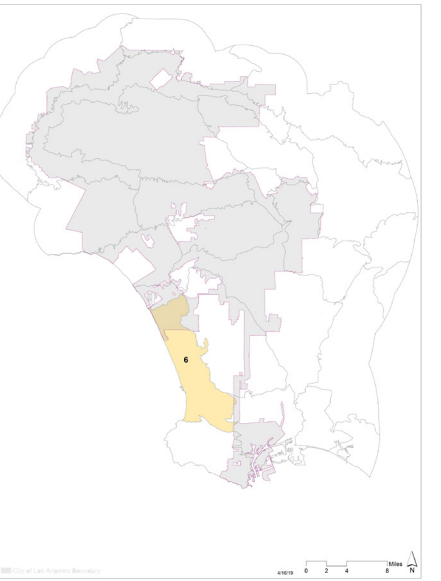
ECOTOPE 6: LOS ANGELES DUNES AND PLAINS

(Partially within the City of Los Angeles)



LANDFORM

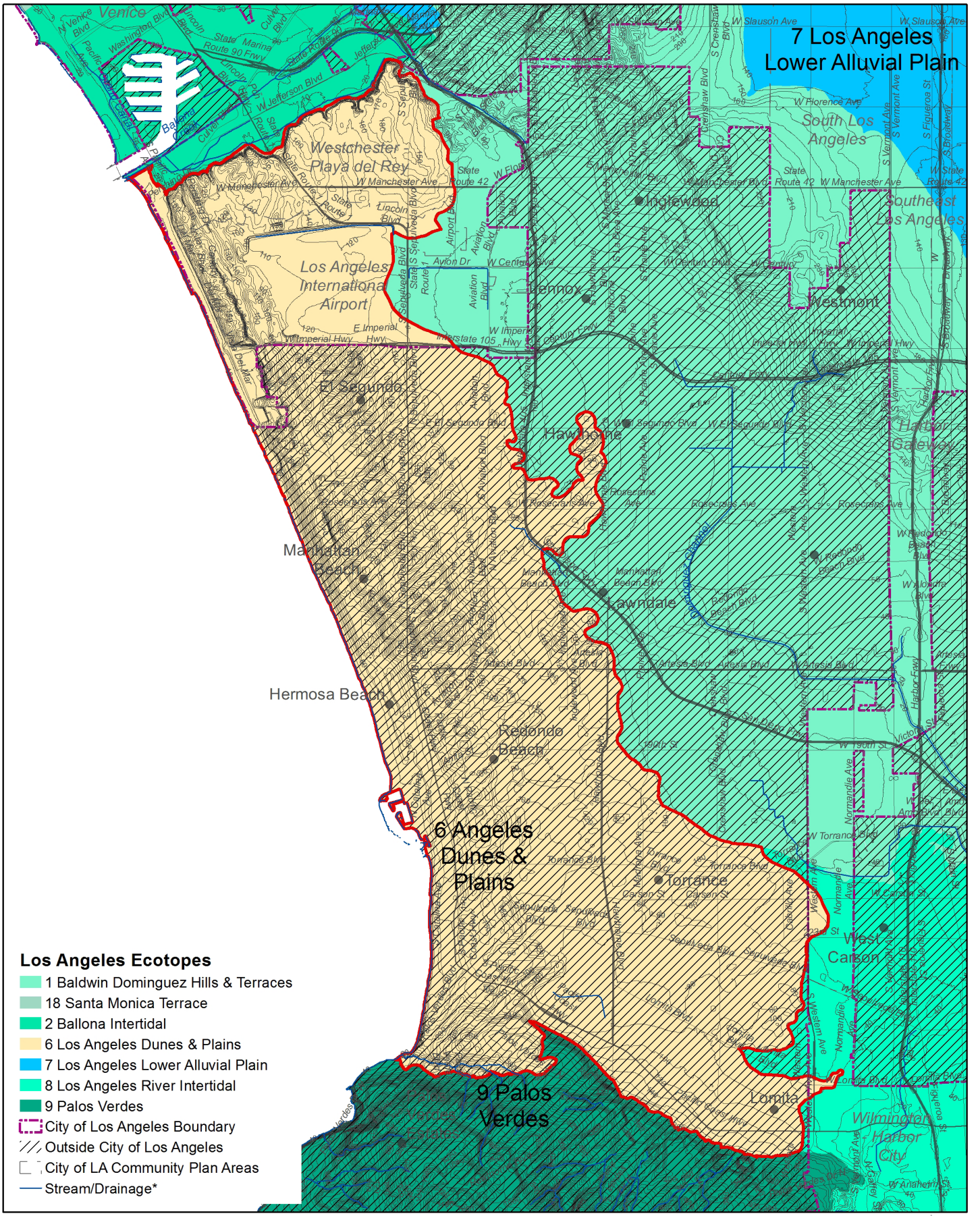
The Los Angeles Dunes and Plains ecotope is bounded by the Ballona Creek Intertidal and Coastal Plain ecotope to the north, Palos Verdes Peninsula to the south, and flatter plains and historic wetlands to the east. Landforms in this ecotope consist of dunes, formed from sand transported to the coast from Ballona Creek (formerly the Los Angeles River), and deposited as dunes by prevailing winds over time. The extensive area of intact historic wetland complex near present day Madrona Marsh is also included in the ecotope. Soils consist mostly of very well drained sand, providing exceptional opportunities for infiltration of stormwater throughout the ecotope. Landforms have been well characterized in Mattoni & Longcore (1997) and the delineation of this ecotope closely reflects their findings, but incorporates the more recent landform delineations in the NRCS SSURGO soils dataset (USDA 2017).

MICROCLIMATE

Coastal influence dominates the ecotope, but decreases toward the eastern boundary. Aspects are diverse, but are predominantly easterly or westerly facing, resulting in many finer-grained microclimates throughout the ecotope. The extensive north-facing slopes along the boundaries of the Ballona Creek Intertidal ecotope to the north and the Palos Verdes Peninsula to the south result in relatively cool and windy microclimate conditions there. The elevation of the Palos Verdes Peninsula also drives somewhat more continental influence observed in southeasterly portions of the ecotope near the City of Torrance.

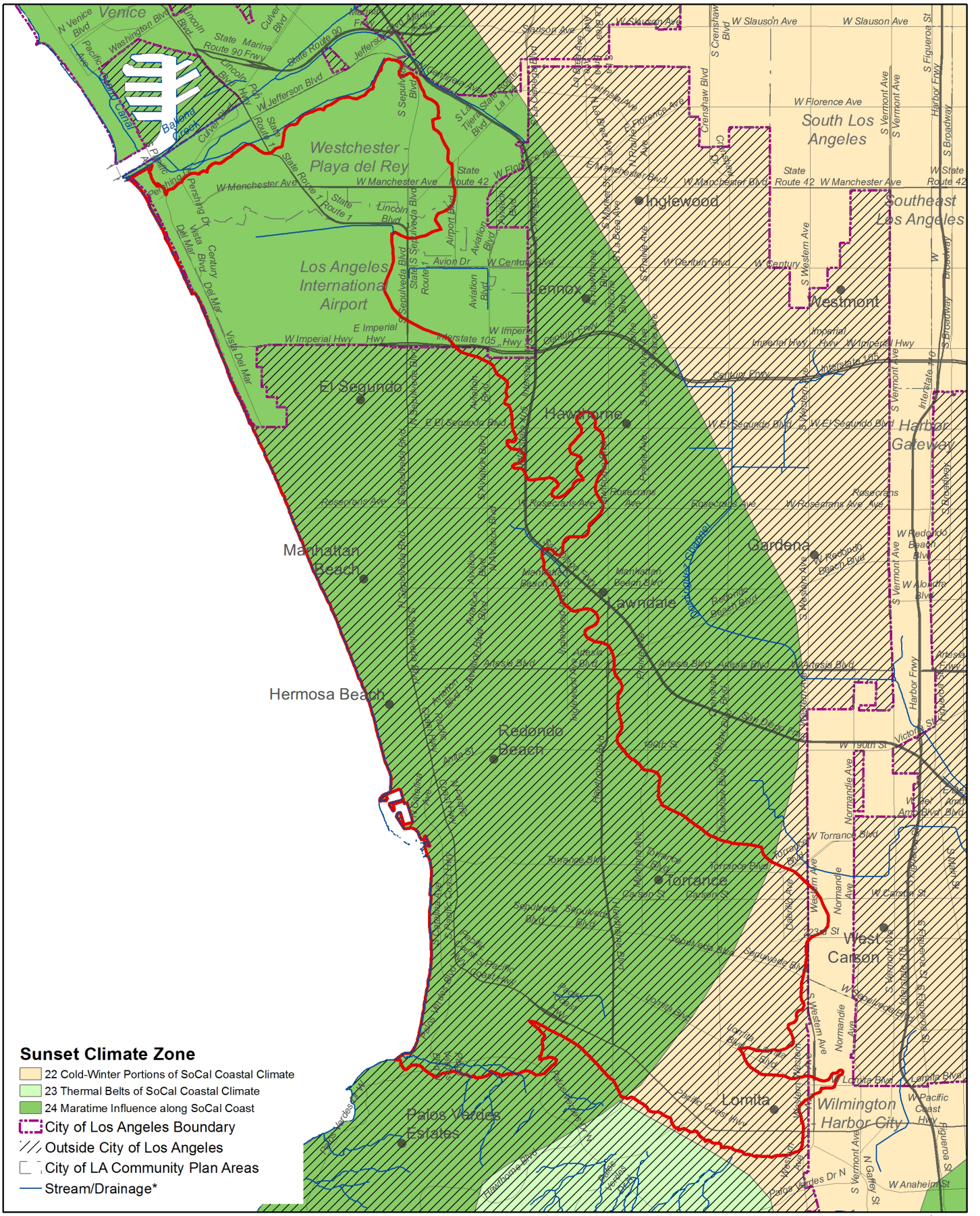
VEGETATION & LANDCOVER

The CALVEG dataset reflects limited native vegetation; however, finer-grained analysis reveals significant areas of dune scrub and degraded prairie at the LAX dunes area, and a relatively large corridor of dune scrub and coastal sage scrub along the bluffs bordering the Ballona Wetlands. Younger dunes closer to the coast were dominated by dune scrub that transitioned to extensive herbaceous prairie communities of grasses and annual and perennial wildflowers in the central portion of the ecotope. Coastal sage scrub and wetland vegetation was also present toward eastern and southern areas. The federally endangered El Segundo blue butterfly (*Euphilotes battoides allyni*) ranges almost exclusively within the ecotope and is associated with its host plant, dune buckwheat *(Eriogonum parvifolium),* and the dune scrub vegetation type. Other notable vegetation exists at the Madrona Marsh where a small remnant wetland, once part of an extensive historic wetland complex, still remains.



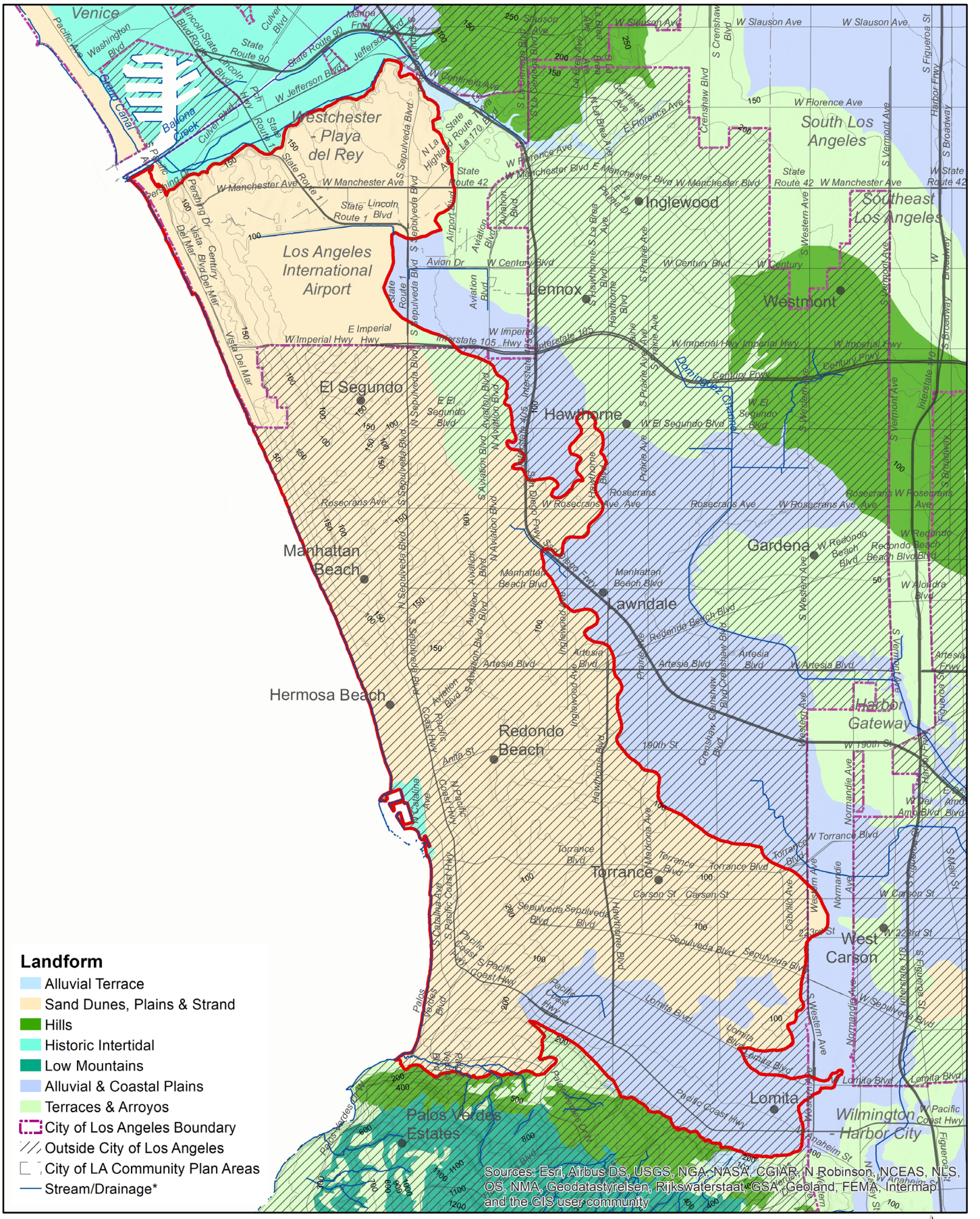
Ecotope 6 Context Map

Data source: I. Brown (2019). https://escholarship.org/uc/item/4c81w4nr



Microclimate

Data source: Sunset Magazine. http://www.sunset.com/garden/climate-zones/climate-zones-intro-us-map



Landform

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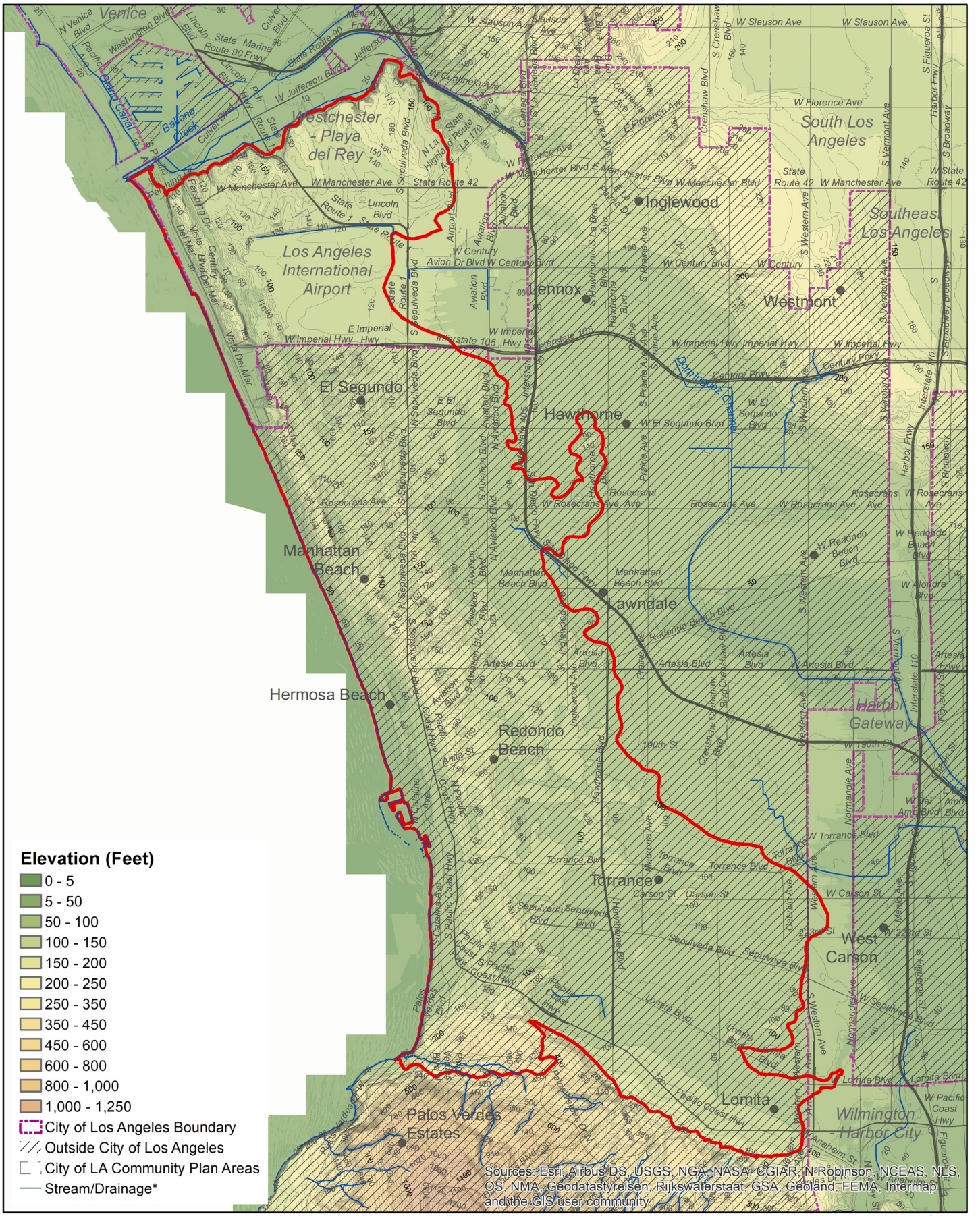
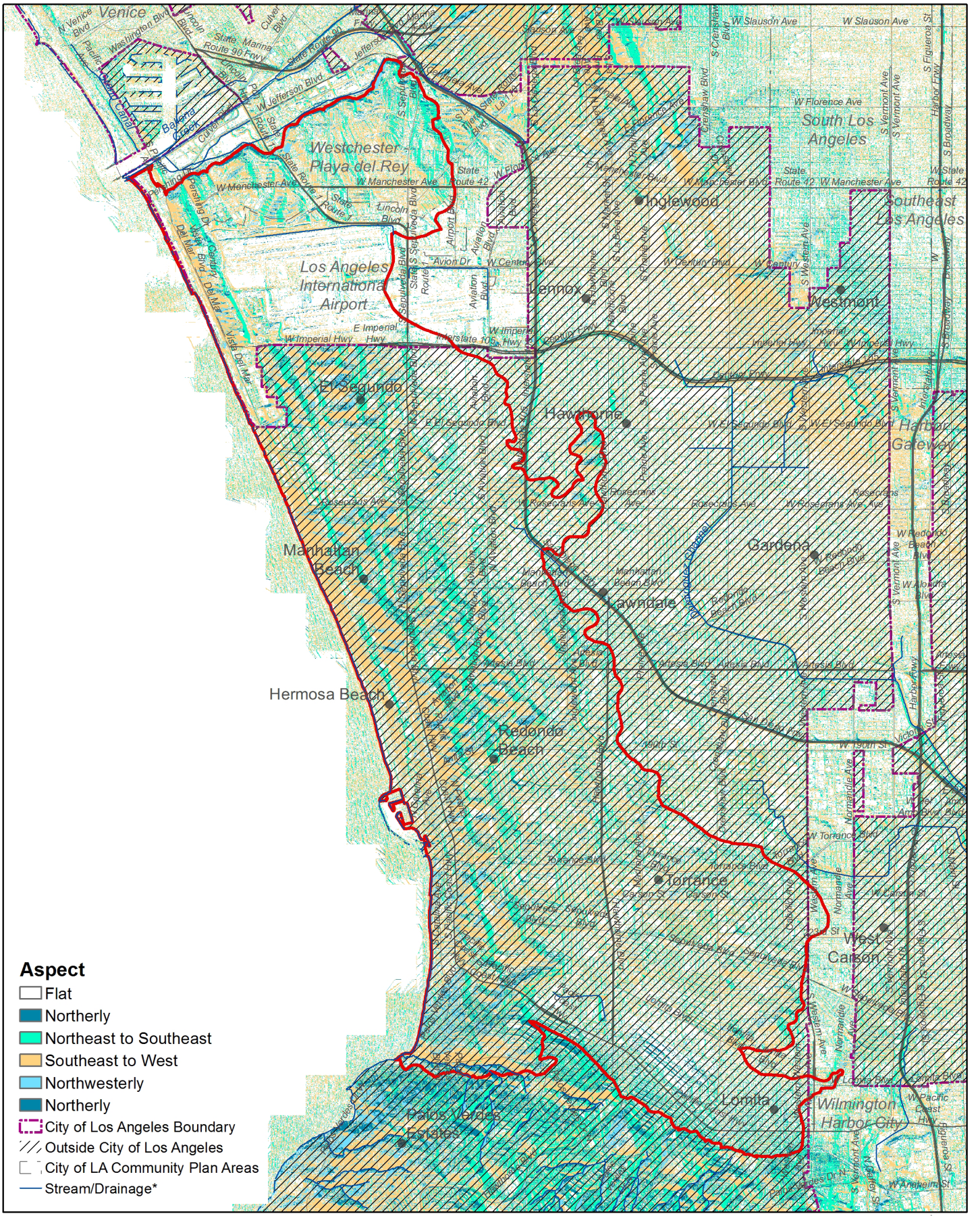


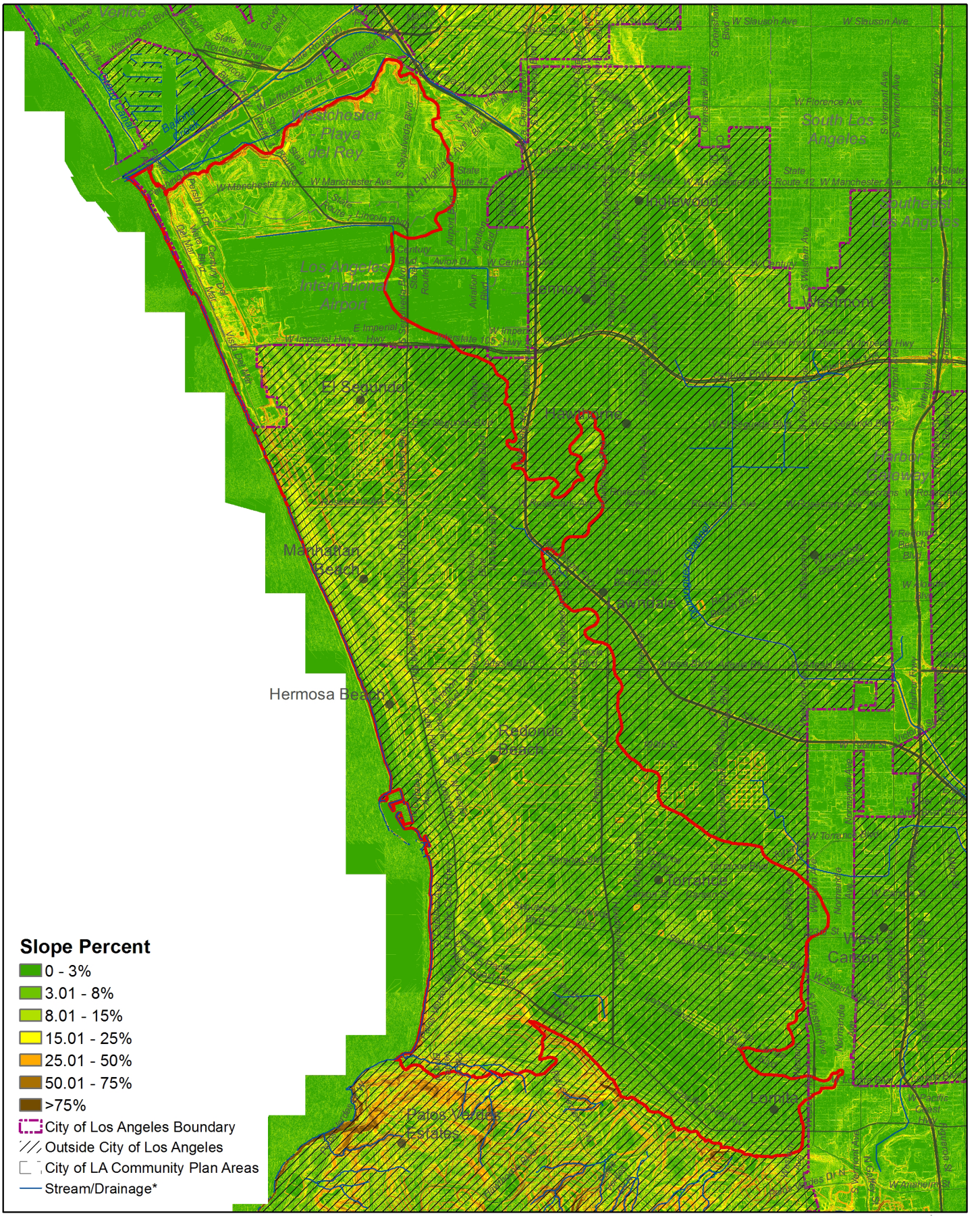
Elevation

Data source: 2006 10-foot Digital Elevation Model (DEM) – LARIAC – Public Domain. https://egis3.lacounty.gov/dataportal/2011/01/26/2006-10-foot-digital-elevation-model-dem-public-domain/



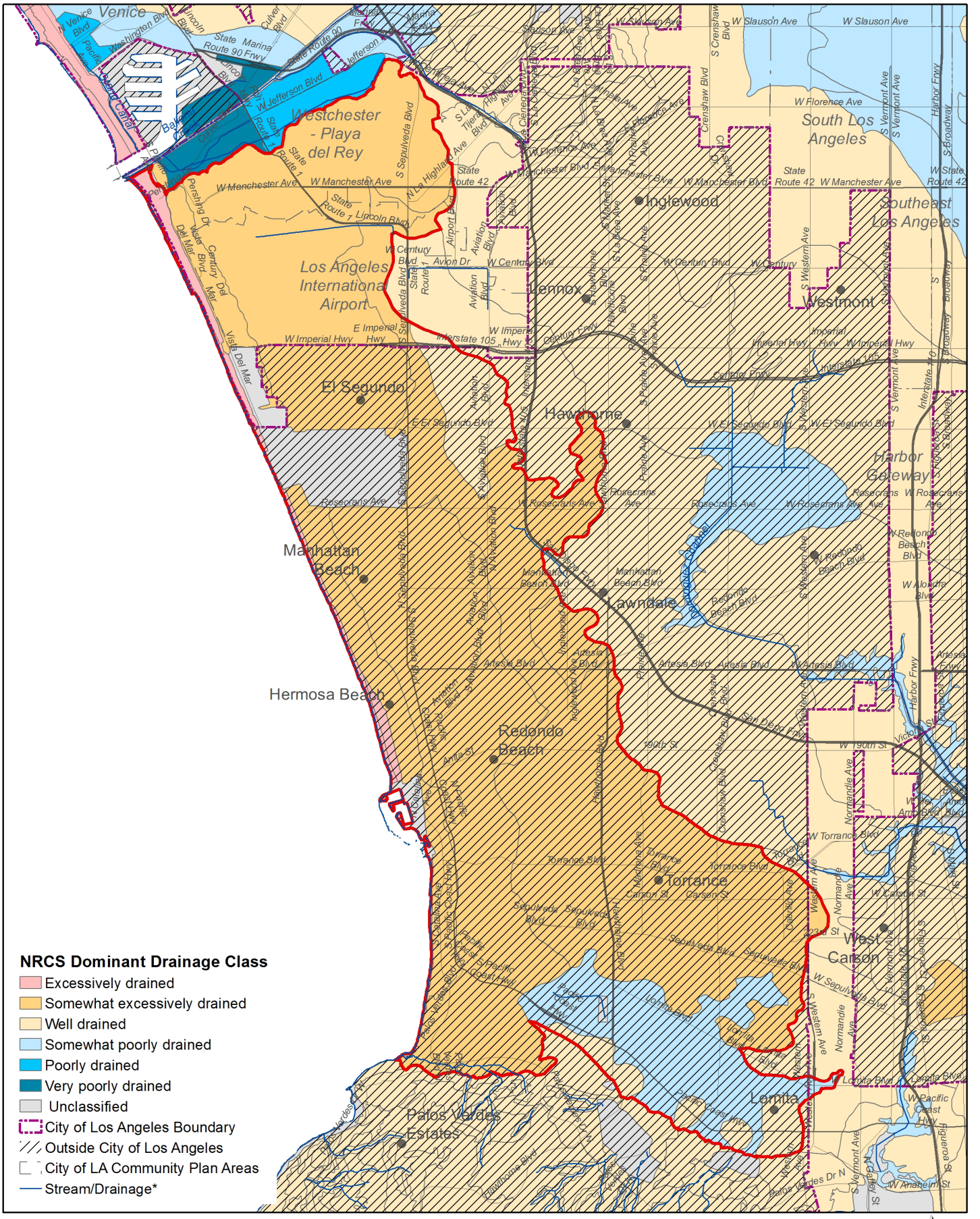
Aspect

Data source: 2006 10-foot Digital Elevation Model (DEM) – LARIAC – Public Domain. https://egis3.lacounty.gov/dataportal/2011/01/26/2006-10-foot-digital-elevation-model-dem-public-domain/



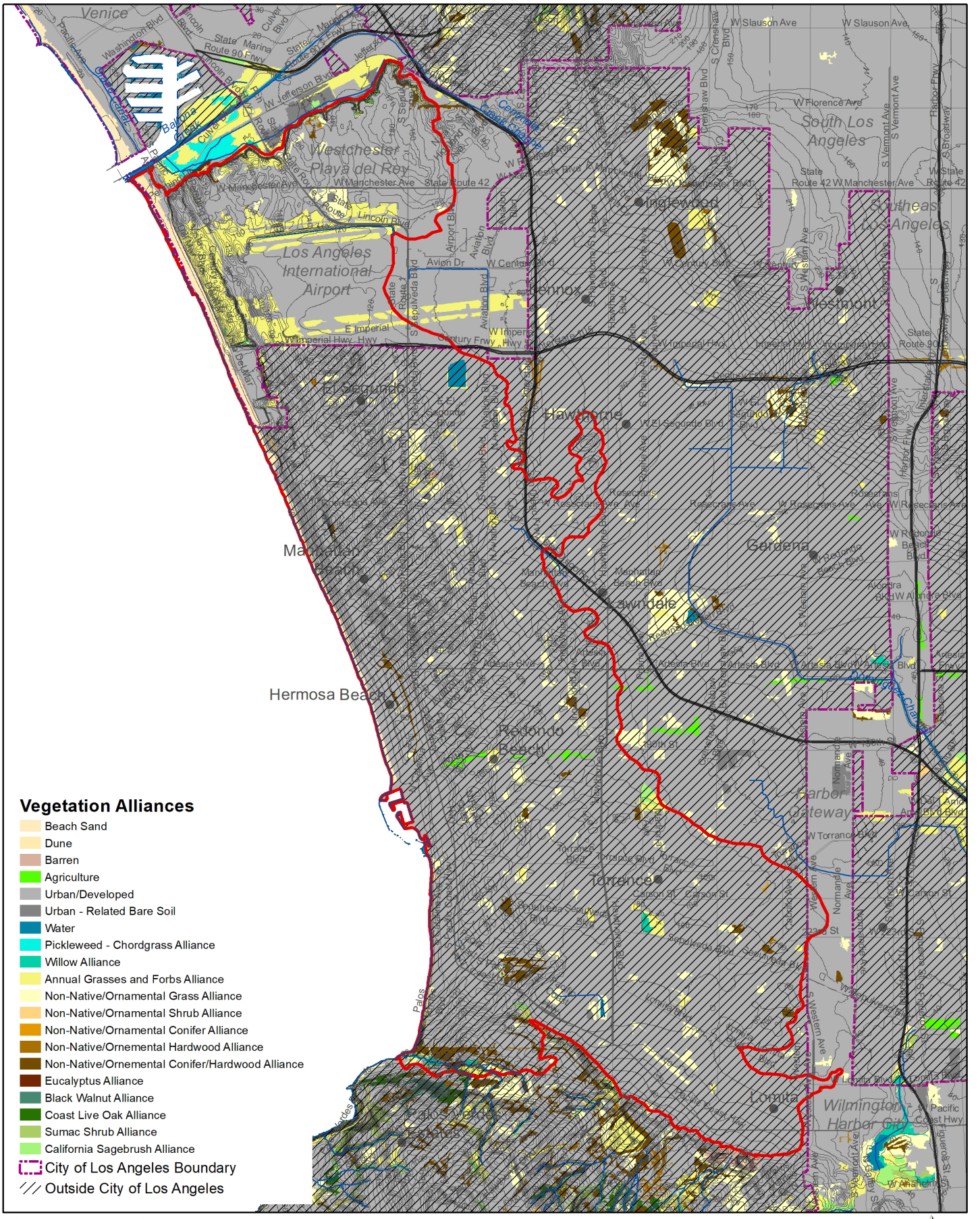
Slope Percent

Data source: 2006 10-foot Digital Elevation Model (DEM) – LARIAC – Public Domain. https://egis3.lacounty.gov/dataportal/2011/01/26/2006-10-foot-digital-elevation-model-dem-public-domain/



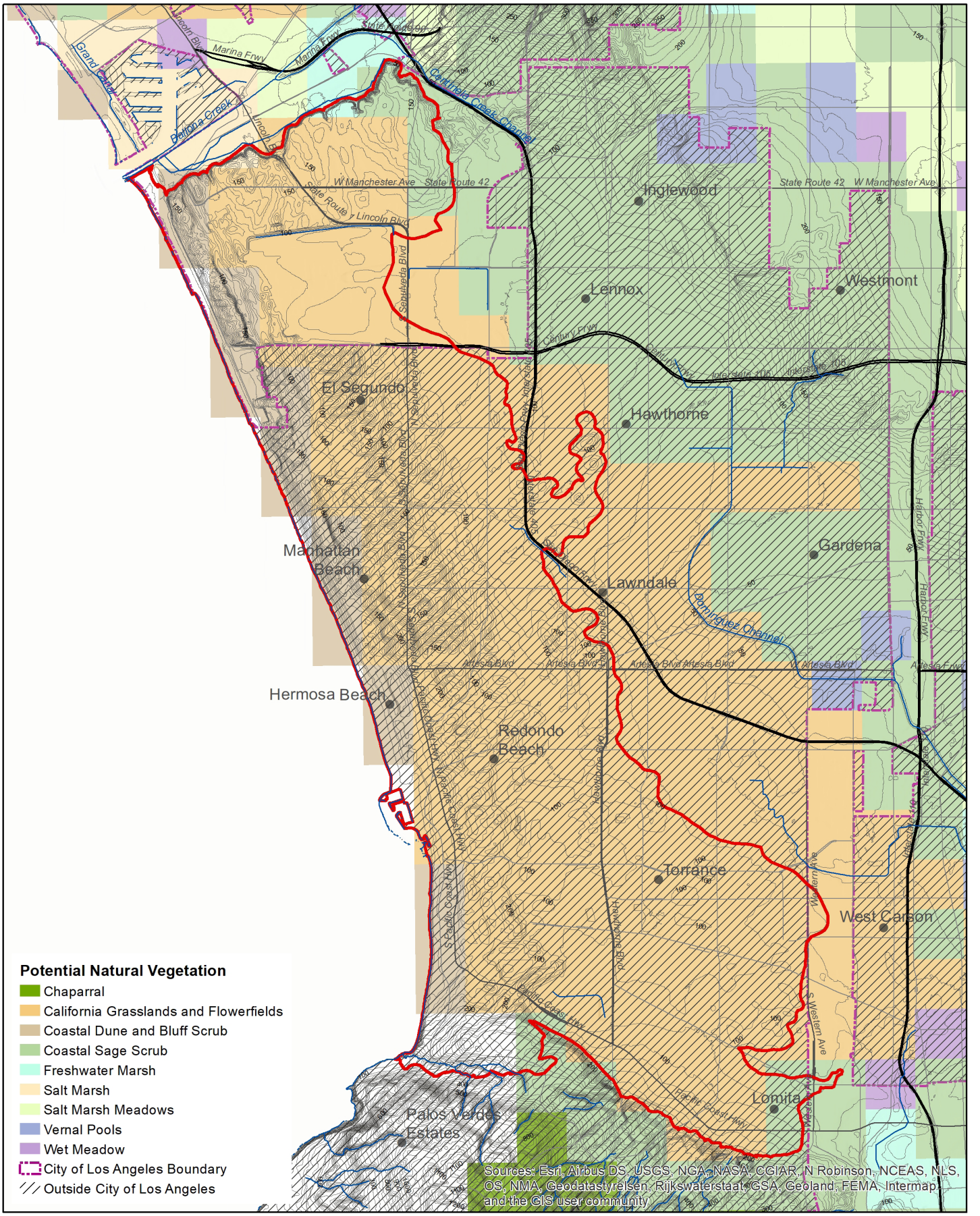
Drainage

Data source: Soil Survey Geographic (SSURGO) Database for Los Angeles County, Southeastern Part, CA; National Hydrography Dataset, U.S. Geological Survey, Reston, Virginia. 2002-2016.



