo rat	AMAFD03100	Endangered	Threatened	G2	S2	
25	***Dodecahema leptoceras*** slender-horned spineflower	PDPGN0V010	Endangered	Endangered	G1	S1	1B.1
26	***Empidonax traillii extimus*** southwestern willow flycatcher	ABPAE33043	Endangered	Endangered	G5T1T2	S1	
27	***Eriastrum densifolium ssp. sanctorum*** Santa Ana River woollystar	PDPLM03035	Endangered	Endangered	G4T1	S1	1B.1
28	***Eryngium aristulatum var. parishii*** San Diego button-celery	PDAPI0Z042	Endangered	Endangered	G5T2	S2.1	1B.1
29	***Euphydryas editha quino*** quino checkerspot butterfly	IILEPK405L	Endangered		G5T1	S1	
30	***Gopherus agassizii*** desert tortoise	ARAAF01010	Threatened	Threatened	G4	S2	
31	***Haliaeetus leucocephalus*** bald eagle	ABNKC10010	Delisted	Endangered	G5	S2	
32	***Ivesia callida*** Tahquitz ivesia	PDROS0X040		Rare	G1	S1.3	1B.3
33	***Limnanthes gracilis ssp. parishii*** Parish's meadowfoam	PDLIM02052		Endangered	G3T2	S2.2	1B.2
34	***Melanerpes uropygialis*** Gila woodpecker	ABNYF04150		Endangered	G5	S1S2	
35	***Micrathene whitneyi*** elf owl	ABNSB09010		Endangered	G5	S1	
36	***Navarretia fossalis*** Moran's nosegay	PDPLM0C080	Threatened		G1	S1	1B.1
37	***Oncorhynchus mykiss irideus*** southern steelhead - southern California DPS	AFCHA0209J	Endangered		G5T2Q	S2	SC
38	***Orcuttia californica*** California Orcutt grass	PMPOA4G010	Endangered	Endangered	G2	S2.1	1B.1
39	***Ovis canadensis nelsoni DPS*** peninsular bighorn sheep	AMALE04012	Endangered	Threatened	G4T3Q	S1	
40	***Packera ganderi*** Gander's ragwort	PDAST8H1F0		Rare	G2	S2.2	1B.2
41	***Polioptila californica californica*** coastal California gnatcatcher	ABPBJ08081	Threatened		G3T2	S2	SC
42	***Rallus longirostris yumanensis*** Yuma clapper rail	ABNME0501A	Endangered	Threatened	G5T3	S1	
43	***Rana draytonii*** California red-legged frog	AAABH01022	Threatened		G4T2T3	S2S3	SC
44	***Rana muscosa*** Sierra Madre yellow-legged frog	AAABH01330	Endangered		G1	S1	SC
45	***Rhaphiomidas terminatus abdominalis*** Delhi Sands flower-loving fly	IIDIP05021	Endangered		G1T1	S1	
46	***Streptocephalus woottoni*** Riverside fairy shrimp	ICBRA07010	Endangered		G1	S1	

	Scientific Name/Common Name	Element Code	Federal Status	State Status	GRank	SRank	CDFG or CNPS
47	***Trichostema austromontanum ssp. compactum*** Hidden Lake bluecurls	PDLAM22022	Threatened		G3G4T1	S1.1	1B.1
48	***Uma inornata*** Coachella Valley fringe-toed lizard	ARACF15010	Threatened	Endangered	G1Q	S1	
49	***Vireo bellii arizonae*** Arizona bell's vireo	ABPBW01111		Endangered	G5T4	S1	
50	***Vireo bellii pusillus*** least Bell's vireo	ABPBW01114	Endangered	Endangered	G5T2	S2	
51	***Xyrauchen texanus*** razorback sucker	AFCJC11010	Endangered	Endangered	G1	S1	

FEDERALLY AND STATE-LISTED SPECIES
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SAN BERNARDINO COUNTY

	Scientific Name/Common Name	Element Code	Federal Status	State Status	GRank	SRank	CDFG or CNPS
1	***Acanthoscyphus parishii var. goodmaniana*** Cushenbury oxytheca	PDPGN0J043	Endangered		G4?T1	S1.1	1B.1
2	***Anaxyrus californicus*** arroyo toad	AAABB01230	Endangered		G2G3	S2S3	SC
3	***Arenaria paludicola*** marsh sandwort	PDCAR040L0	Endangered	Endangered	G1	S1	1B.1
4	***Astragalus albens*** Cushenbury milk-vetch	PDFAB0F0A0	Endangered		G1	S1.1	1B.1
5	***Astragalus jaegerianus*** Lane Mountain milk-vetch	PDFAB0F4F0	Endangered		G1	S1.1	1B.1
6	***Astragalus tricarinatus*** triple-ribbed milk-vetch	PDFAB0F920	Endangered		G1	S1.2	1B.2
7	***Berberis nevinii*** Nevin's barberry	PDBER060A0	Endangered	Endangered	G2	S2.2	1B.1
8	***Brodiaea filifolia*** thread-leaved brodiaea	PMLIL0C050	Threatened	Endangered	G2	S2.1	1B.1
9	***Buteo swainsoni*** Swainson's hawk	ABNKC19070		Threatened	G5	S2	
10	***Castilleja cinerea*** ash-gray paintbrush	PDSCR0D0H0	Threatened		G2	S2.2	1B.2
11	***Catostomus santaanae*** Santa Ana sucker	AFCJC02190	Threatened		G1	S1	SC
12	***Charadrius alexandrinus nivosus*** western snowy plover	ABNNB03031	Threatened		G4T3	S2	SC
13	***Charina umbratica*** southern rubber boa	ARADA01011		Threatened	G5T2T3	S2S3	
14	***Coccyzus americanus occidentalis*** western yellow-billed cuckoo	ABNRB02022	Candidate	Endangered	G5T3Q	S1	
15	***Cordylanthus maritimus ssp. maritimus*** salt marsh bird's-beak	PDSCR0J0C2	Endangered	Endangered	G4?T2	S2.1	1B.2
16	***Deinandra mohavensis*** Mojave tarplant	PDAST4R0K0		Endangered	G3	S3	1B.3
17	***Dipodomys merriami parvus*** San Bernardino kangaroo rat	AMAFD03143	Endangered		G5T1	S1	SC
18	***Dipodomys stephensi*** Stephens' kangaroo rat	AMAFD03100	Endangered	Threatened	G2	S2	
19	***Dodecahema leptoceras*** slender-horned spineflower	PDPGN0V010	Endangered	Endangered	G1	S1	1B.1
20	***Empidonax traillii extimus*** southwestern willow flycatcher	ABPAE33043	Endangered	Endangered	G5T1T2	S1	
21	***Eremogone ursina*** Big Bear Valley sandwort	PDCAR040R0	Threatened		G2	S2.1	1B.2
22	***Eriastrum densifolium ssp. sanctorum*** Santa Ana River woollystar	PDPLM03035	Endangered	Endangered	G4T1	S1	1B.1
23	***Erigeron parishii*** Parish's daisy	PDAST3M310	Threatened		G2	S2	1B.1

	Scientific Name/Common Name	Element Code	Federal Status	State Status	GRank	SRank	CDFG or CNPS
24	***Eriogonum kennedyi var. austromontanum*** southern mountain buckwheat	PDPGN083B2	Threatened		G4T2	S2.2	1B.2
25	***Eriogonum ovalifolium var. vineum*** Cushenbury buckwheat	PDPGN084F8	Endangered		G5T1	S1.1	1B.1
26	***Eriogonum thornei*** Thorne's buckwheat	PDPGN08233		Endangered	G1	S1.1	1B.2
27	***Gasterosteus aculeatus williamsoni*** unarmored threespine stickleback	AFCPA03011	Endangered	Endangered	G5T1	S1	
28	***Gila bicolor mohavensis*** Mohave tui chub	AFCJB1303H	Endangered	Endangered	G4T1	S1	
29	***Gila elegans*** bonytail	AFCJB13100	Endangered	Endangered	G1	S1	
30	***Gopherus agassizii*** desert tortoise	ARAAF01010	Threatened	Threatened	G4	S2	
31	***Haliaeetus leucocephalus*** bald eagle	ABNKC10010	Delisted	Endangered	G5	S2	
32	***Laterallus jamaicensis coturniculus*** California black rail	ABNME03041		Threatened	G4T1	S1	
33	***Melanerpes uropygialis*** Gila woodpecker	ABNYF04150		Endangered	G5	S1S2	
34	***Micrathene whitneyi*** elf owl	ABNSB09010		Endangered	G5	S1	
35	***Nasturtium gambelii*** Gambel's water cress	PDBRA270V0	Endangered	Threatened	G1	S1	1B.1
36	***Physaria kingii ssp. bernardina*** San Bernardino Mountains bladderpod	PDBRA1N0W1	Endangered		G5T1	S1	1B.1
37	***Poa atropurpurea*** San Bernardino blue grass	PMPOA4Z0A0	Endangered		G2	S2.2	1B.2
38	***Polioptila californica californica*** coastal California gnatcatcher	ABPBJ08081	Threatened		G3T2	S2	SC
39	***Ptychocheilus lucius*** Colorado pikeminnow	AFCJB35020	Endangered	Endangered	G1	SX	
40	***Rallus longirostris yumanensis*** Yuma clapper rail	ABNME0501A	Endangered	Threatened	G5T3	S1	
41	***Rana draytonii*** California red-legged frog	AAABH01022	Threatened		G4T2T3	S2S3	SC
42	***Rana muscosa*** Sierra Madre yellow-legged frog	AAABH01330	Endangered		G1	S1	SC
43	***Rhaphiomidas terminatus abdominalis*** Delhi Sands flower-loving fly	IIDIP05021	Endangered		G1T1	S1	
44	***Sidalcea hickmanii ssp. parishii*** Parish's checkerbloom	PDMAL110A3		Rare	G3T1	S1.2	1B.2
45	***Sidalcea pedata*** bird-foot checkerbloom	PDMAL110L0	Endangered	Endangered	G1	S1.1	1B.1
46	***Taraxacum californicum*** California dandelion	PDAST93050	Endangered		G2	S2.1	1B.1

	Scientific Name/Common Name	Element Code	Federal Status	State Status	GRank	SRank	CDFG or CNPS
47	***Thelypodium stenopetalum*** slender-petaled thelypodium	PDBRA2N0F0	Endangered	Endangered	G1	S1.1	1B.1
48	***Vireo bellii arizonae*** Arizona bell's vireo	ABPBW01111		Endangered	G5T4	S1	
49	***Vireo bellii pusillus*** least Bell's vireo	ABPBW01114	Endangered	Endangered	G5T2	S2	
50	***Xerospermophilus mohavensis*** Mohave ground squirrel	AMAFB05150		Threatened	G2G3	S2S3	
51	***Xyrauchen texanus*** razorback sucker	AFCJC11010	Endangered	Endangered	G1	S1	

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SAN DIEGO COUNTY

	Scientific Name/Common Name	Element Code	Federal Status	State Status	GRank	SRank	CDFG or CNPS
1	***Acanthomintha ilicifolia*** San Diego thorn-mint	PDLAM01010	Threatened	Endangered	G2	S2	1B.1
2	***Ambrosia pumila*** San Diego ambrosia	PDAST0C0M0	Endangered		G1	S1.1	1B.1
3	***Anaxyrus californicus*** arroyo toad	AAABB01230	Endangered		G2G3	S2S3	SC
4	***Arctostaphylos glandulosa ssp. crassifolia*** Del Mar manzanita	PDERI040E8	Endangered		G5T1	S1.1	1B.1
5	***Astragalus magdalenae var. peirsonii*** Peirson's milk-vetch	PDFAB0F532	Threatened	Endangered	G3G4T2	S2.2	1B.2
6	***Astragalus tener var. titi*** coastal dunes milk-vetch	PDFAB0F8R2	Endangered	Endangered	G1T1	S1.1	1B.1
7	***Baccharis vanessae*** Encinitas baccharis	PDAST0W0P0	Threatened	Endangered	G1	S1.1	1B.1
8	***Berberis nevinii*** Nevin's barberry	PDBER060A0	Endangered	Endangered	G2	S2.2	1B.1
9	***Branchinecta sandiegonensis*** San Diego fairy shrimp	ICBRA03060	Endangered		G1	S1	
10	***Brodiaea filifolia*** thread-leaved brodiaea	PMLIL0C050	Threatened	Endangered	G2	S2.1	1B.1
11	***Calochortus dunnii*** Dunn's mariposa-lily	PMLIL0D0C0		Rare	G2	S2.1	1B.2
12	***Charadrius alexandrinus nivosus*** western snowy plover	ABNNB03031	Threatened		G4T3	S2	SC
13	***Chorizanthe orcuttiana*** Orcutt's spineflower	PDPGN040G0	Endangered	Endangered	G1	S1.1	1B.1
14	***Coccyzus americanus occidentalis*** western yellow-billed cuckoo	ABNRB02022	Candidate	Endangered	G5T3Q	S1	
15	***Coleonyx switaki*** barefoot gecko	ARACD01040		Threatened	G4	S1	
16	***Cordylanthus maritimus ssp. maritimus*** salt marsh bird's-beak	PDSCR0J0C2	Endangered	Endangered	G4?T2	S2.1	1B.2
17	***Cyprinodon macularius*** desert pupfish	AFCNB02060	Endangered	Endangered	G1	S1	
18	***Deinandra conjugens*** Otay tarplant	PDAST4R070	Threatened	Endangered	G1	S1.1	1B.1
19	***Deinandra mohavensis*** Mojave tarplant	PDAST4R0K0		Endangered	G3	S3	1B.3
20	***Delphinium hesperium ssp. cuyamacae*** Cuyamaca larkspur	PDRAN0B0U1		Rare	G4T2	S2.1	1B.2
21	***Dieteria asteroides var. lagunensis*** Mount Laguna aster	PDAST64131		Rare	G5T2T3Q	S1.1	2.1
22	***Dipodomys stephensi*** Stephens' kangaroo rat	AMAFD03100	Endangered	Threatened	G2	S2	
23	***Downingia concolor var. brevior*** Cuyamaca Lake downingia	PDCAM06041		Endangered	G4T1	S1.1	1B.1