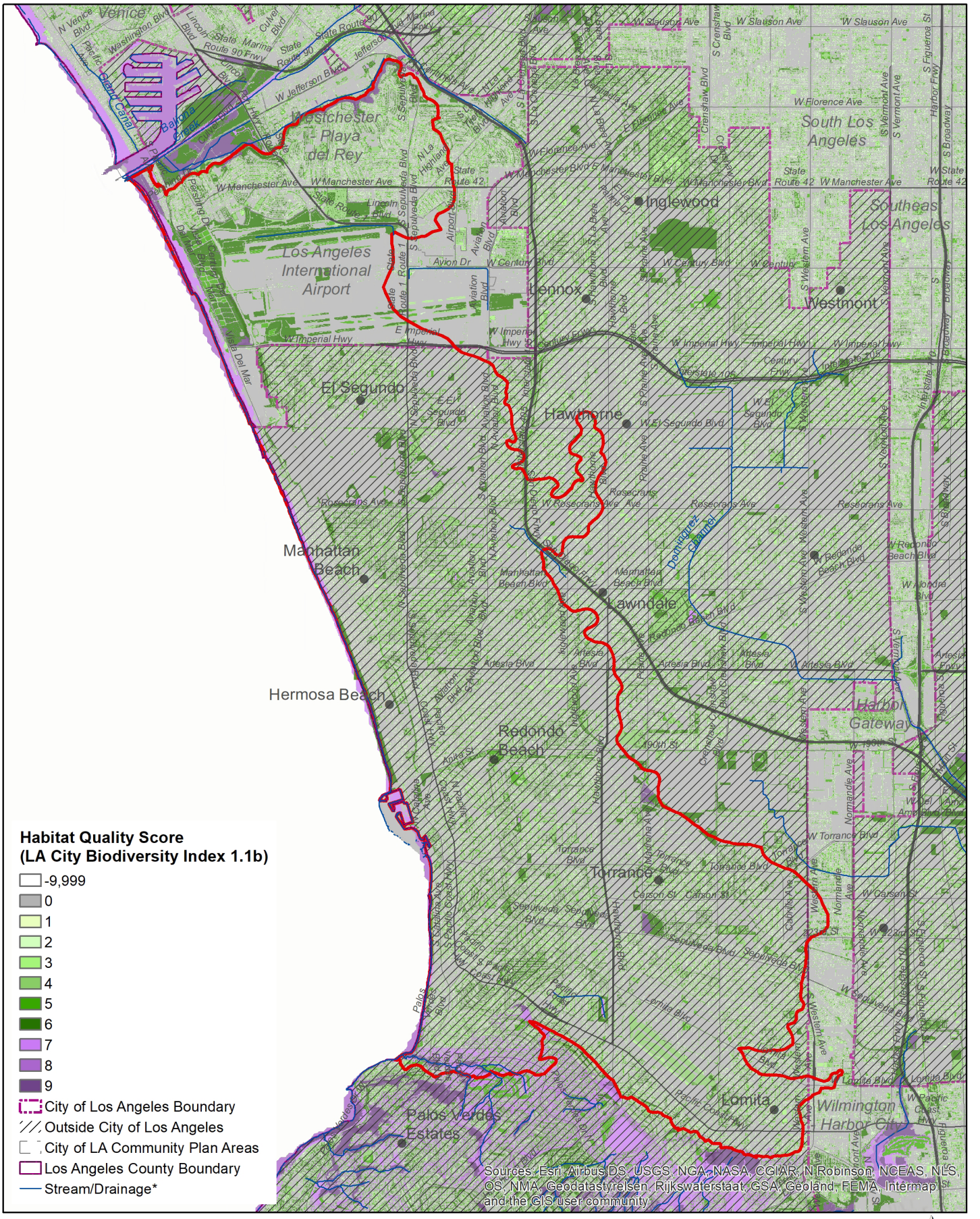
Vegetation Alliances

Data source: CALVEG. https://www.fs.usda.gov/detail/r5/landmanagement/resourcemanagement/?cid=stelprdb5347192



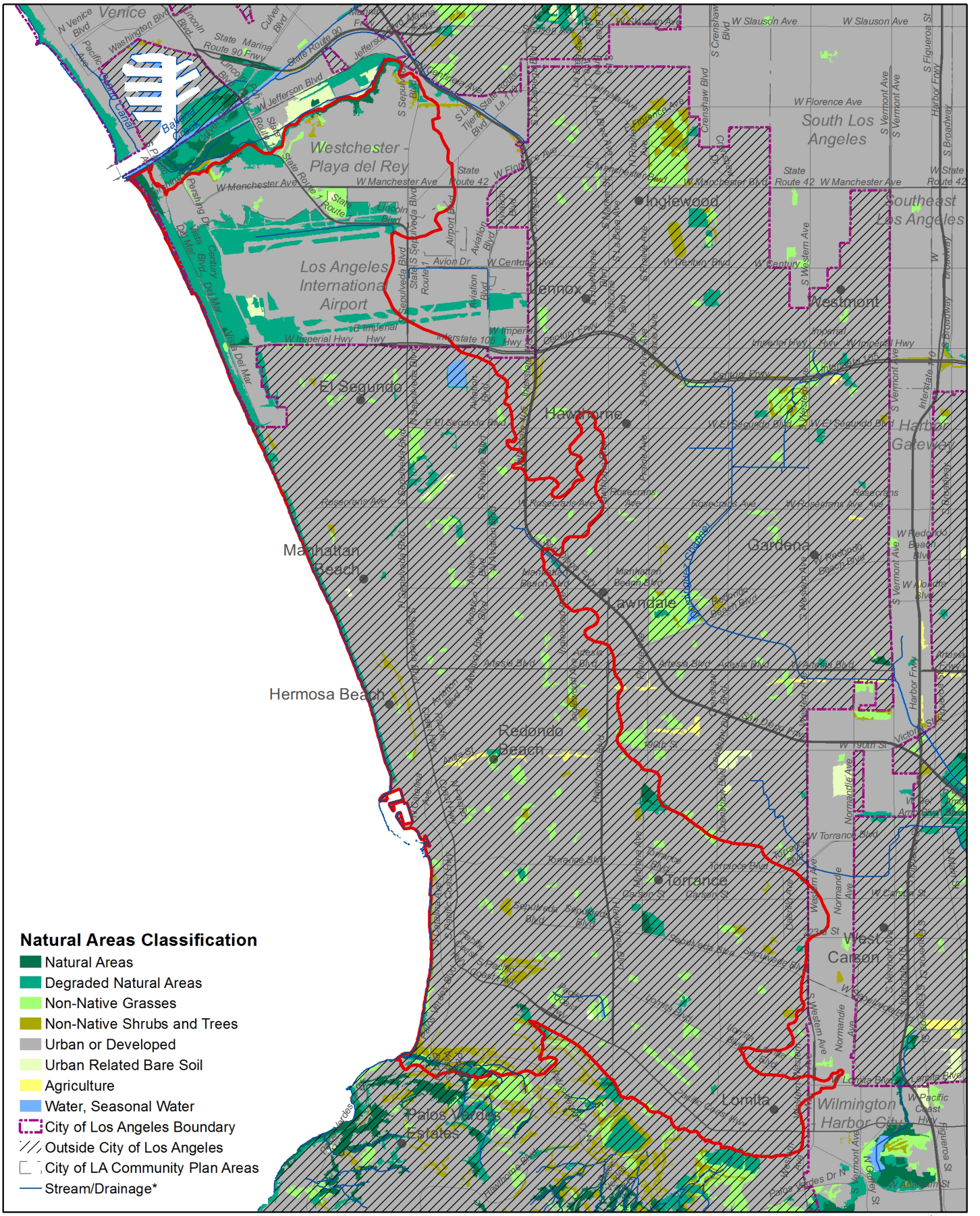
Hypothesized Potential Natural Vegetation

Data source: USC Spatial Sciences Institute/UCLA Institute of the Environment: Historical Ecology of the Los Angeles River Watershed Project.



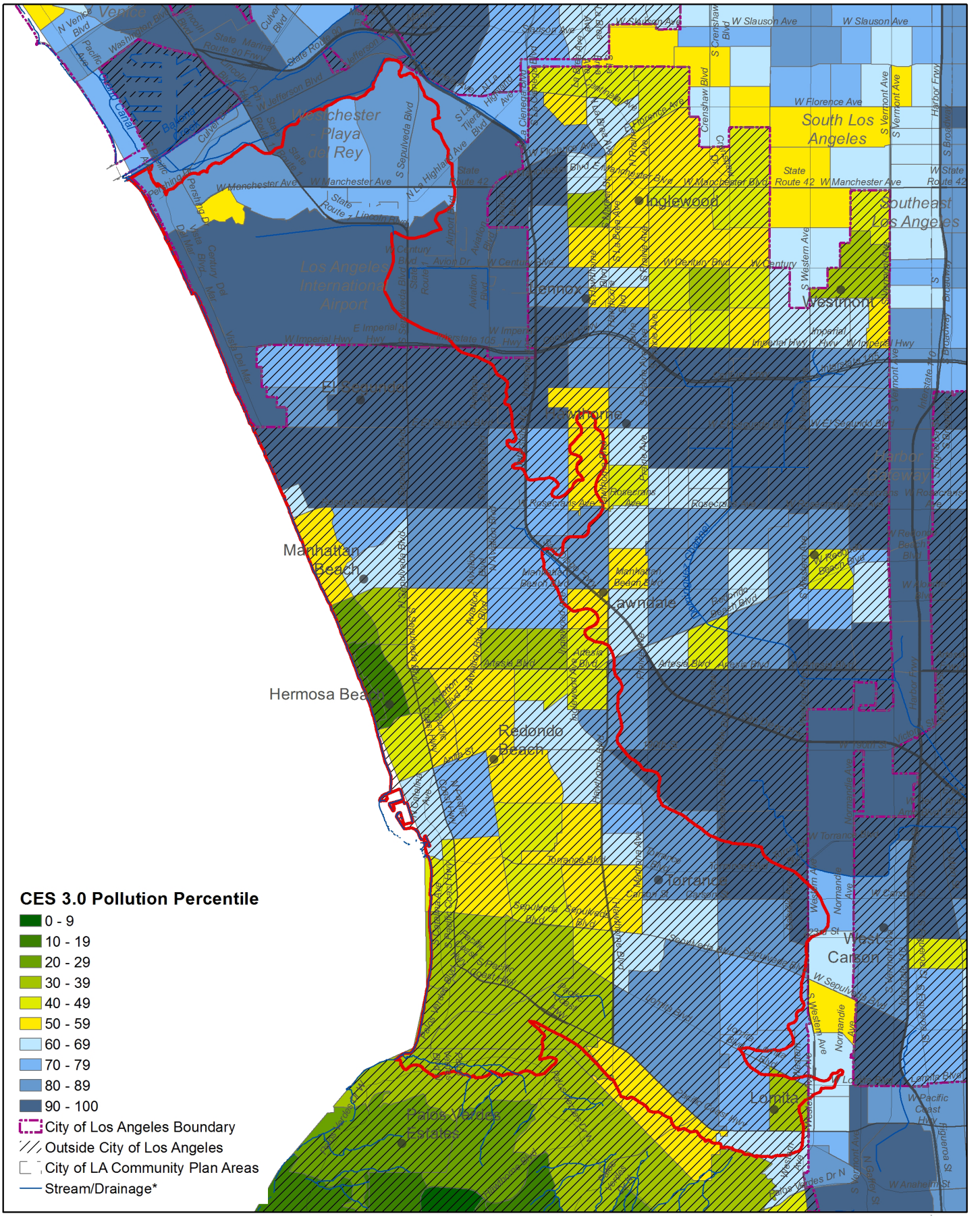
General Habitat Quality

Data source: I. Brown (2019). https://escholarship.org/uc/item/4c81w4nr



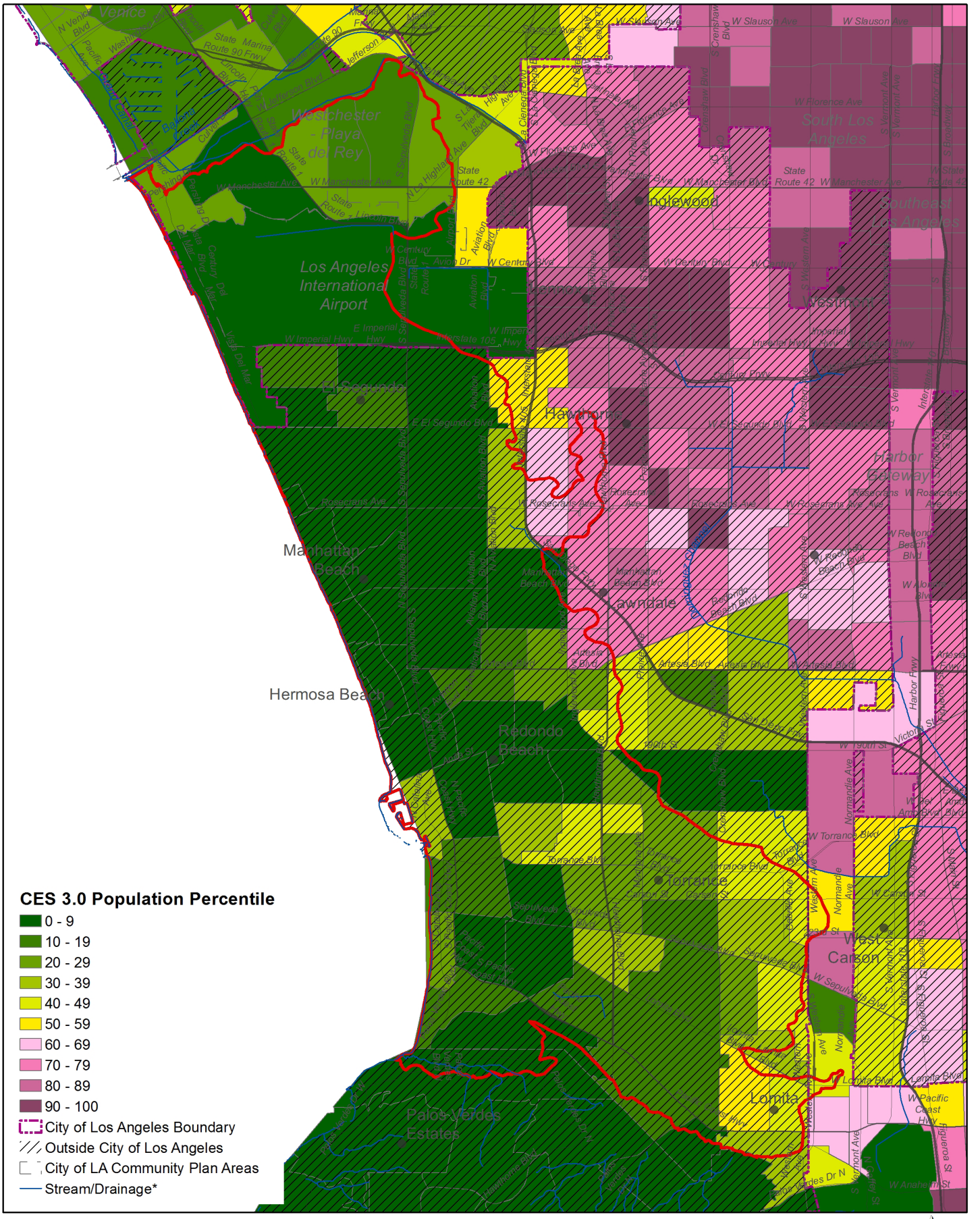
Natural Areas Classification

Data source: 2018 City of Los Angeles Biodiversity Report, Appendix B. https://www.lacitysan.org/cs/groups/public/documents/document/y250/mdi0/~edisp/cnt024943.pdf



CalEnviroScreen Pollution Precentile (pollution exposure)

Data source: CalEnviroScreen 3.0. The California Office of Environmental Health Hazard Assessment (OEHHA). https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-30

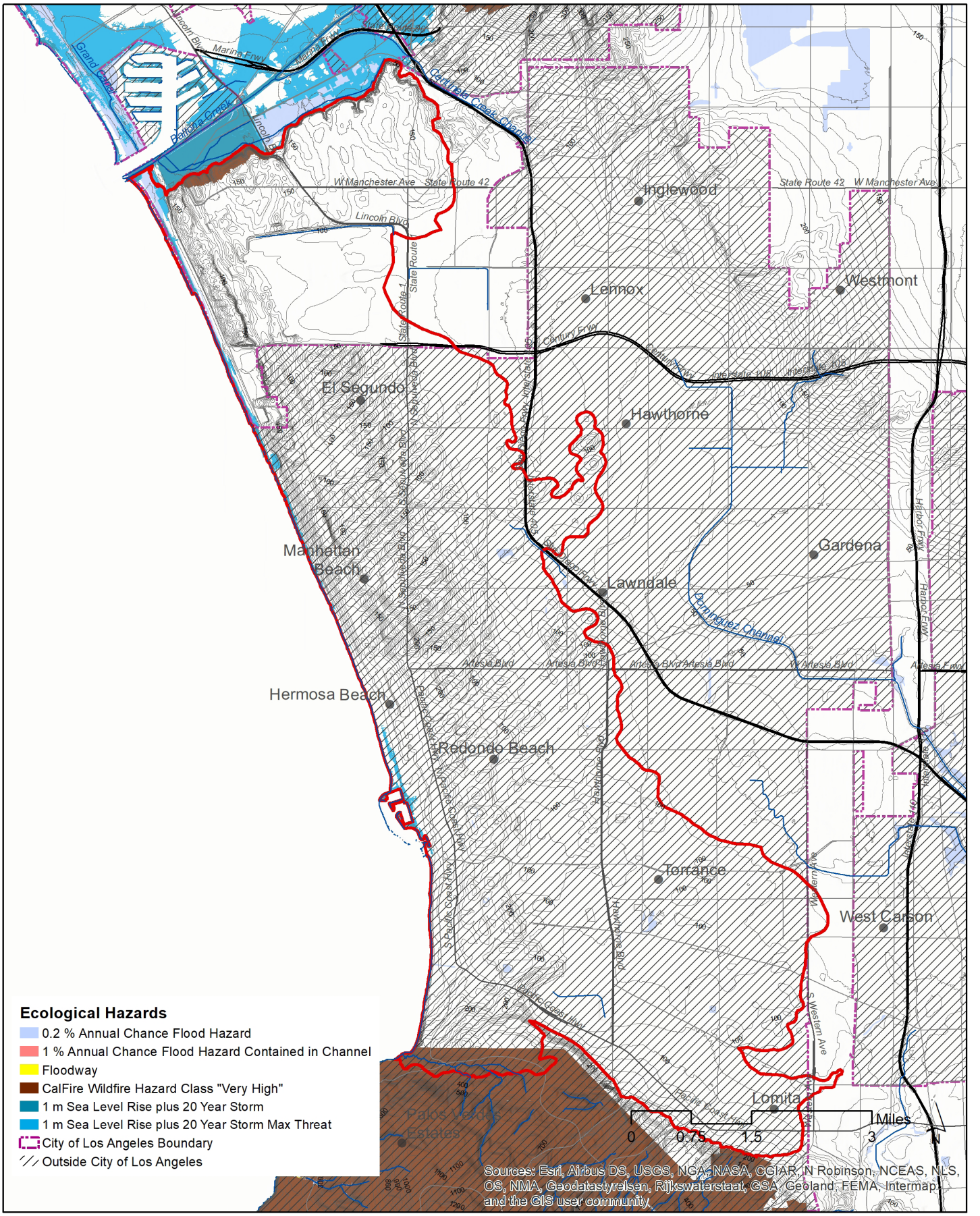


CalEnviroscreen Population Percentile (population vulnerability)

Data source: CalEnviroScreen 3.0. The California Office of Environmental Health Hazard Assessment (OEHHA). https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-30

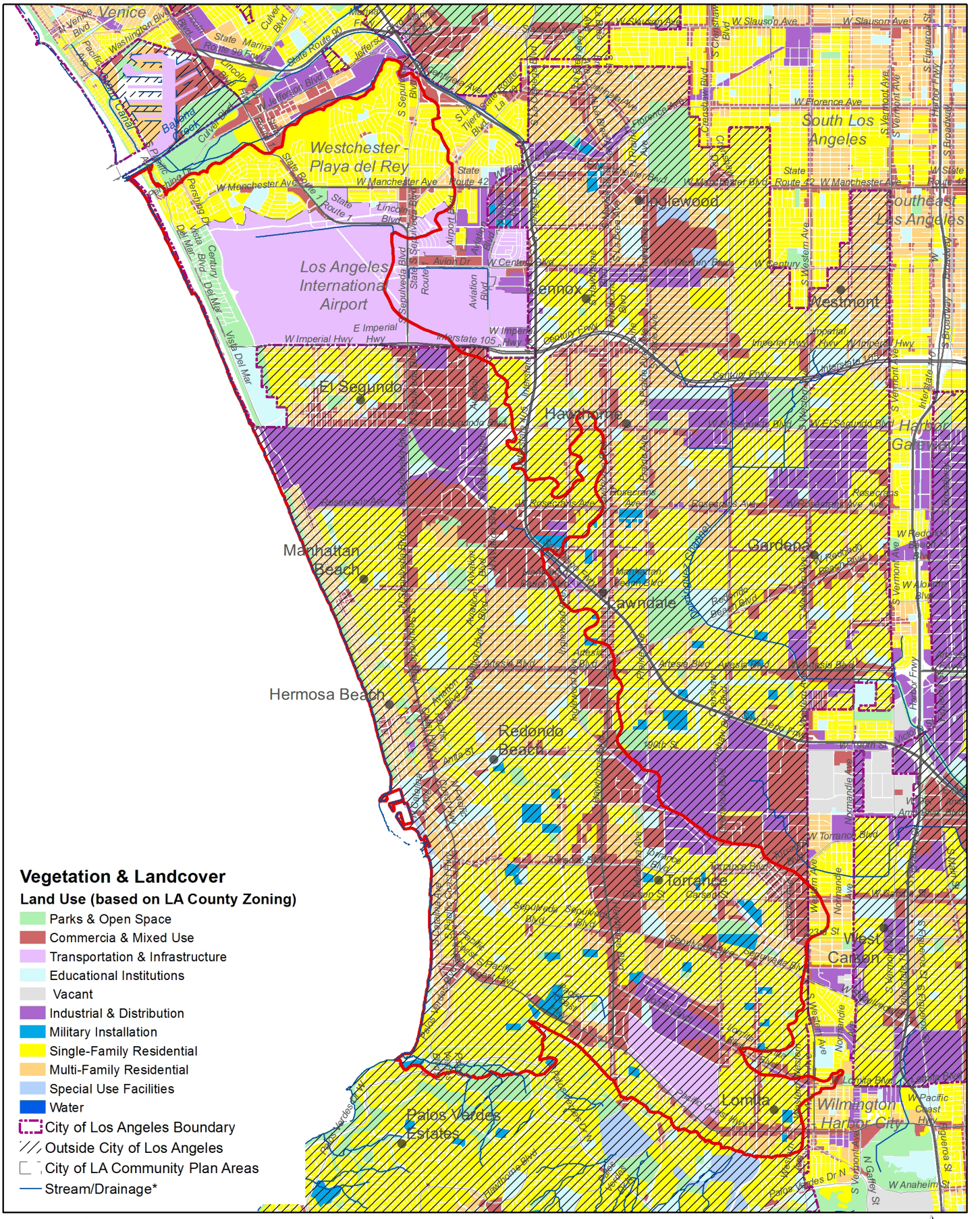
0 0.75 1.5 3 Miles

N



Ecological Hazards

Data sources: Coastal Storm Modeling System (CoSMoS) for Southern California, v3.0, Phase 2; Calfire Fire Hazard Severity Zone Maps; Federal Emergency Management Agency, National Flood Hazard Layer, Version 1.1.1.0, 11/01/2016.

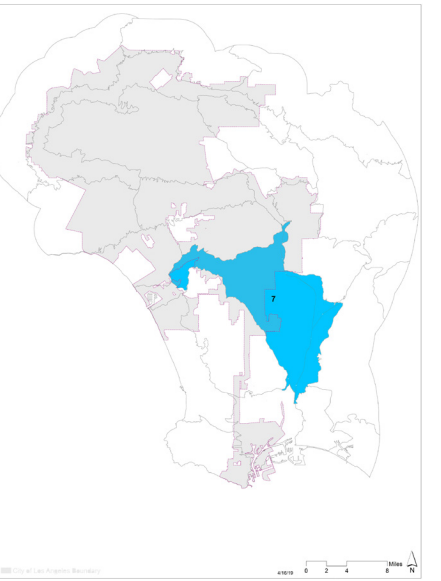


Land Use

Data source: 2008 Los Angeles County Countywide Zoning by the Southern California Association of Governments (SCAG). https://egis3.lacounty.gov/dataportal/2012/04/10/county-wide-zoning/

ECOTOPE 7: LOS ANGELES RIVER LOWER ALLUVIAL PLAIN

(Partially within the City of Los Angeles)



LANDFORM

The Los Angeles Lower Alluvial Plain encompasses the broad, flat landforms below the Elysian Hills, Repetto Hills, and Arroyo Seco confluence. This landform was once dominated by alluvial deposition during annual, rainy season flood events. Meandering, braided channels transported, sorted, and deposited alluvium from the San Gabriel and Eastern Santa Monica Mountains into very flat plains. Soils vary and include sandy to cobbly, poorly developed soils on areas subject to more recent alluvial activity, and more clayey soils in other areas. Historically, as alluvium built up near the channel, large storms would often breach the banks resulting in flooding of relatively lower adjacent areas, sometimes allowing the channel to shift miles east or west during a single-storm event. An historic example of this was when the river shifted its course from emptying into Santa Monica Bay, via what is now Ballona Creek, to its present outlet in Long Beach in 1825. There is also evidence that the river would occasionally merge with the San Gabriel River in north Orange County and flow out near Seal Beach (Gumprect, 2001)." Today, however, flooding and natural alluvial processes have mostly been eliminated due to channelization of the LA River and dense urbanization, with the exception of some areas in the southeast, mostly below the Rio Hondo, and along Ballona Creek in the northwest portion of the ecotope that are still subject to flooding during major storm events.

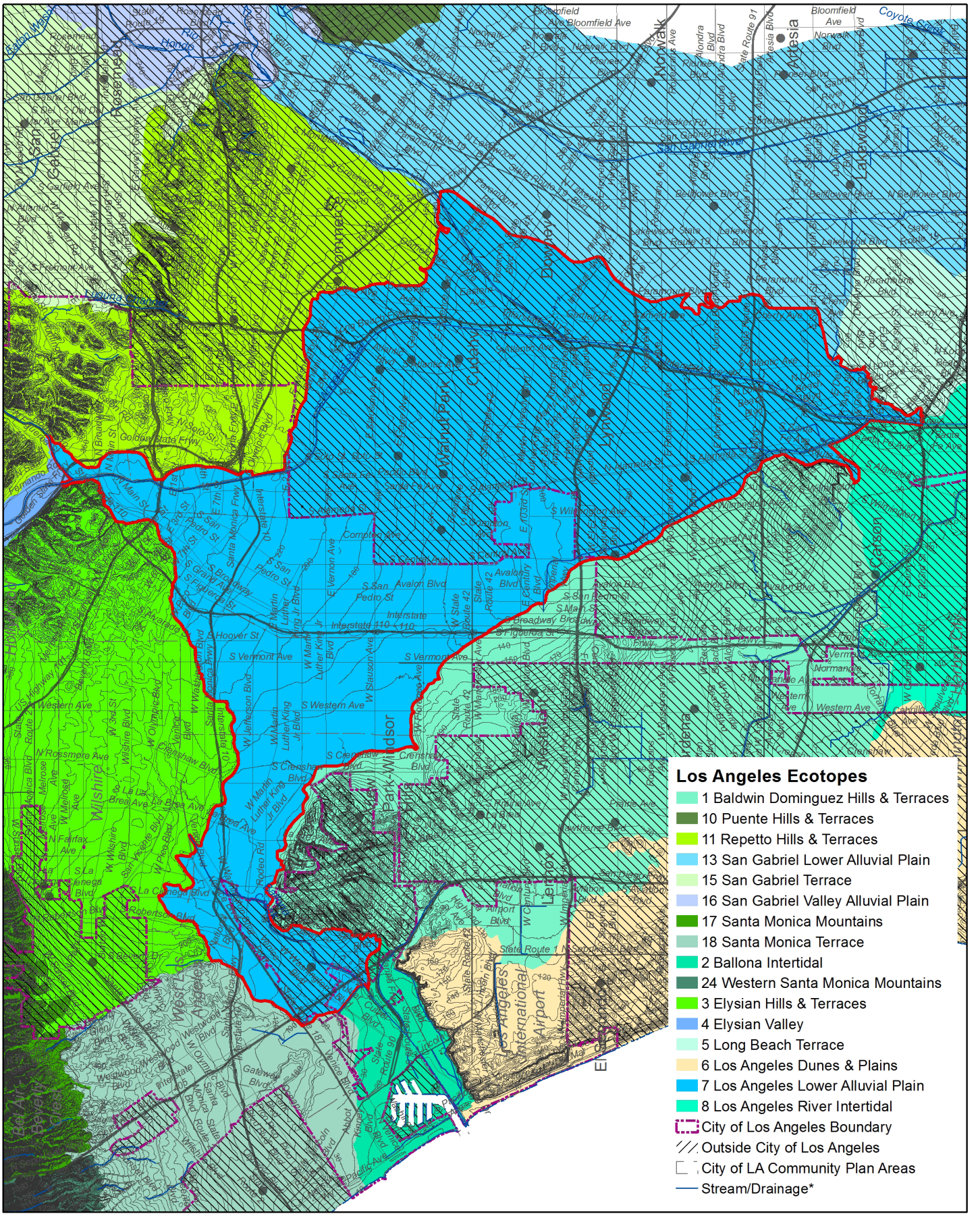
Another important feature of the landform is along the southwestern edge where it meets the higher terrain delimited by the Santa Monica Terrace, Baldwin-Dominguez Hills & Terraces, and Long Beach Terrace ecotopes. These features historically presented a barrier to water flow resulting in vast, poorly drained wetland complexes and associated soils. Those along present-day Ballona Creek near "La Cienega" are well described in Dark et al. (2011). Wetlands were also present to the south between Compton Creek and the Dominguez Hills. Soils elsewhere within the ecotope vary in permeability and areas of coarse soils present excellent opportunities for stormwater infiltration.

MICROCLIMATE

Sunset Cold-Winter Coastal Climates comprise almost 96% of the ecotope. This climate zone is characterized by relatively cool nighttime temperatures in winter with occasional frost, but temperatures rarely drop below freezing. Increasingly hot summer temperatures are exhibited further from the coast. The extremely dense urban and industrial land use, limited tree canopy, and flat terrain of this ecotope result in extensive direct solar exposure. According to mapping done by the City of Los Angeles, Department of City Planning, some of the strongest urban heat islands in the City of Los Angeles occur in eastern portions of the ecotope.

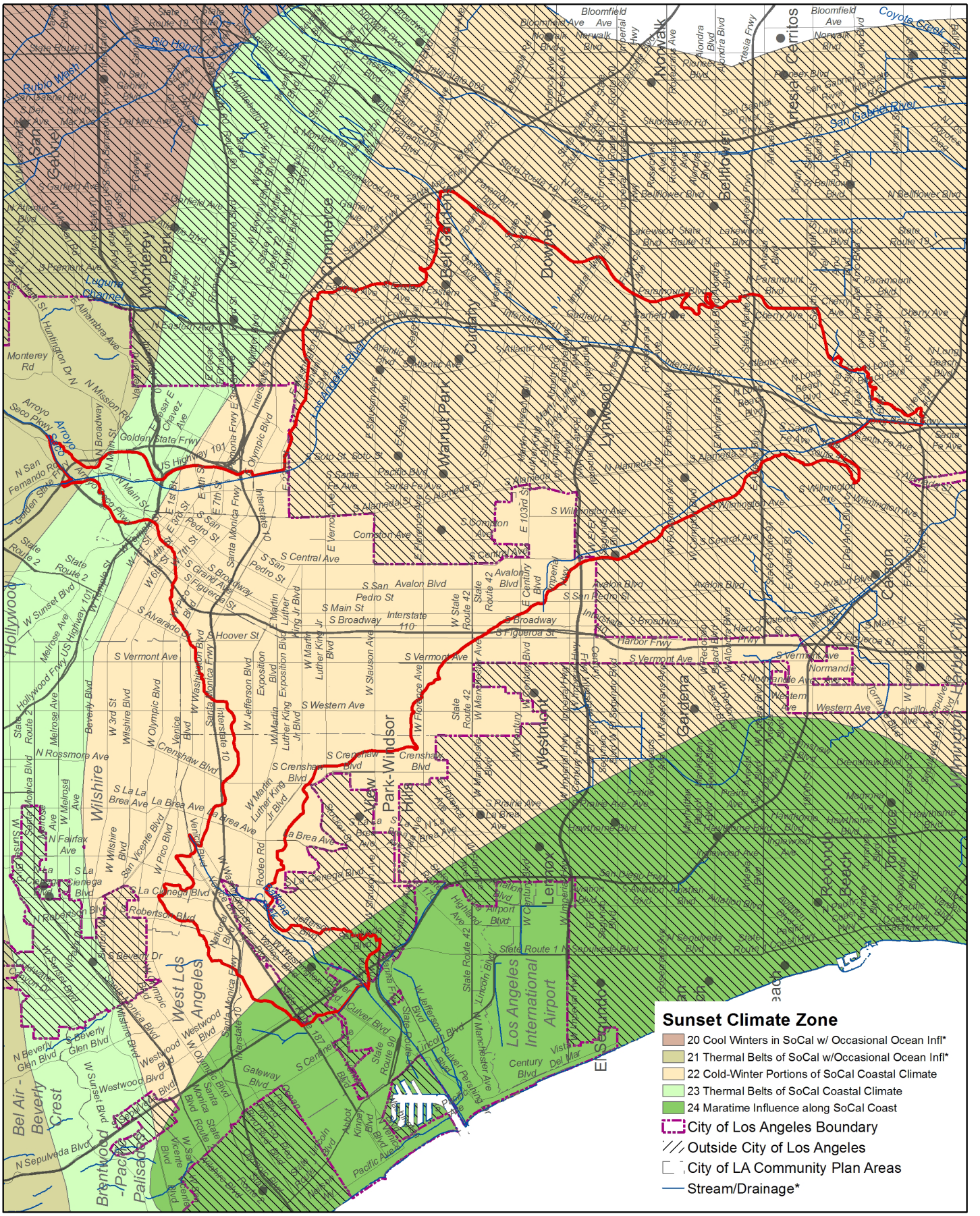
VEGETATION & LANDCOVER

The presence of flat terrain, protected from flooding, has led to dense development in this ecotope. As such, the CALVEG dataset reflects that almost no native vegetation remains. However, historic accounts and soils present evidence of vast, verdant plains interspersed with riparian woodlands (Gumprect 2001). The water table in many areas was probably a lot shallower historically, likely supporting trees in areas, especially near stream channels and springs and areas with more coarse, gravelly soil types. A significant western sycamore tree, the "Compton Eagle Tree", which once demarcated the northern boundary of Rancho San Pedro, still stands today near E. Poppy Ave. and N. Short Street in Compton. Seasonally wet herbaceous meadows and marshes were also mapped by Dark et al. (2011) in what is now the Ballona Creek Watershed. Similar ecosystems were likely present on similar soils along the southern boundary of the ecotope where the LA River and Compton Creeks formed similar wetland complexes upstream of the Baldwin-Dominguez Hills and Long Beach Terrace Ecotopes. Drier alluvial scrub and seasonally dry herbaceous meadows interspersed with riparian vegetation, springs, and wetlands, similar to those described by Stein et al. (2007) for the lower San Gabriel River floodplain, likely occurred in the southeastern portion of the ecotope.



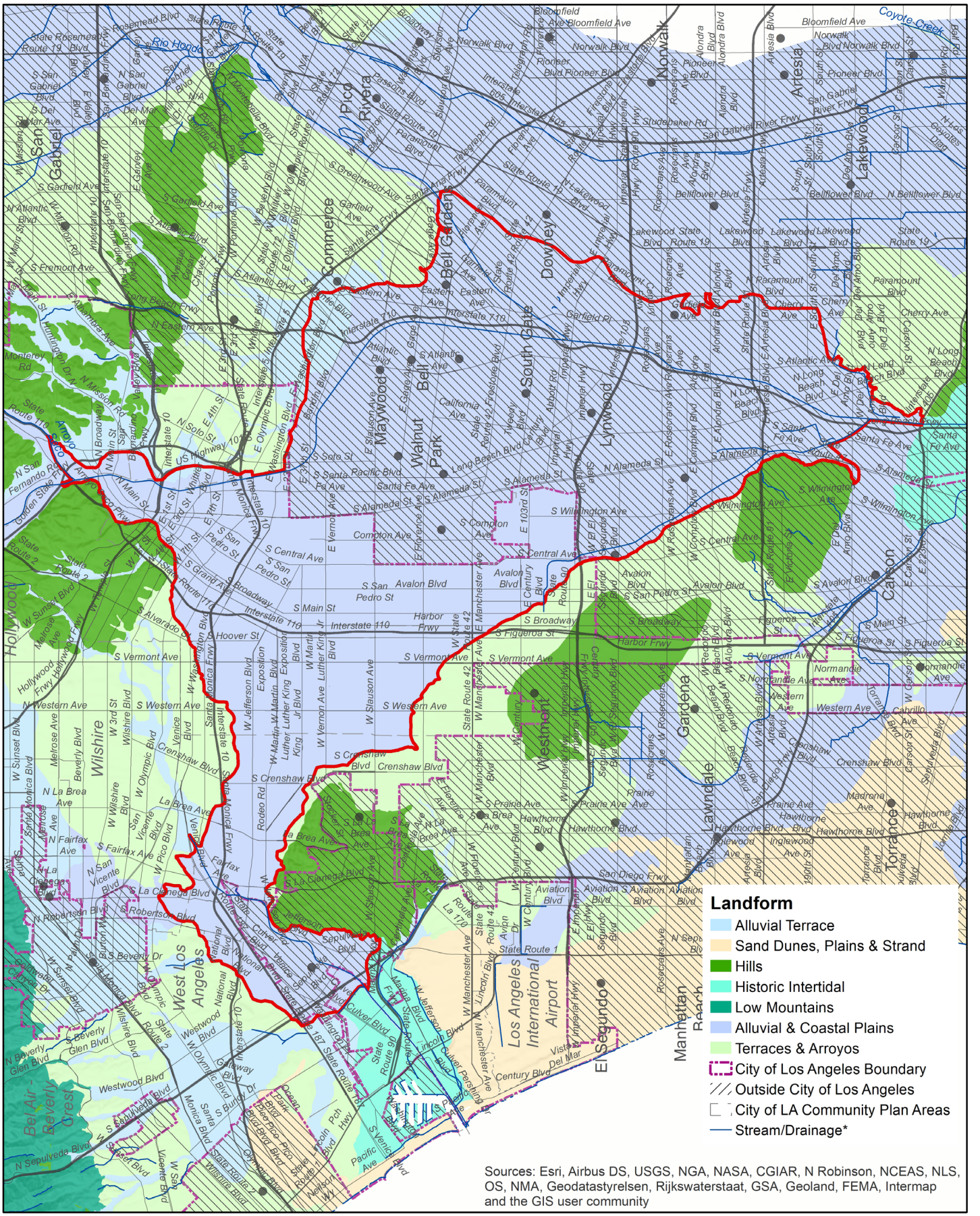
Ecotope 7 Context Map

Data source: I. Brown (2019). https://escholarship.org/uc/item/4c81w4nr



Microclimate

Data source: Sunset Magazine. http://www.sunset.com/garden/climate-zones/climate-zones-intro-us-map



Landform

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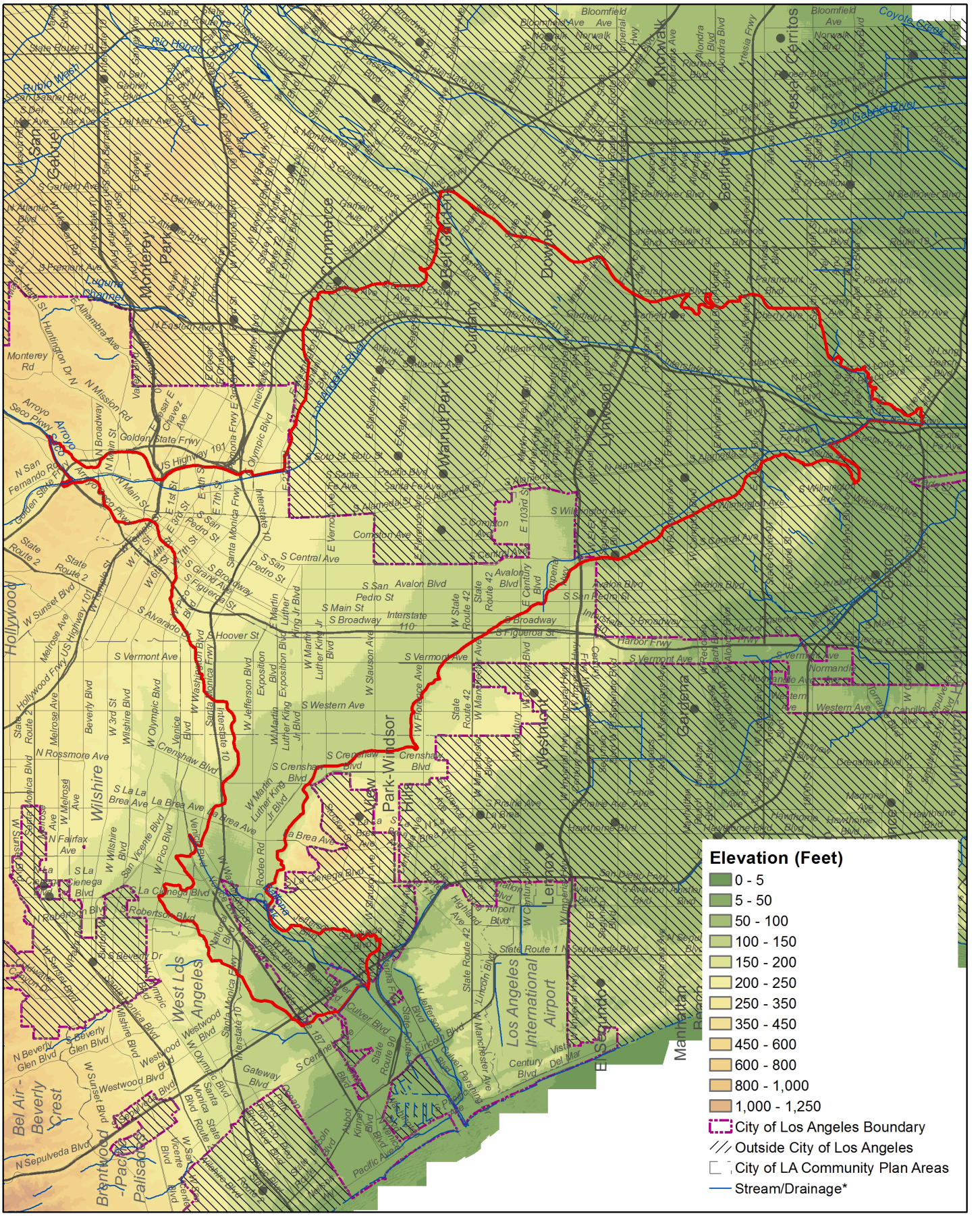

Elevation

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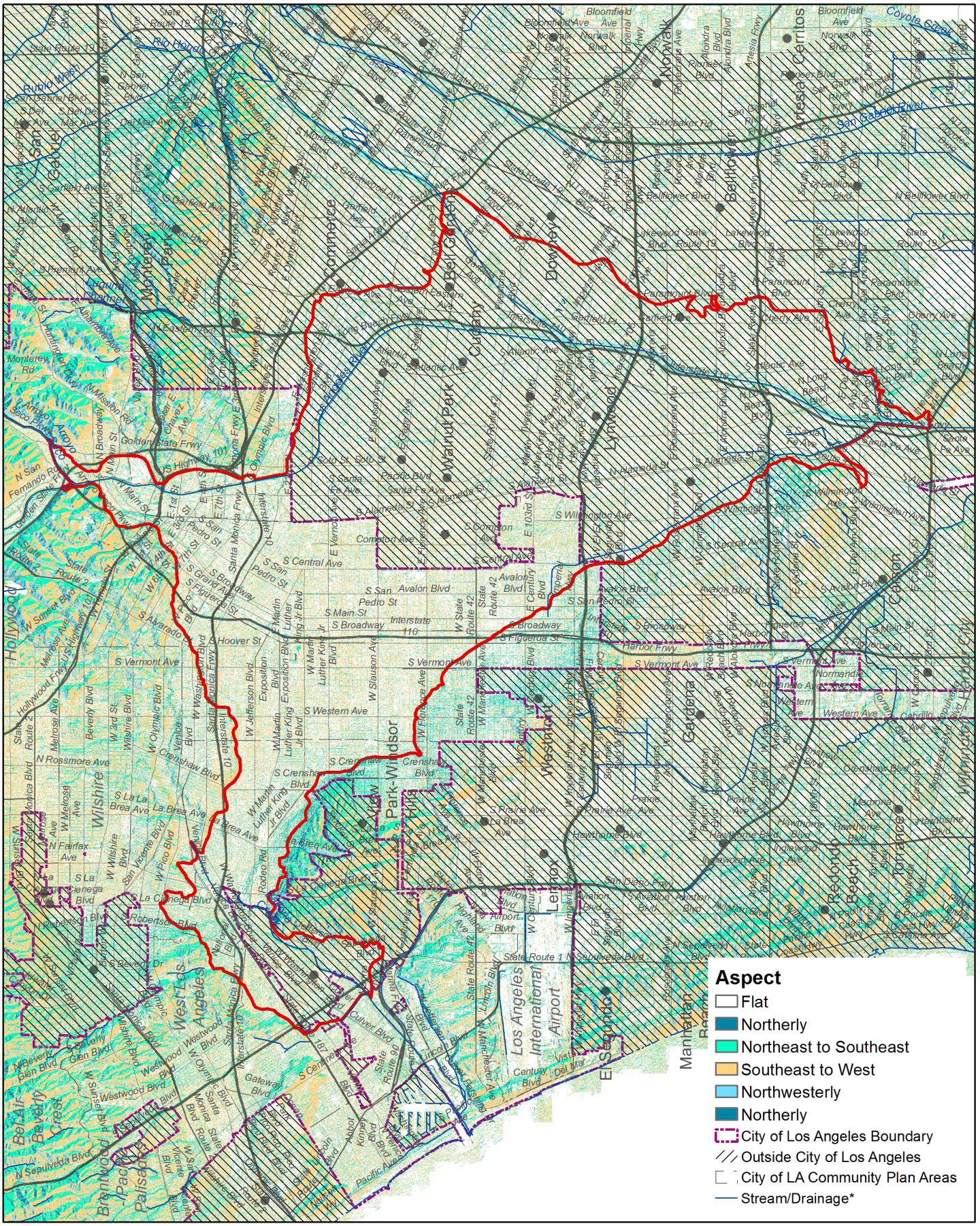
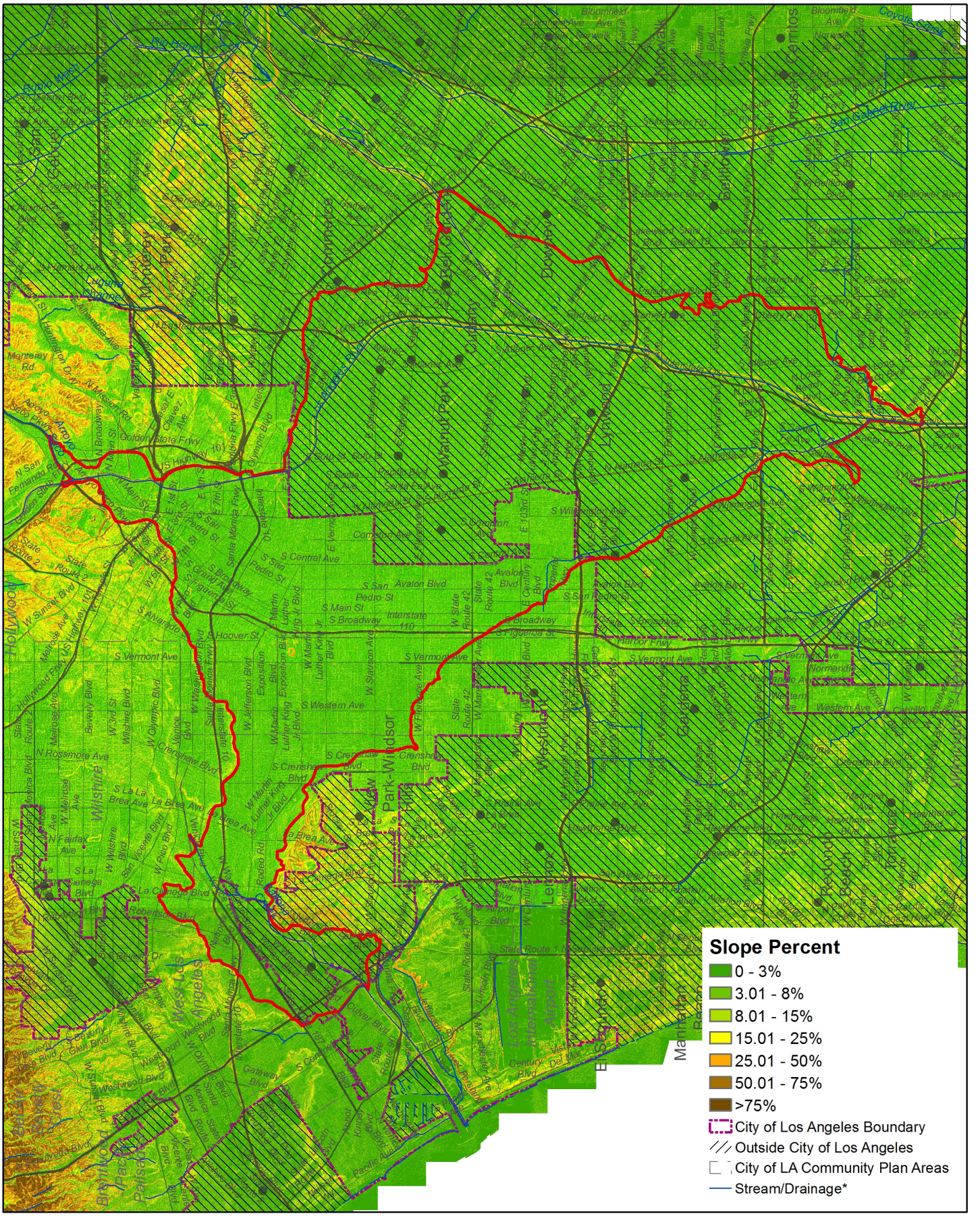


Aspect

Data source: 2006 10-foot Digital Elevation Model (DEM) – LARIAC – Public Domain. https://egis3.lacounty.gov/dataportal/2011/01/26/2006-10-foot-digital-elevation-model-dem-public-domain/



Slope Percent

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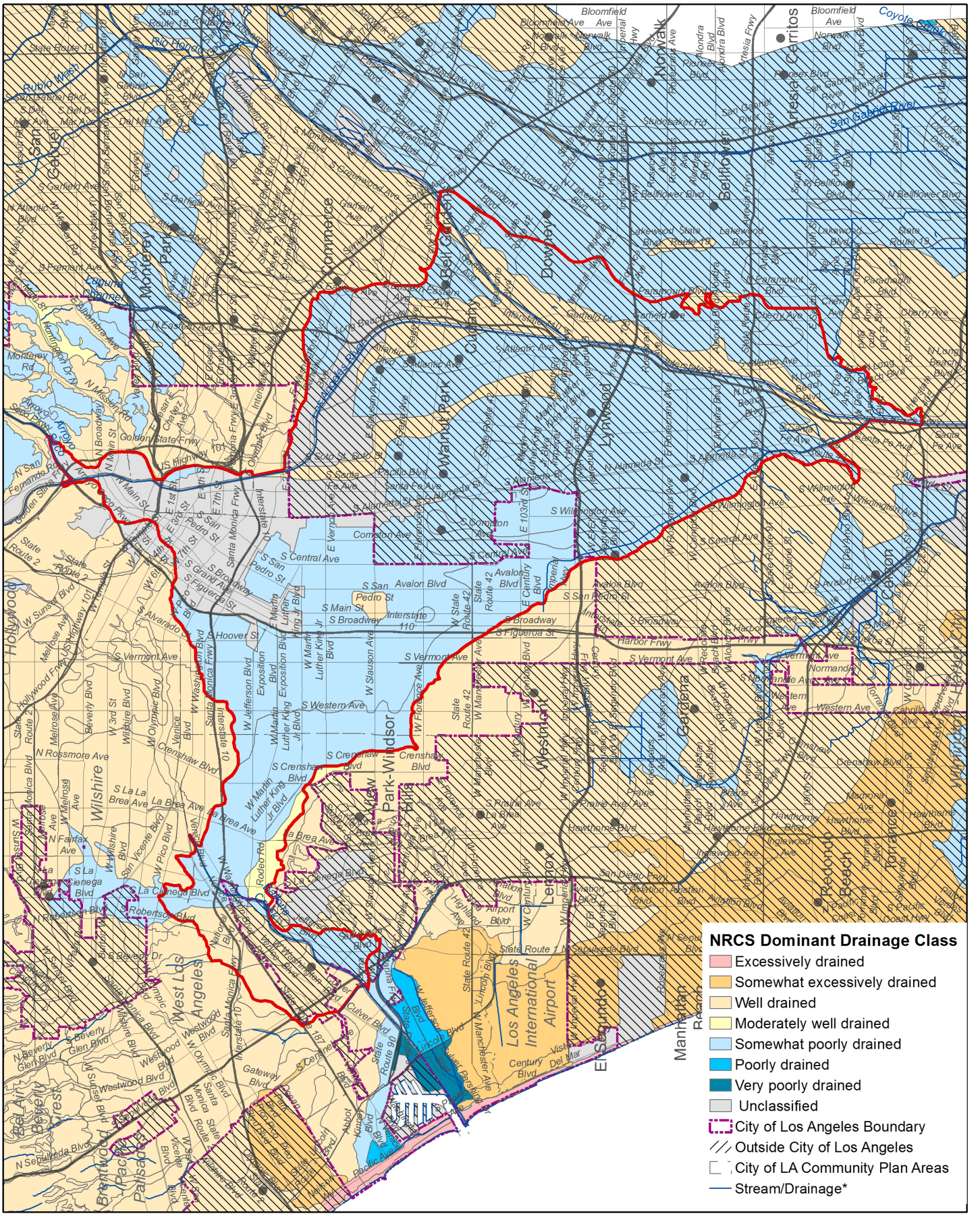

Drainage

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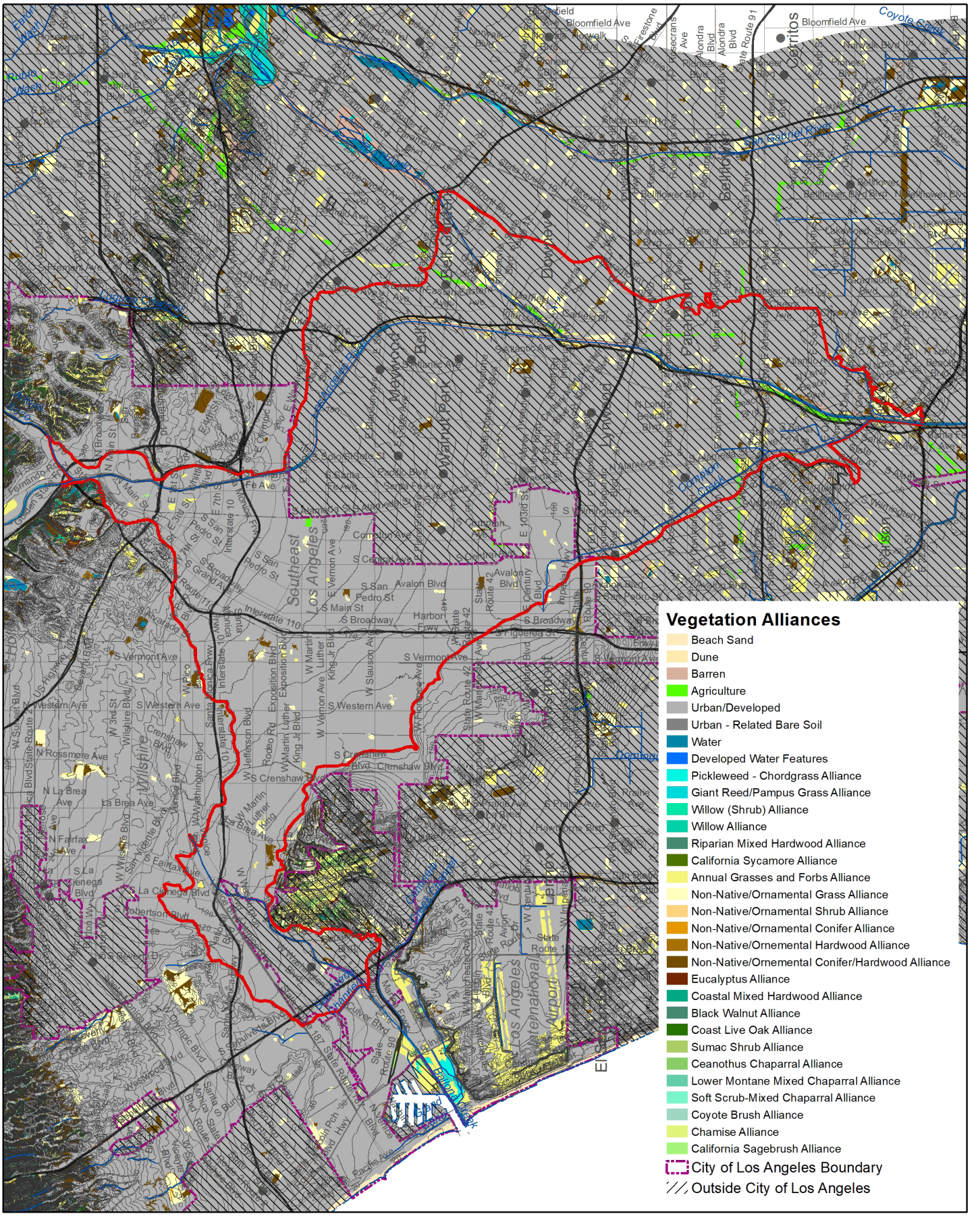
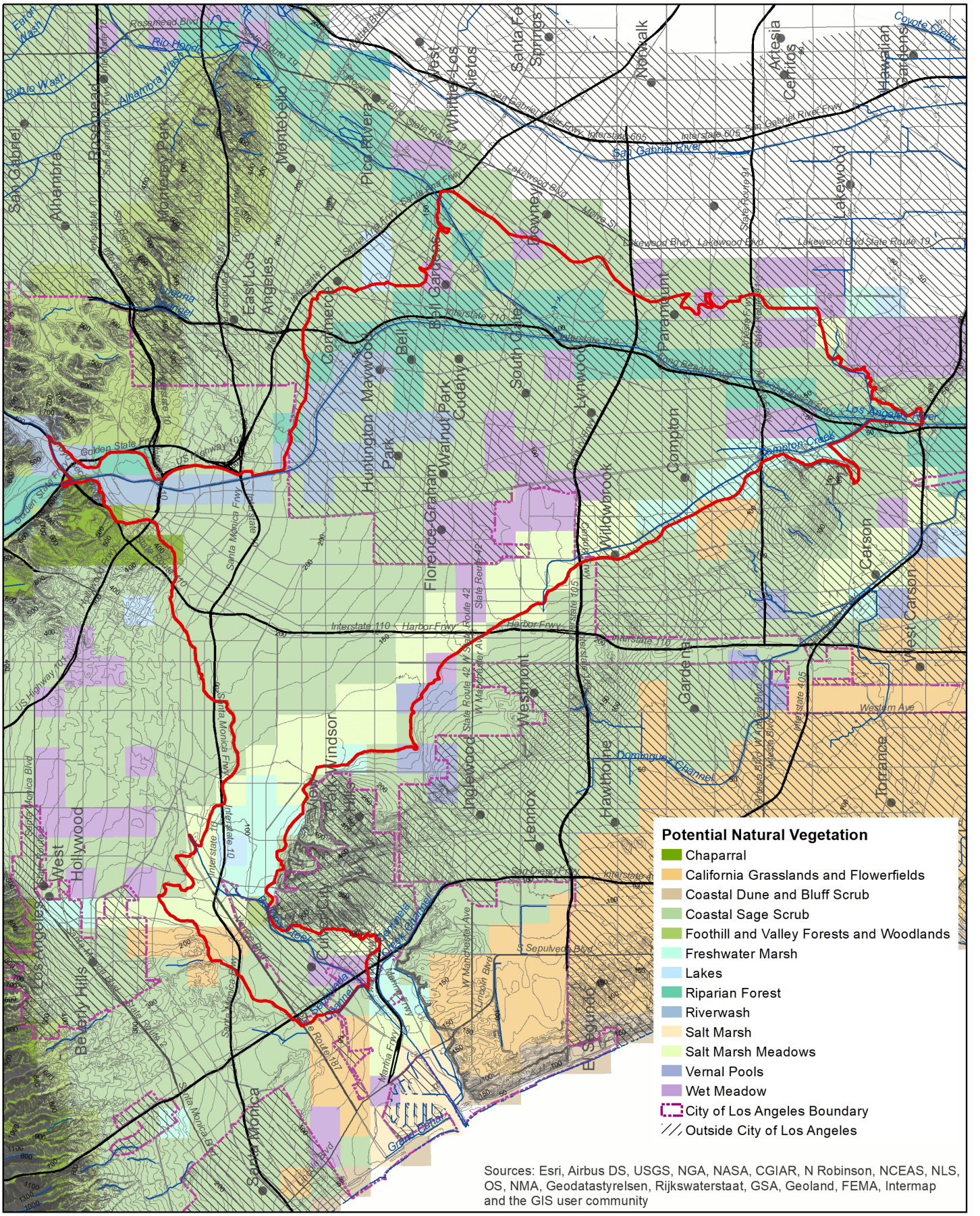


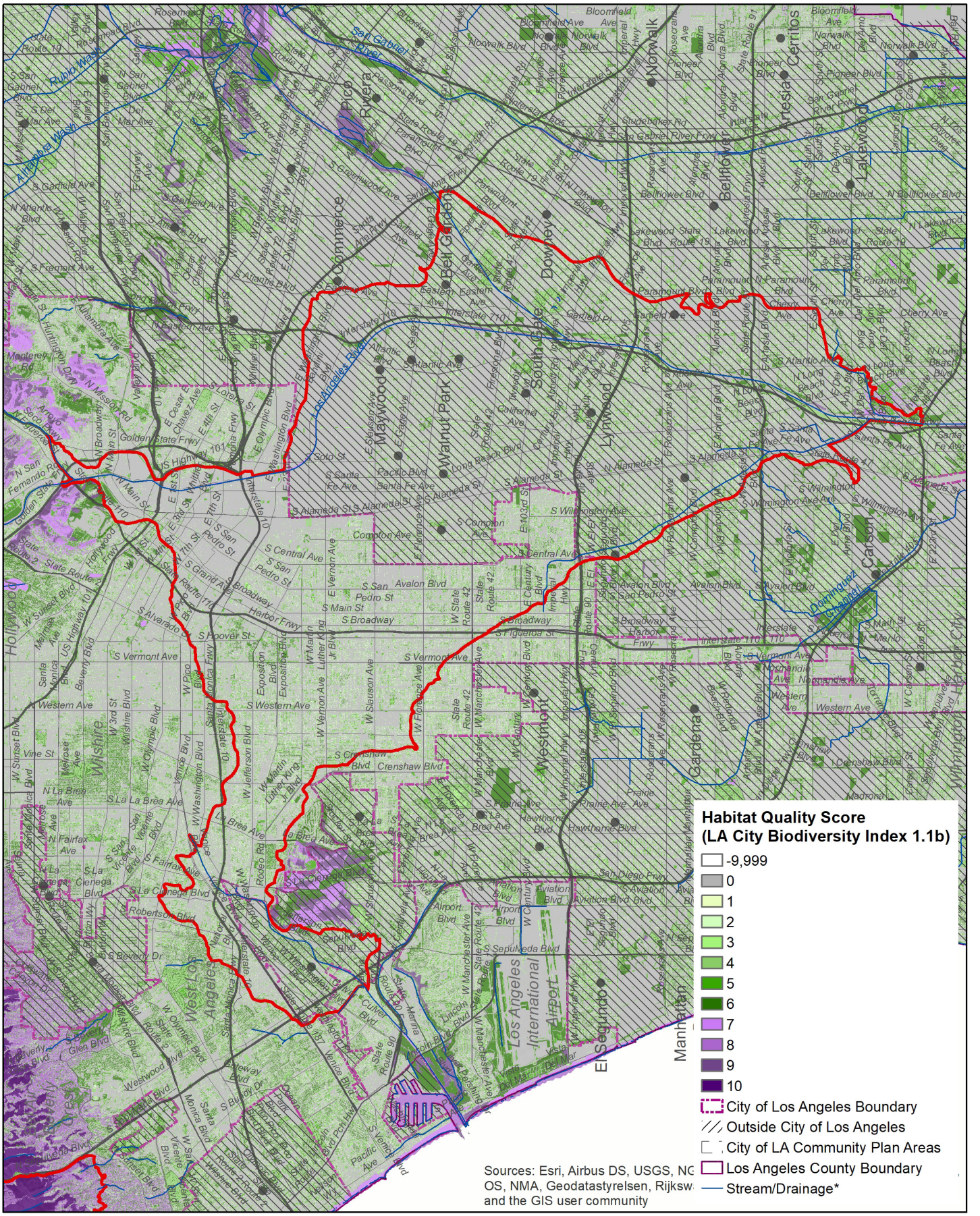
Vegetation Alliances

Data source: CALVEG. https://www.fs.usda.gov/detail/r5/landmanagement/resourcemanagement/?cid=stelprdb5347192



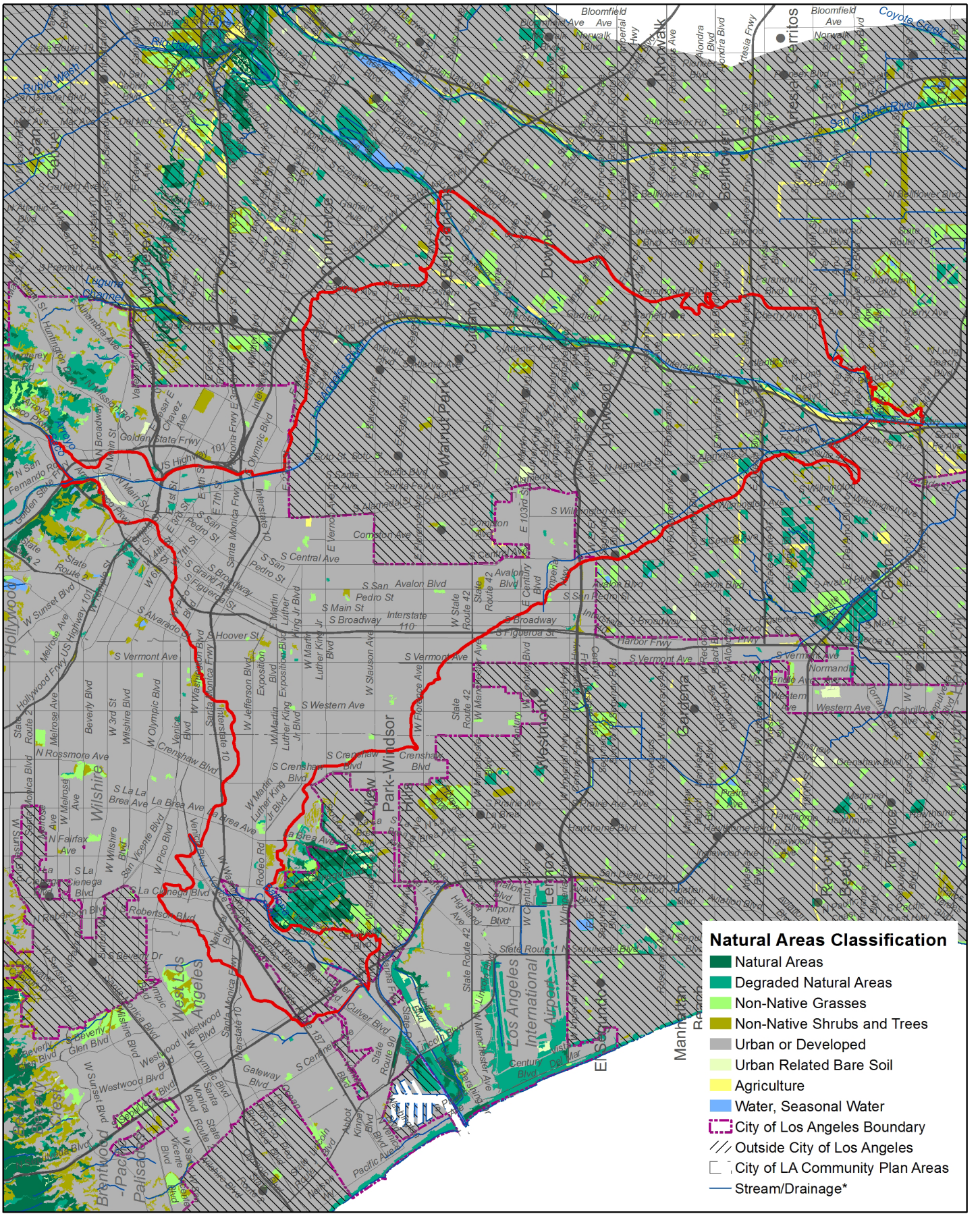
Hypothesized Potential Natural Vegetation

Data source: USC Spatial Sciences Institute/UCLA Institute of the Environment: Historical Ecology of the Los Angeles River Watershed Project.



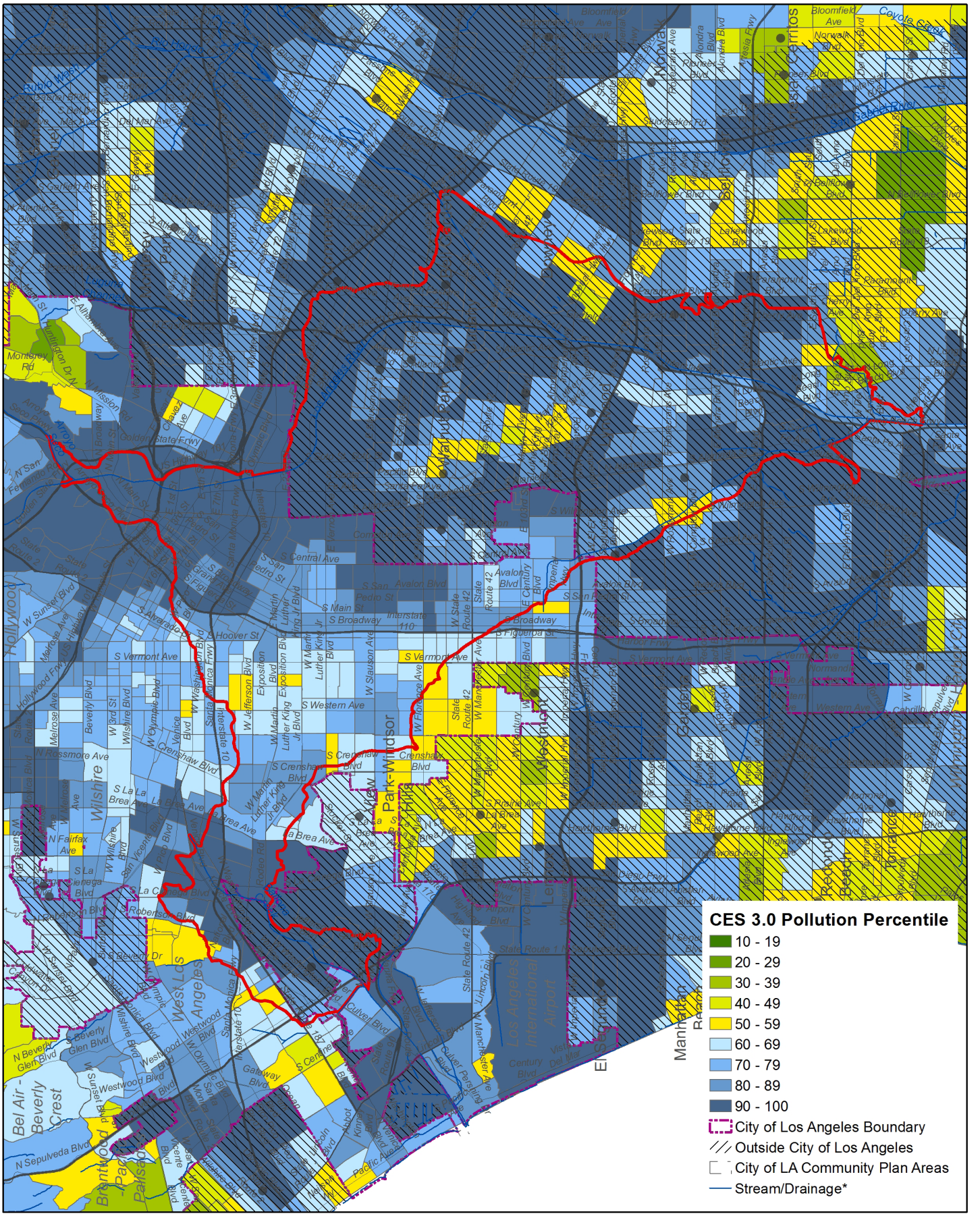
General Habitat Quality

Data source: I. Brown (2019). https://escholarship.org/uc/item/4c81w4nr



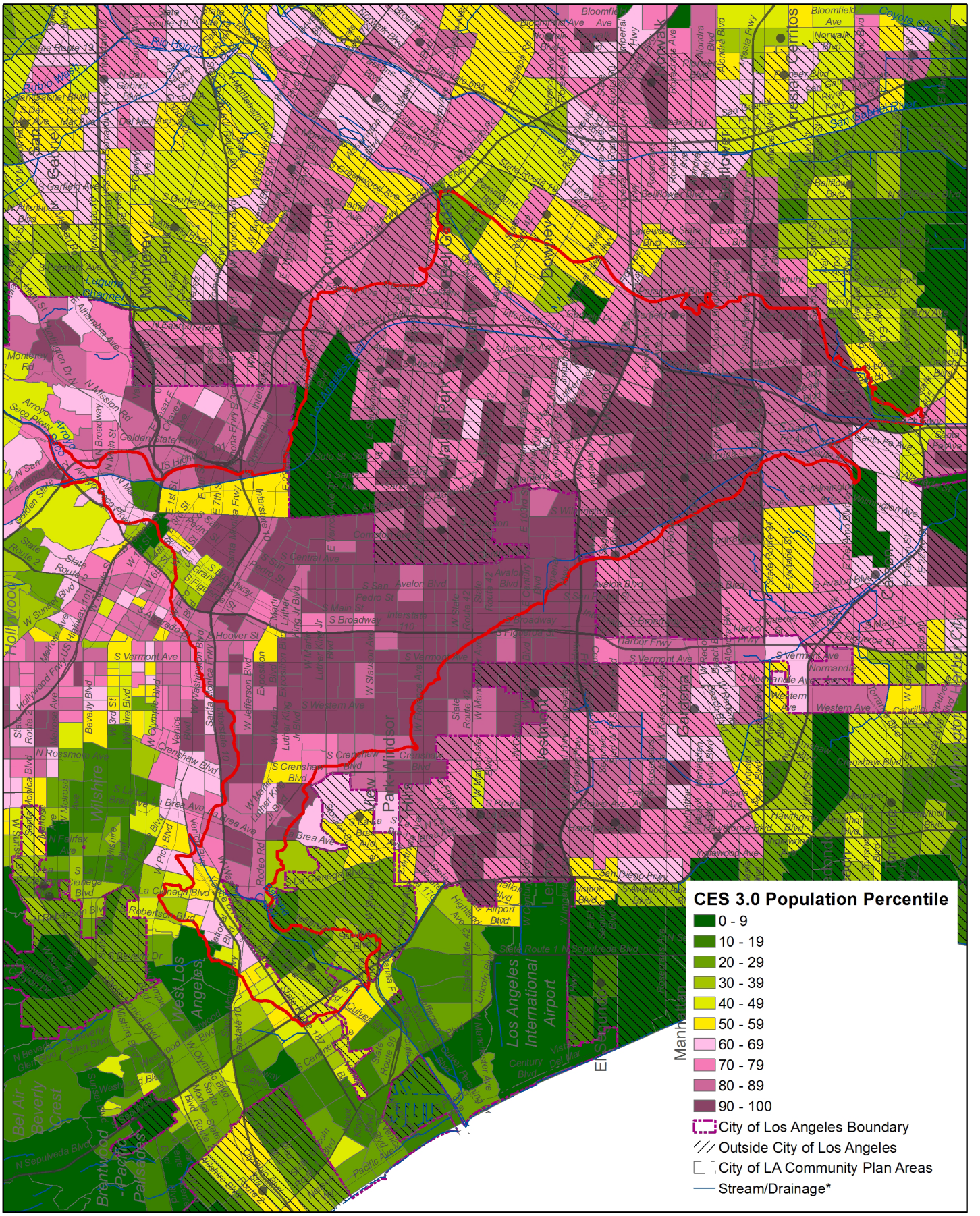
Natural Areas Classification

Data source: 2018 City of Los Angeles Biodiversity Report, Appendix B. https://www.lacitysan.org/cs/groups/public/documents/document/y250/mdi0/~edisp/cnt024943.pdf



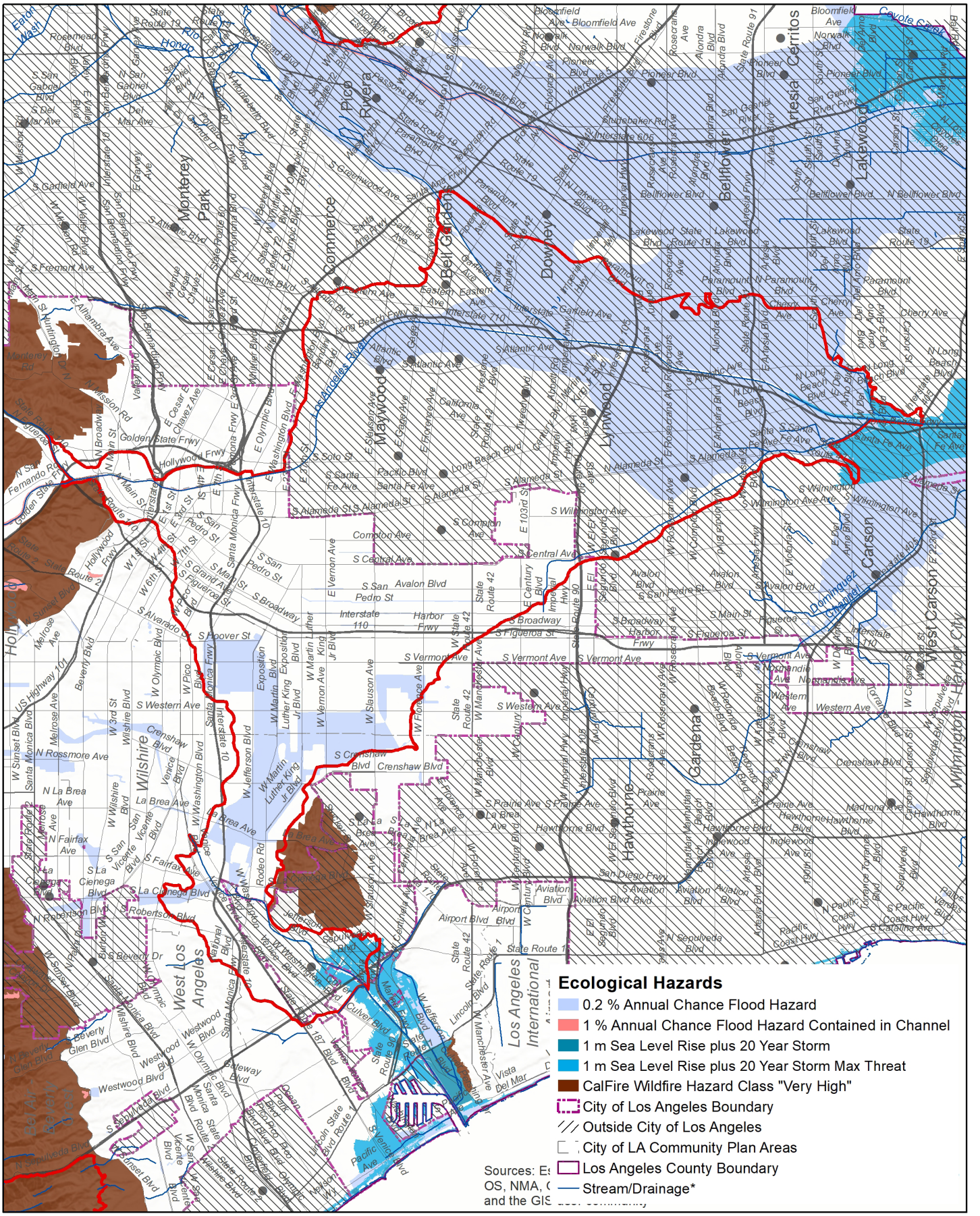
CalEnviroScreen Pollution Precentile (pollution exposure)

Data source: CalEnviroScreen 3.0. The California Office of Environmental Health Hazard Assessment (OEHHA). https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-30



CalEnviroscreen Population Percentile (population vulnerability)

Data source: CalEnviroScreen 3.0. The California Office of Environmental Health Hazard Assessment (OEHHA). https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-30



Ecological Hazards

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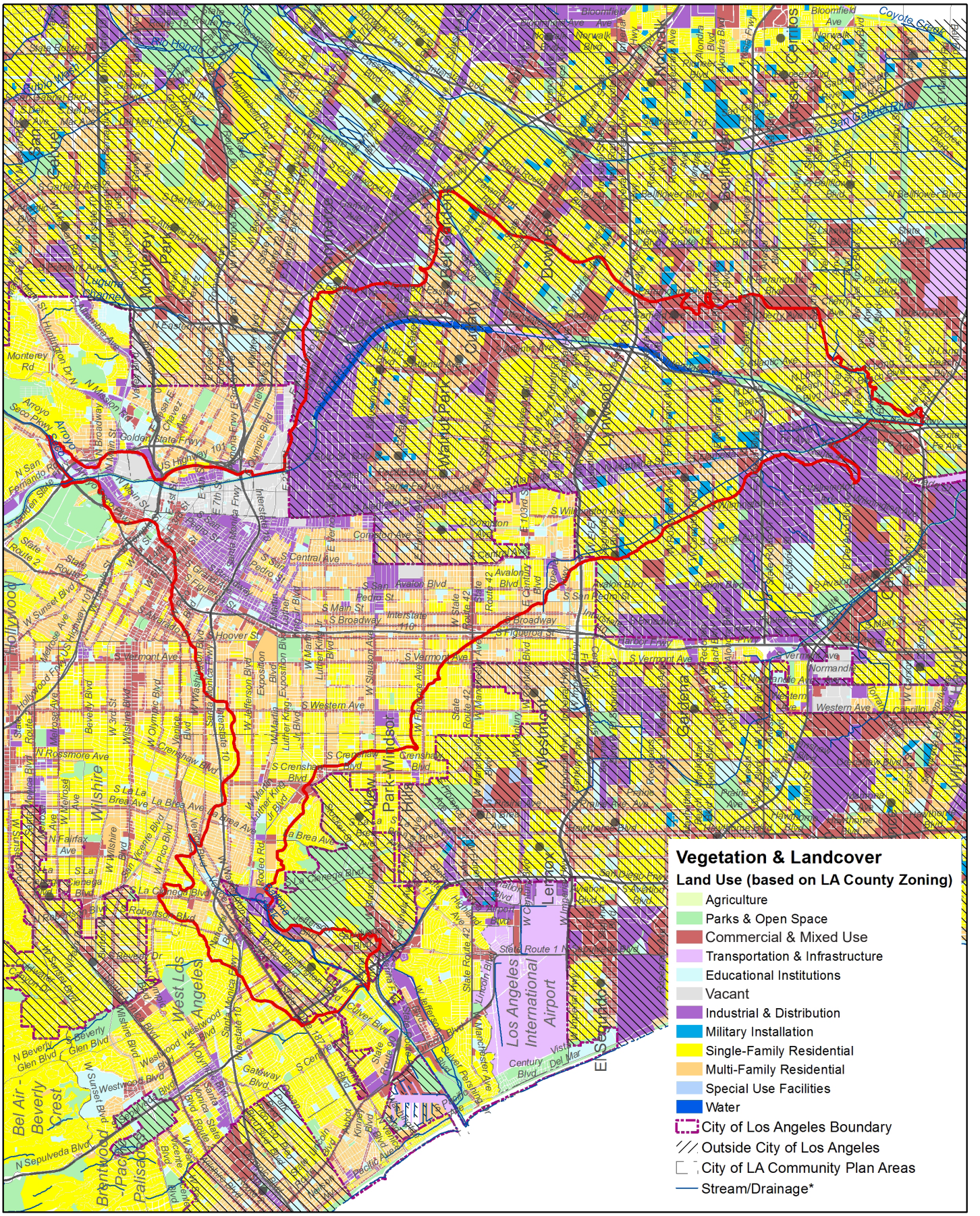
0 1.25 2.5 5 Miles