	Scientific Name/Common Name	Element Code	Federal Status	State Status	GRank	SRank	CDFG or CNPS
24	***Dudleya brevifolia*** short-leaved dudleya	PDCRA04053		Endangered	G2T1	S1.1	1B.1
25	***Empidonax traillii extimus*** southwestern willow flycatcher	ABPAE33043	Endangered	Endangered	G5T1T2	S1	
26	***Eryngium aristulatum var. parishii*** San Diego button-celery	PDAPI0Z042	Endangered	Endangered	G5T2	S2.1	1B.1
27	***Eucyclogobius newberryi*** tidewater goby	AFCQN04010	Endangered		G3	S2S3	SC
28	***Euphydryas editha quino*** quino checkerspot butterfly	IILEPK405L	Endangered		G5T1	S1	
29	***Fremontodendron mexicanum*** Mexican flannelbush	PDSTE03020	Endangered	Rare	G2	S2.1	1B.1
30	***Galium angustifolium ssp. borregoense*** Borrego bedstraw	PDRUB0N042		Rare	G5T2	S2.3	1B.3
31	***Gasterosteus aculeatus williamsoni*** unarmored threespine stickleback	AFCPA03011	Endangered	Endangered	G5T1	S1	
32	***Gila bicolor mohavensis*** Mohave tui chub	AFCJB1303H	Endangered	Endangered	G4T1	S1	
33	***Hazardia orcuttii*** Orcutt's hazardia	PDAST4H070	Candidate	Threatened	G1	S1	1B.1
34	***Helianthus niveus ssp. tephrodes*** Algodones Dunes sunflower	PDAST4N0Z2		Endangered	G4T2	S1.2	1B.2
35	***Laterallus jamaicensis coturniculus*** California black rail	ABNME03041		Threatened	G4T1	S1	
36	***Limnanthes gracilis ssp. parishii*** Parish's meadowfoam	PDLIM02052		Endangered	G3T2	S2.2	1B.2
37	***Monardella viminea*** willowy monardella	PDLAM180D4	Endangered	Endangered	G2	S2.1	1B.1
38	***Navarretia fossalis*** Moran's nosegay	PDPLM0C080	Threatened		G1	S1	1B.1
39	***Nolina interrata*** Dehesa nolina	PMAGA08070		Endangered	G1	S1.2	1B.1
40	***Oncorhynchus mykiss irideus*** southern steelhead - southern California DPS	AFCHA0209J	Endangered		G5T2Q	S2	SC
41	***Orcuttia californica*** California Orcutt grass	PMPOA4G010	Endangered	Endangered	G2	S2.1	1B.1
42	***Ornithostaphylos oppositifolia*** Baja California birdbush	PDERI0W010		Endangered	G4	S1.1	2.1
43	***Ovis canadensis nelsoni DPS*** peninsular bighorn sheep	AMALE04012	Endangered	Threatened	G4T3Q	S1	
44	***Packera ganderi*** Gander's ragwort	PDAST8H1F0		Rare	G2	S2.2	1B.2
45	***Passerculus sandwichensis beldingi*** Belding's savannah sparrow	ABPBX99015		Endangered	G5T3	S3	
46	***Perognathus longimembris pacificus*** Pacific pocket mouse	AMAFD01042	Endangered		G5T1	S1	SC

	Scientific Name/Common Name	Element Code	Federal Status	State Status	GRank	SRank	CDFG or CNPS
47	***Poa atropurpurea*** San Bernardino blue grass	PMPOA4Z0A0	Endangered		G2	S2.2	1B.2
48	***Pogogyne abramsii*** San Diego mesa mint	PDLAM1K010	Endangered	Endangered	G2	S2.1	1B.1
49	***Pogogyne nudiuscula*** Otay Mesa mint	PDLAM1K040	Endangered	Endangered	G1	S1.1	1B.1
50	***Polioptila californica californica*** coastal California gnatcatcher	ABPBJ08081	Threatened		G3T2	S2	SC
51	***Pyrgus ruralis lagunae*** Laguna Mountains skipper	IILEP38021	Endangered		G5T1	S1	
52	***Rallus longirostris levipes*** light-footed clapper rail	ABNME05014	Endangered	Endangered	G5T1T2	S1	
53	***Rana draytonii*** California red-legged frog	AAABH01022	Threatened		G4T2T3	S2S3	SC
54	***Rana muscosa*** Sierra Madre yellow-legged frog	AAABH01330	Endangered		G1	S1	SC
55	***Riparia riparia*** bank swallow	ABPAU08010		Threatened	G5	S2S3	
56	***Rosa minutifolia*** small-leaved rose	PDROS1J1B0		Endangered	G3	SXC	2.1
57	***Sternula antillarum browni*** California least tern	ABNNM08103	Endangered	Endangered	G4T2T3Q	S2S3	
58	***Streptocephalus woottoni*** Riverside fairy shrimp	ICBRA07010	Endangered		G1	S1	
59	***Vireo bellii pusillus*** least Bell's vireo	ABPBW01114	Endangered	Endangered	G5T2	S2	

FEDERALLY AND STATE-LISTED SPECIES
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SAN LUIS OBISPO COUNTY

	Scientific Name/Common Name	Element Code	Federal Status	State Status	GRank	SRank	CDFG or CNPS
1	***Ambystoma californiense*** California tiger salamander	AAAAA01180	Threatened	Threatened	G2G3	S2S3	SC
2	***Ammospermophilus nelsoni*** Nelson's antelope squirrel	AMAFB04040		Threatened	G2	S2	
3	***Arctostaphylos hookeri ssp. hearstiorum*** Hearst's manzanita	PDERI040J4		Endangered	G3T1	S1.2	1B.2
4	***Arctostaphylos morroensis*** Morro manzanita	PDERI040S0	Threatened		G2	S2.2	1B.1
5	***Arenaria paludicola*** marsh sandwort	PDCAR040L0	Endangered	Endangered	G1	S1	1B.1
6	***Bloomeria humilis*** dwarf goldenstar	PMLIL0B020		Rare	G1	S1.1	1B.2
7	***Branchinecta longiantenna*** longhorn fairy shrimp	ICBRA03020	Endangered		G1	S1	
8	***Branchinecta lynchi*** vernal pool fairy shrimp	ICBRA03030	Threatened		G3	S2S3	
9	***Caulanthus californicus*** California jewel-flower	PDBRA31010	Endangered	Endangered	G1	S1.1	1B.1
10	***Ceanothus hearstiorum*** Hearst's ceanothus	PDRHA040J0		Rare	G1	S1.2	1B.2
11	***Ceanothus maritimus*** maritime ceanothus	PDRHA040T0		Rare	G2	S2.2	1B.2
12	***Charadrius alexandrinus nivosus*** western snowy plover	ABNNB03031	Threatened		G4T3	S2	SC
13	***Chlorogalum purpureum var. purpureum*** Santa Lucia purple amole	PMLIL0G051	Threatened		G1T1	S1.1	1B.1
14	***Chlorogalum purpureum var. reductum*** Camatta Canyon amole	PMLIL0G052	Threatened	Rare	G1T1	S1.1	1B.1
15	***Chorizanthe pungens var. pungens*** Monterey spineflower	PDPGN040M2	Threatened		G2T2	S2.2	1B.2
16	***Cirsium fontinale var. obispoense*** Chorro Creek bog thistle	PDAST2E162	Endangered	Endangered	G2T1	S1.2	1B.2
17	***Cirsium loncholepis*** La Graciosa thistle	PDAST2E1N0	Endangered	Threatened	G1	S1	1B.1
18	***Cirsium rhothophilum*** surf thistle	PDAST2E2J0		Threatened	G2	S2.2	1B.2
19	***Clarkia speciosa ssp. immaculata*** Pismo clarkia	PDONA05111	Endangered	Rare	G4T1	S1.1	1B.1
20	***Coccyzus americanus occidentalis*** western yellow-billed cuckoo	ABNRB02022	Candidate	Endangered	G5T3Q	S1	
21	***Cordylanthus maritimus ssp. maritimus*** salt marsh bird's-beak	PDSCR0J0C2	Endangered	Endangered	G4?T2	S2.1	1B.2
22	***Dipodomys heermanni morroensis*** Morro Bay kangaroo rat	AMAFD03063	Endangered	Endangered	G3G4T1	S1	
23	***Dipodomys ingens*** giant kangaroo rat	AMAFD03080	Endangered	Endangered	G2	S2	