N

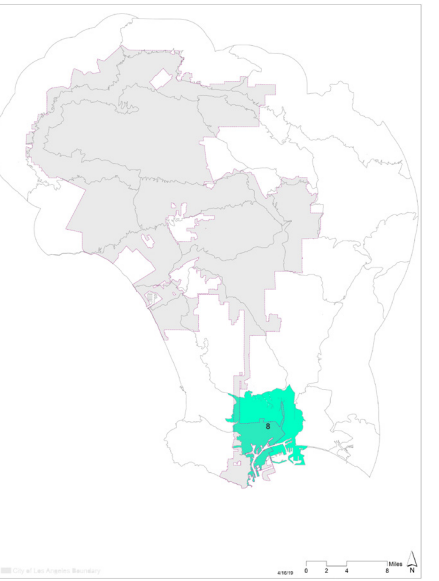


Land Use

Data source: 2008 Los Angeles County Countywide Zoning by the Southern California Association of Governments (SCAG). https://egis3.lacounty.gov/dataportal/2012/04/10/county-wide-zoning/

ECOTOPE 8: LOS ANGELES RIVER INTERTIDAL AND COASTAL PLAIN

(Partially within the City of Los Angeles)



LANDFORM

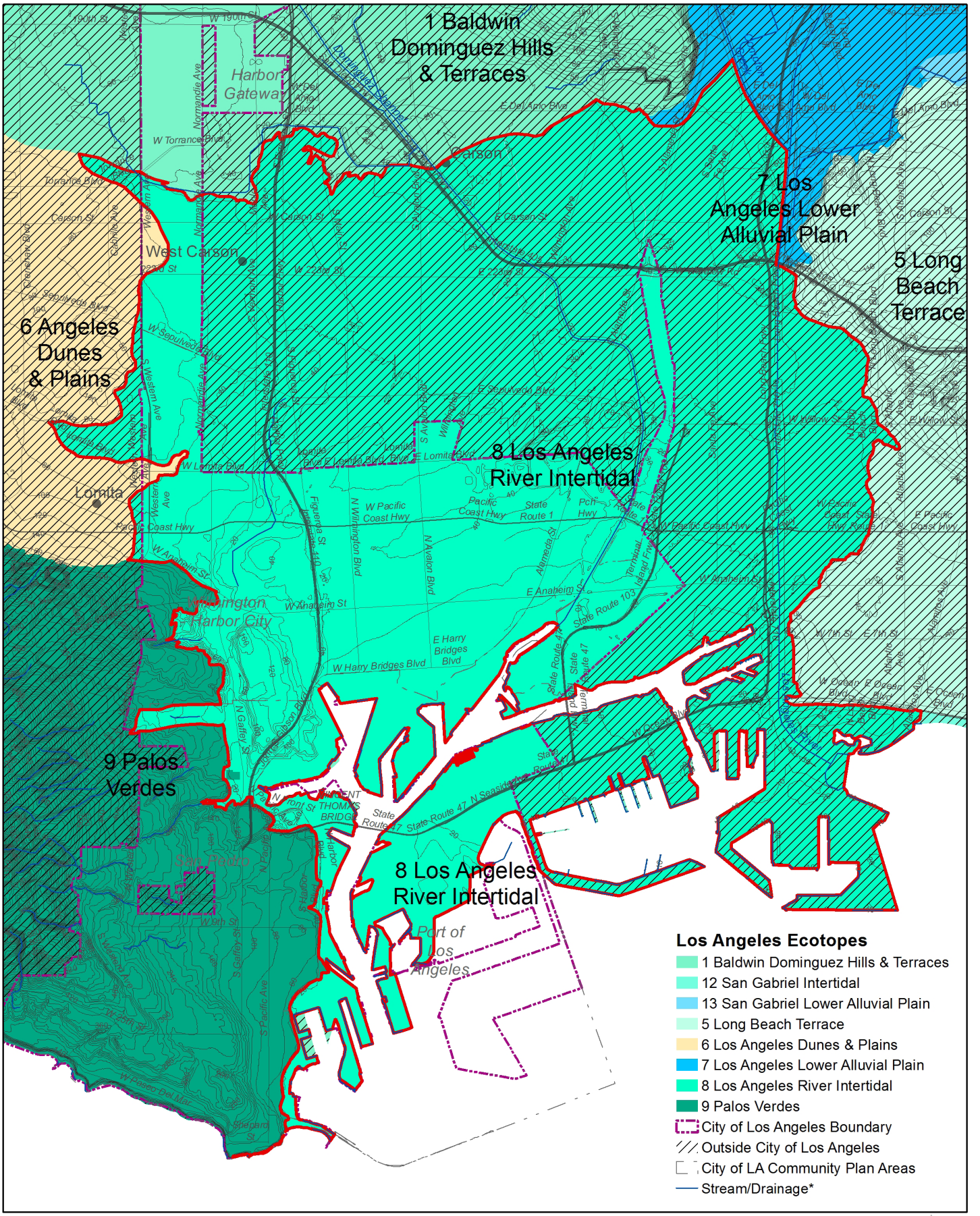
This ecotope is dominated by historic estuaries, brackish wetlands, and alluvial plains of the Los Angeles River, Dominguez Channel, and adjacent dunes and terraces within 40 feet of elevation above sea level. The area historically included an expansive lagoon protected by a sand spit that has since been filled and channelized to make way for the Ports of Los Angeles and Long Beach. Most of the natural areas of this ecotope have been lost; however, three notable wetland and marine restoration areas remain, including the restored natural estuary at the Golden Shore Marine Biological Reserve at the mouth of the LA River in Long Beach, an intertidal area at Cabrillo Beach Park, and the recently restored freshwater lake and wetlands at Machado Lake. Soils are variable, with well-drained sandy soils on dune and strand landforms, poorly drained hydric soils in former wetland areas, clay soils with variable drainage on coastal plains, and extensive areas of "unclassified" soils that likely include fill material above former intertidal wetlands. With its low elevation, many areas within this ecotope are threatened by sea level rise, which may drastically alter existing and adjacent land use in the coming century.

MICROCLIMATE

Areas of the ecotope closer to San Pedro Harbor exhibit a strong maritime influence, leading to relatively temperate conditions throughout the year. The high elevation of the Palos Verdes Peninsula to the west interacts with local atmospheric circulation to produce more continental influence in northern portions resulting in cooler winter temperatures and hotter summer temperatures. Spring and early summer fog is prevalent throughout the ecotope, but less so in northern portions. Western areas include somewhat higher, undulating terrain with more diverse aspects while central and eastern areas are very flat, influencing site-level solar loading patterns. In central and eastern portions of the ecotope, the flat terrain, plus the extensive paved surfaces of the ports, result in high heat loading of surfaces in summer. This heat influences the local urban heat island effect, especially as heat is transported to the east on prevailing winds.

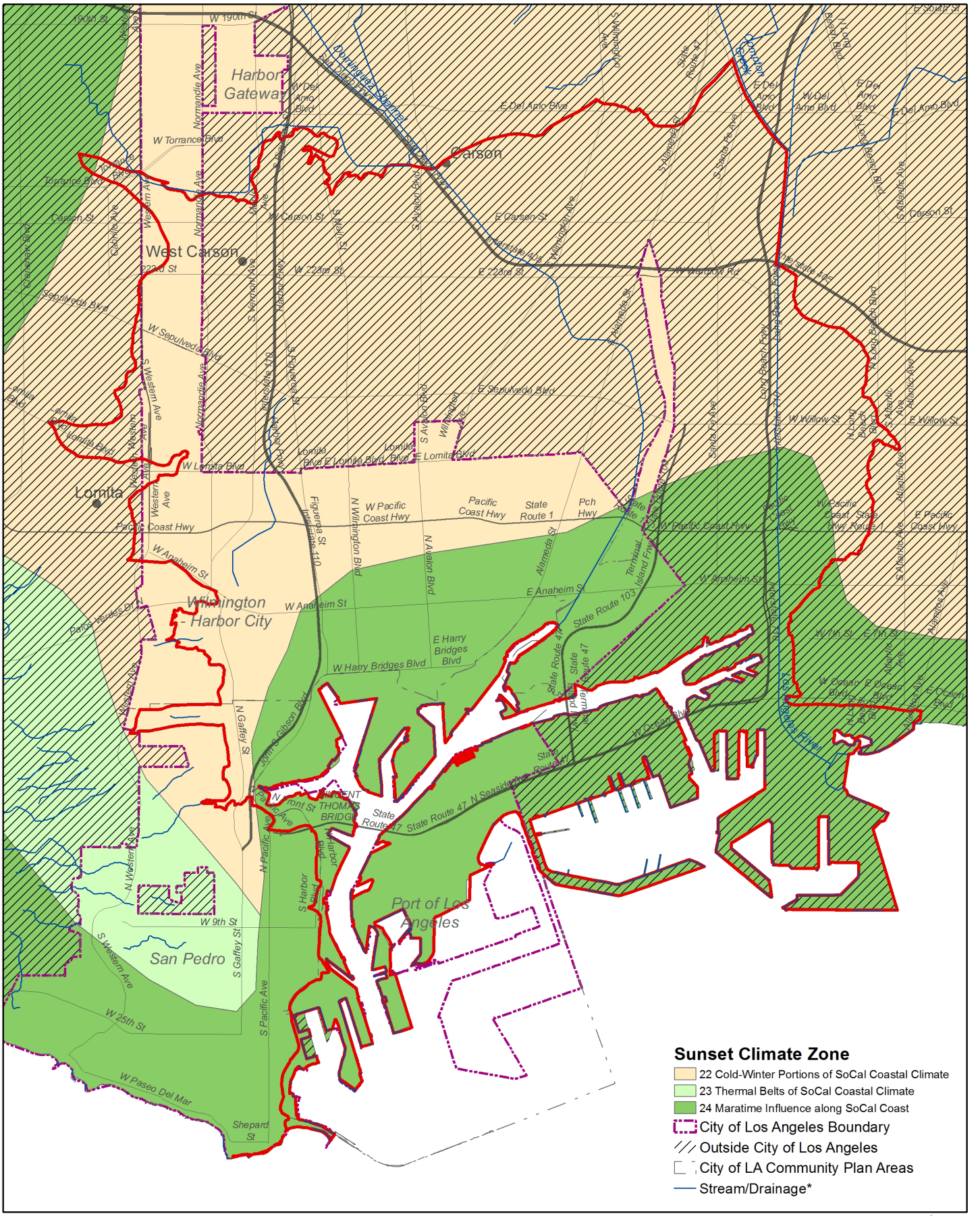
VEGETATION & LANDCOVER

Less than 1% of terrestrial natural areas remain in the ecotope with remaining types detected by CALVEG reflecting mainly freshwater willow wetlands and saline marsh. Coastal plain and terrace areas likely exhibited similar native prairie and coastal sage scrub vegetation, historically, as has been described by Mattoni & Longcore (1997) for the Los Angeles Dunes and Plains. The unique microclimate effects of areas around the Palos Verdes Peninsula, including this ecotope, have contributed to rare biodiversity, including locally endemic species such as the Palos Verdes blue butterfly (*Glaucopsyche lygdamus palosverdesensis*), bright green dudleya (*Dudleya virens hassei*), and island green dudleya (*Dudleya virens insularis*), among others. While largely converted to development, the estuary of the Los Angeles River was also integral to biodiversity and ecological processes of the entire watershed. Recovery of the Southern California Steelhead (*Oncorhynchus mykiss*) in the Los Angeles River, an effort currently being explored by a number of agencies and NGOs, would likely depend on recovery of brackish, intertidal wetlands necessary for juvenile rearing (National Marine Fisheries Service, 2012). Potential recovery of other intertidal species of concern within the ecotope could also support improved regional connectivity and sustainability of existing populations currently present in similar intertidal ecotopes at Ballona Creek (Ecotope 2) and the San Gabriel River (Ecotope 12) to the north and south.



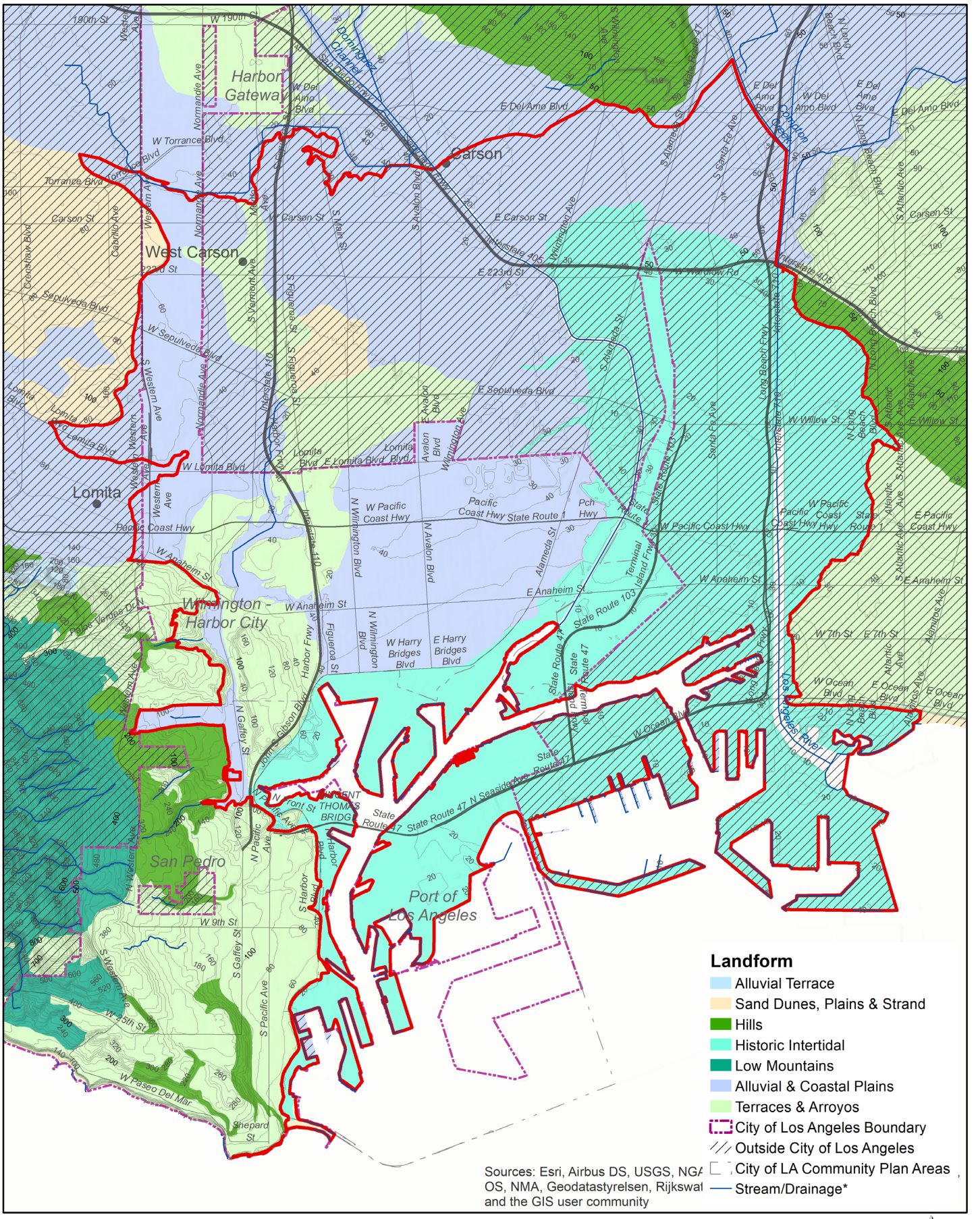
Ecotope 8 Context Map

Data source: I. Brown (2019). https://escholarship.org/uc/item/4c81w4nr



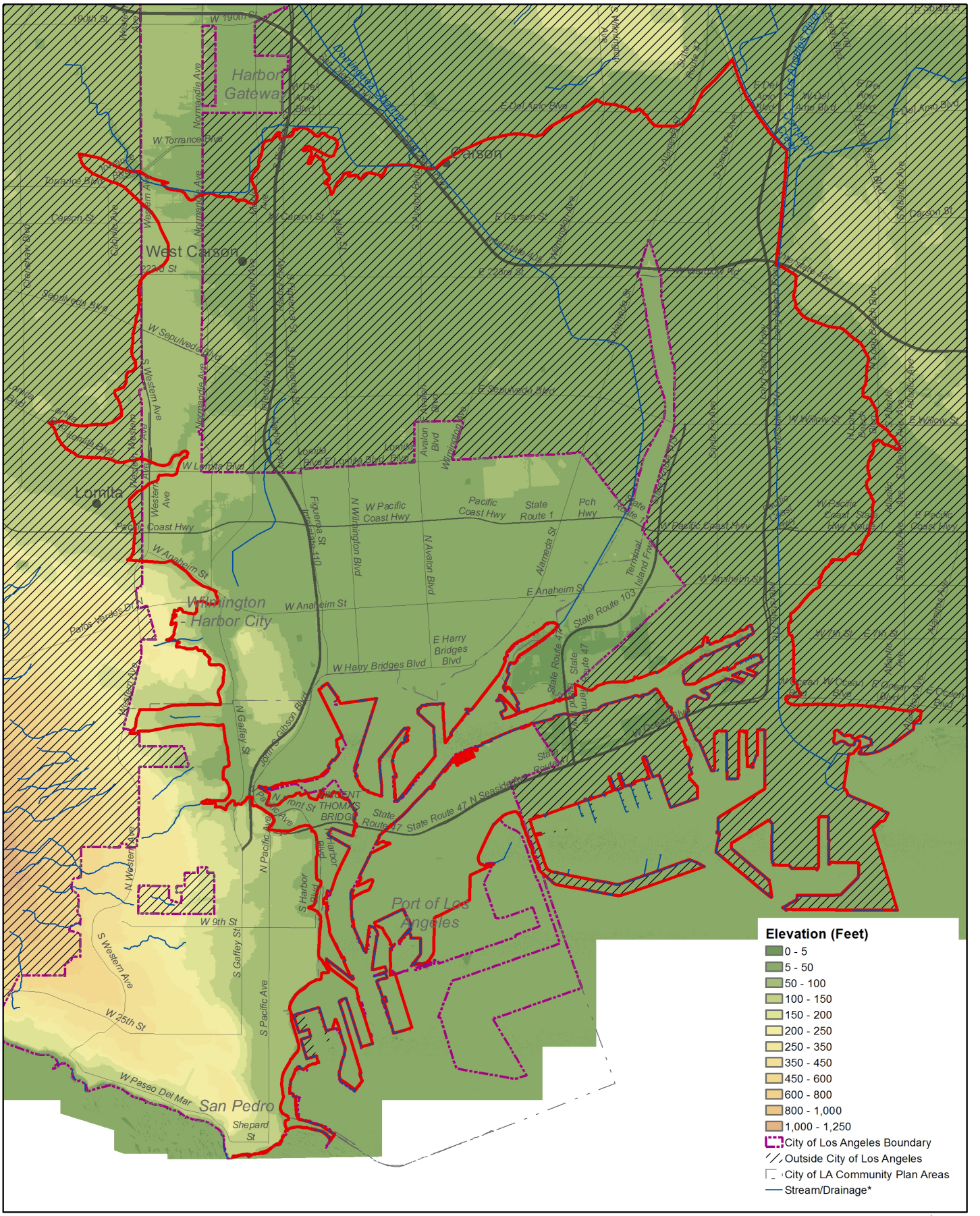
Microclimate

Data source: Sunset Magazine. http://www.sunset.com/garden/climate-zones/climate-zones-intro-us-map



Landform

Data source: I. Brown (2019), https://escholarship.org/uc/item/4c81w4nr

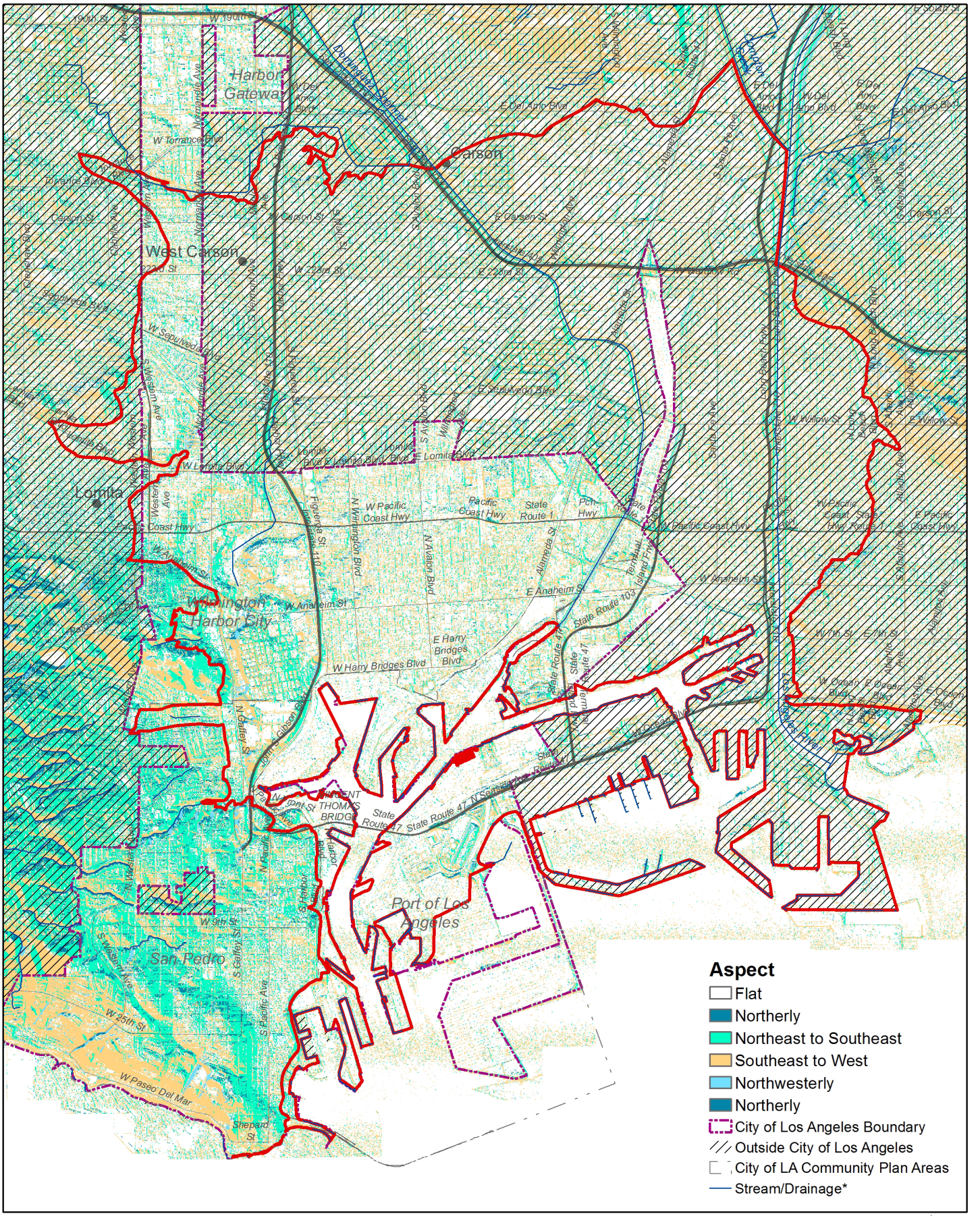


Elevation

Data source: 2006 10-foot Digital Elevation Model (DEM) – LARIAC – Public Domain. https://egis3.lacounty.gov/dataportal/2011/01/26/2006-10-foot-digital-elevation-model-dem-public-domain/

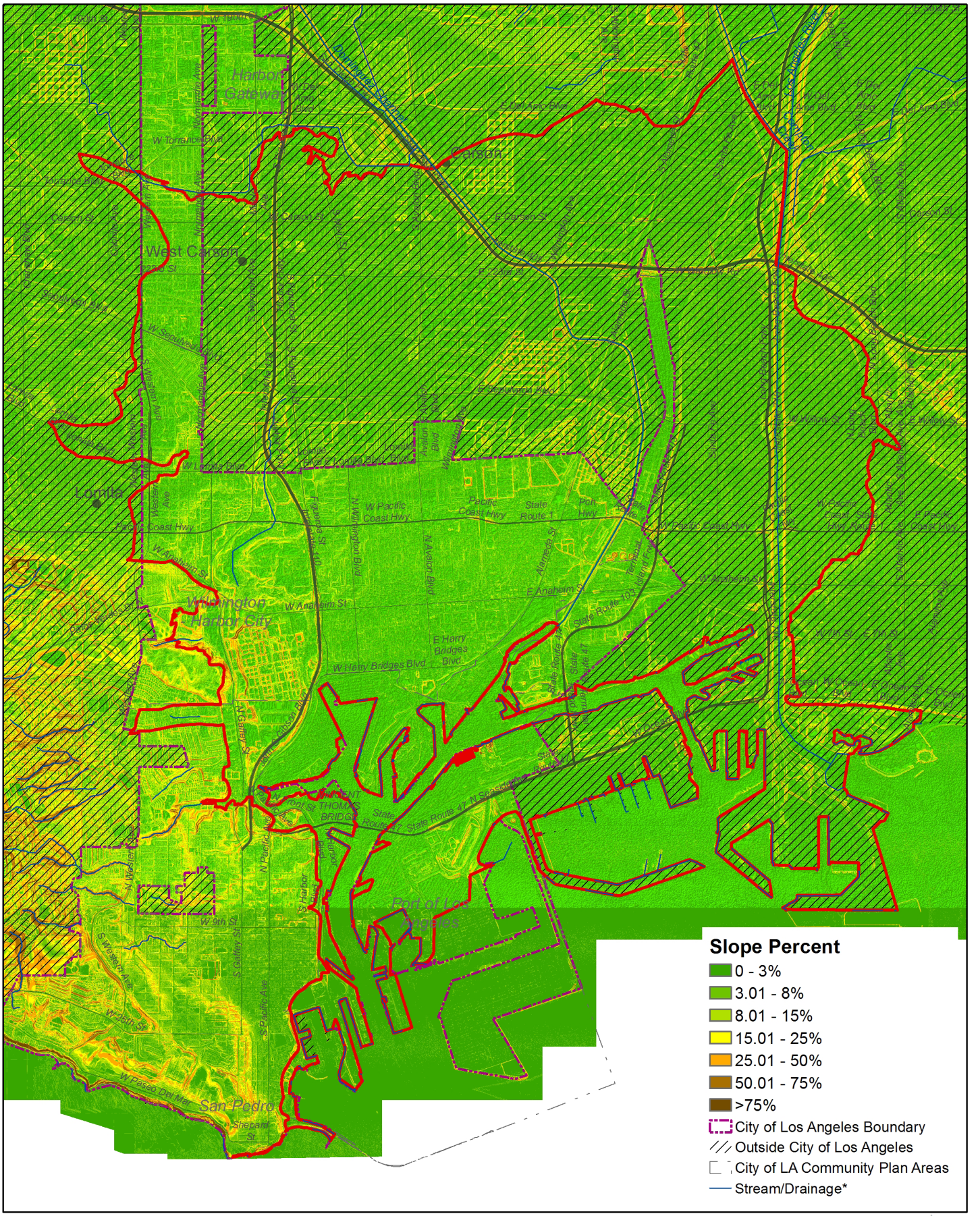
0 0.5 1 2 Miles

N



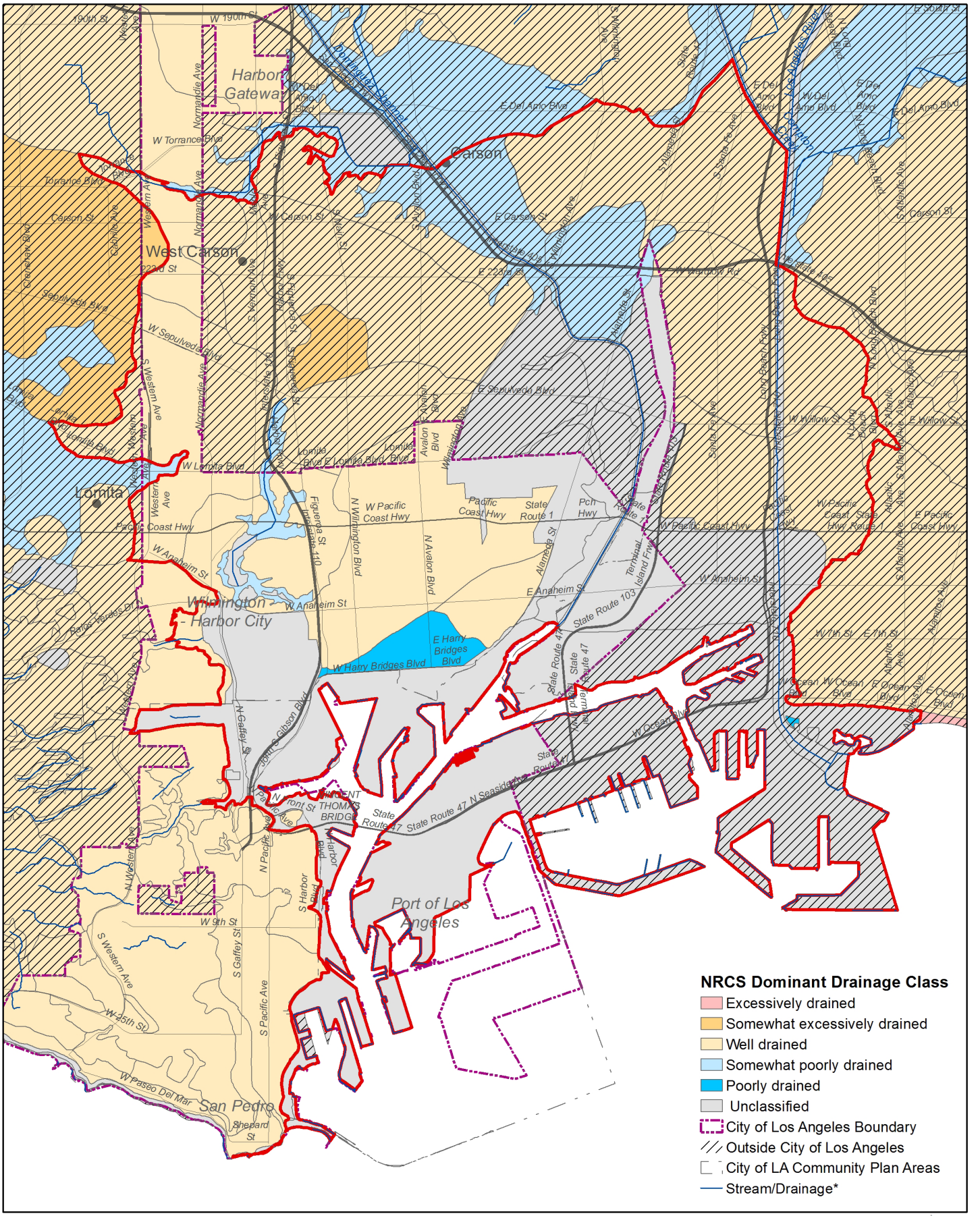
Aspect

Data source: 2006 10-foot Digital Elevation Model (DEM) – LARIAC – Public Domain. https://egis3.lacounty.gov/dataportal/2011/01/26/2006-10-foot-digital-elevation-model-dem-public-domain/



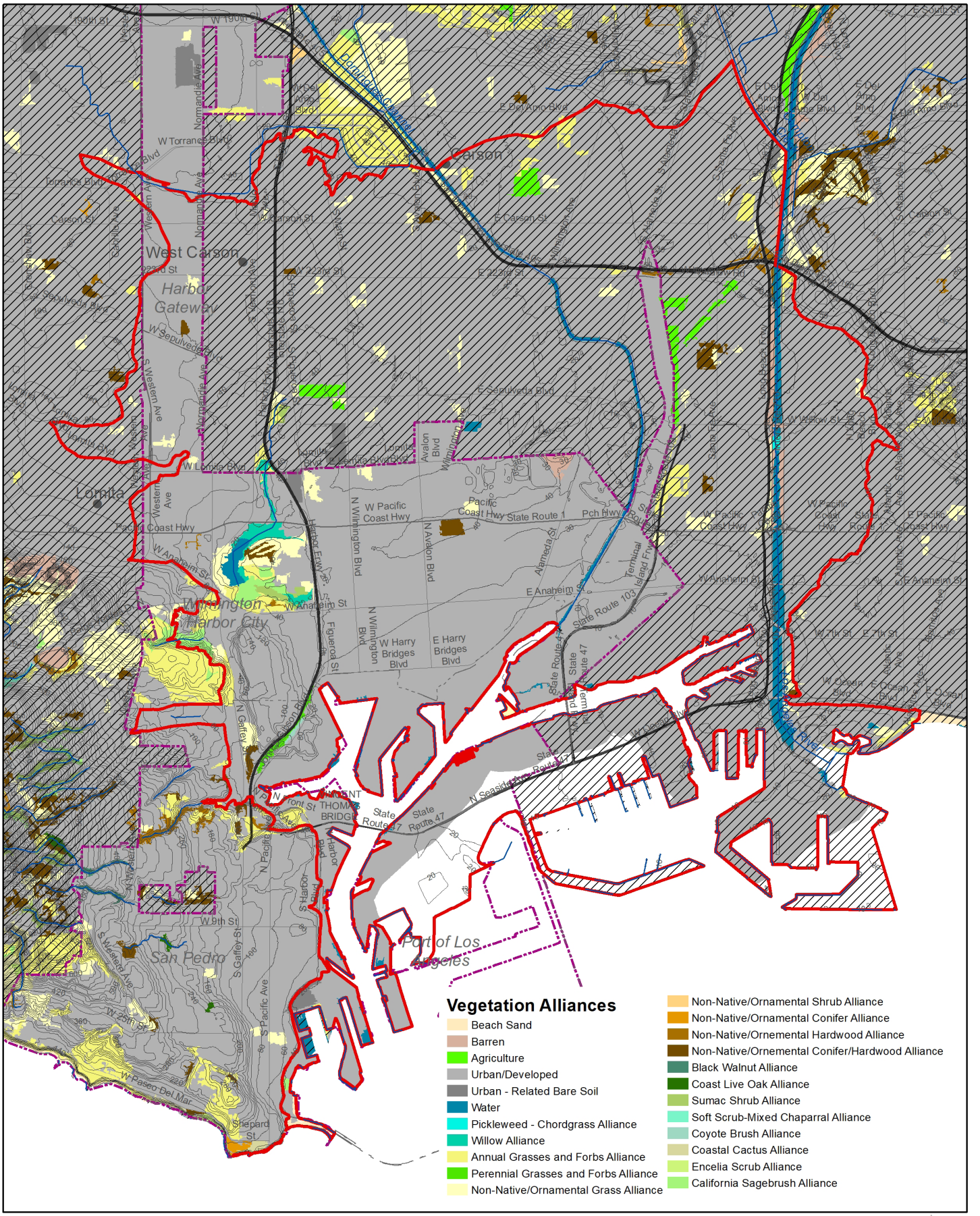
Slope Percent

Data source: 2006 10-foot Digital Elevation Model (DEM) – LARIAC – Public Domain. https://egis3.lacounty.gov/dataportal/2011/01/26/2006-10-foot-digital-elevation-model-dem-public-domain/



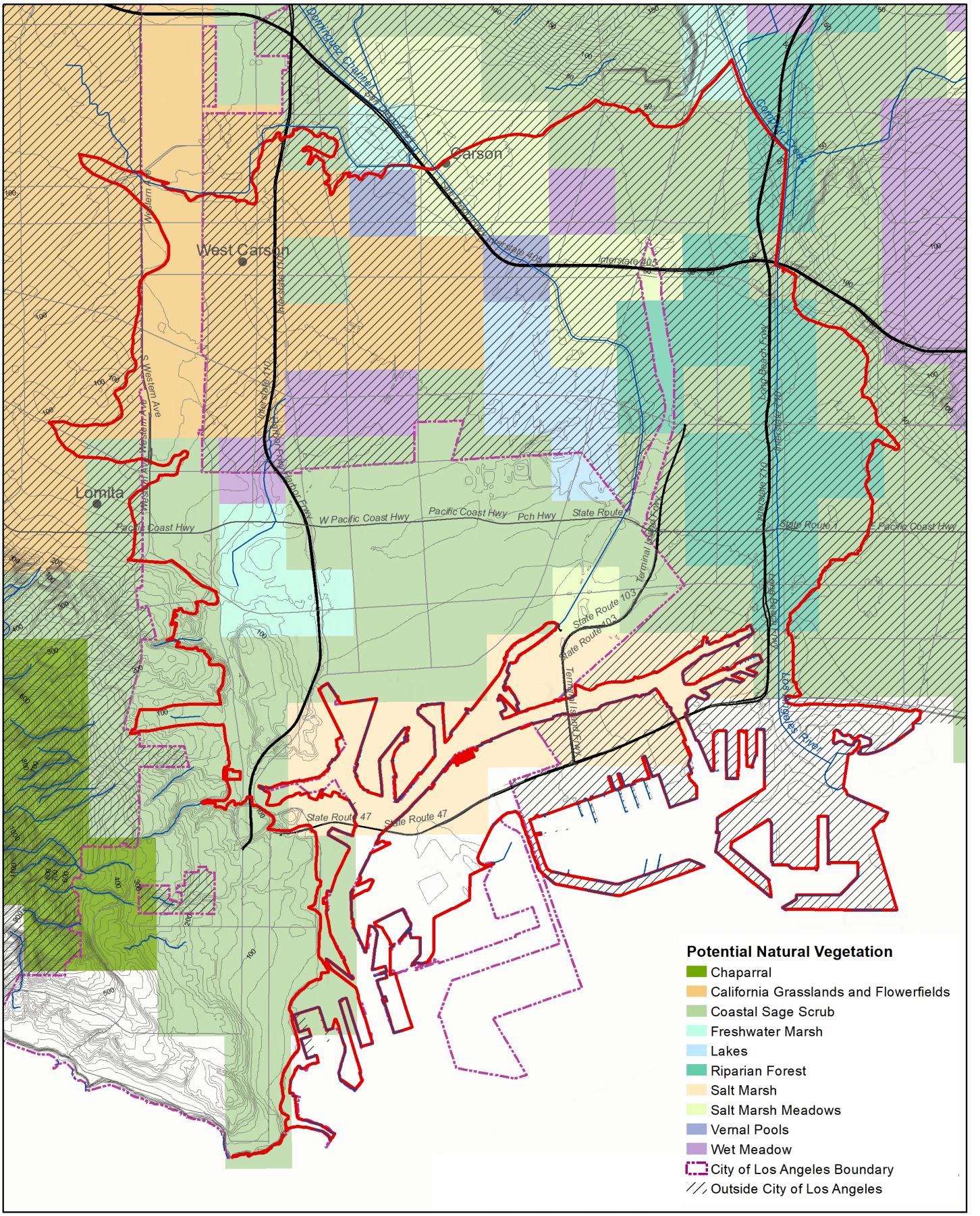
Drainage

Data source: Soil Survey Geographic (SSURGO) Database for Los Angeles County, Southeastern Part, CA; National Hydrography Dataset, U.S. Geological Survey, Reston, Virginia. 2002-2016.



Vegetation Alliances

Data source: CALVEG. https://www.fs.usda.gov/detail/r5/landmanagement/resourcemanagement/?cid=stelprdb5347192

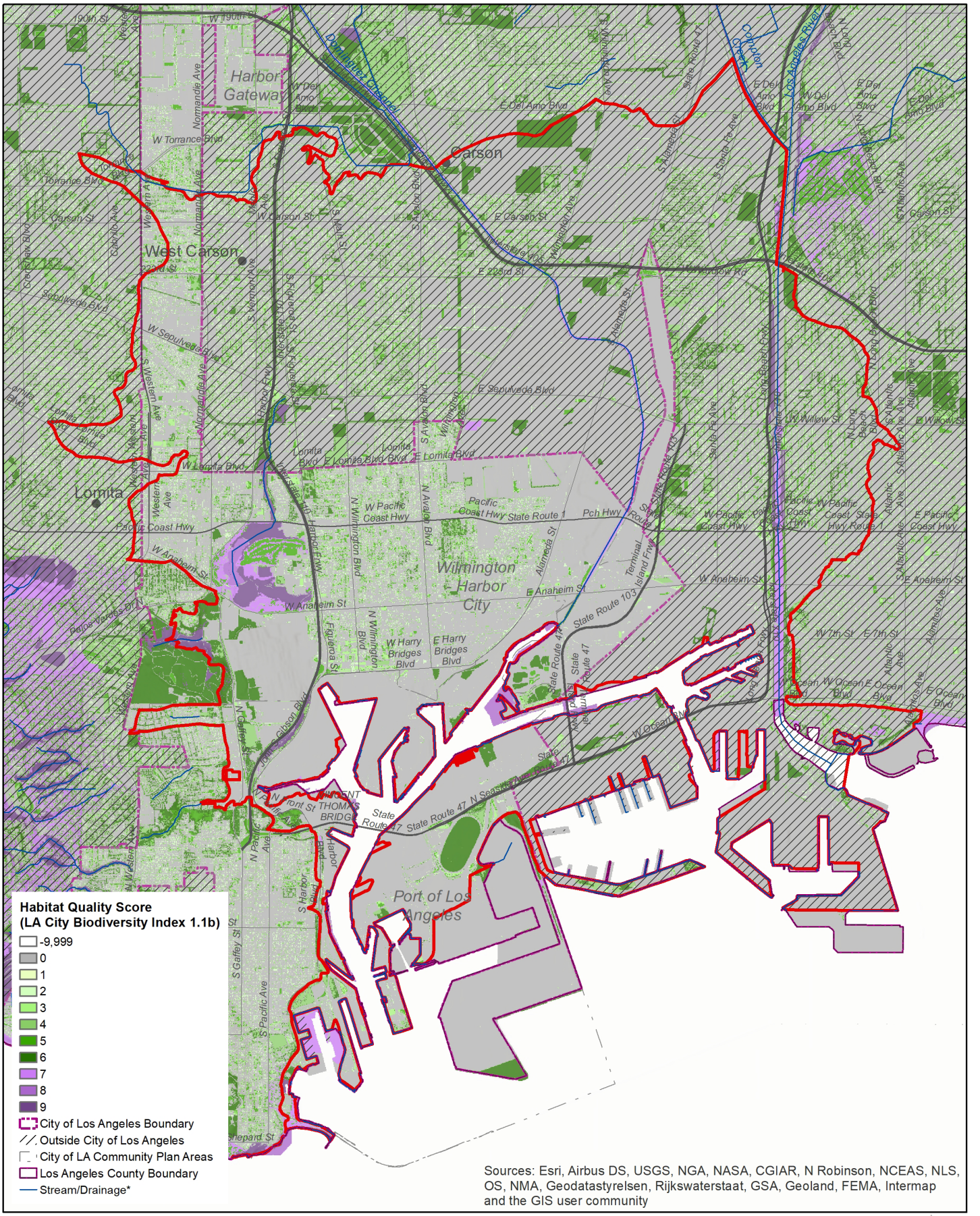


Hypothesized Potential Natural Vegetation

Data source: USC Spatial Sciences Institute/UCLA Institute of the Environment: Historical Ecology of the Los Angeles River Watershed Project.

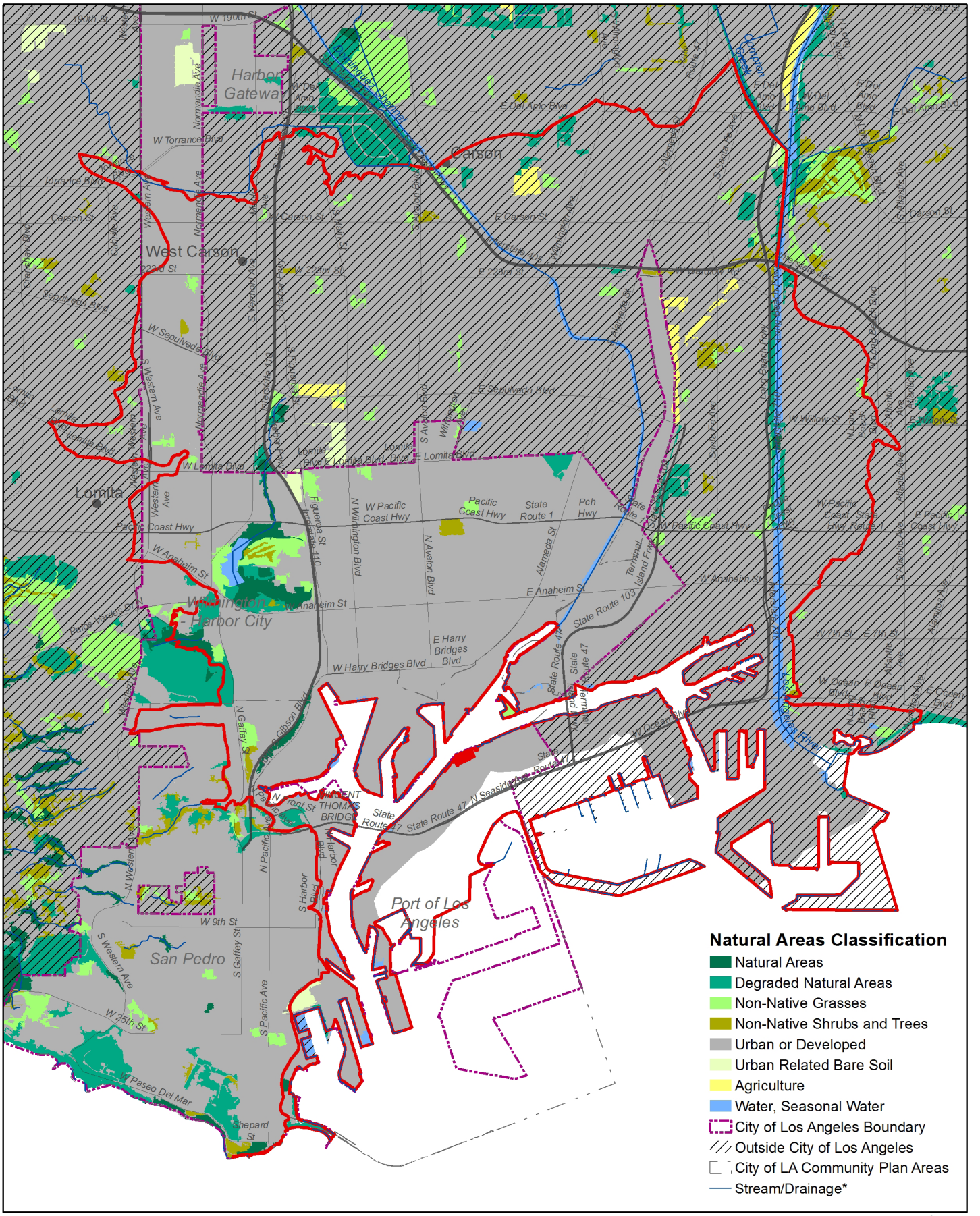
0 0.5 1 2 Miles

N



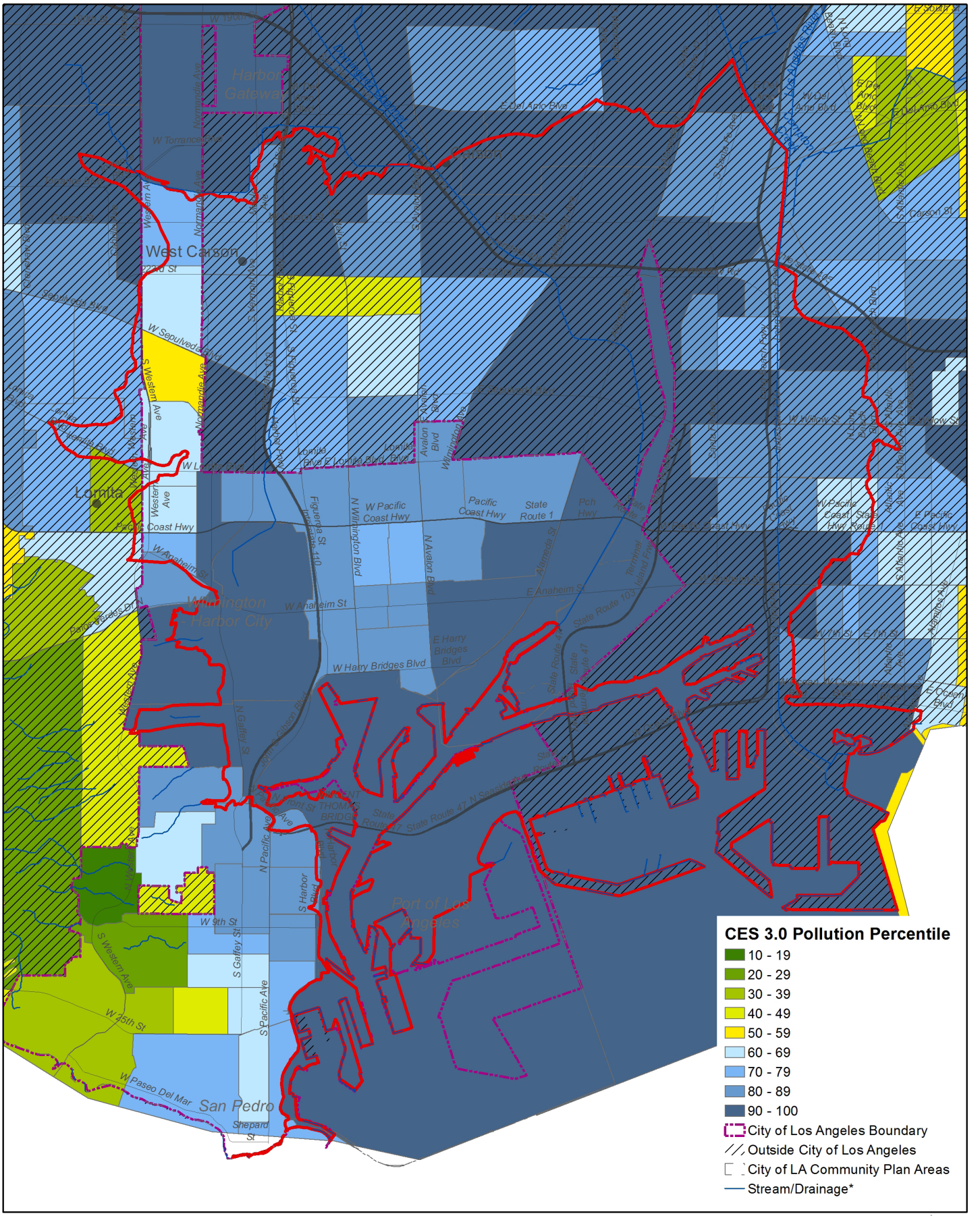
General Habitat Quality

Data source: I. Brown (2019). https://escholarship.org/uc/item/4c81w4nr



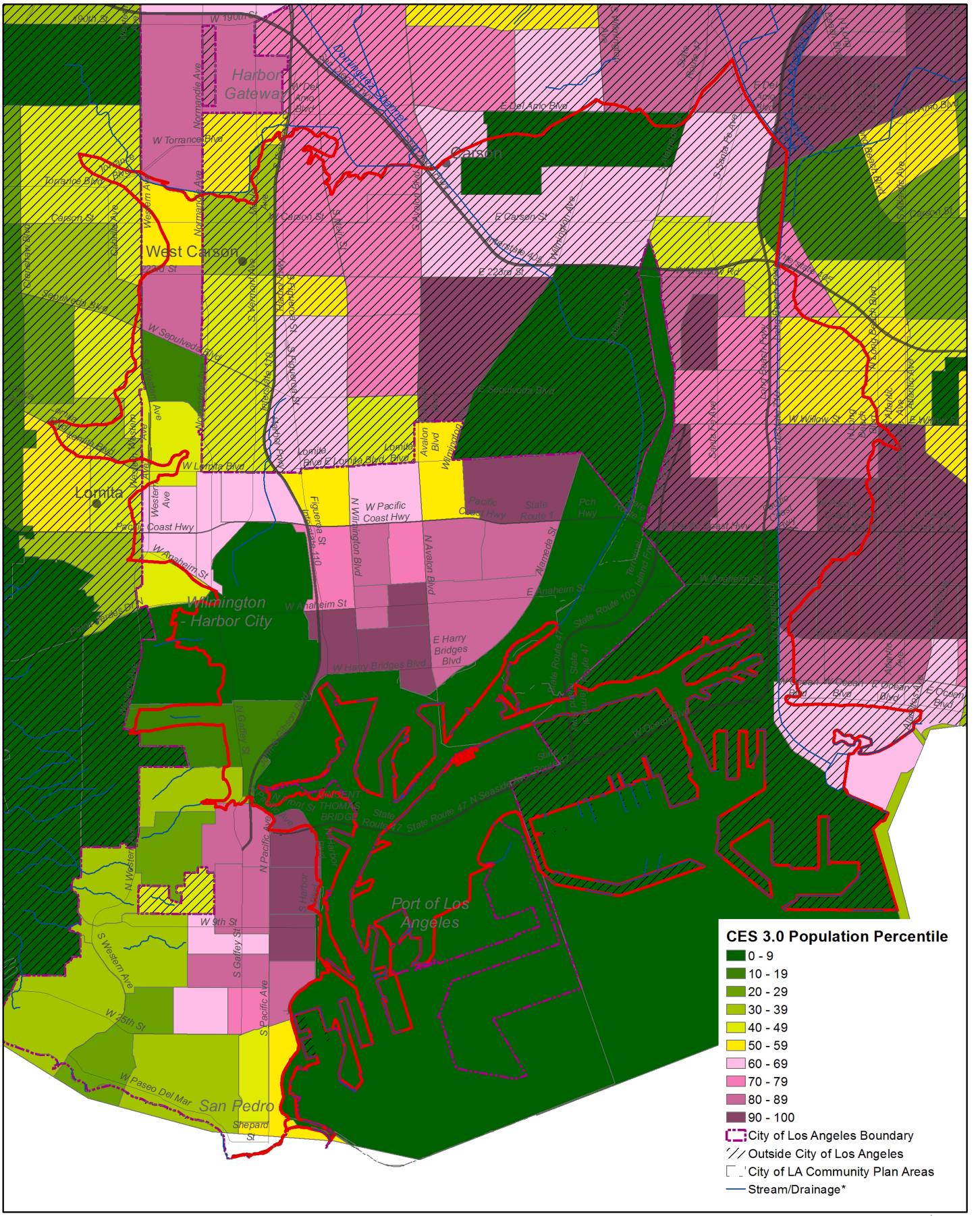
Natural Areas Classification

Data source: 2018 City of Los Angeles Biodiversity Report, Appendix B. https://www.lacitysan.org/cs/groups/public/documents/document/y250/mdi0/~edisp/cnt024943.pdf



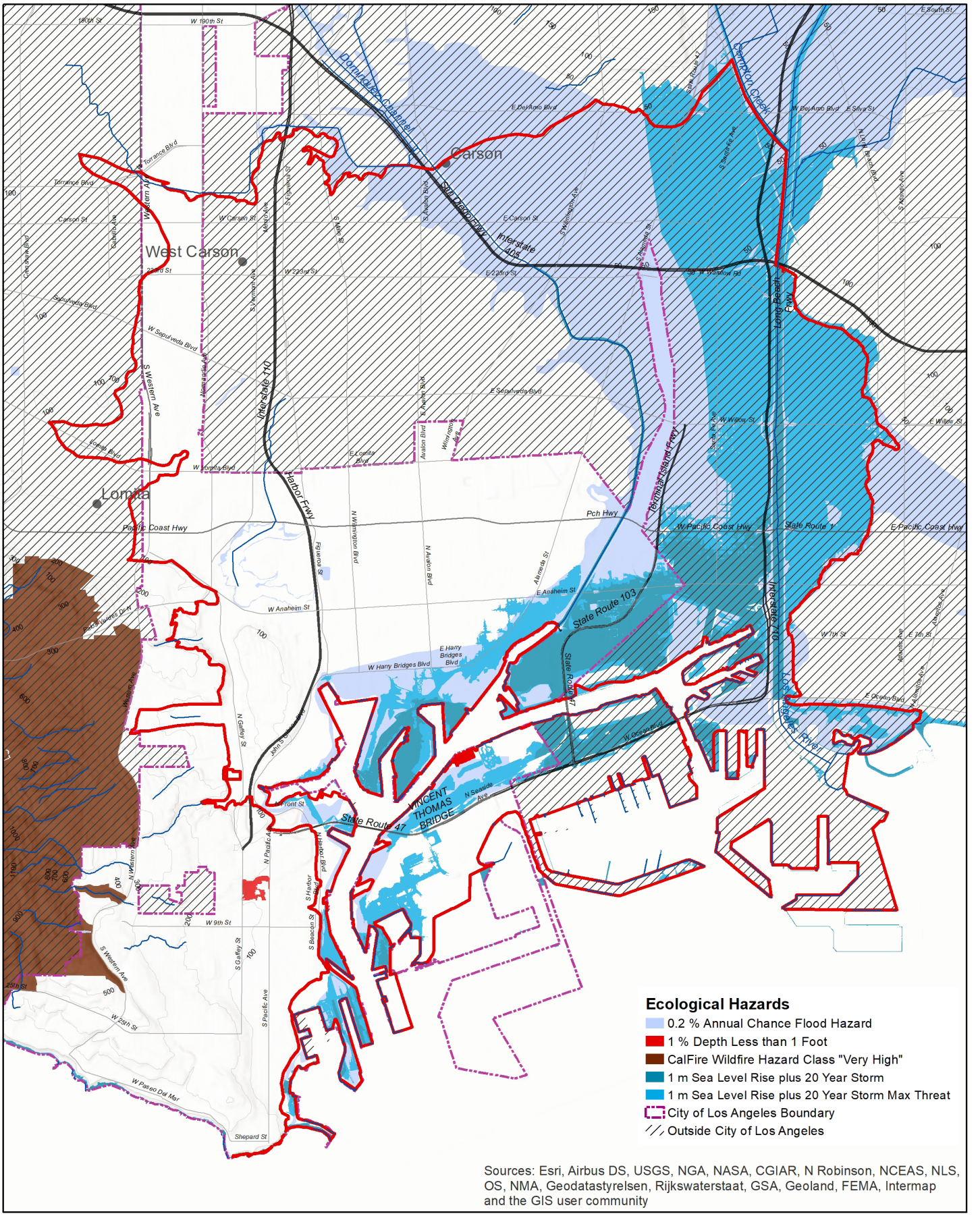
CalEnviroScreen Pollution Precentile (pollution exposure)

Data source: CalEnviroScreen 3.0. The California Office of Environmental Health Hazard Assessment (OEHHA). https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-30



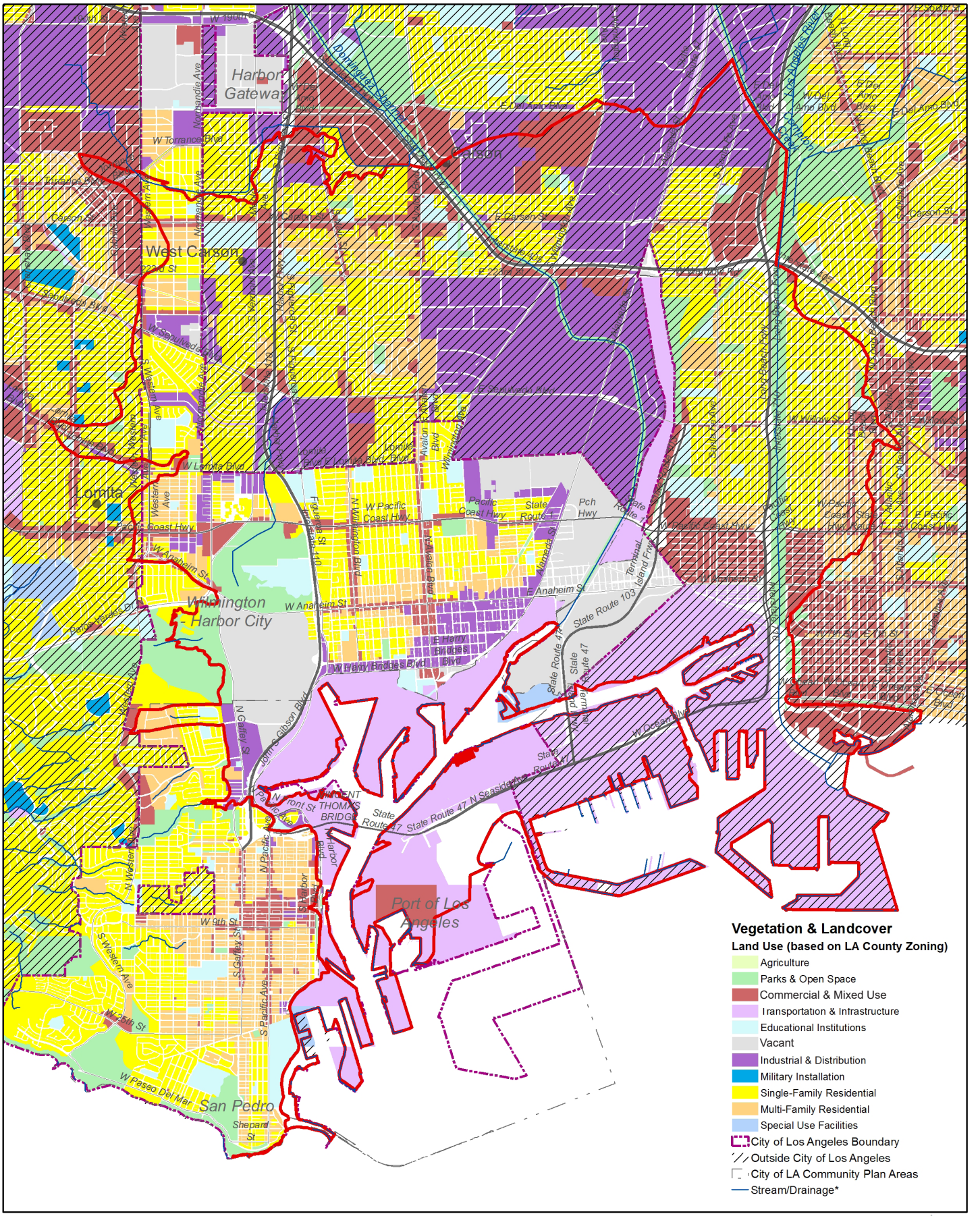
CalEnviroscreen Population Percentile (population vulnerability)

Data source: CalEnviroScreen 3.0. The California Office of Environmental Health Hazard Assessment (OEHHA). https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-30



Ecological Hazards

Data sources: Coastal Storm Modeling System (CoSMoS) for Southern California, v3.0, Phase 2; Calfire Fire Hazard Severity Zone Maps; Federal Emergency Management Agency, National Flood Hazard Layer, Version 1.1.1.0, 11/01/2016.

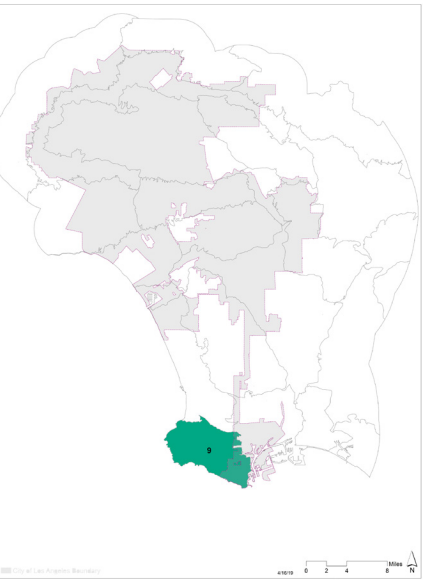


Land Use

Data source: 2008 Los Angeles County Countywide Zoning by the Southern California Association of Governments (SCAG). https://egis3.lacounty.gov/dataportal/2012/04/10/county-wide-zoning/

ECOTOPE 9: PALOS VERDES PENINSULA HILLS AND TERRACES

(Partially within the City of Los Angeles)



LANDFORM

The Palos Verdes Peninsula sits atop the Palos Verdes Fault and rises approximately 1,250 feet from sea level between Santa Monica Bay to the north and San Pedro Bay to the south. Relatively flat peak areas give way to steeper slopes with deep canyons interspersed with broad terraces that step down to the ocean or plains below. Extensive landslide areas are present on ocean-facing slopes. Overall, the Peninsula is fairly symmetrical in shape resulting in an even mix of aspects in all directions. Soils are generally well drained.

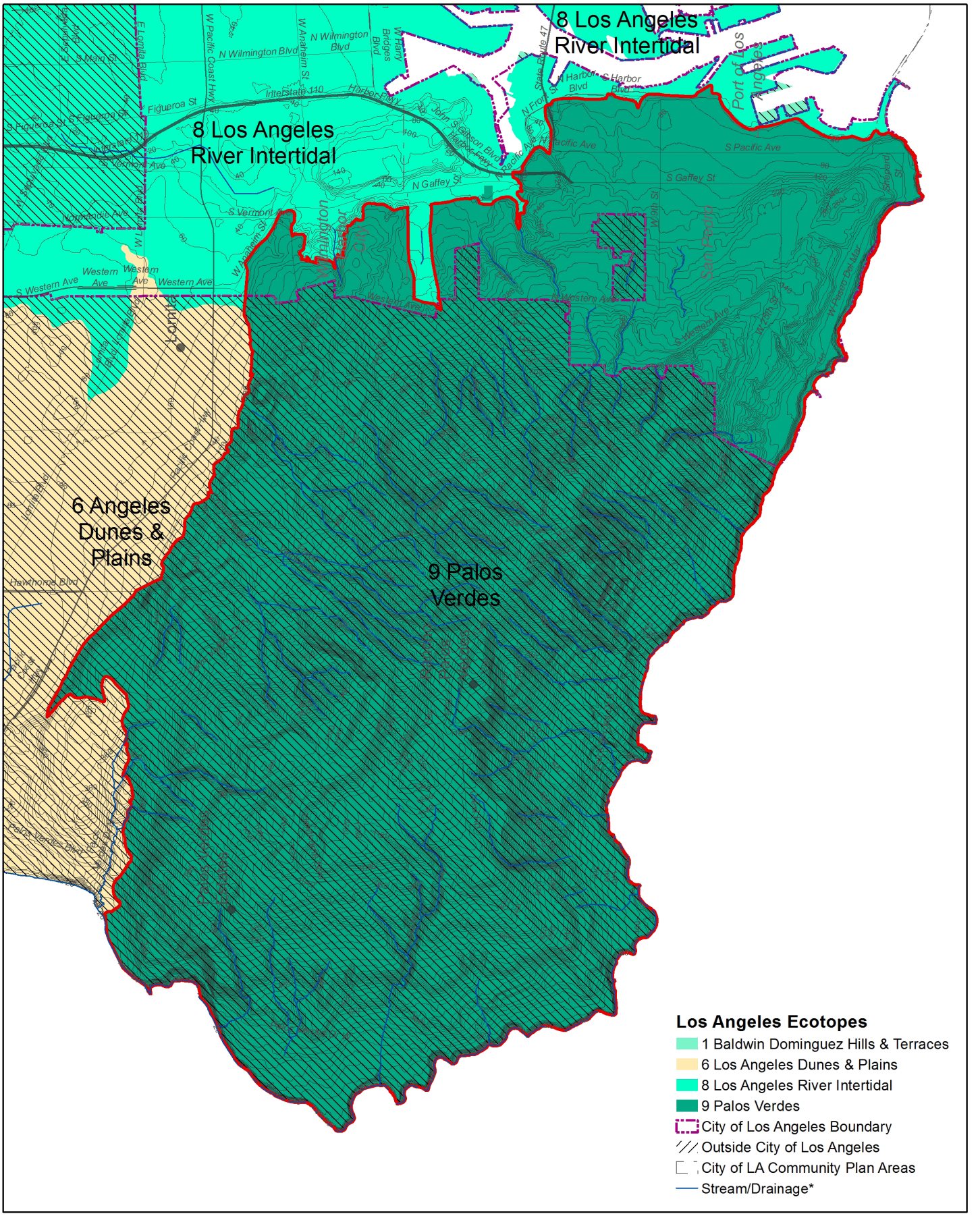
MICROCLIMATE

Strong coastal influence, and some orographic enhancement of precipitation, is present in coastal-facing areas resulting in cool summers and moderate winters free of frost or freezing conditions. Shadowing of ocean influence to the east results in a thermal belt with moderate climate characteristics at mid-elevations. Lower elevations to the east have more continental influence with cooler winter nighttime temperatures and hotter summer temperatures. Diverse aspects are relatively evenly distributed across the ecotope resulting in diverse finer-grained microclimates.

VEGETATION & LANDCOVER

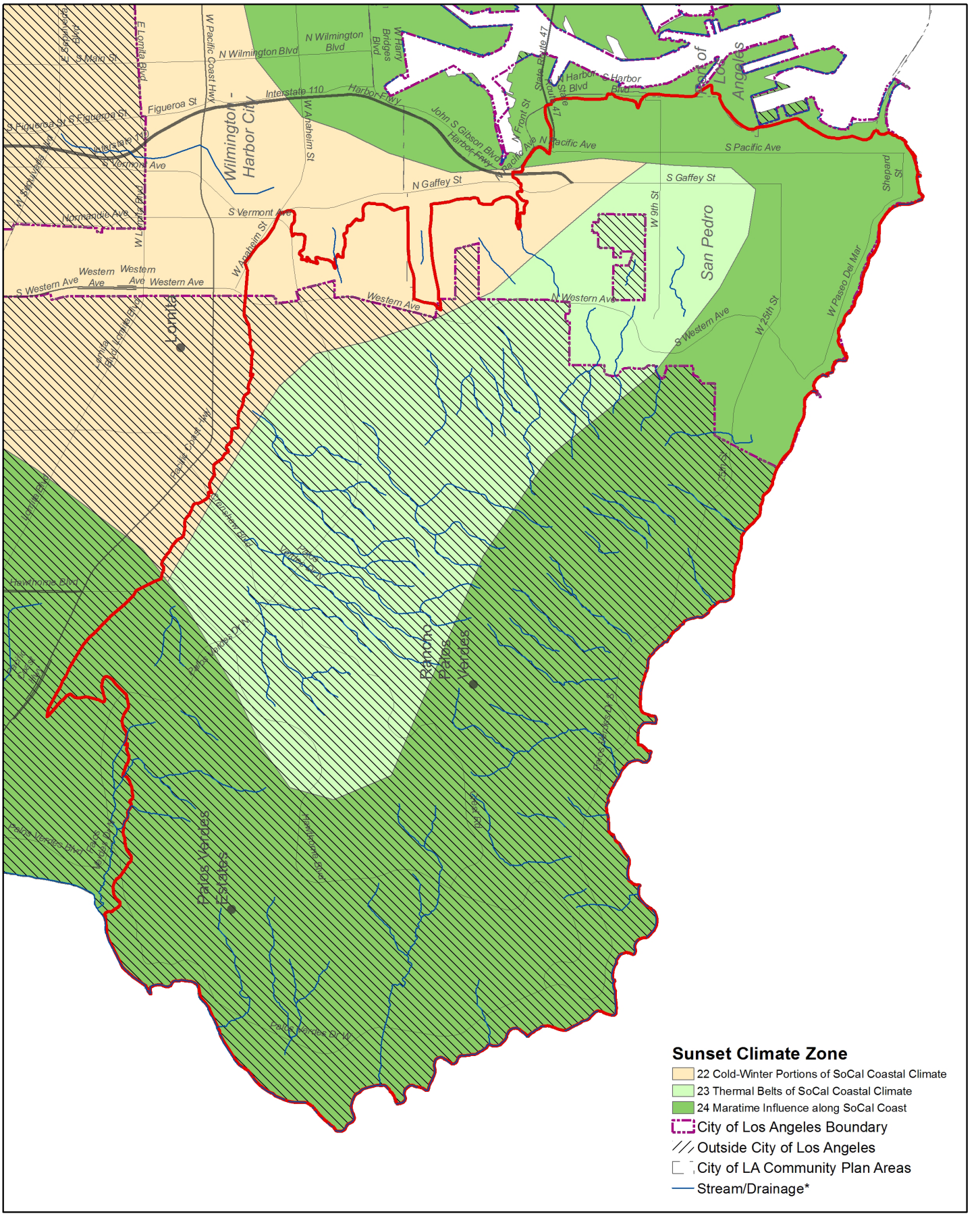
Substantial natural areas of conservation significance are present within the Palos Verdes Peninsula ecotope. About 13.74% of the ecotope is natural areas dominated by chaparral and coastal sage scrub vegetation types, with a smaller amount of coast live oak and California black walnut woodlands in north and east facing canyons making up an additional 1.49%. However, the more recent Rancho Palos Verdes Natural Communities Conservation Plan (NCCP) did not find these woodland types to be present, so this is perhaps a misclassification by CALVEG (City of Rancho Palos Verdes, 2018). An additional 12.76% of the ecotope is classified as degraded natural areas including annual grasses and forbs alliance by CALVEG; however, it is likely that these areas include some small areas of high quality native perennial bunchgrasses and other herbaceous species described in the NCCP.

Driven by the unique microclimate and development pressure, the ecotope includes numerous species of conservation concern. Natural areas in the ecotope outside of the City of Los Angeles are being formally planned for conservation through the Rancho Palos Verdes NCCP and Habitat Conservation Plan. The aim of this plan is to protect the plant communities and natural processes that are essential to sustain habitat for target species. The plan includes detailed information on ecological characteristics and biodiversity of the ecotope. Notable species include the federally endangered El Segundo blue butterfly (*Euphilotes abttoides allyni*), the Palos Verdes blue butterfly (*Glaucopsyche lygdamus palosverdesensis*), the federally threatened coastal California gnatcatcher (*Polioptila californica californica*), and other imperiled species receiving lower levels of protection status including the island green dudleya (*Dudleya virens insularis*) and cactus wren (*Campylorhynchus brunneicapillus*).



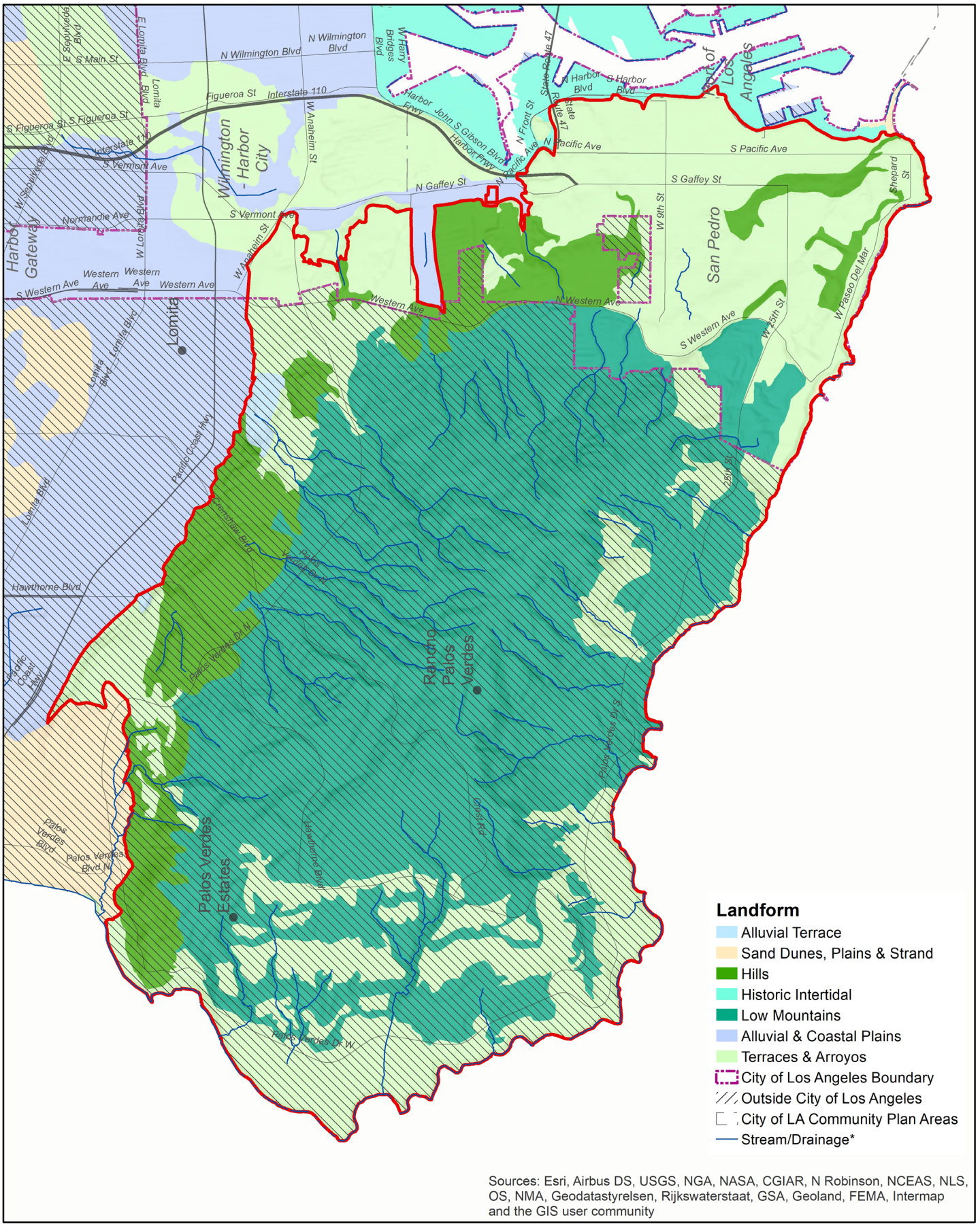
Ecotope 9 Context Map

Data source: I. Brown (2019). https://escholarship.org/uc/item/4c81w4nr



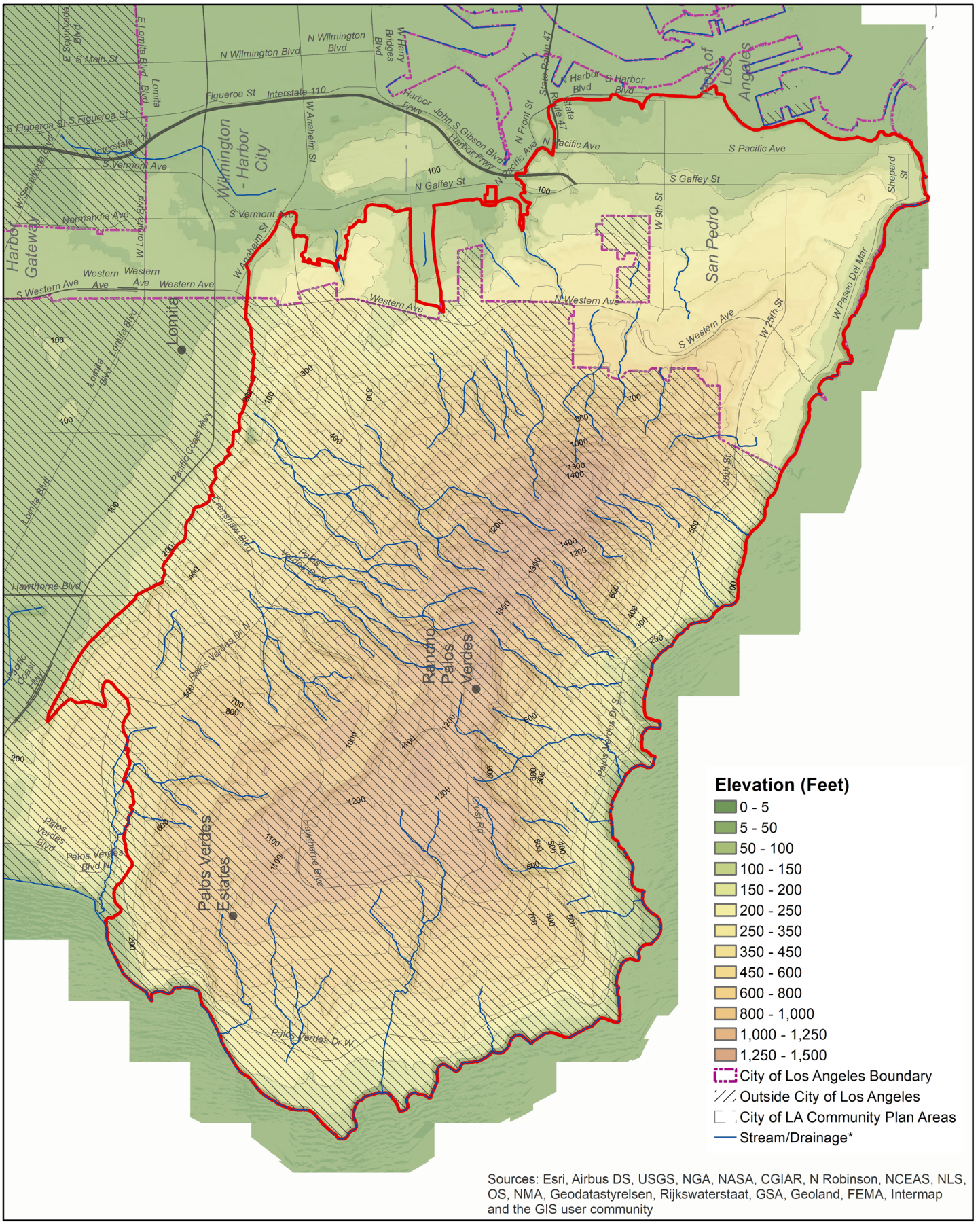
Microclimate

Data source: Sunset Magazine. http://www.sunset.com/garden/climate-zones/climate-zones-intro-us-map