	Scientific Name/Common Name	Element Code	Federal Status	State Status	GRank	SRank	CDFG or CNPS
24	***Dipodomys nitratoides nitratoides*** Tipton kangaroo rat	AMAFD03152	Endangered	Endangered	G3T1	S1	
25	***Dithyrea maritima*** beach spectaclepod	PDBRA10020		Threatened	G2	S2.1	1B.1
26	***Eriodictyon altissimum*** Indian Knob mountainbalm	PDHYD04010	Endangered	Endangered	G2Q	S2.2	1B.1
27	***Eucyclogobius newberryi*** tidewater goby	AFCQN04010	Endangered		G3	S2S3	SC
28	***Euphilotes enoptes smithi*** Smith's blue butterfly	IILEPG2026	Endangered		G5T1T2	S1S2	
29	***Euproserpinus euterpe*** Kern primrose sphinx moth	IILEX14020	Threatened		G1	S1	
30	***Gambelia sila*** blunt-nosed leopard lizard	ARACF07010	Endangered	Endangered	G1	S1	
31	***Gymnogyps californianus*** California condor	ABNKA03010	Endangered	Endangered	G1	S1	
32	***Haliaeetus leucocephalus*** bald eagle	ABNKC10010	Delisted	Endangered	G5	S2	
33	***Helminthoglypta walkeriana*** Morro shoulderband (=banded dune) snail	IMGASC2510	Endangered		G1	S1	
34	***Laterallus jamaicensis coturniculus*** California black rail	ABNME03041		Threatened	G4T1	S1	
35	***Lupinus nipomensis*** Nipomo Mesa lupine	PDFAB2B550	Endangered	Endangered	G1	S1.1	1B.1
36	***Monolopia congdonii*** San Joaquin woollythreads	PDASTA8010	Endangered		G3	S3.2	1B.2
37	***Nasturtium gambelii*** Gambel's water cress	PDBRA270V0	Endangered	Threatened	G1	S1	1B.1
38	***Navarretia fossalis*** Moran's nosegay	PDPLM0C080	Threatened		G1	S1	1B.1
39	***Oncorhynchus mykiss irideus*** steelhead - south/central California coast DPS	AFCHA0209H	Threatened		G5T2Q	S2	SC
40	***Oncorhynchus mykiss irideus*** southern steelhead - southern California DPS	AFCHA0209J	Endangered		G5T2Q	S2	SC
41	***Pedicularis dudleyi*** Dudley's lousewort	PDSCR1K0D0		Rare	G2	S2.2	1B.2
42	***Rallus longirostris obsoletus*** California clapper rail	ABNME05016	Endangered	Endangered	G5T1	S1	
43	***Rana draytonii*** California red-legged frog	AAABH01022	Threatened		G4T2T3	S2S3	SC
44	***Sanicula maritima*** adobe sanicle	PDAPI1Z0D0		Rare	G2	S2.2	1B.1
45	***Sidalcea hickmanii ssp. anomala*** Cuesta Pass checkerbloom	PDMAL110A1		Rare	G3T1	S1	1B.2
46	***Sidalcea hickmanii ssp. parishii*** Parish's checkerbloom	PDMAL110A3		Rare	G3T1	S1.2	1B.2

	Scientific Name/Common Name	Element Code	Federal Status	State Status	GRank	SRank	CDFG or CNPS
47	***Sternula antillarum browni*** California least tern	ABNNM08103	Endangered	Endangered	G4T2T3Q	S2S3	
48	***Suaeda californica*** California seablite	PDCHE0P020	Endangered		G1	S1.1	1B.1
49	***Vulpes macrotis mutica*** San Joaquin kit fox	AMAJA03041	Endangered	Threatened	G4T2T3	S2S3	

FEDERALLY AND STATE-LISTED SPECIES
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SANTA BARBARA COUNTY

	Scientific Name/Common Name	Element Code	Federal Status	State Status	GRank	SRank	CDFG or CNPS
1	***Acmispon argophyllus var. niveus*** Santa Cruz Island bird's-foot trefoil	PDFAB2A048		Endangered	G5T3	S3.2	4.2
2	***Ambystoma californiense*** California tiger salamander	AAAAA01180	Threatened	Threatened	G2G3	S2S3	SC
3	***Ammospermophilus nelsoni*** Nelson's antelope squirrel	AMAFB04040		Threatened	G2	S2	
4	***Anaxyrus californicus*** arroyo toad	AAABB01230	Endangered		G2G3	S2S3	SC
5	***Arabis hoffmannii*** Hoffmann's rock-cress	PDBRA060V0	Endangered		G1	S1.3	1B.1
6	***Arctocephalus townsendi*** Guadalupe fur-seal	AMAJC02010	Threatened	Threatened	G1	S1	
7	***Arctostaphylos confertiflora*** Santa Rosa Island manzanita	PDERI040A0	Endangered		G1	S1	1B.2
8	***Astragalus traskiae*** Trask's milk-vetch	PDFAB0F910		Rare	G3	S3	1B.2
9	***Berberis pinnata ssp. insularis*** island barberry	PDBER060B2	Endangered	Endangered	G5T1	S1.2	1B.2
10	***Branchinecta lynchi*** vernal pool fairy shrimp	ICBRA03030	Threatened		G3	S2S3	
11	***Castilleja mollis*** soft-leaved paintbrush	PDSCR0D230	Endangered		G1	S1.1	1B.1
12	***Caulanthus californicus*** California jewel-flower	PDBRA31010	Endangered	Endangered	G1	S1.1	1B.1
13	***Charadrius alexandrinus nivosus*** western snowy plover	ABNNB03031	Threatened		G4T3	S2	SC
14	***Cirsium loncholepis*** La Graciosa thistle	PDAST2E1N0	Endangered	Threatened	G1	S1	1B.1
15	***Cirsium rhothophilum*** surf thistle	PDAST2E2J0		Threatened	G2	S2.2	1B.2
16	***Cordylanthus maritimus ssp. maritimus*** salt marsh bird's-beak	PDSCR0J0C2	Endangered	Endangered	G4?T2	S2.1	1B.2
17	***Cordylanthus rigidus ssp. littoralis*** seaside bird's-beak	PDSCR0J0P2		Endangered	G5T1	S1.1	1B.1
18	***Deinandra increscens ssp. villosa*** Gaviota tarplant	PDAST4R0U3	Endangered	Endangered	G4G5T1	S1.1	1B.1
19	***Dipodomys ingens*** giant kangaroo rat	AMAFD03080	Endangered	Endangered	G2	S2	
20	***Dithyrea maritima*** beach spectaclepod	PDBRA10020		Threatened	G2	S2.1	1B.1
21	***Dudleya nesiotica*** Santa Cruz Island dudleya	PDCRA040J0	Threatened	Rare	G1	S1.2	1B.1
22	***Dudleya traskiae*** Santa Barbara Island dudleya	PDCRA040Q0	Endangered	Endangered	G1	S1.2	1B.2
23	***Empidonax traillii extimus*** southwestern willow flycatcher	ABPAE33043	Endangered	Endangered	G5T1T2	S1	

	Scientific Name/Common Name	Element Code	Federal Status	State Status	GRank	SRank	CDFG or CNPS
24	***Eriodictyon capitatum*** Lompoc yerba santa	PDHYD04040	Endangered	Rare	G1	S1.2	1B.2
25	***Eriogonum giganteum var. compactum*** Santa Barbara Island buckwheat	PDPGN082A1		Rare	G2T2	S2.2	1B.3
26	***Eucyclogobius newberryi*** tidewater goby	AFCQN04010	Endangered		G3	S2S3	SC
27	***Euproserpinus euterpe*** Kern primrose sphinx moth	IILEX14020	Threatened		G1	S1	
28	***Galium buxifolium*** box bedstraw	PDRUB0N0D0	Endangered	Rare	G2	S2.2	1B.2
29	***Gambelia sila*** blunt-nosed leopard lizard	ARACF07010	Endangered	Endangered	G1	S1	
30	***Gasterosteus aculeatus williamsoni*** unarmored threespine stickleback	AFCPA03011	Endangered	Endangered	G5T1	S1	
31	***Gilia tenuiflora ssp. hoffmannii*** Hoffmann's slender-flowered gilia	PDPLM041P3	Endangered		G3G4T1	S1.1	1B.1
32	***Gymnogyps californianus*** California condor	ABNKA03010	Endangered	Endangered	G1	S1	
33	***Haliaeetus leucocephalus*** bald eagle	ABNKC10010	Delisted	Endangered	G5	S2	
34	***Haliotis cracherodii*** black abalone	IMGASV2030	Endangered		G3G4	S3	
35	***Helianthemum greenei*** island rush-rose	PDCIS02090	Threatened		G2	S2.2	1B.2
36	***Lasthenia conjugens*** Contra Costa goldfields	PDAST5L040	Endangered		G1	S1.1	1B.1
37	***Layia carnosa*** beach layia	PDAST5N010	Endangered	Endangered	G2	S2.1	1B.1
38	***Malacothamnus fasciculatus var. nesioticus*** Santa Cruz Island bush-mallow	PDMAL0Q061	Endangered	Endangered	G4T1Q	S1.1	1B.1
39	***Malacothrix indecora*** Santa Cruz Island malacothrix	PDAST660J0	Endangered		G1	S1.1	1B.1
40	***Malacothrix squalida*** island malacothrix	PDAST660K0	Endangered		G1	S1.2	1B.1
41	***Monolopia congdonii*** San Joaquin woollythreads	PDASTA8010	Endangered		G3	S3.2	1B.2
42	***Nasturtium gambelii*** Gambel's water cress	PDBRA270V0	Endangered	Threatened	G1	S1	1B.1
43	***Oncorhynchus mykiss irideus*** southern steelhead - southern California DPS	AFCHA0209J	Endangered		G5T2Q	S2	SC
44	***Passerculus sandwichensis beldingi*** Belding's savannah sparrow	ABPBX99015		Endangered	G5T3	S3	
45	***Phacelia insularis var. insularis*** northern Channel Islands phacelia	PDHYD0C2B2	Endangered		G2TH	SH	1B.2
46	***Rallus longirostris levipes*** light-footed clapper rail	ABNME05014	Endangered	Endangered	G5T1T2	S1	

	Scientific Name/Common Name	Element Code	Federal Status	State Status	GRank	SRank	CDFG or CNPS
47	***Rana draytonii*** California red-legged frog	AAABH01022	Threatened		G4T2T3	S2S3	SC
48	***Riparia riparia*** bank swallow	ABPAU08010		Threatened	G5	S2S3	
49	***Sibara filifolia*** Santa Cruz Island rock cress	PDBRA2A020	Endangered		G1	S1.1	1B.1
50	***Sidalcea hickmanii ssp. parishii*** Parish's checkerbloom	PDMAL110A3		Rare	G3T1	S1.2	1B.2
51	***Sternula antillarum browni*** California least tern	ABNNM08103	Endangered	Endangered	G4T2T3Q	S2S3	
52	***Synthliboramphus hypoleucus*** Xantus' murrelet	ABNNN07010	Candidate	Threatened	G3G4	S3	
53	***Thermopsis macrophylla*** Santa Ynez false lupine	PDFAB3Z0E0		Rare	G1	S1.3	1B.3
54	***Thysanocarpus conchuliferus*** Santa Cruz Island fringepod	PDBRA2Q060	Endangered		G1	S1.2	1B.2
55	***Urocyon littoralis littoralis*** San Miguel Island fox	AMAJA04025	Endangered	Threatened	G1T1	S1	
56	***Urocyon littoralis santacruzae*** Santa Cruz Island fox	AMAJA04021	Endangered	Threatened	G1T1	S1	
57	***Urocyon littoralis santarosae*** Santa Rosa Island fox	AMAJA04026	Endangered	Threatened	G1T1	S1	
58	***Vireo bellii pusillus*** least Bell's vireo	ABPBW01114	Endangered	Endangered	G5T2	S2	
59	***Vulpes macrotis mutica*** San Joaquin kit fox	AMAJA03041	Endangered	Threatened	G4T2T3	S2S3	
60	***Xantusia riversiana*** island night lizard	ARACK01020	Threatened		G1	S1	