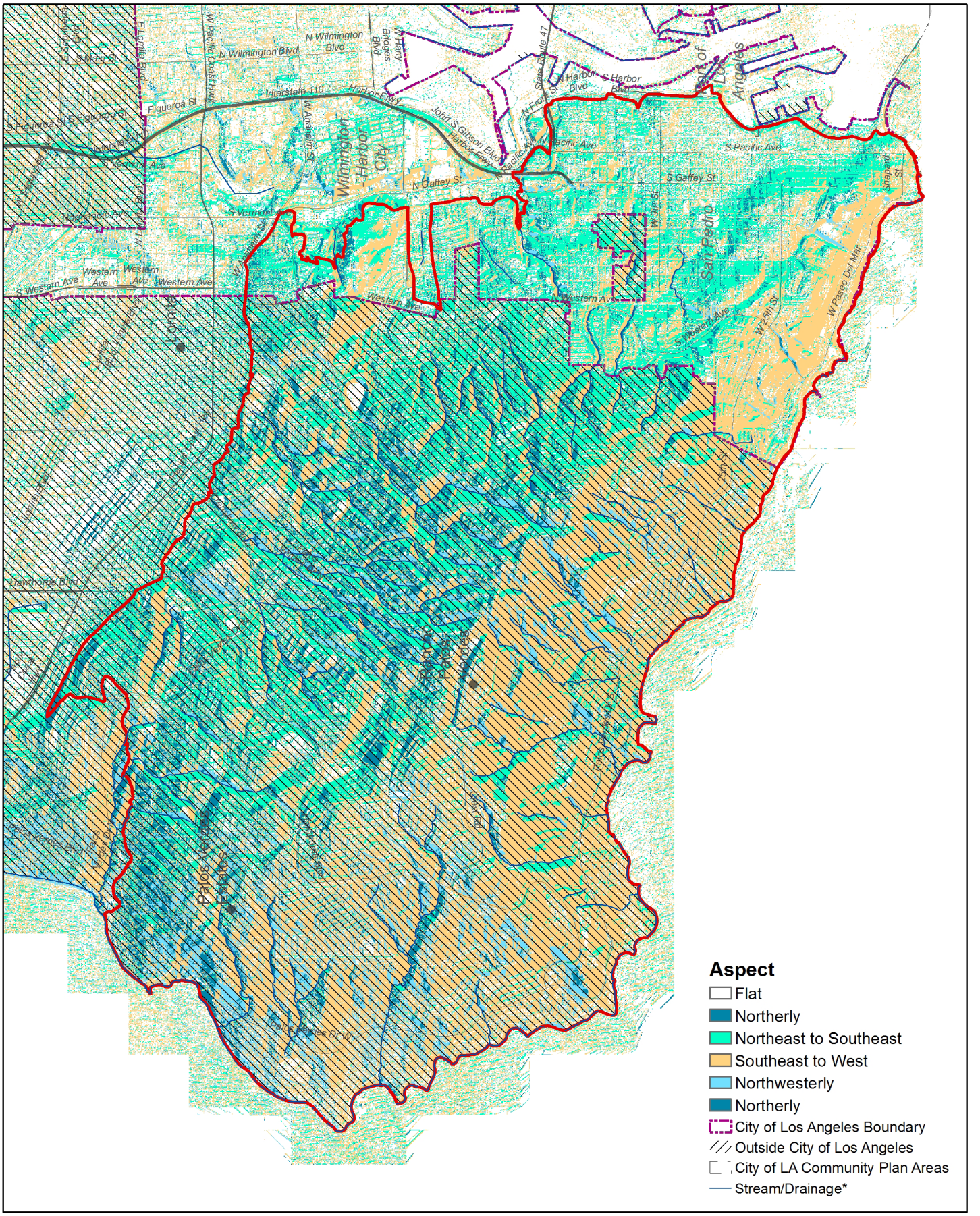
Landform

Data source: I. Brown (2019), https://escholarship.org/uc/item/4c81w4nr



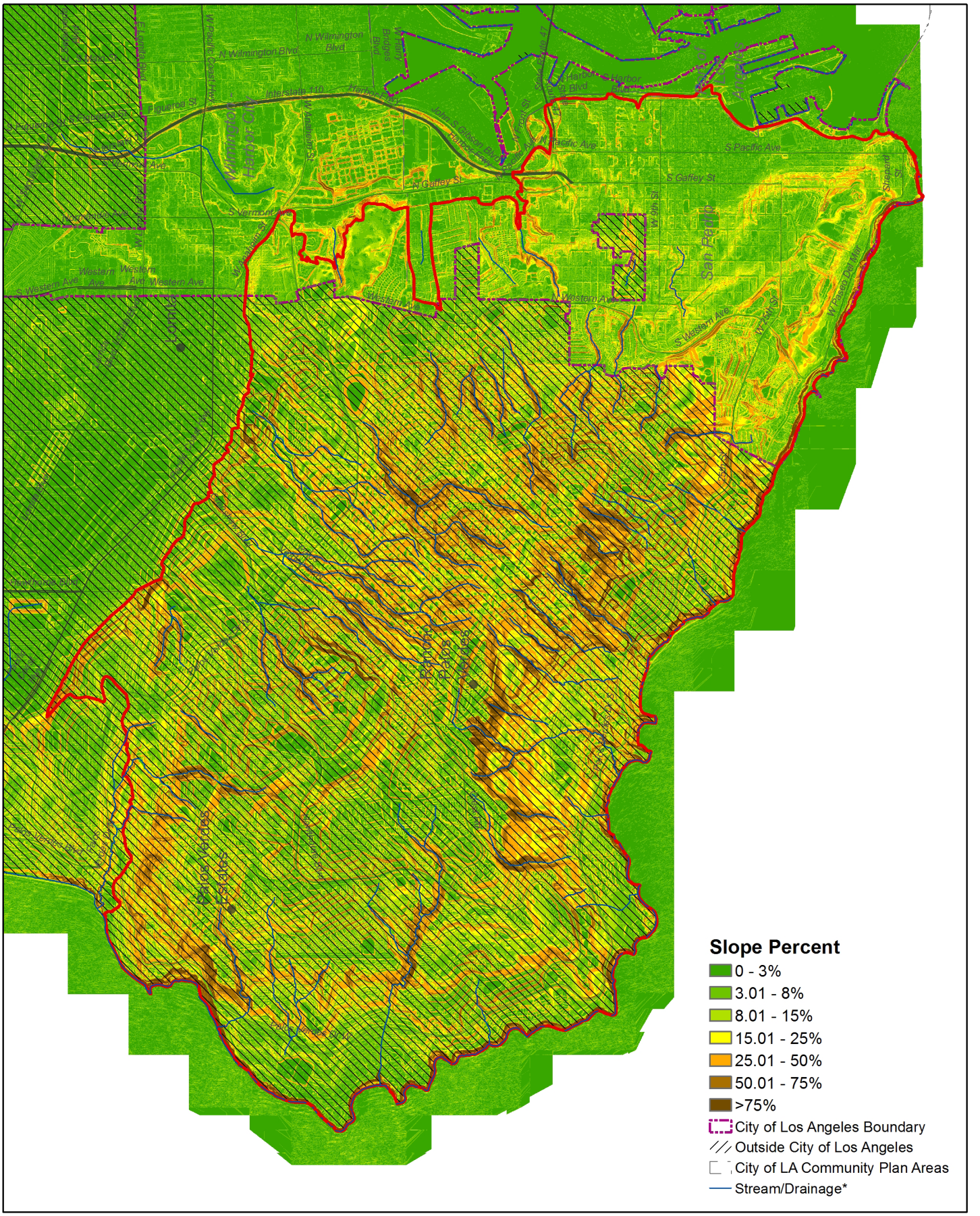
Elevation

Data source: 2006 10-foot Digital Elevation Model (DEM) – LARIAC – Public Domain. https://egis3.lacounty.gov/dataportal/2011/01/26/2006-10-foot-digital-elevation-model-dem-public-domain/



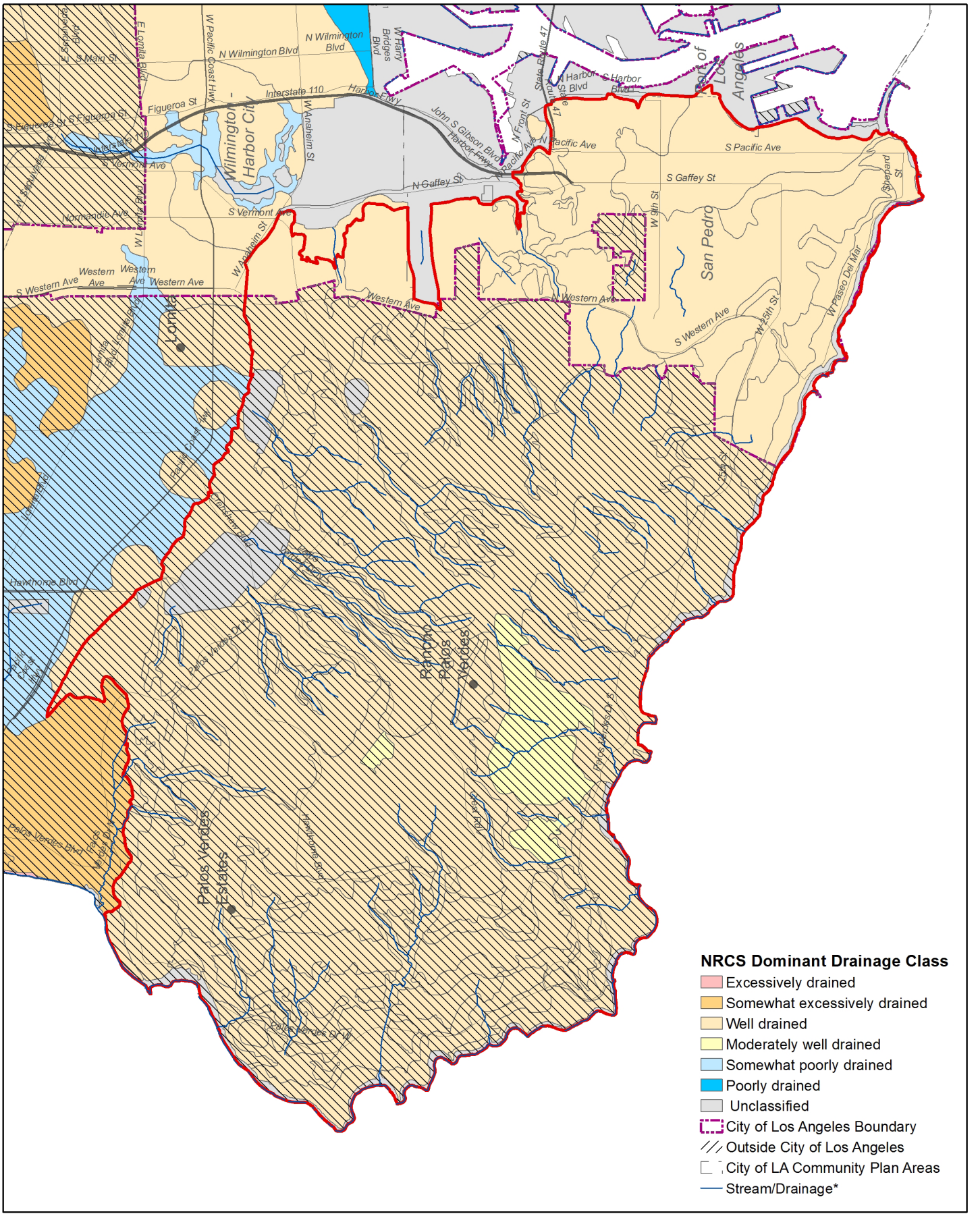
Aspect

Data source: 2006 10-foot Digital Elevation Model (DEM) – LARIAC – Public Domain. https://egis3.lacounty.gov/dataportal/2011/01/26/2006-10-foot-digital-elevation-model-dem-public-domain/



Slope Percent

Data source: 2006 10-foot Digital Elevation Model (DEM) – LARIAC – Public Domain. https://egis3.lacounty.gov/dataportal/2011/01/26/2006-10-foot-digital-elevation-model-dem-public-domain/


NRCS Dominant Drainage Class
Excessively drained
Somewhat excessively drained
Well drained
Moderately well drained
Somewhat poorly drained
Poorly drained
Unclassified
City of Los Angeles Boundary
Outside City of Los Angeles
City of LA Community Plan Areas
Stream/Drainage*
Wilmington - Harbor City
San Pedro
Port of Los Angeles
Lomita
Rancho Palos Verdes
Palos Verdes Estates
Interstate 110
Harbor Fwy
Western Ave
N Wilmington Blvd
S Pacific Ave
S Gaffey St
Figueroa St
Normandie Ave
S Vermont Ave
Hawthorne Blvd
Palos Verdes Dr W
Palos Verdes Dr N
Crenshaw Blvd
Pacific Coast Hwy
S Western Ave
N Western Ave
W 9th St
W 25th St
W Passeo Del Mar
Sheppard St
N Gaffey St
John S Gibson Blvd
Harbor Fwy
N Front St
N Harbor Blvd
S Harbor Blvd
W Anaheim St
W Harry Bridges Blvd
State Route 47
Vincent Thomas Br
E Lomita Blvd
W Lomita Blvd
Lomita Blvd
Western Ave
Western Ave
Western Ave
Western Ave
S Western Ave
S Figueroa St
S Figueroa St
S Main St
Avalon Blvd
Normandie Ave
S Vermont Ave
W Pacific Coast Hwy
Interstate 110
Figueroa St
N Wilmington Blvd
Harbor Fwy
Pacific Coast Hwy
Crenshaw Blvd
Palos Verdes Dr W
Palos Verdes Dr N
Hawthorne Blvd
Palos Verdes Dr N
Palos Verdes Dr W
Palos Verdes Dr E
Gaffey St
Palos Verdes Dr S
Hawthorne Blvd
Palos Verdes Dr N
Palos Verdes Dr W
Palos Verdes Dr E
Gaffey St
Palos Verdes Dr S
Hawthorne Blvd
Pacific Coast Hwy
Lomita Blvd
Western Ave
Western Ave
Western Ave
S Western Ave
S Figueroa St
S Figueroa St
S Main St
Avalon Blvd
Normandie Ave
S Vermont Ave
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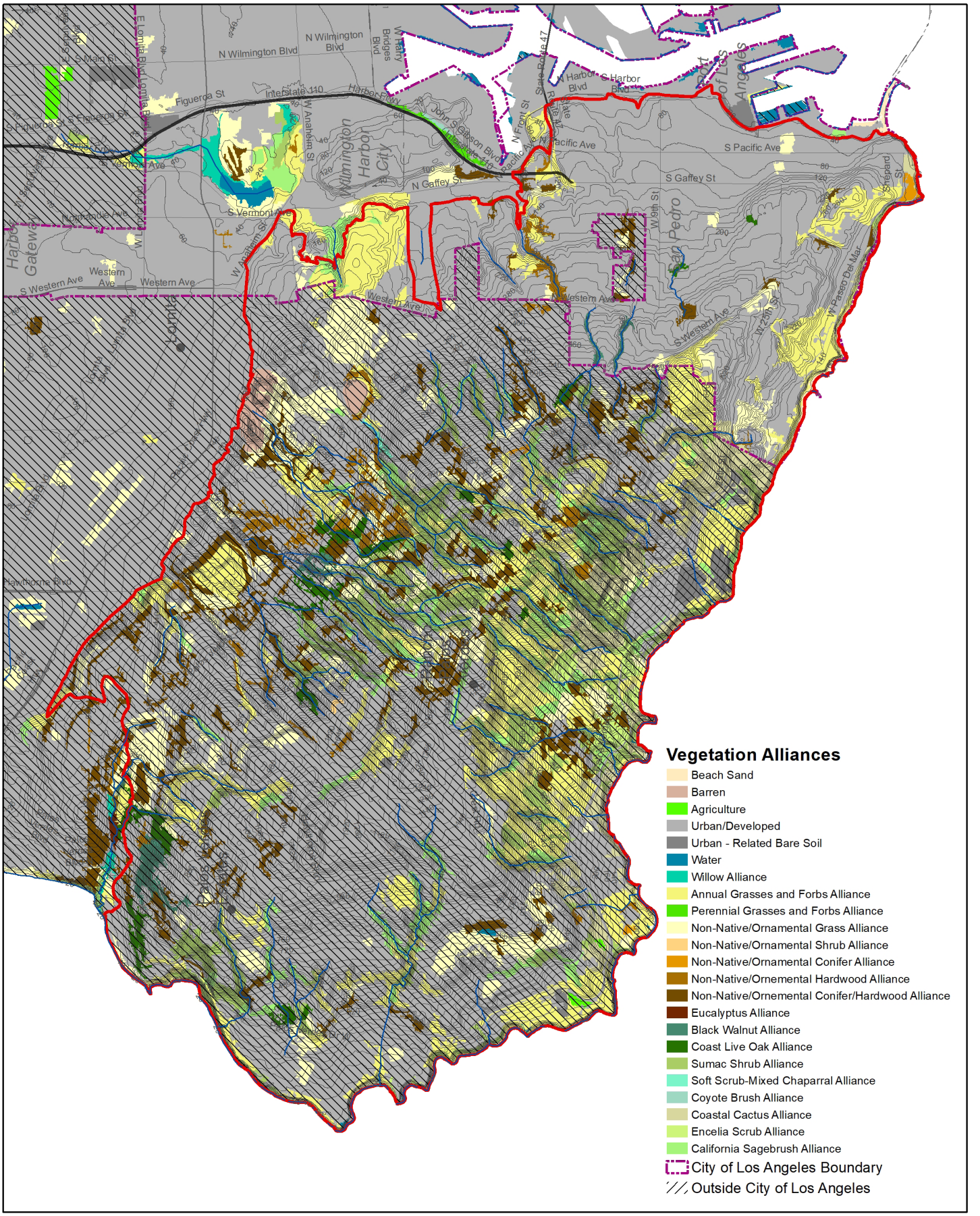
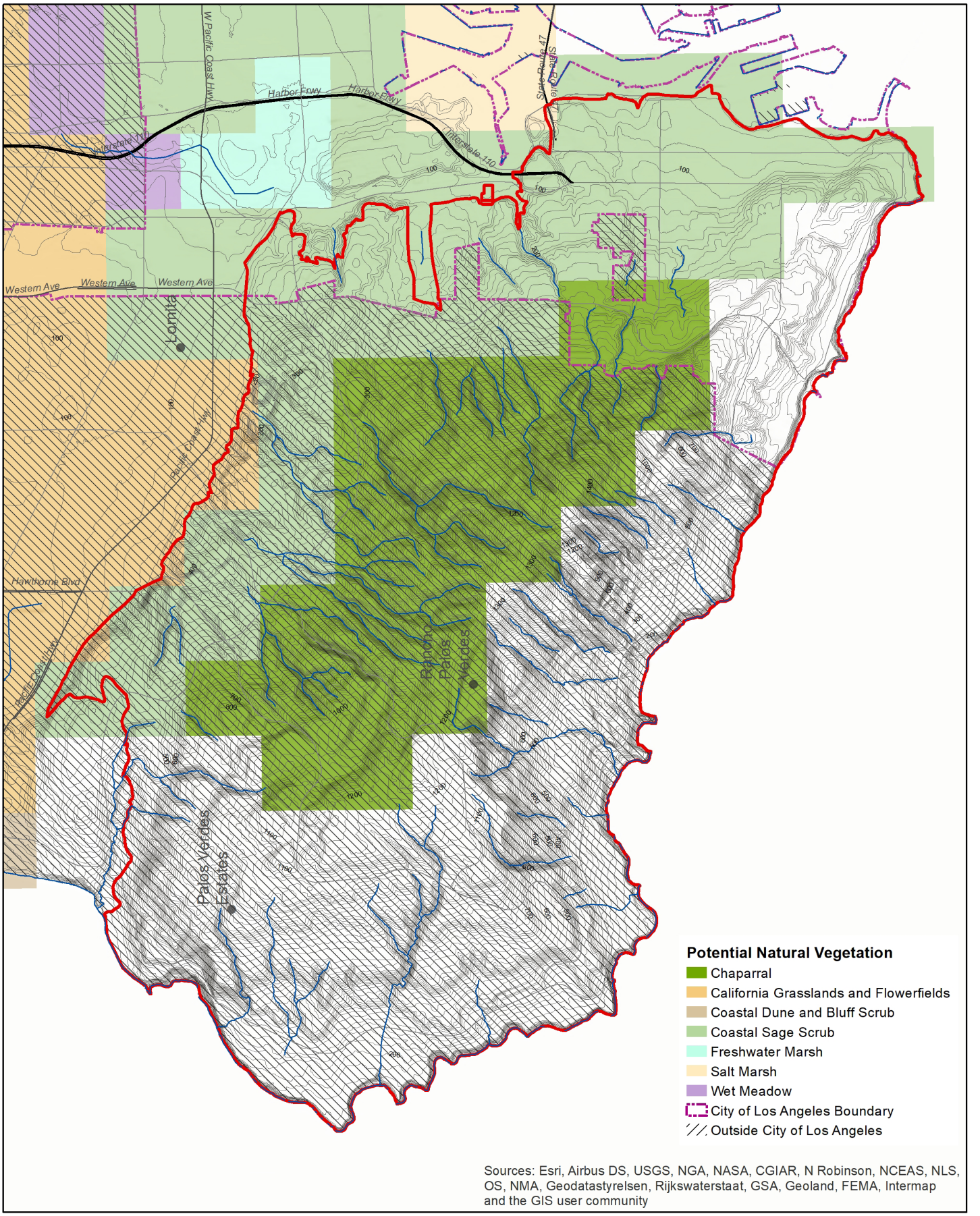
Crenshaw Blvd
Palos Verdes Dr W
Palos Verdes Dr N



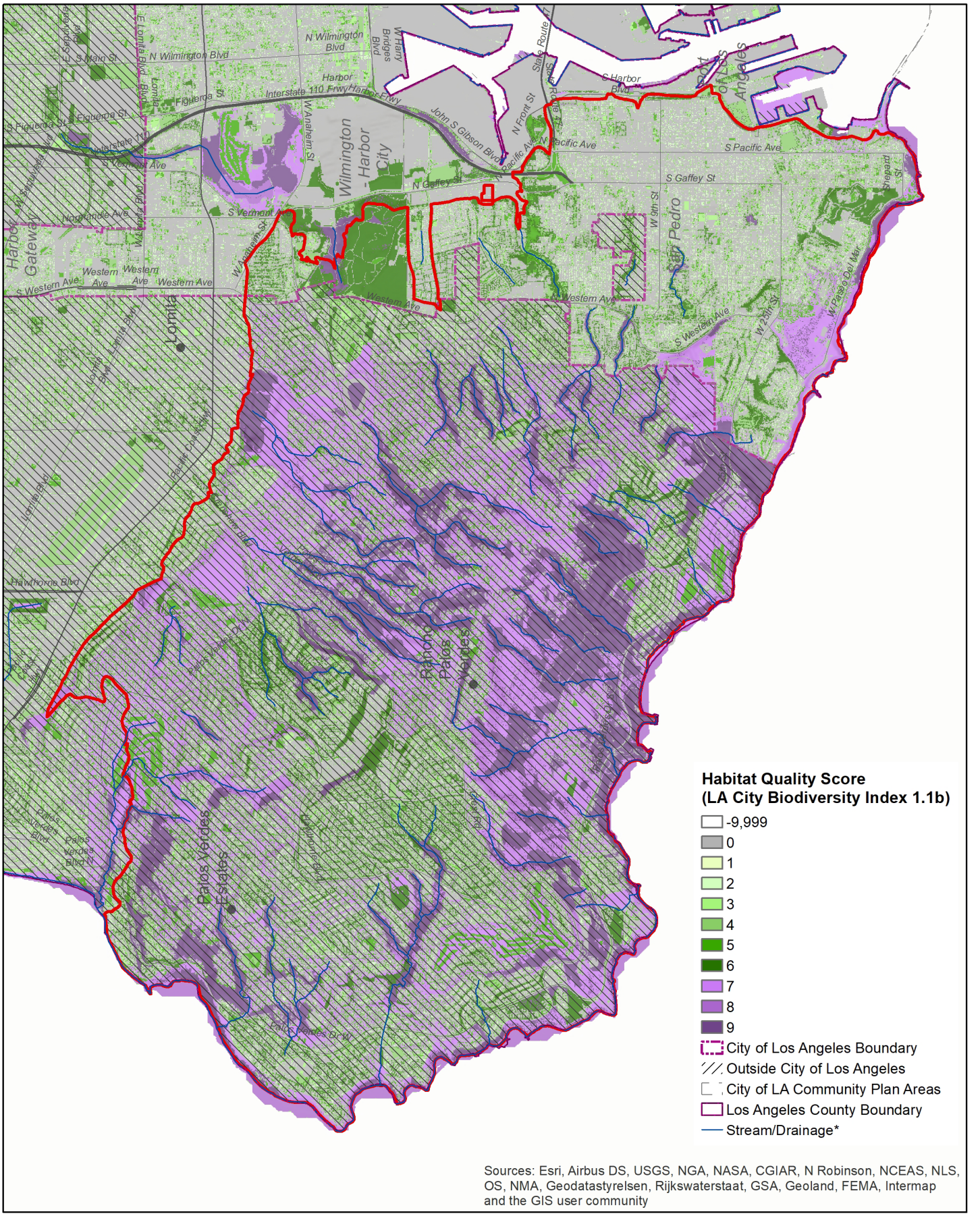
Vegetation Alliances

Data source: CALVEG. https://www.fs.usda.gov/detail/r5/landmanagement/resourcemanagement/?cid=stelprdb5347192



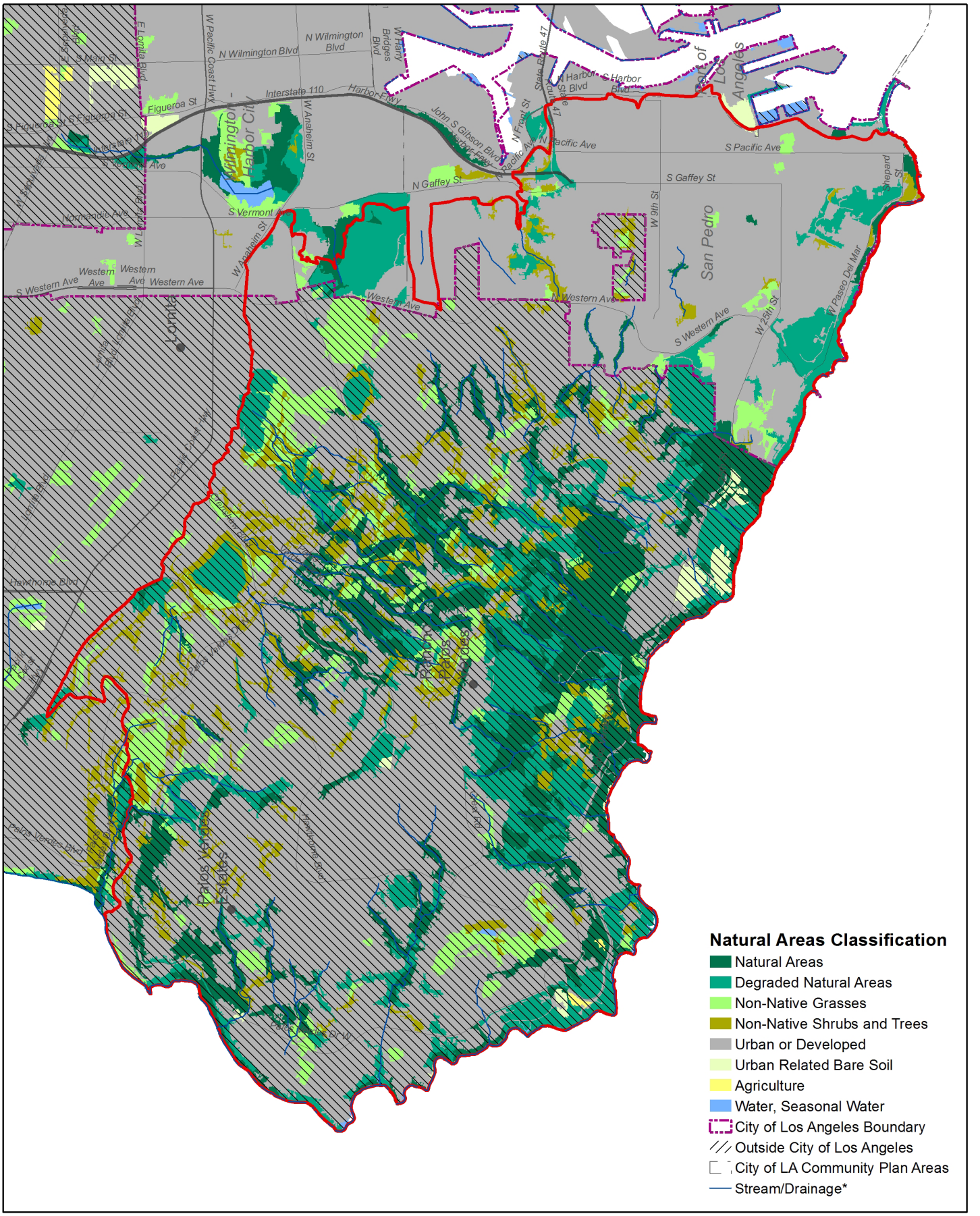
Hypothesized Potential Natural Vegetation

Data source: USC Spatial Sciences Institute/UCLA Institute of the Environment: Historical Ecology of the Los Angeles River Watershed Project.



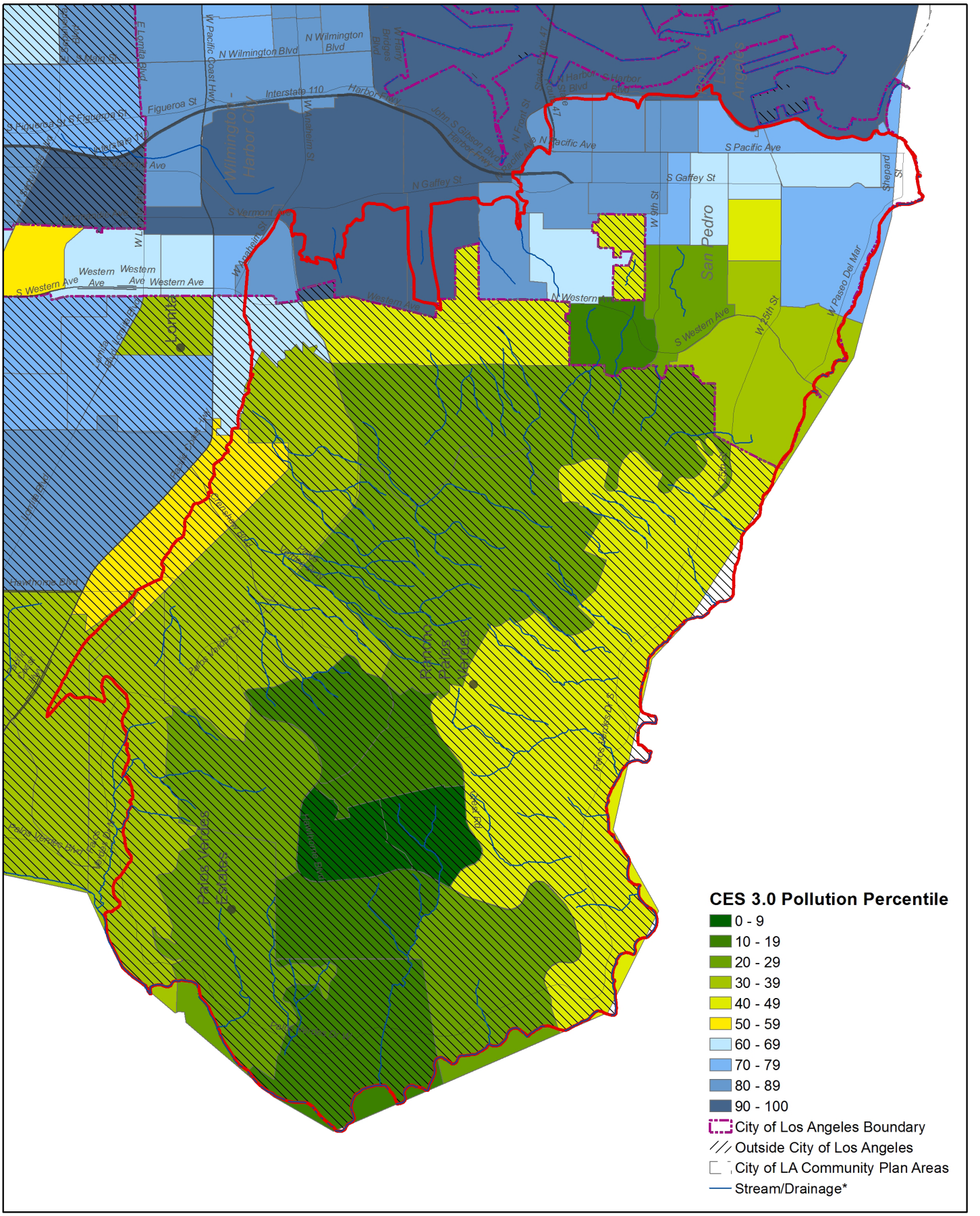
General Habitat Quality

Data source: I. Brown (2019). https://escholarship.org/uc/item/4c81w4nr



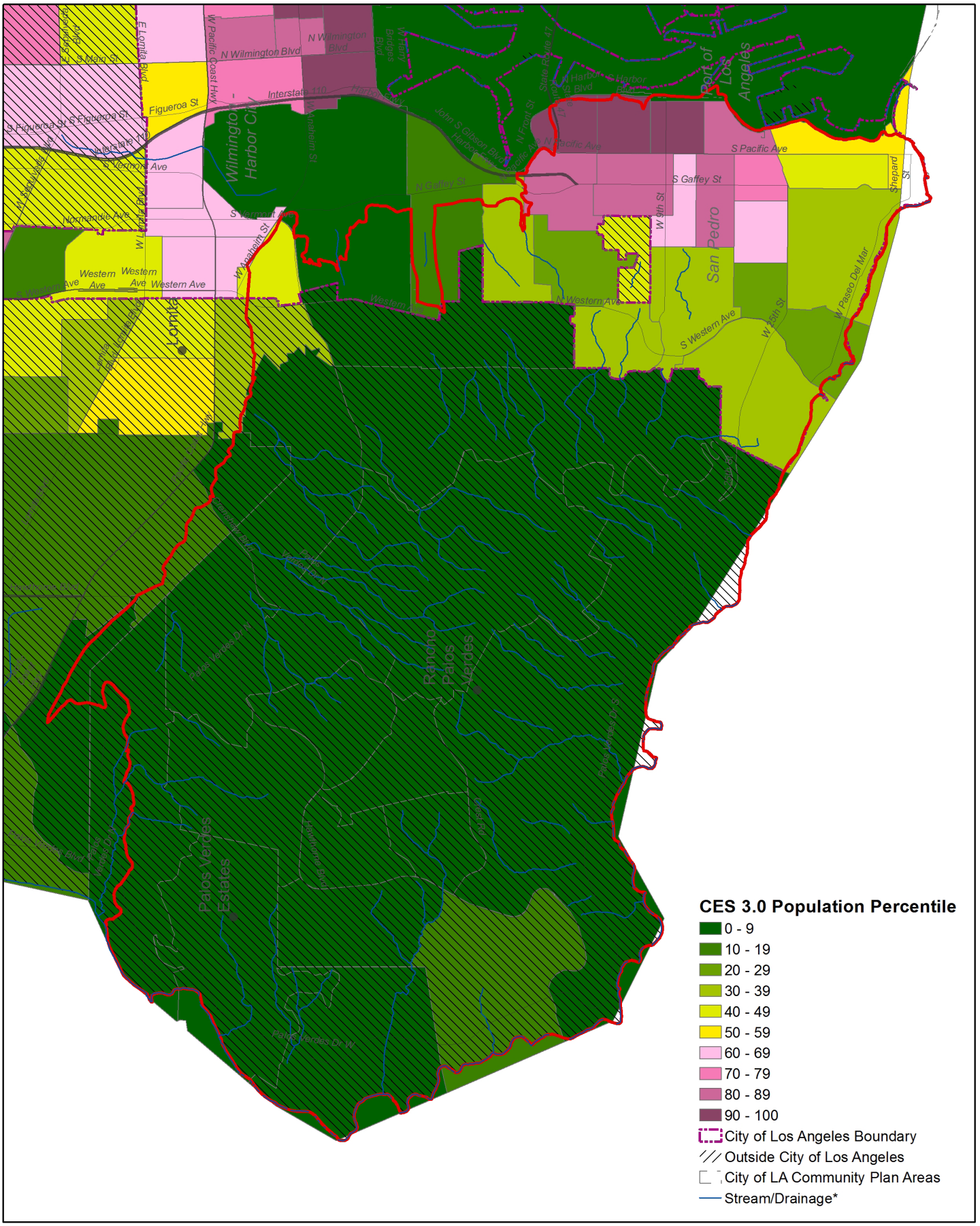
Natural Areas Classification

Data source: 2018 City of Los Angeles Biodiversity Report, Appendix B. https://www.lacitysan.org/cs/groups/public/documents/document/y250/mdi0/~edisp/cnt024943.pdf



CalEnviroScreen Pollution Precentile (pollution exposure)

Data source: CalEnviroScreen 3.0. The California Office of Environmental Health Hazard Assessment (OEHHA). https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-30



CalEnviroscreen Population Percentile (population vulnerability)

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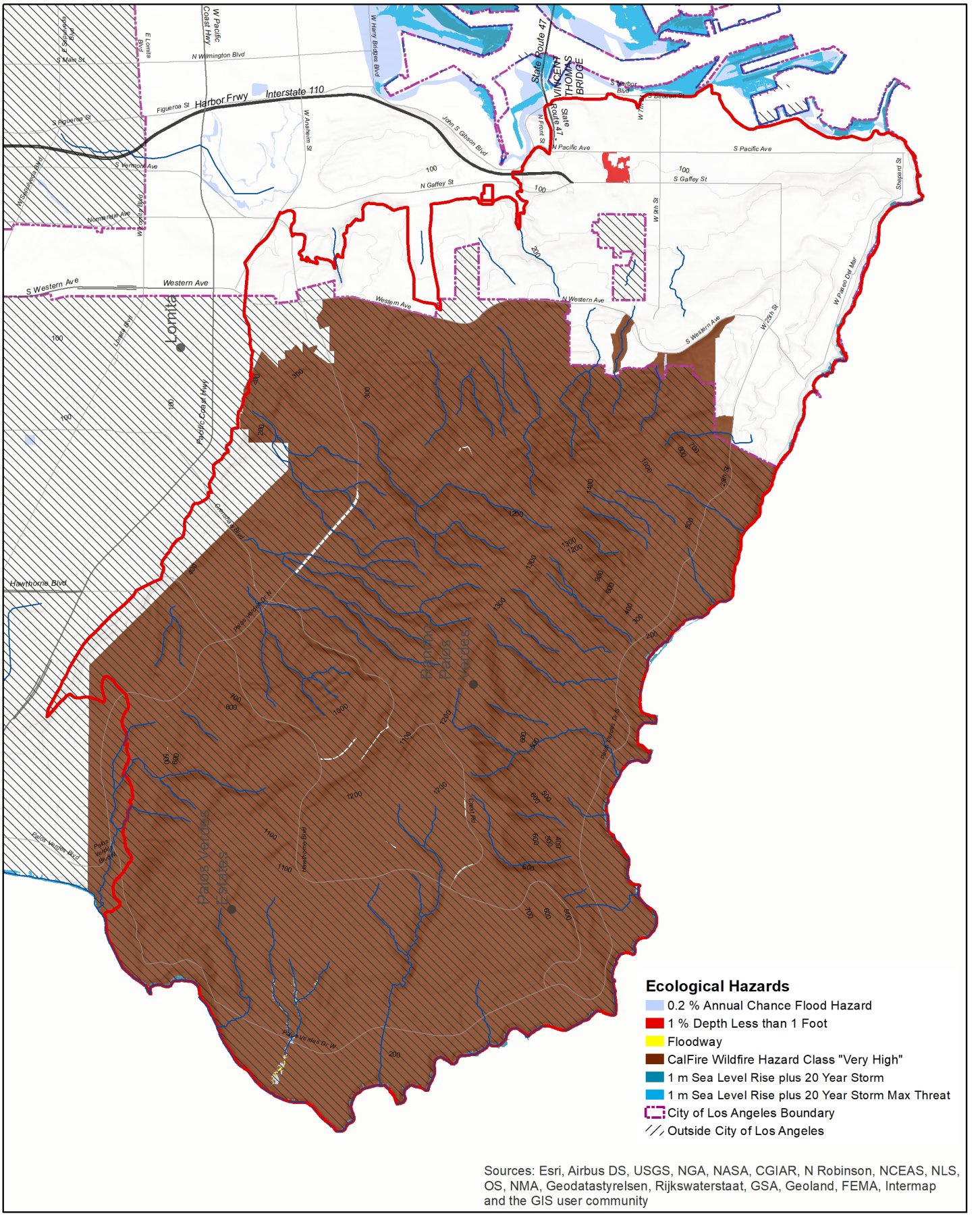

Ecological Hazards

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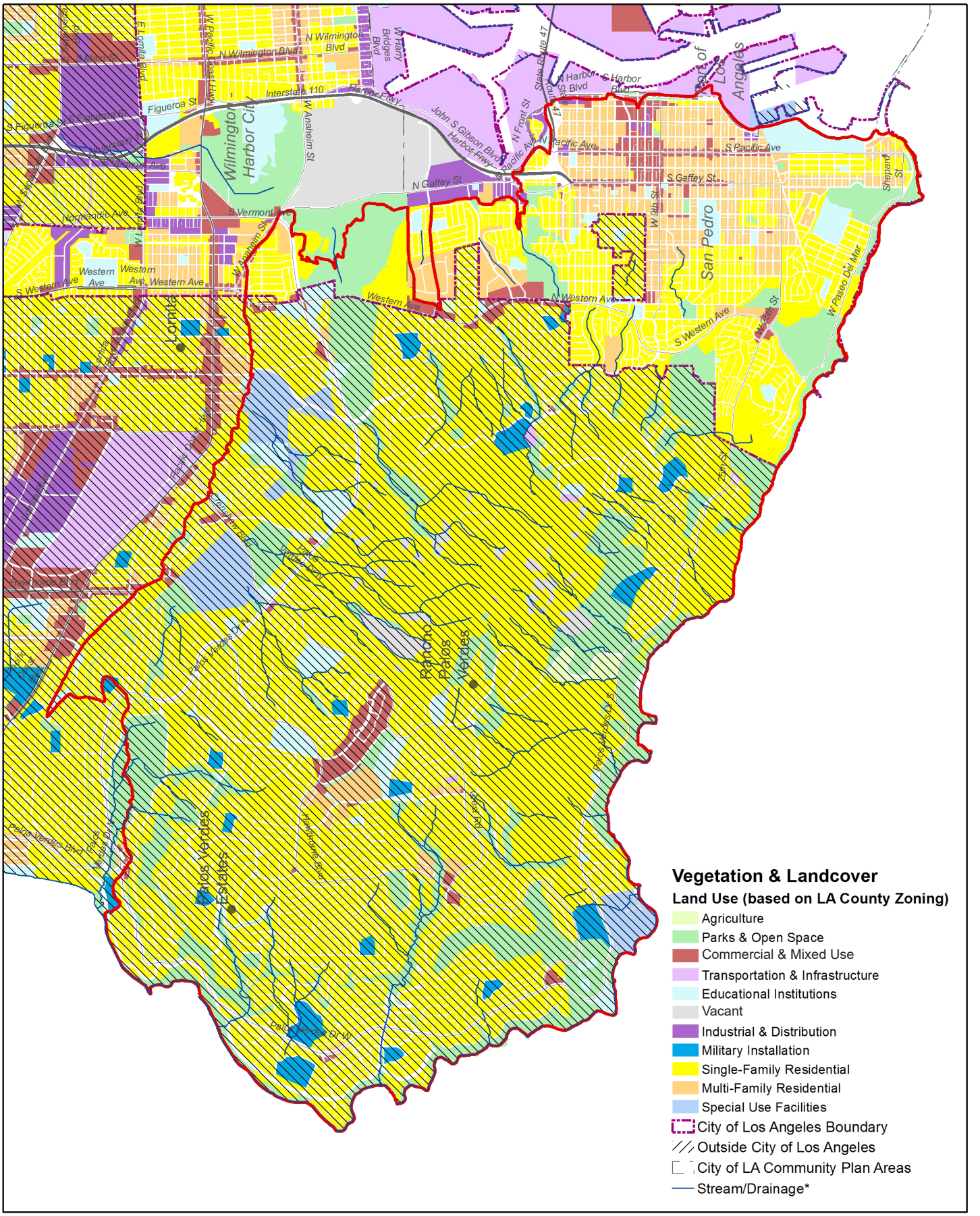
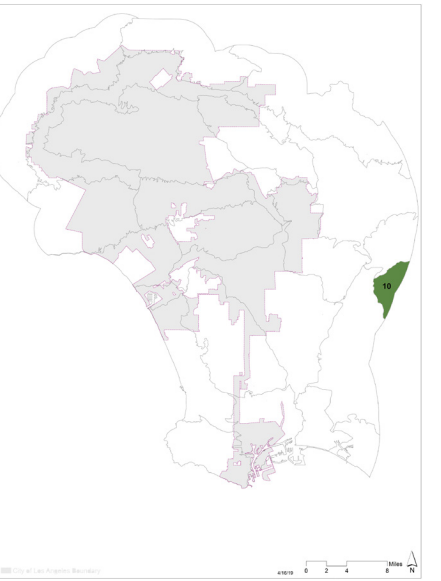


Land Use

Data source: 2008 Los Angeles County Countywide Zoning by the Southern California Association of Governments (SCAG). https://egis3.lacounty.gov/dataportal/2012/04/10/county-wide-zoning/

ECOTOPE 10: PUENTE HILLS (INCLUDES PORTION OF ECOTOPE 27: COYOTE HILLS & TERRACES)



(Falls outside of the City of Los Angeles. Only the portion of ecotope within the study area has been characterized.)