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VENTURA COUNTY

	Scientific Name/Common Name	Element Code	Federal Status	State Status	GRank	SRank	CDFG or CNPS
1	***Anaxyrus californicus*** arroyo toad	AAABB01230	Endangered		G2G3	S2S3	SC
2	***Arabis hoffmannii*** Hoffmann's rock-cress	PDBRA060V0	Endangered		G1	S1.3	1B.1
3	***Arctocephalus townsendi*** Guadalupe fur-seal	AMAJC02010	Threatened	Threatened	G1	S1	
4	***Astragalus brauntonii*** Braunton's milk-vetch	PDFAB0F1G0	Endangered		G2	S2.1	1B.1
5	***Astragalus pycnostachyus var. lanosissimus*** Ventura Marsh milk-vetch	PDFAB0F7B1	Endangered	Endangered	G2T1	S1	1B.1
6	***Astragalus traskiae*** Trask's milk-vetch	PDFAB0F910		Rare	G3	S3	1B.2
7	***Berberis pinnata ssp. insularis*** island barberry	PDBER060B2	Endangered	Endangered	G5T1	S1.2	1B.2
8	***Branchinecta lynchi*** vernal pool fairy shrimp	ICBRA03030	Threatened		G3	S2S3	
9	***Catostomus santaanae*** Santa Ana sucker	AFCJC02190	Threatened		G1	S1	SC
10	***Charadrius alexandrinus nivosus*** western snowy plover	ABNNB03031	Threatened		G4T3	S2	SC
11	***Chorizanthe parryi var. fernandina*** San Fernando Valley spineflower	PDPGN040J1	Candidate	Endangered	G2T1	S1.1	1B.1
12	***Coccyzus americanus occidentalis*** western yellow-billed cuckoo	ABNRB02022	Candidate	Endangered	G5T3Q	S1	
13	***Cordylanthus maritimus ssp. maritimus*** salt marsh bird's-beak	PDSCR0J0C2	Endangered	Endangered	G4?T2	S2.1	1B.2
14	***Deinandra minthornii*** Santa Susana tarplant	PDAST4R0J0		Rare	G2	S2.2	1B.2
15	***Dithyrea maritima*** beach spectaclepod	PDBRA10020		Threatened	G2	S2.1	1B.1
16	***Dudleya cymosa ssp. agourensis*** Agoura Hills dudleya	PDCRA040A7	Threatened		G5T1	S1.2	1B.2
17	***Dudleya cymosa ssp. marcescens*** marcescent dudleya	PDCRA040A3	Threatened	Rare	G5T2	S2.2	1B.2
18	***Dudleya parva*** Conejo dudleya	PDCRA04016	Threatened		G2	S2.1	1B.2
19	***Dudleya verityi*** Verity's dudleya	PDCRA040U0	Threatened		G1	S1.1	1B.2
20	***Empidonax traillii extimus*** southwestern willow flycatcher	ABPAE33043	Endangered	Endangered	G5T1T2	S1	
21	***Enhydra lutris nereis*** southern sea otter	AMAJF09012	Threatened		G4T2	S2	
22	***Eriogonum crocatum*** Conejo buckwheat	PDPGN081G0		Rare	G2	S2.1	1B.2
23	***Eriogonum grande var. timorum*** San Nicolas Island buckwheat	PDPGN082J3		Endangered	G3T1	S1.1	1B.1

	Scientific Name/Common Name	Element Code	Federal Status	State Status	GRank	SRank	CDFG or CNPS
24	***Eucyclogobius newberryi*** tidewater goby	AFCQN04010	Endangered		G3	S2S3	SC
25	***Euproserpinus euterpe*** Kern primrose sphinx moth	IILEX14020	Threatened		G1	S1	
26	***Gambelia sila*** blunt-nosed leopard lizard	ARACF07010	Endangered	Endangered	G1	S1	
27	***Gasterosteus aculeatus williamsoni*** unarmored threespine stickleback	AFCPA03011	Endangered	Endangered	G5T1	S1	
28	***Gymnogyps californianus*** California condor	ABNKA03010	Endangered	Endangered	G1	S1	
29	***Malacothrix squalida*** island malacothrix	PDAST660K0	Endangered		G1	S1.2	1B.1
30	***Oncorhynchus mykiss irideus*** southern steelhead - southern California DPS	AFCHA0209J	Endangered		G5T2Q	S2	SC
31	***Orcuttia californica*** California Orcutt grass	PMPOA4G010	Endangered	Endangered	G2	S2.1	1B.1
32	***Passerculus sandwichensis beldingi*** Belding's savannah sparrow	ABPBX99015		Endangered	G5T3	S3	
33	***Pentachaeta lyonii*** Lyon's pentachaeta	PDAST6X060	Endangered	Endangered	G2	S2	1B.1
34	***Polioptila californica californica*** coastal California gnatcatcher	ABPBJ08081	Threatened		G3T2	S2	SC
35	***Rallus longirostris levipes*** light-footed clapper rail	ABNME05014	Endangered	Endangered	G5T1T2	S1	
36	***Rana draytonii*** California red-legged frog	AAABH01022	Threatened		G4T2T3	S2S3	SC
37	***Riparia riparia*** bank swallow	ABPAU08010		Threatened	G5	S2S3	
38	***Sternula antillarum browni*** California least tern	ABNNM08103	Endangered	Endangered	G4T2T3Q	S2S3	
39	***Streptocephalus woottoni*** Riverside fairy shrimp	ICBRA07010	Endangered		G1	S1	
40	***Urocyon littoralis dickeyi*** San Nicolas Island fox	AMAJA04024		Threatened	G1T1	S1	
41	***Vireo bellii pusillus*** least Bell's vireo	ABPBW01114	Endangered	Endangered	G5T2	S2	
42	***Xantusia riversiana*** island night lizard	ARACK01020	Threatened		G1	S1	

APPENDIX E

NATIVE AMERICAN HERITAGE COMMISSION LETTER

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STATE OF CALIFORNIA Arnold Schwarzenegger, Governor

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August 24, 2010

MS. REINA PEREIRA
CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS, BUREAU OF SANITATION
1149 South Broadway, 8th Floor
Los Angeles, CA 90015

Re: SCH#2010081061; Notice of Completion; draft Environmental Impact Report (DEIR) for the **EIR 10-026-BS, Solid Waste Integrated Resources Plan (SWIRP) Project** located City-wide; City of Los Angeles; Los Angeles County, California.

Dear Ms. Pereira:

The Native American Heritage Commission (NAHC) is the state 'trustee agency' pursuant to Public Resources Code §21070 for the protection and preservation of California's Native American Cultural Resources. (Also see *Environmental Protection Information Center v. Johnson (1985) 170 Cal App. 3rd 604).* The California Environmental Quality Act (CEQA - CA Public Resources Code §21000-21177, amendment effective 3/18/2010) requires that any project that causes a substantial adverse change in the significance of an historical resource, that includes archaeological resources, is a 'significant effect' requiring the preparation of an Environmental Impact Report (EIR) per the California Code of Regulations §15064.5(b)(c)(f) CEQA guidelines). Section 15382 of the CEQA Guidelines defines a significant impact on the environment as "a substantial, or potentially substantial, adverse change in any of physical conditions within an area affected by the proposed project, including ...objects of historic or aesthetic significance. The lead agency is required to assess whether the project will have an adverse impact on these resources within the 'area of potential effect (APE), and if so, to mitigate that effect. State law also addresses Native American Religious Expression in Public Resources Code §5097.9.