LANDFORM

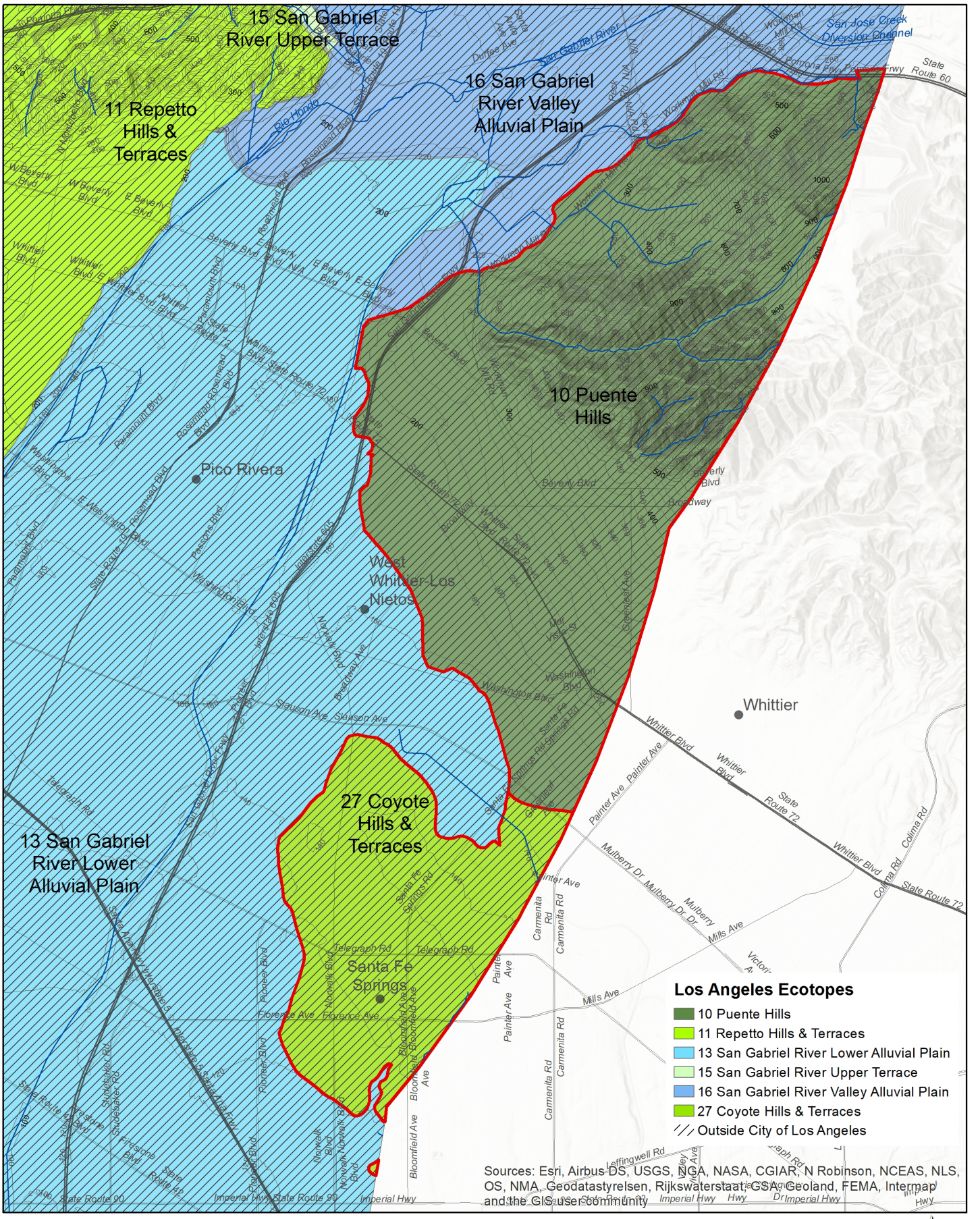
The far northwestern portion of the Puente Hills and Terraces are included within the study area. This portion exhibits elevations ranging from roughly 100' to 1,000' and is comprised of alluvial material near the boundary of the San Gabriel River floodplain, with more diverse clay and limestone-derived soils in steeper areas along the Whittier-Elsinore fault within Turnbull and Sycamore Canyons above the City of Whittier. Seeps and springs are prevalent and support substantial woodlands and chaparral, especially on north slopes and shaded canyon bottoms. This area represents the northwestern terminus of the range of hills that ultimately connects with Chino Hills and the Santa Ana Mountains to the southeast. The ecotope is bound by the Whittier Narrows to the northwest, the San Gabriel Valley to the north, and the Coyote Hills & Terraces to the south (Puente Hills, 2007). *(Note that the Coyote Hills and Terraces ecotope has been designated as a separate ecotope since the environmental factors maps were produced and boundaries on those maps do not reflect this change. The ecotopes map on the following page reflects the correct boundary).*

MICROCLIMATE

This transitional area between the maritime and continental influences produces thermal belts on higher terrain with moderate climates. This area exhibits relatively warmer winter nighttime lows and moderate temperatures throughout the year. However, the distance from the coast and higher terrain can produce relatively high temperatures during summer heat waves. Aspects are generally southwest and northeast due to the orientation of the Puente Hills Fault that produced the hills. The southwest aspect can be favorable for orographic enhancement of precipitation in winter and also lead to high solar loading of land surfaces throughout the year. Northeastern aspects are cooler and relatively moist. This range of hills often represents the limit of morning fog common across the coastal plain in spring and summer. This area is exposed to a relatively high urban heat island due to transport of heat from extensive urban development to the west (Taha, 2017).

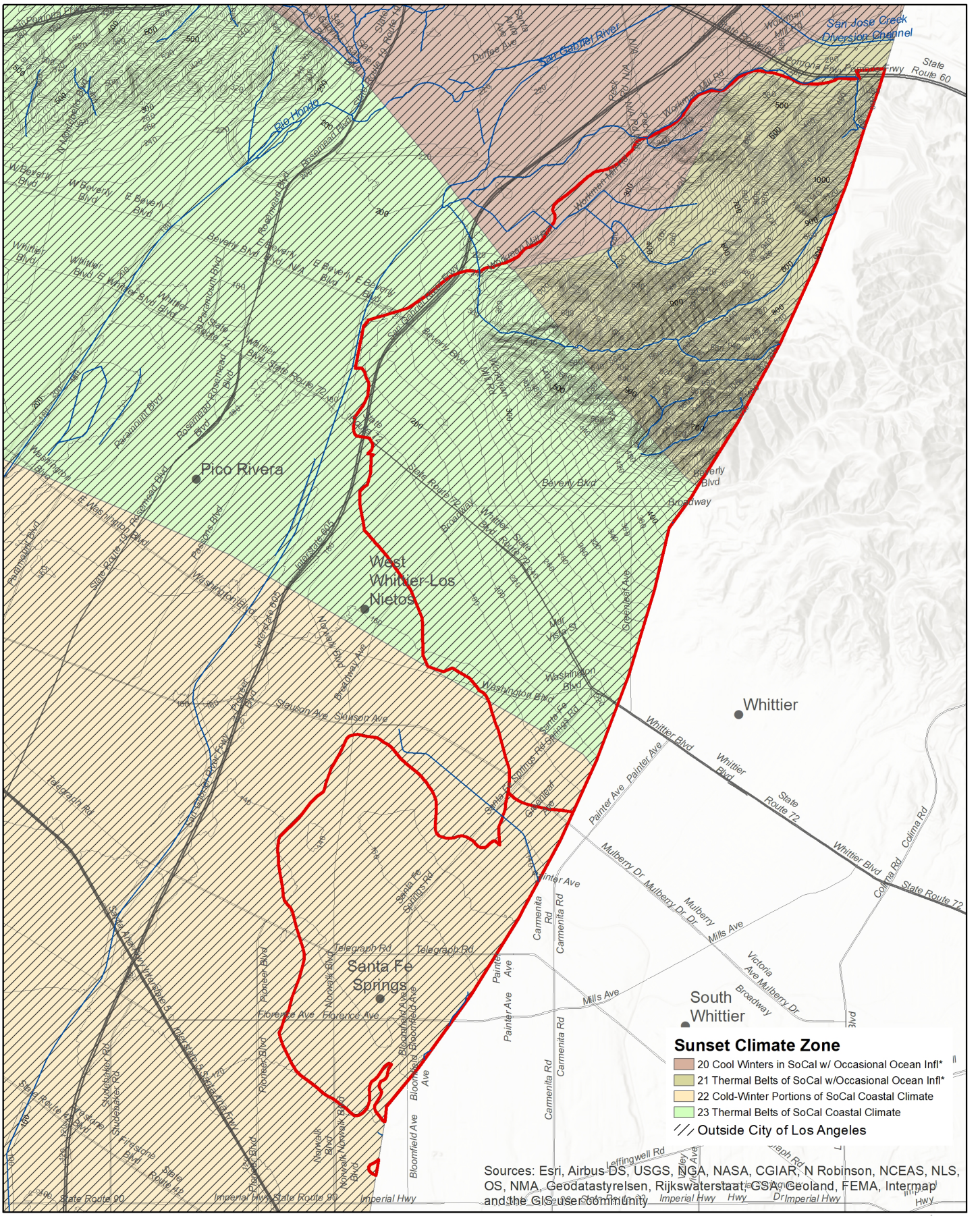
VEGETATION & LANDCOVER

This portion of the ecotope maintains 14.27% natural areas comprising mostly chaparral vegetation types, with lesser amounts of coastal sage scrub and woodlands. Areas of high quality California sycamore woodland alliance are present in Sycamore Canyon Park. Degraded natural areas dominated by annual grasslands, with likely pockets of high quality native perennial grasslands, comprise 7.89%. The Puente Hills Habitat Preservation Authority has been implementing their Resource Management Plan since 2007 to restore sensitive habitats and maintain habitat connectivity throughout the broader hill complex. Maintaining habitat connectivity in the ecotope is of high conservation significance, and this particular location is important for supporting connectivity between the Puente Hills and the San Gabriel River in the adjacent Whittier Narrows. Highly mobile species, such as some birds and insects, may also use stepping stones of native vegetation to connect to the northwest along the Repetto Hills, Elysian Hills, Verdugo Mountains, and Santa Monica Mountains. Numerous flora and fauna species of conservation concern are present, including the coastal California gnatcatcher (*Polioptila californica californica*) and the least Bell's vireo(*Vireo bellii pusillus*) observed in Sycamore Canyon, and the southwest willow flycatcher (*Empidonax traillii extimus*), which has been observed migrating through the area to reach habitats to the north (Puente Hills, 2007).



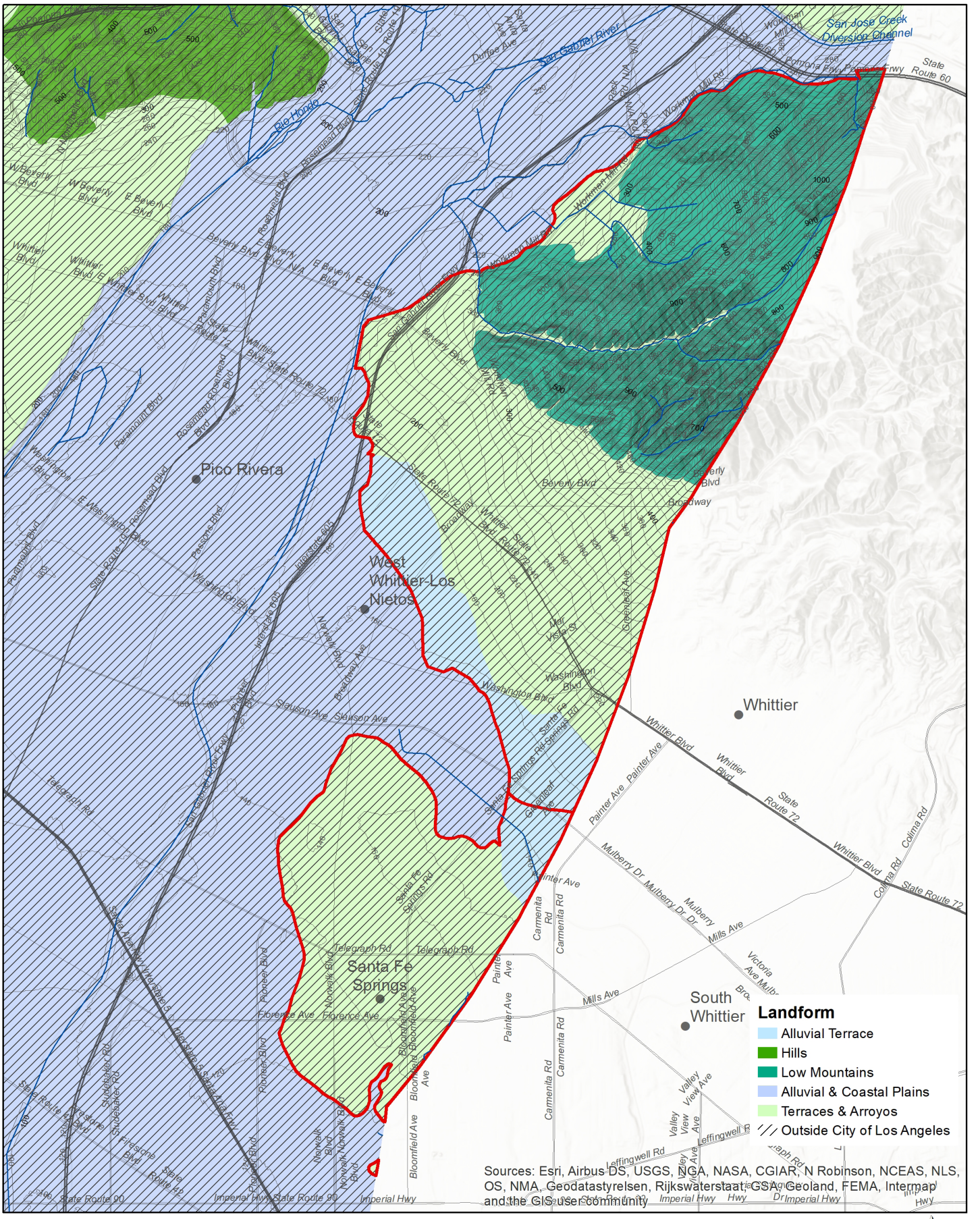
Ecotopes 10 and 27 Context Map

Data source: I. Brown (2019). https://escholarship.org/uc/item/4c81w4nr



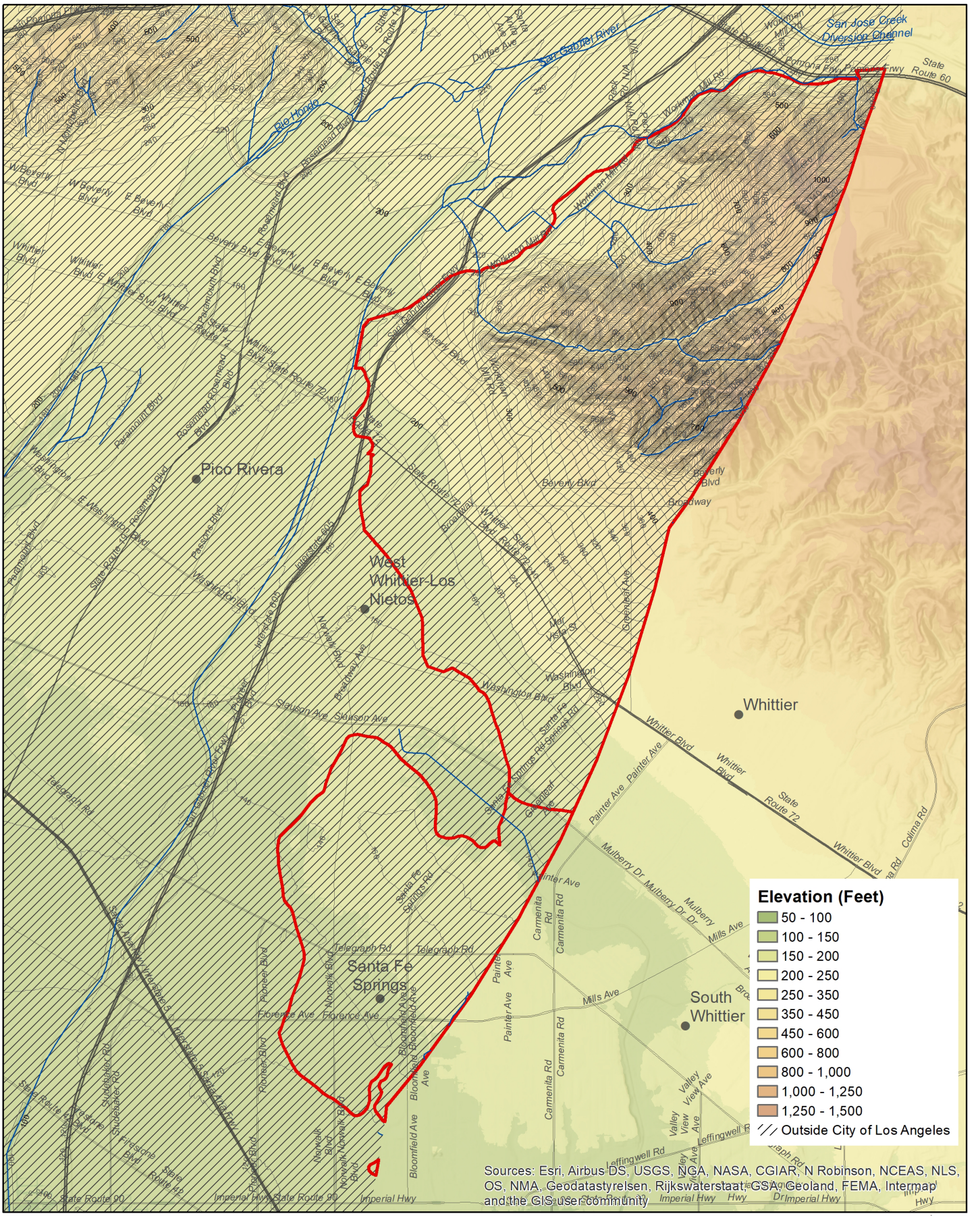
Microclimate

Data source: Sunset Magazine. http://www.sunset.com/garden/climate-zones/climate-zones-intro-us-map



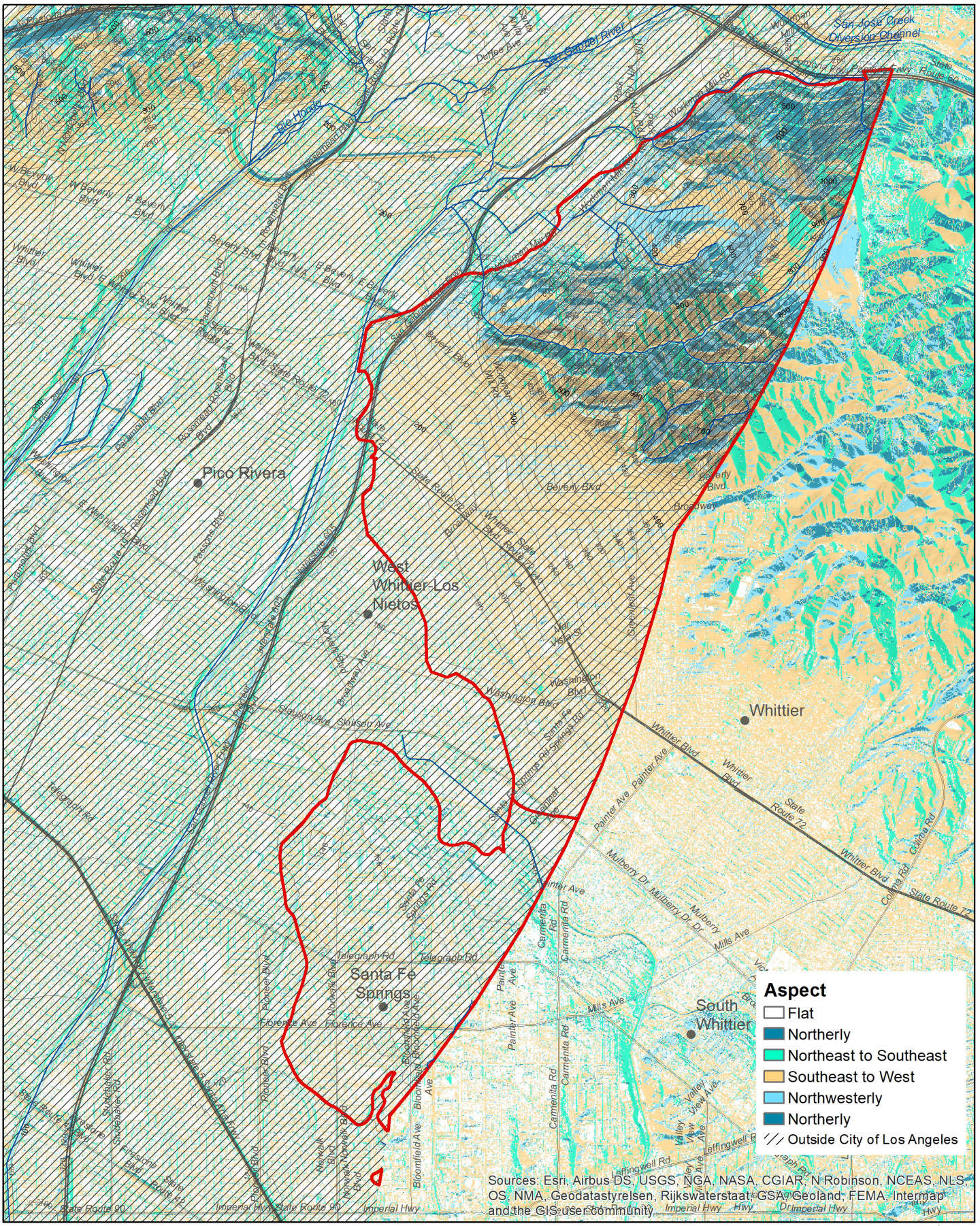
Landform

Data source: I. Brown (2019), https://escholarship.org/uc/item/4c81w4nr



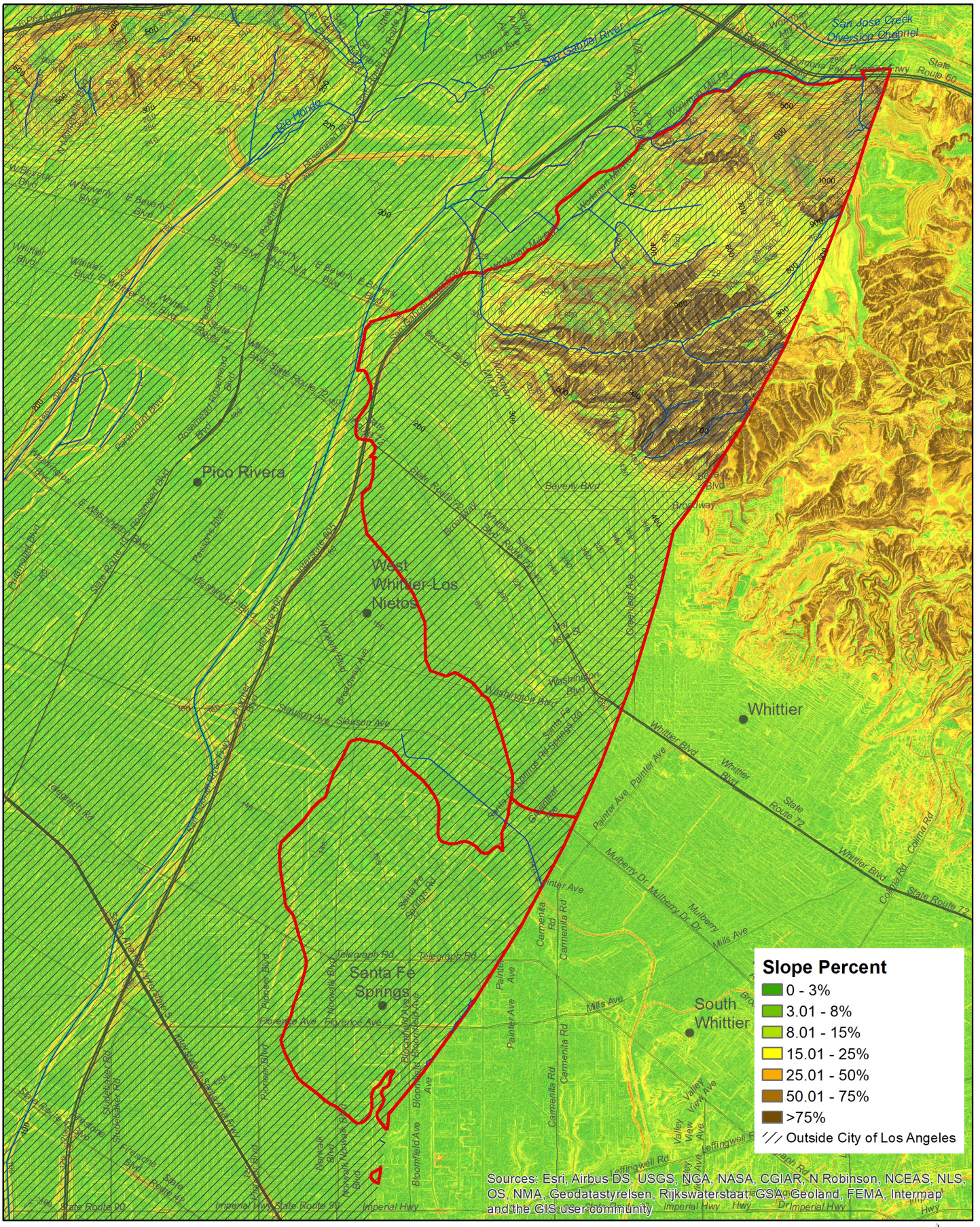
Elevation

Data source: 2006 10-foot Digital Elevation Model (DEM) – LARIAC – Public Domain. https://egis3.lacounty.gov/dataportal/2011/01/26/2006-10-foot-digital-elevation-model-dem-public-domain/



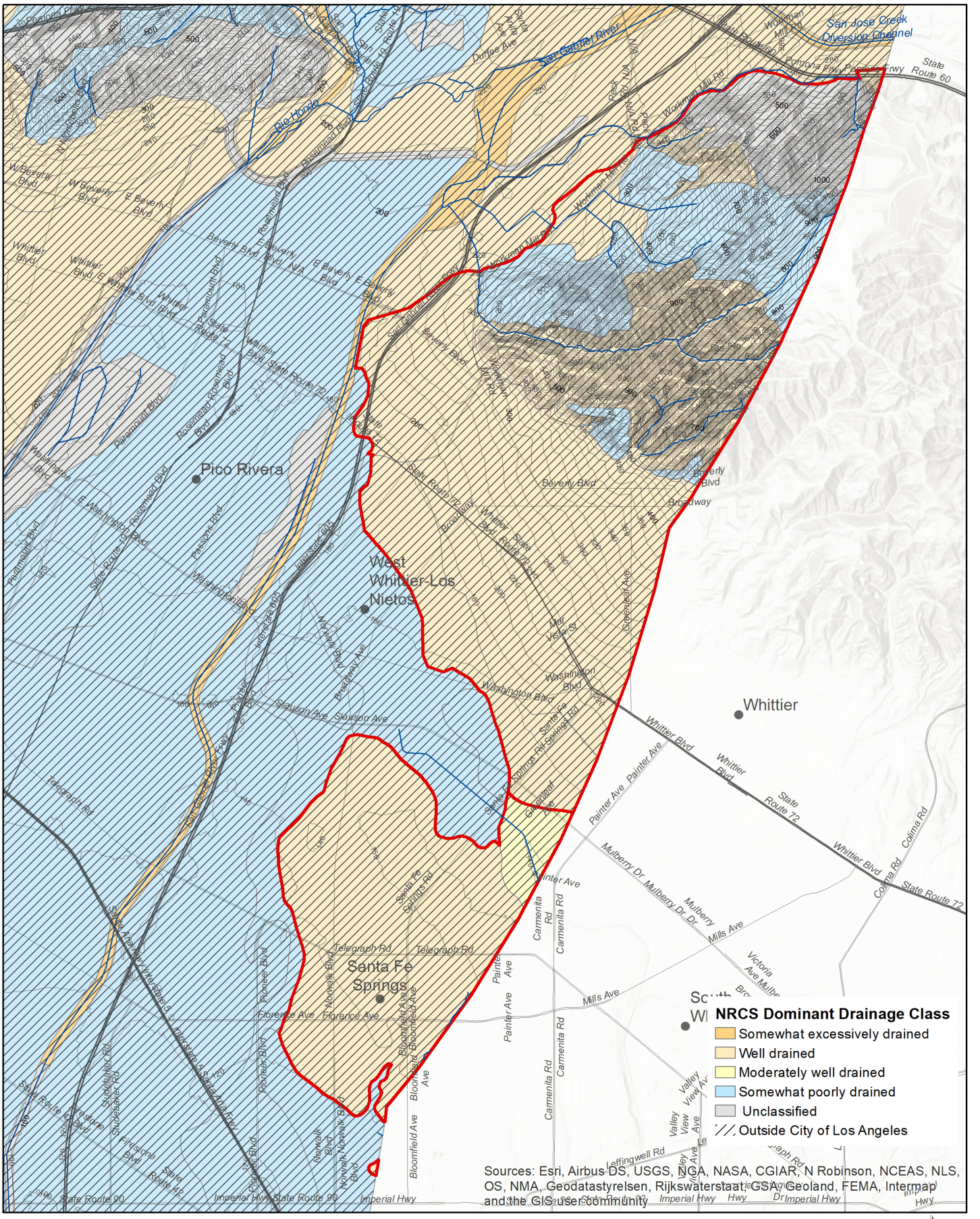
Aspect

Data source: 2006 10-foot Digital Elevation Model (DEM) – LARIAC – Public Domain. https://egis3.lacounty.gov/dataportal/2011/01/26/2006-10-foot-digital-elevation-model-dem-public-domain/



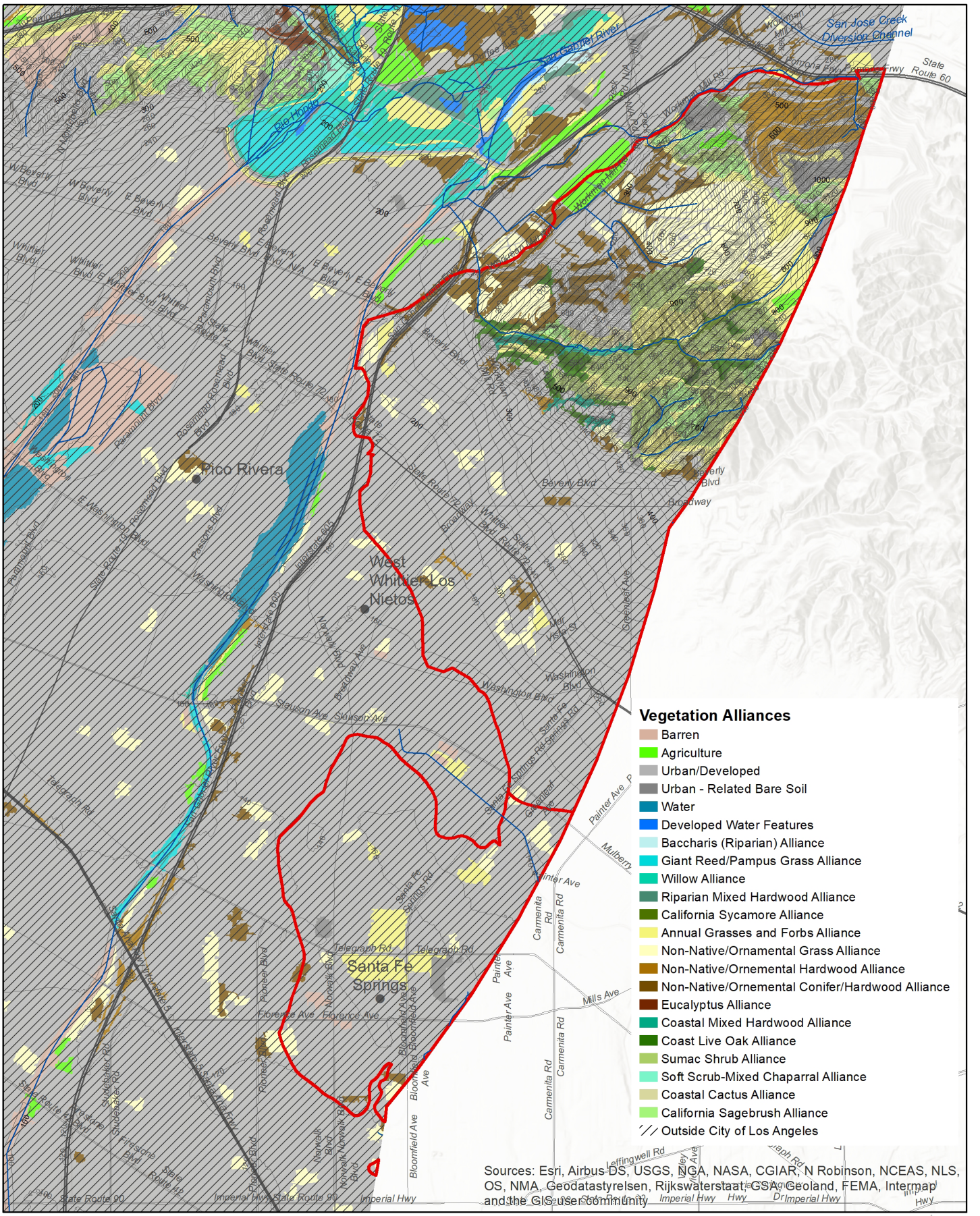
Slope Percent

Data source: 2006 10-foot Digital Elevation Model (DEM) – LARIAC – Public Domain. https://egis3.lacounty.gov/dataportal/2011/01/26/2006-10-foot-digital-elevation-model-dem-public-domain/



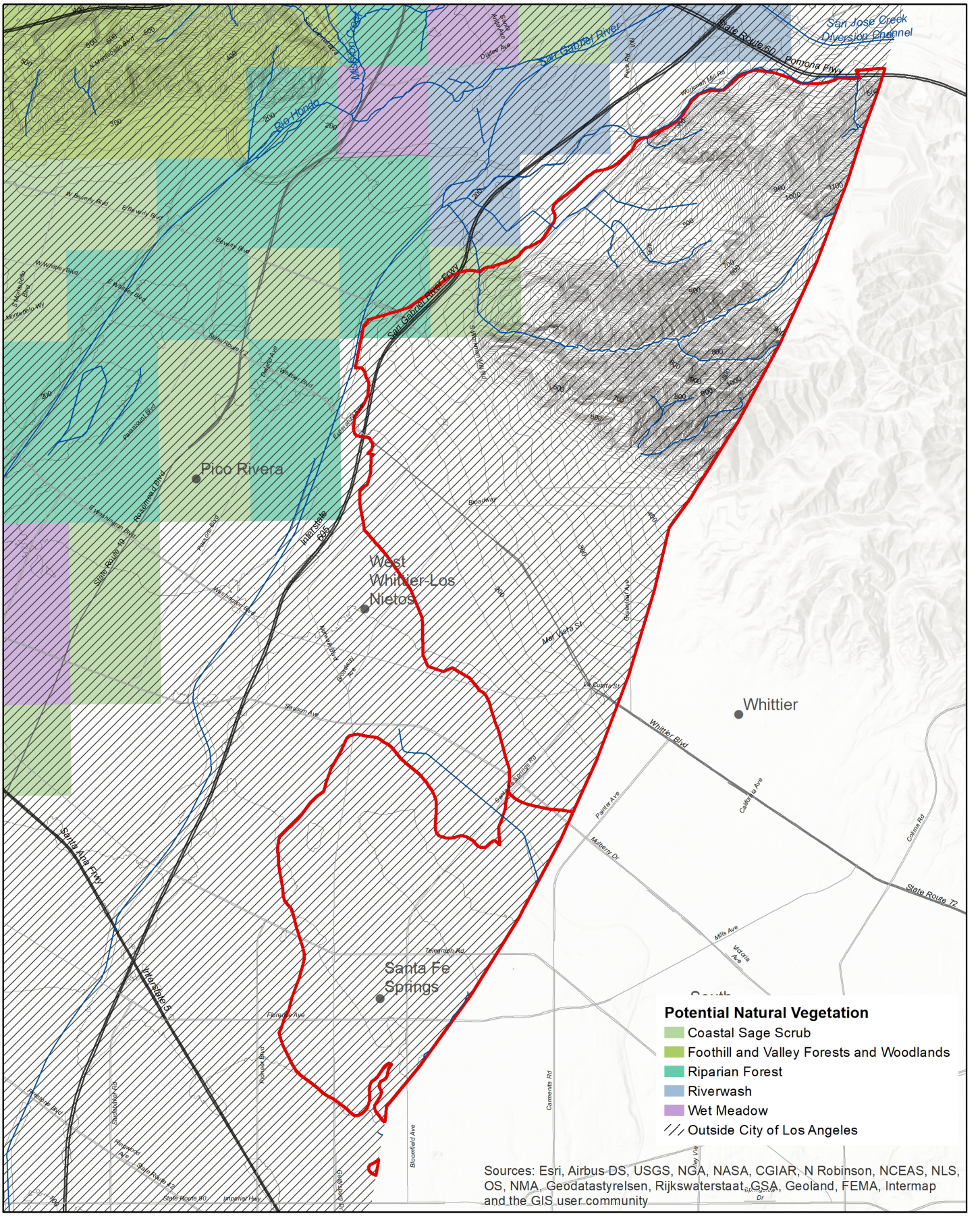
Drainage

Data source: Soil Survey Geographic (SSURGO) Database for Los Angeles County, Southeastern Part, CA; National Hydrography Dataset, U.S. Geological Survey, Reston, Virginia. 2002-2016.