The Native American Heritage Commission did perform a Sacred Lands File (SLF) search in the NAHC SLF Inventory, established by the Legislature pursuant to Public Resources Code §5097.94(a) and Native American Cultural Resources **were identified** within one-half mile of the APE identified for the project. Early consultation with Native American tribes in your area is the best way to avoid unanticipated discoveries once a project is underway. Enclosed are the names of the culturally affiliated tribes and interested Native American individuals that the NAHC recommends as 'consulting parties,' for this purpose, that may have knowledge of the religious and cultural significance of the historic properties in the project area (e.g. APE). We recommend that you contact persons on the attached list of Native American contacts. A Native American Tribe or Tribal Elder may be the only source of information about a cultural resource.. Also, the NAHC recommends that a Native American Monitor or Native American culturally knowledgeable person be employed whenever a professional archaeologist is employed during the 'Initial Study' and in other phases of the environmental planning processes.

Furthermore the NAHC recommends that you contact the California Historic Resources Information System (CHRIS) at the Office of Historic Preservation (OHP) Coordinator's office (at (916) 653-7278, for referral to the nearest OHP Information Center of which there are 10.

Consultation with tribes and interested Native American tribes and interested Native American individuals, as consulting parties, on the NAHC list ,should be conducted in compliance with the requirements of federal NEPA (42 U.S.C. 4321-43351) and Section 106 and 4(f) of federal NHPA (16 U.S.C. 470 [f)]*et se),* 36 CFR Part 800.3, the President's Council on Environmental Quality (CSQ; 42 U.S.C. 4371 *et seq.*) and NAGPRA (25 U.S.C. 3001-3013), as appropriate. The 1992 *Secretary of the Interior's Standards for the Treatment of Historic Properties* were revised so that they could be applied to all historic resource types included in the National Register of Historic Places and including *cultural landscapes.* Consultation with Native American communities is also a matter of environmental justice as defined by California Government Code §65040.12(e).

Lead agencies should consider avoidance, as defined in Section 15370 of the California Environmental Quality Act (CEQA) when significant cultural resources could be affected by a project. Also, Public Resources Code Section 5097.98 and Health & Safety Code Section 7050.5 provide for provisions for accidentally discovered archeological resources during construction and mandate the processes to be followed in the event of an accidental discovery of any human remains in a project location other than a 'dedicated cemetery. Discussion of these should be included in your environmental documents, as appropriate.

The authority for the SLF record search of the NAHC Sacred Lands Inventory, established by the California Legislature, is California Public Resources Code §5097.94(a) and is exempt from the CA Public Records Act (c.f. California Government Code §6254.10). The results of the SLF search are confidential. However, Native Americans on the attached contact list are not prohibited from and may wish to reveal the nature of identified cultural resources/historic properties. Confidentiality of "historic properties of religious and cultural significance' may also be protected the under Section 304 of the NHPA or at the Secretary of the Interior' discretion if not eligible for listing on the National Register of Historic Places. The Secretary may also be advised by the federal Indian Religious Freedom Act (cf. 42 U.S.C, 1996) in issuing a decision on whether or not to disclose items of religious and/or cultural significance identified in or near the APE and possibly threatened by proposed project activity.

CEQA Guidelines, Section 15064.5(d) requires the lead agency to work with the Native Americans identified by this Commission if the initial Study identifies the presence or likely presence of Native American human remains within the APE. CEQA Guidelines provide for agreements with Native American, identified by the NAHC, to assure the appropriate and dignified treatment of Native American human remains and any associated grave liens. Although tribal consultation under the California Environmental Quality Act (CEQA; CA Public Resources Code Section 21000 – 21177) is 'advisory' rather than mandated, the NAHC does request 'lead agencies' to work with tribes and interested Native American individuals as 'consulting parties,' on the list provided by the NAHC in order that cultural resources will be protected. However, the 2006 SB 1059 the state enabling legislation to the Federal Energy Policy Act of 2005, does mandate tribal consultation for the 'electric transmission corridors. This is codified in the California Public Resources Code, Chapter 4.3, and §25330 to Division 15, requires consultation with California Native American tribes, and identifies both federally recognized and non-federally recognized on a list maintained by the NAHC

Health and Safety Code §7050.5, Public Resources Code §5097.98 and Sec. §15064.5 (d) of the California Code of Regulations (CEQA Guidelines) mandate procedures to be followed, including that construction or excavation be stopped in the event of an accidental discovery of any human remains in a location other than a dedicated cemetery until the county coroner or medical examiner can determine whether the remains are those of a Native American. . Note that §7052 of the Health & Safety Code states that disturbance of Native American cemeteries is a felony.

Again, Lead agencies should consider avoidance, as defined in §15370 of the California Code of Regulations (CEQA Guidelines), when significant cultural resources are discovered during the course of project planning and implementation.

Please feel free to contact me at (916) 653-6251 if you have any questions.

Sincerely,

Dave Singleton
Program Analyst

Attachment: List of Culturally Affiliated Native American Contacts

Cc: State Clearinghouse

Native American Contacts
Los Angeles County
August 24, 2010

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Fernandeno
Tataviam
Kitanemuk

Tongva Ancestral Territorial Tribal Nation
John Tommy Rosas, Tribal Admin.
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Gabrielino Tongva

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rortega@tataviam-nsn.us
(818) 837-0794 Office

(818) 837-0796 Fax

Fernandeno
Tataviam

Kitanemuk & Yowlumne Tejon Indians
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Covina , CA 91722
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Yowlumne
Kitanemuk

LA City/County Native American Indian Comm
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Los Angeles , CA 90020
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(213) 351-5324
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San Fernando Band of Mission Indians
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Fernandeño
Tataviam
Serrano
Vanyume
Kitanemuk

Ti'At Society
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Gabrielino

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(626) 286-1262 -FAX

Gabrielino Tongva

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code. Also, federal National Environmental Policy Act (NEPA), National Historic Preservation Act, Section 106 and federal NAGPRA. And 36 CFR Part 800.3.

This list is only applicable for contacting local Native Americans for consultation purposes with regard to cultural resources impact by the proposed SCH#2010081061; CEQA Notice of Preparation (NOP); draft Environmental Impact Repaort (DEIR) for the Solid Waste Integrated Resources Plan (SWIRP); City of Los Angeles; Los Angeles County, California.

Native American Contacts
Los Angeles County
August 24, 2010

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(310) 587-2281

Gabrielino Tongva Indians of California Tribal Council
Robert F. Doramae, Tribal Chair/Cultural
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562-925-7989 - fax

Gabrielino-Tongva Tribe
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Shoshoneon Gabrieleno Band of Mission Indians
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APPENDIX F

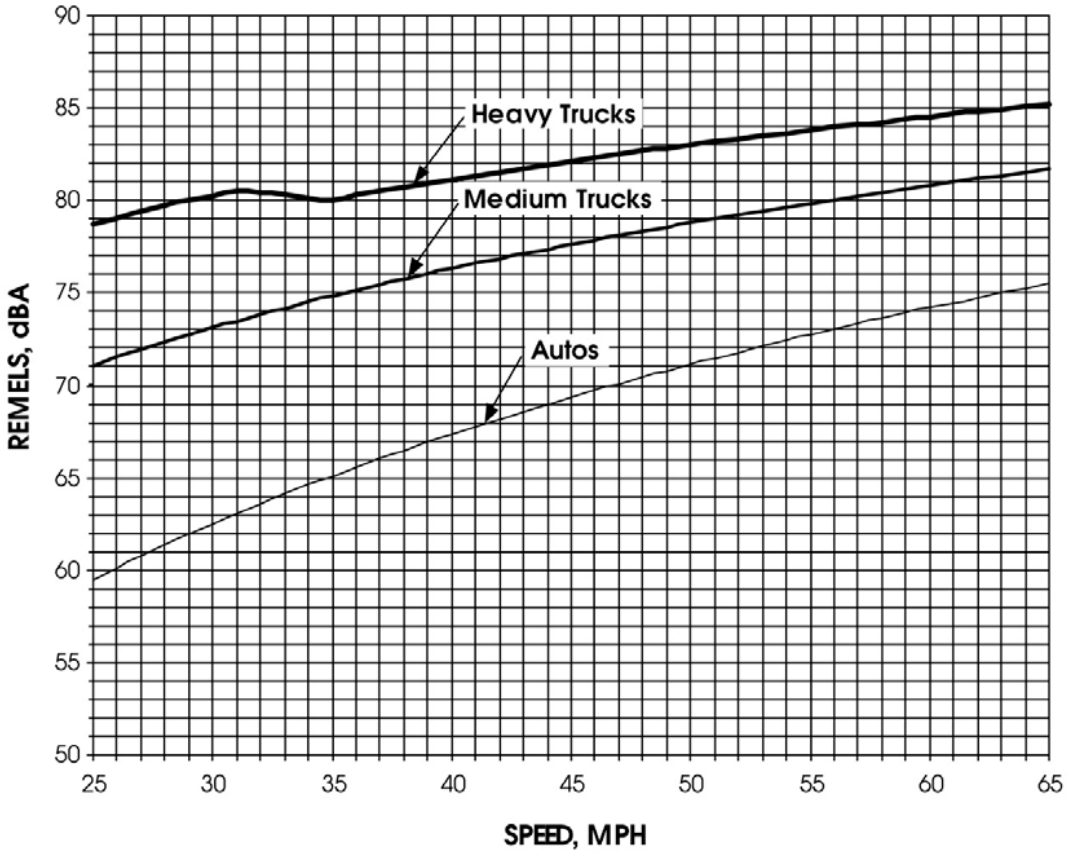
NOISE MODELING DATA

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The future facilities proposed under the Solid Waste Integrated Resources Plan (SWIRP) have the potential to generate noise resulting from the transport of solid waste to and from each proposed facility and employee trips generated. The increase in traffic resulting from implementation of SWIRP would increase the ambient noise levels at sensitive off-site locations in the vicinity where future facilities are proposed. Because traffic is considered to be a long-term noise source, a substantial permanent increase in ambient noise levels in the vicinity of future facilities could potentially occur.

Future noise impacts resulting from vehicular traffic on roadways were modeled using the Federal Highway Administration (FHWA) Highway Traffic Noise Prediction Model (FHWA-RD-77-108) which includes the California specific vehicle noise curves (CALVENO), see Table 1. The noise computations use a series of regression formulas to calculate an energy average noise level for the different classes of vehicles (automobiles, medium truck, and heavy trucks) average daily traffic volumes (ADT), vehicle speed, and the percentage of vehicles on the road during the three time periods of the day. Traffic inputs were obtained for each proposed facility in the Traffic section of the report. Automobiles were assumed to be traveling at 40 miles per hour (mph) and heavy trucks were assumed to be traveling at 40 mph. The noise computations also calculated the CNEL value which applies an appropriate penalty for evening and nighttime hours. Traffic noise was evaluated under with project conditions.[1] Tables 2 and 3 present the noise model output and results

Table 1. California Vehicle Noise (Calveno) Reference Energy Mean Emission Levels (Remels), for Level Roads, Constant Speed, at 50 feet



[1] California Department of Transportation. Technical Noise Supplement-Technical Noise Supplement to the Traffic Noise Analysis Protocol. November 2009.

Table 2. SWIRP Noise Model Output

Facility Type	ADT Total	Vehicle Distribution			Autos						Heavy Trucks						*Total Noise Levels*
					Volumes	*Speeds*		*Noise Levels*			*Volumes*	*Speeds*		*Noise Levels*			
		Autos	Medium	Heavy Trucks	Day	Speed (mph)	Speed (kph)	Reference Energy Mean[1]	Traffic Flow Adjustment[2]	*Total Leq Day*[3]	Day	Speed (mph)	Speed (kph)	Reference Energy Evening[4]	Traffic Flow Adjustment[5]	*Total Leq Day*[6]	Total Day[7]
Composting Facilities	234	28	0	206	28	40	64	67.4	-16.89	50.5	206	40.0	64.4	81.2	-8.2	72.9	73.0
Material Recovery Facilities	204	80	0	124	80	40	64	67.4	-12.33	55.0	124	40.0	64.4	82.7	-10.4	72.2	72.3
Resource Recovery Center	72	30	0	42	30	40	64	67.4	-16.59	50.8	42	40.0	64.4	82.7	-15.1	67.5	67.6
Mixed Material Processing	220	100	0	120	100	40	64	67.4	-11.36	56.0	120	40.0	64.4	82.7	-10.6	72.1	72.2
Advanced Thermal Recycling	400	44	0	356	44	40	64	67.4	-14.92	52.4	356	40.0	64.4	82.7	-5.8	76.8	76.8
Alternative Technology (Biological)	138	28	0	110	28	40	64	67.4	-16.89	50.5	110	40.0	64.4	82.7	-10.9	71.7	71.7
Alternative Technology (Thermal)	122	44	0	78	44	40	64	67.4	-14.92	52.4	78	40.0	64.4	82.7	-12.4	70.2	70.3

Notes: The following calculations were used in the noise calculations presented in the table

1. Calculation used for Auto Reference Energy Mean:
   $5.2 + 38.8\log_{10}$(speed, mph)
2. Calculation used for Auto Traffic Flow Adjustment:
   $10(\log_{10})\{[$(Auto Volume)(3.14)(0.015)$]$/(speed, mph)
3. Calculation for Total Auto L_{eq}:
   (Auto Reference Energy Mean + Auto Traffic Flow Adjustment)
4. Calculation used for Heavy Truck Reference Energy Mean:
   $50.4 + 19.2\log_{10}$(speed, mph)
5. Calculation used for Auto Traffic Flow Adjustment:
   $10(\log_{10})\{[$(Auto Volume)(3.14)(0.015)$]$/(speed, mph)
6. Calculation for Total Heavy Truck L_{eq}:
   (Heavy Truck Reference Energy Mean + Heavy Truck Traffic Flow Adjustment)
7. Total Noise Level:
   $10*\log_{10}$((10^(Total Auto L_{eq} /10))+(10^(Total Heavy Truck L_{eq} /10)))

Table 3. SWIRP Noise Model Results

Facility Type	Trips per Day per Facility [1]	Anticipated Noise Generation at a Reference Distance of 50 feet (Leq)
Composting Facilities	440	73
Material Recovery Facilities	328	72
Resource Recovery Center	114	68
Mixed material processing	340	72
Advanced Thermal Recycling	756	77
Alternative Technology (Biological)	248	72
Alternative Technology (Thermal)	200	70