Vegetation Alliances

Data source: CALVEG. https://www.fs.usda.gov/detail/r5/landmanagement/resourcemanagement/?cid=stelprdb5347192

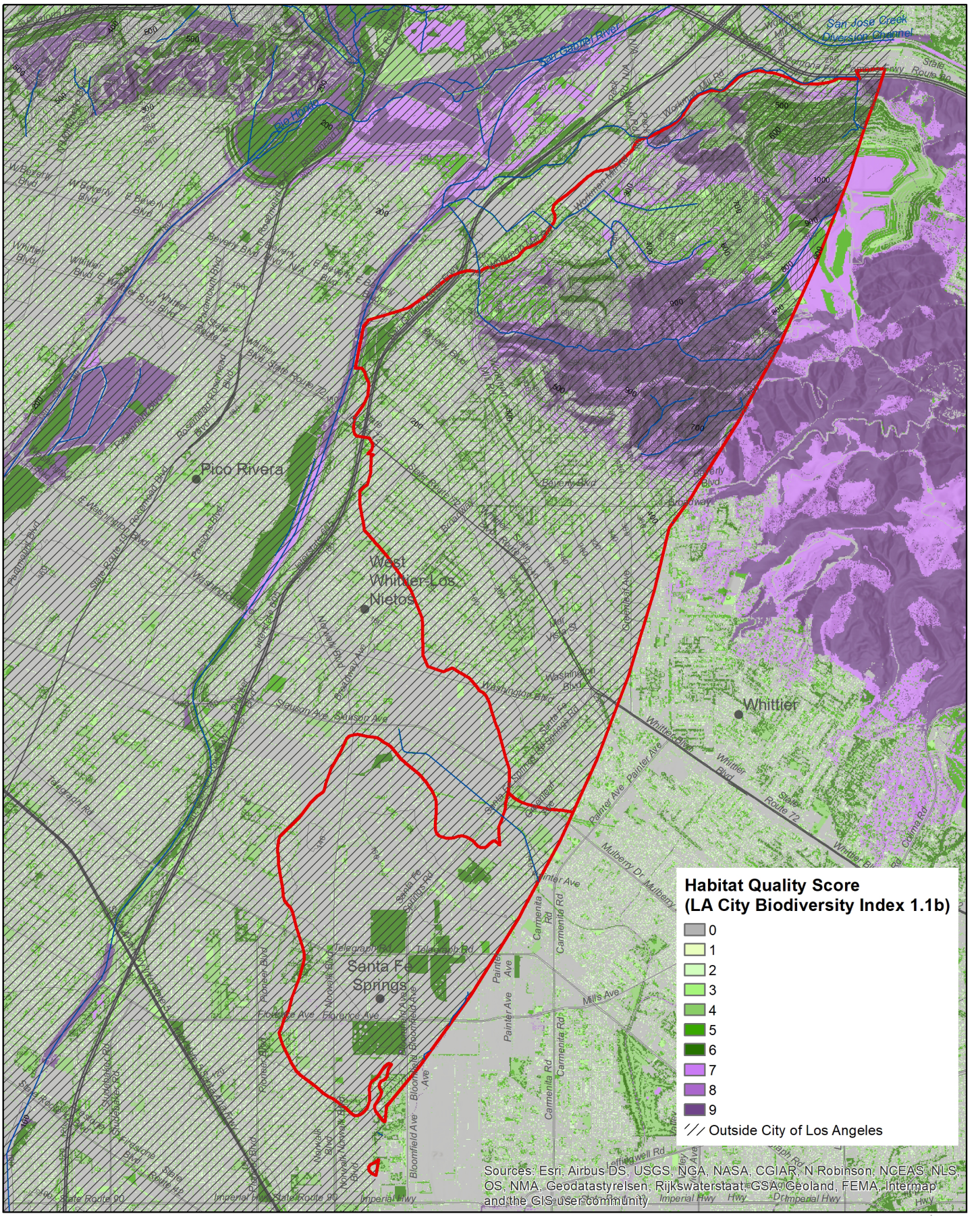


Hypothesized Potential Natural Vegetation

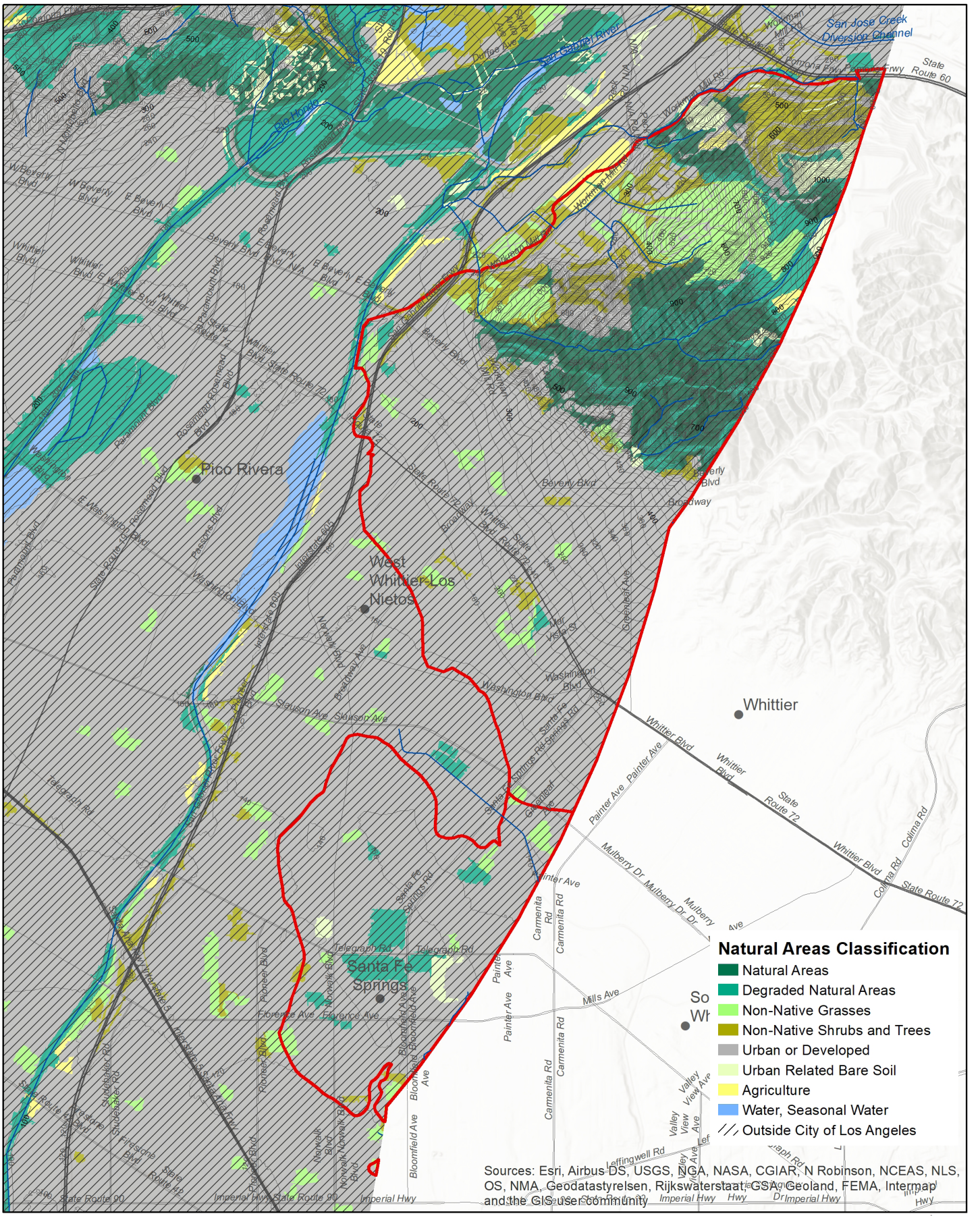
Data source: USC Spatial Sciences Institute/UCLA Institute of the Environment: Historical Ecology of the Los Angeles River Watershed Project.

0 0.4 0.8 1.6 Miles

N

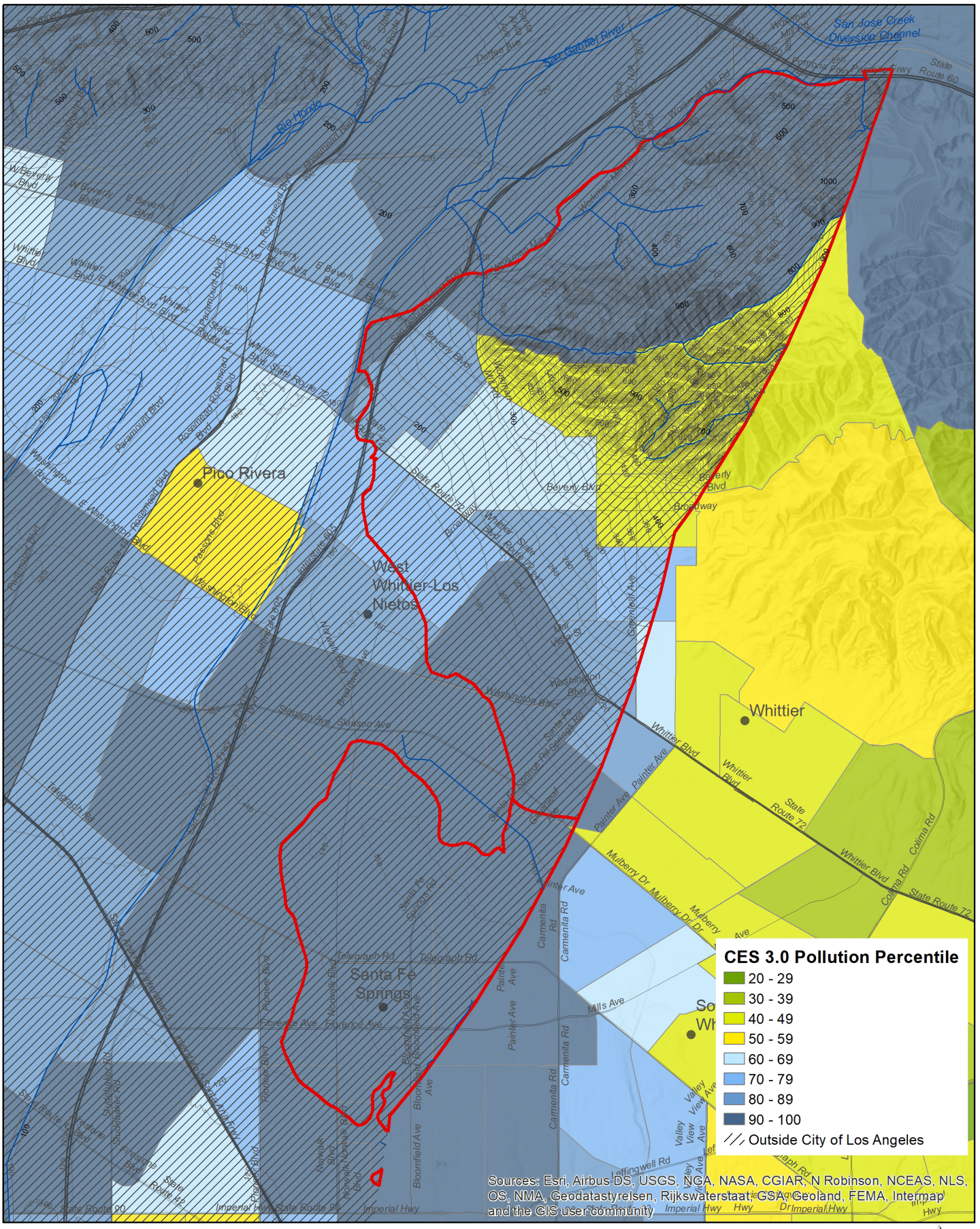


General Habitat Quality
Data source: I. Brown (2019). https://escholarship.org/uc/item/4c81w4nr



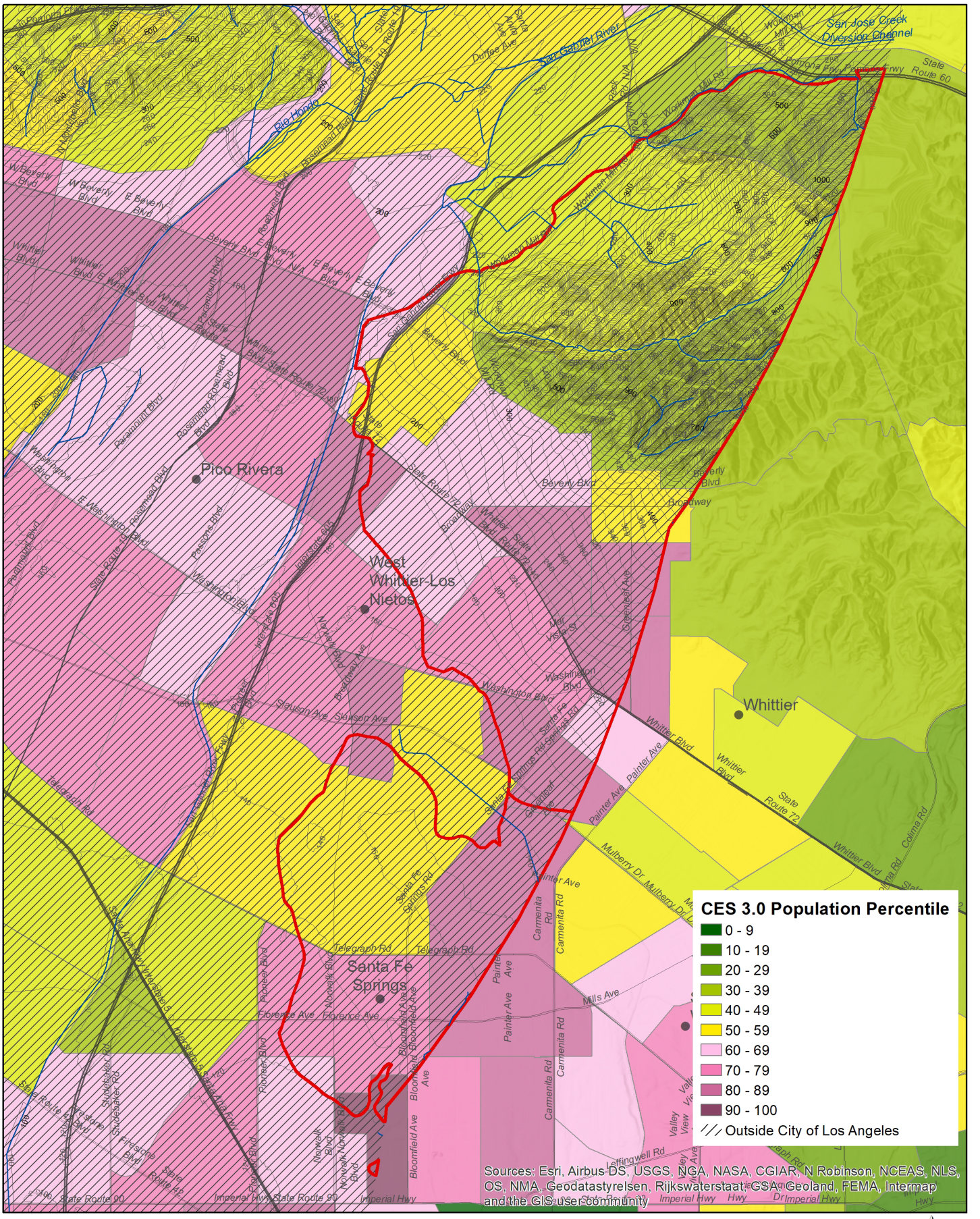
Natural Areas Classification

Data source: 2018 City of Los Angeles Biodiversity Report, Appendix B. https://www.lacitysan.org/cs/groups/public/documents/document/y250/mdi0/~edisp/cnt024943.pdf



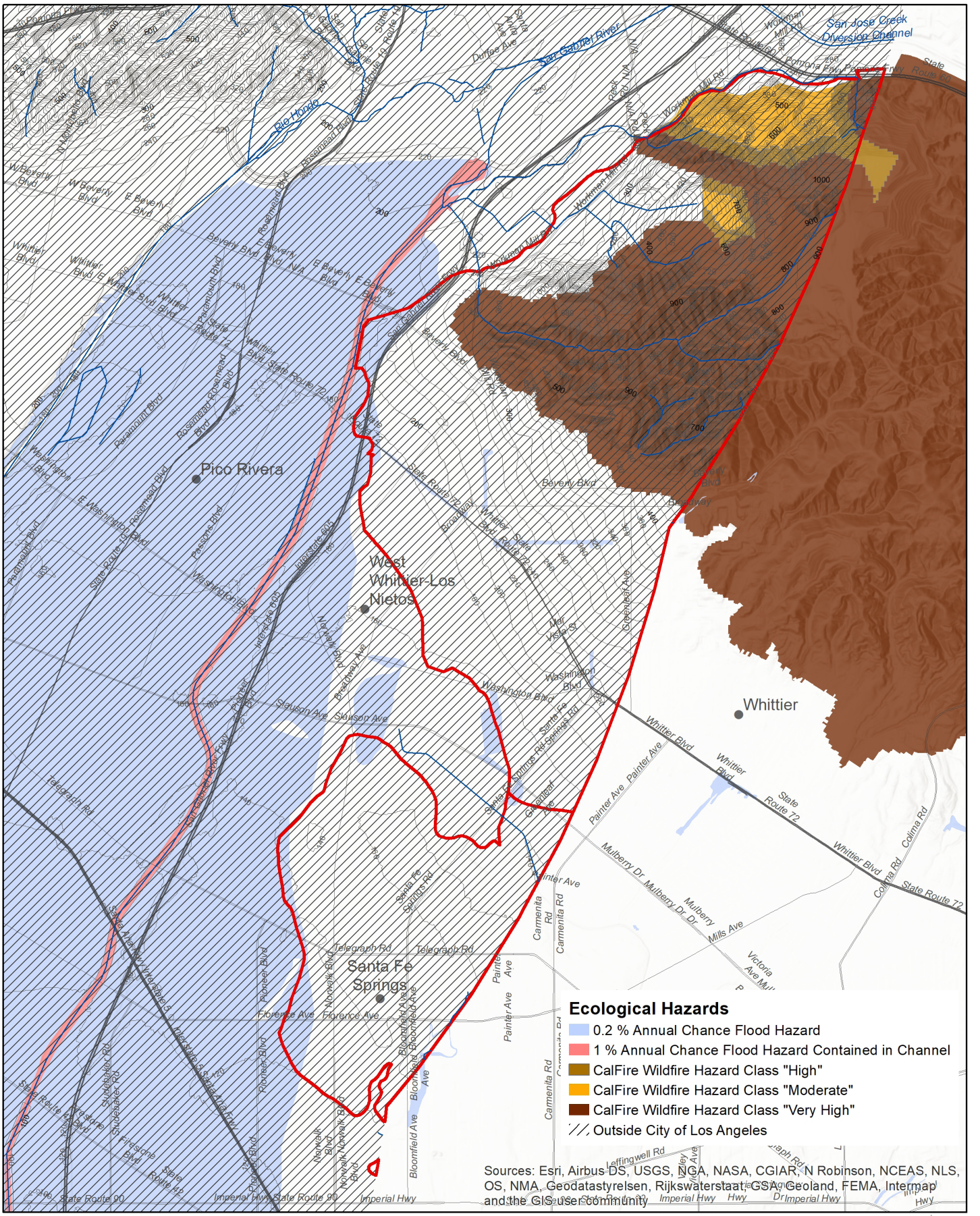
CalEnviroScreen Pollution Precentile (pollution exposure)

Data source: CalEnviroScreen 3.0. The California Office of Environmental Health Hazard Assessment (OEHHA). https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-30



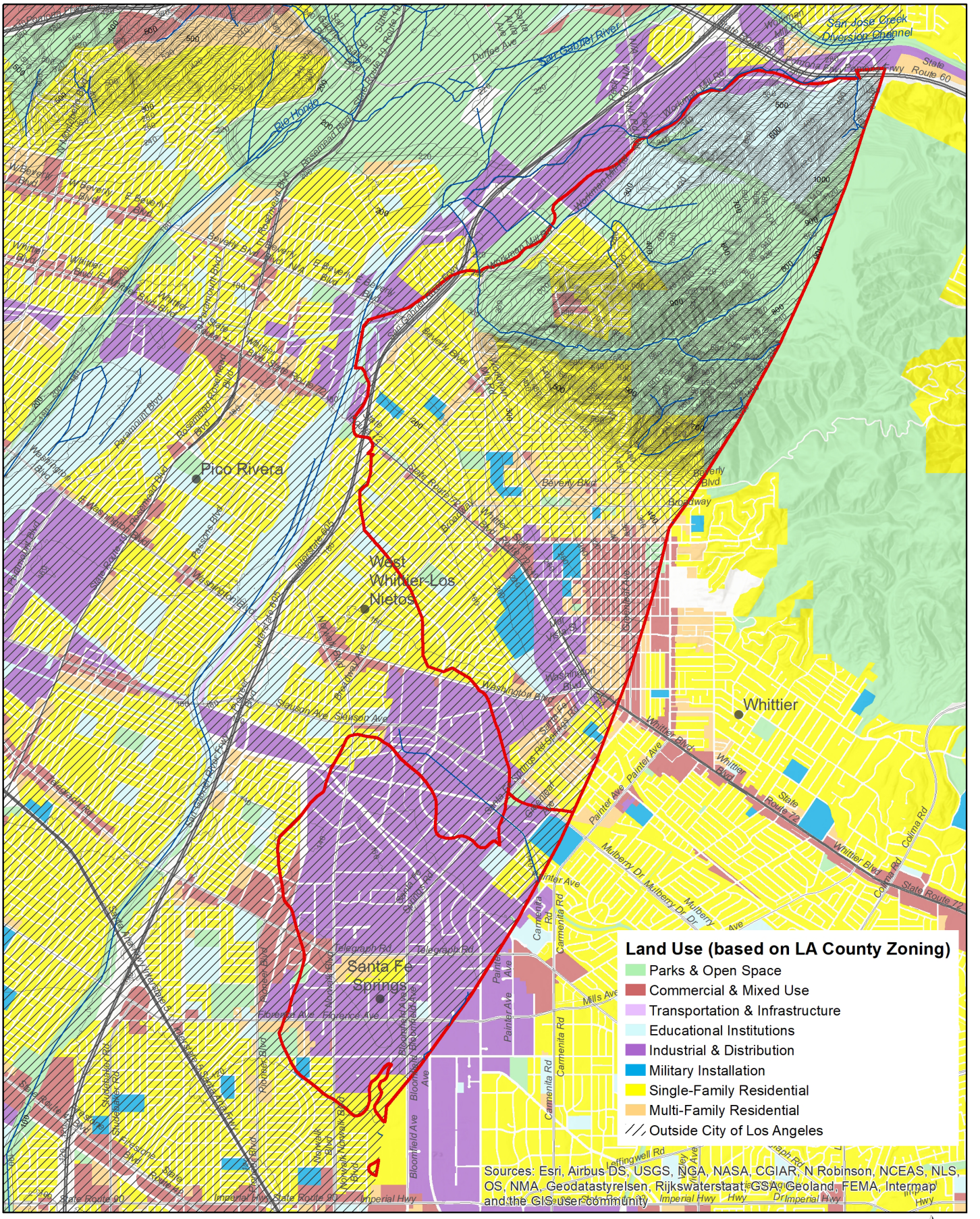
CalEnviroscreen Population Percentile (population vulnerability)

Data source: CalEnviroScreen 3.0. The California Office of Environmental Health Hazard Assessment (OEHHA). https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-30



Ecological Hazards

Data sources: Coastal Storm Modeling System (CoSMoS) for Southern California, v3.0, Phase 2; Calfire Fire Hazard Severity Zone Maps; Federal Emergency Management Agency, National Flood Hazard Layer, Version 1.1.1.0, 11/01/2016.

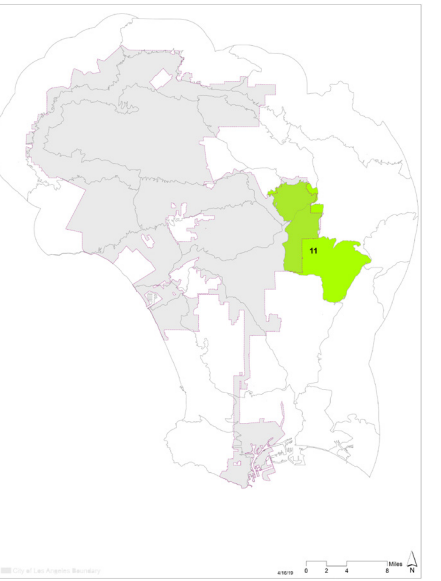


Land Use

Data source: 2008 Los Angeles County Countywide Zoning by the Southern California Association of Governments (SCAG). https://egis3.lacounty.gov/dataportal/2012/04/10/county-wide-zoning/

ECOTOPE 11: REPETTO HILLS AND TERRACES

(Partially within the City of Los Angeles)



LANDFORM

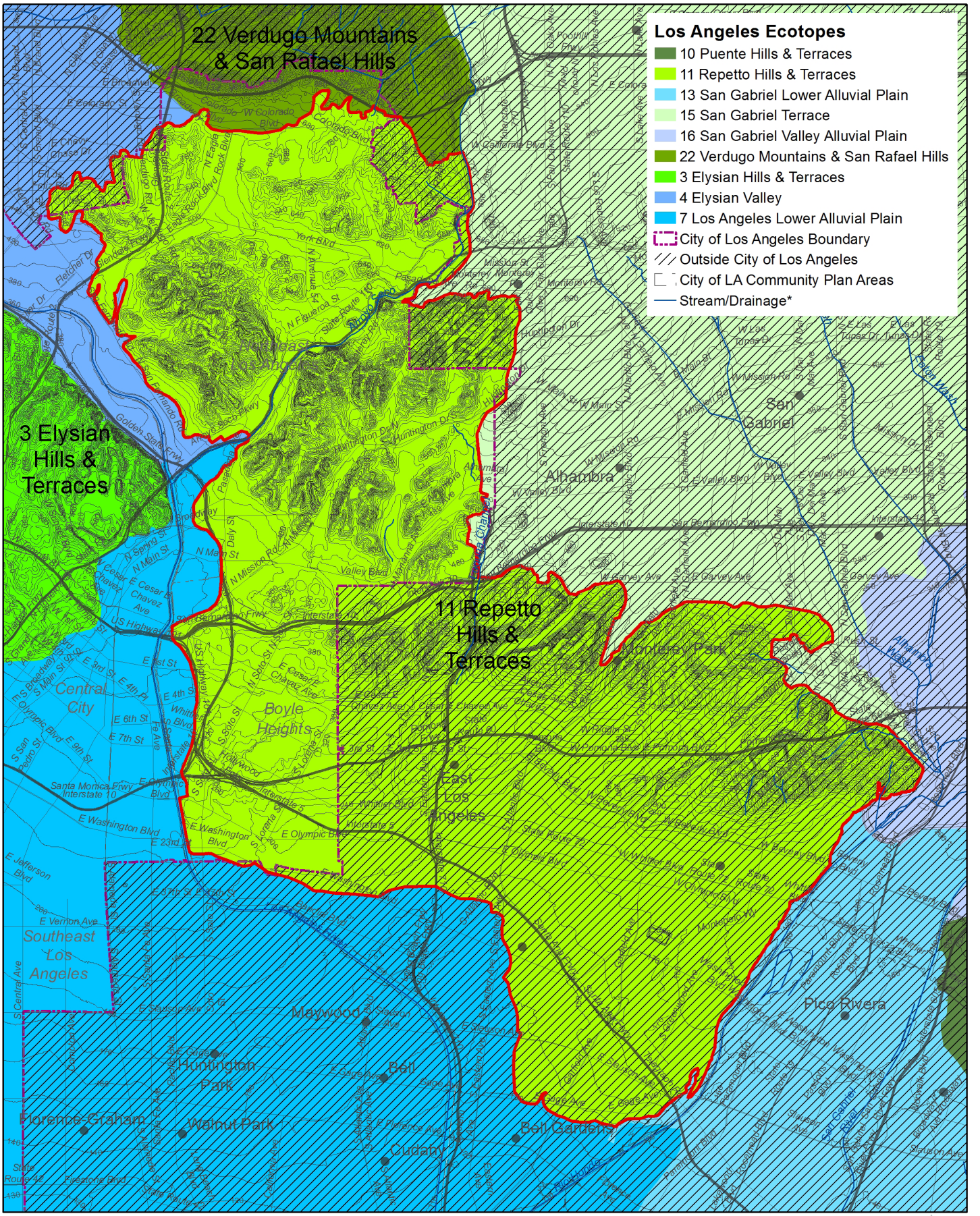
The Repetto Hills and Terraces ecotope is characterized by low hills and terraces interspersed with alluvial features created by numerous seasonal creeks and drainages that originate within the Repetto Hills. The Arroyo Seco is the only large creek that cuts through the ecotope, flowing from the San Gabriel Mountains. Elevations range from 100' along the LA and San Gabriel River alluvial plains to the south and 1,000' near Eagle Rock. Despite the range of elevations, much of the ecotope is relatively flat. As this ecotope is at a higher elevation relative to surrounding floodplains, it was protected from historic flooding and has well-developed soils. The combination of flat terrain and flood protection was likely an important reason that this area was historically developed. Some of LA's oldest neighborhoods are found here, including Boyle Heights and East Los Angeles. Many steep hillsides remain undeveloped as patches of open space and parks, including Debs Park and Ascot Hills Park.

MICROCLIMATE

The microclimates here are similar to those found in the Puente Hills ecotope and include transitional thermal belts with moderate coastal influence on relatively higher terrain, and cooler winter microclimates in lower areas. Some cooling from the coast occurs and morning fog often reaches the ecotope in spring and summer, especially on easterly facing slopes. However, higher terrain in this relatively interior location makes it subject to more intense temperatures during summer heat waves due to the limited marine inversion. Aspects are variable, but are generally oriented southwest and northeast. Like the Puente Hills ecotope, this area is subject to a relatively high urban heat island effect (Taha, 2017).

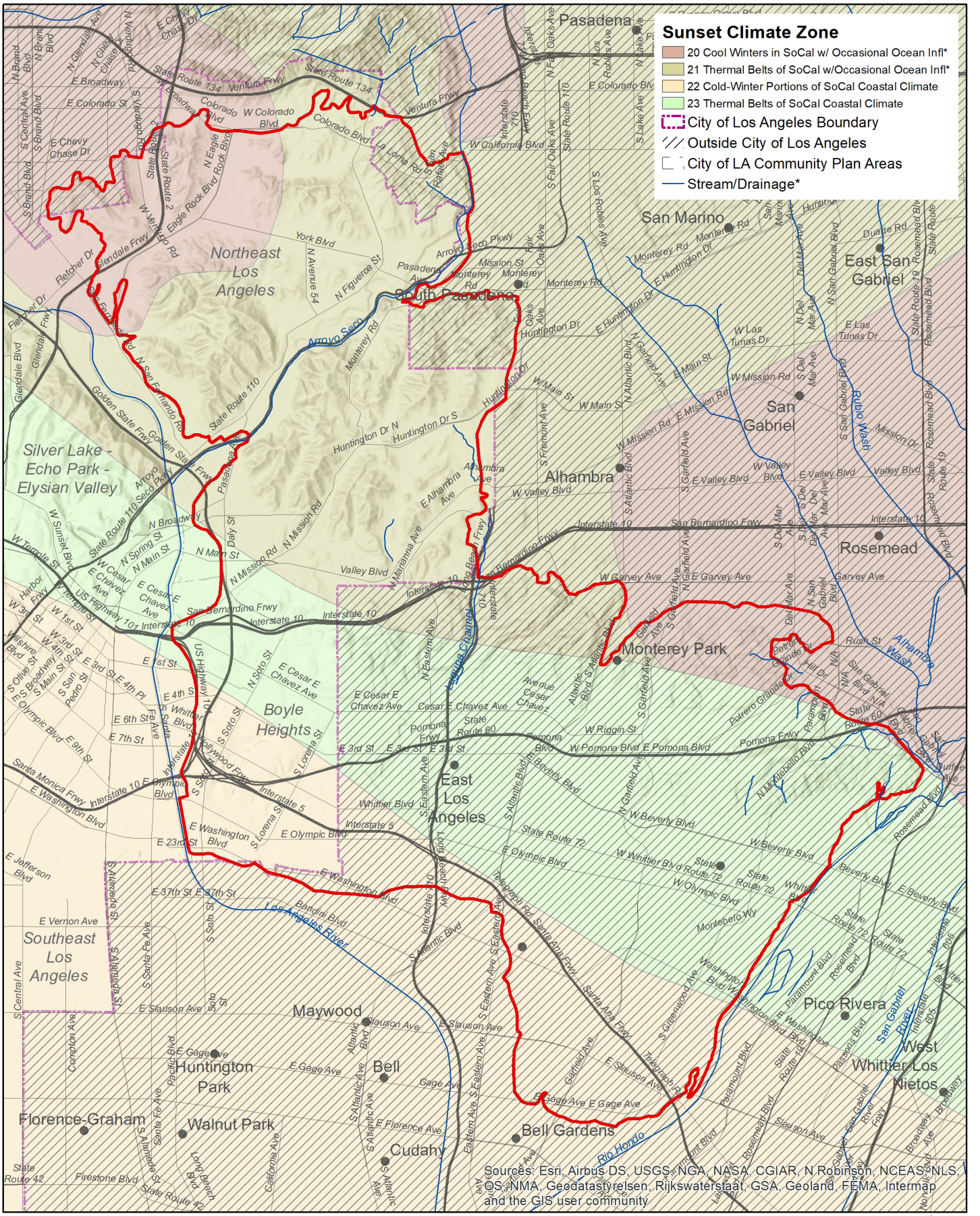
VEGETATION & LANDCOVER

According to CALVEG, 4.45% of natural areas remain in the ecotope. These are mostly coast live oak (*Quercus agrifolia*), California black walnut (*Juglans californica)*, and other woodlands. 4.78% of the ecotope is degraded natural areas dominated by annual grasslands. Other natural areas are mostly coastal sage scrub alliances. Natural and degraded natural areas mostly occur in fragmented patches on steeper slopes along the higher terrain that spans the entire length of the ecotope from the southeast to northwest. These patches likely provide important "stepping stones" of habitat connectivity between major natural areas in the region including the Santa Monica, Verdugo, and San Gabriel Mountains to the north and the Puente Hills and Santa Ana Mountains to the south. Potential conservation enhancement of these urban stepping stones should be further evaluated to support movement of highly mobile fauna. These stepping stones could play a potential role in addressing climate change-driven species range shifts.



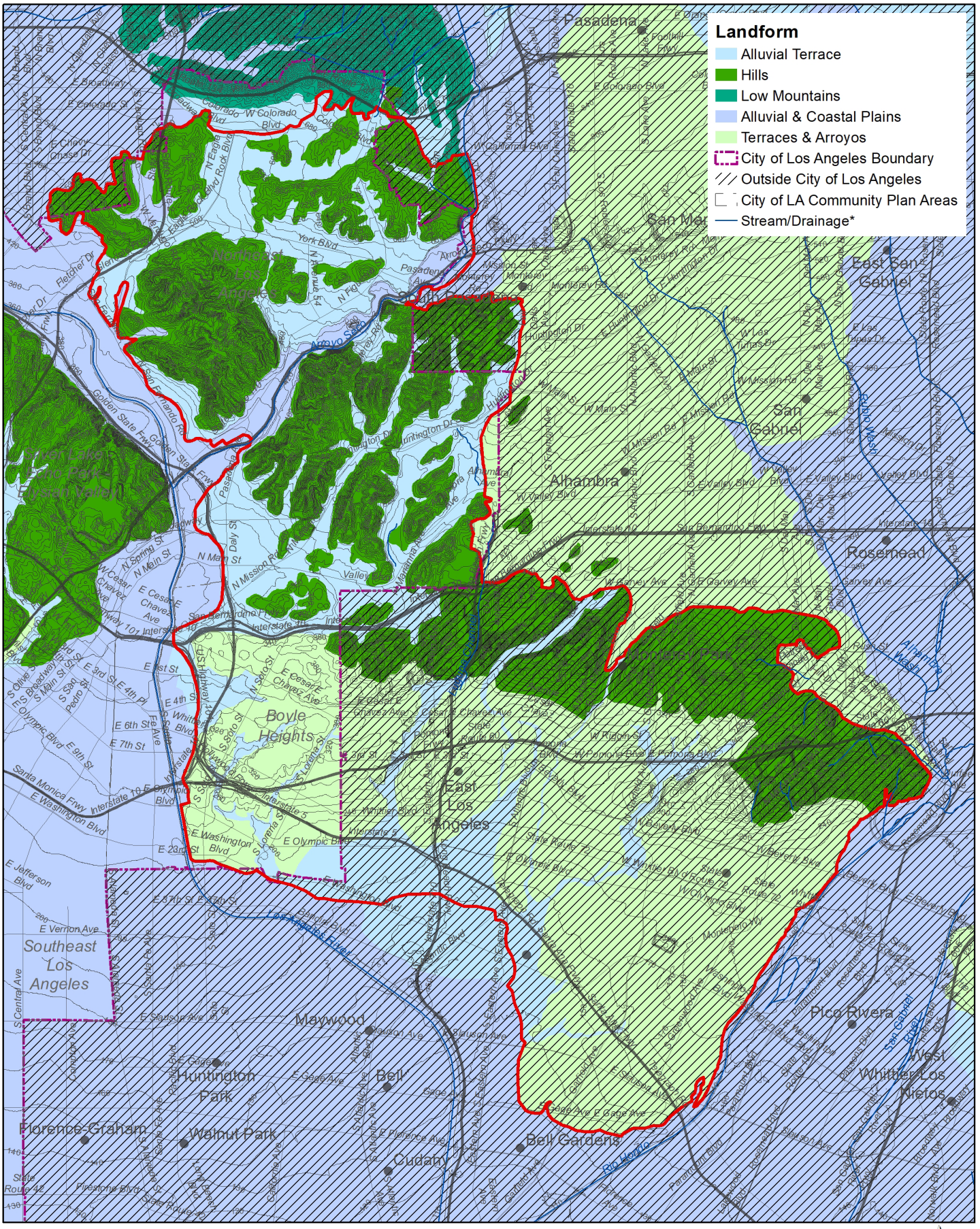
Ecotope 11 Context Map

Data source: I. Brown (2019). https://escholarship.org/uc/item/4c81w4nr



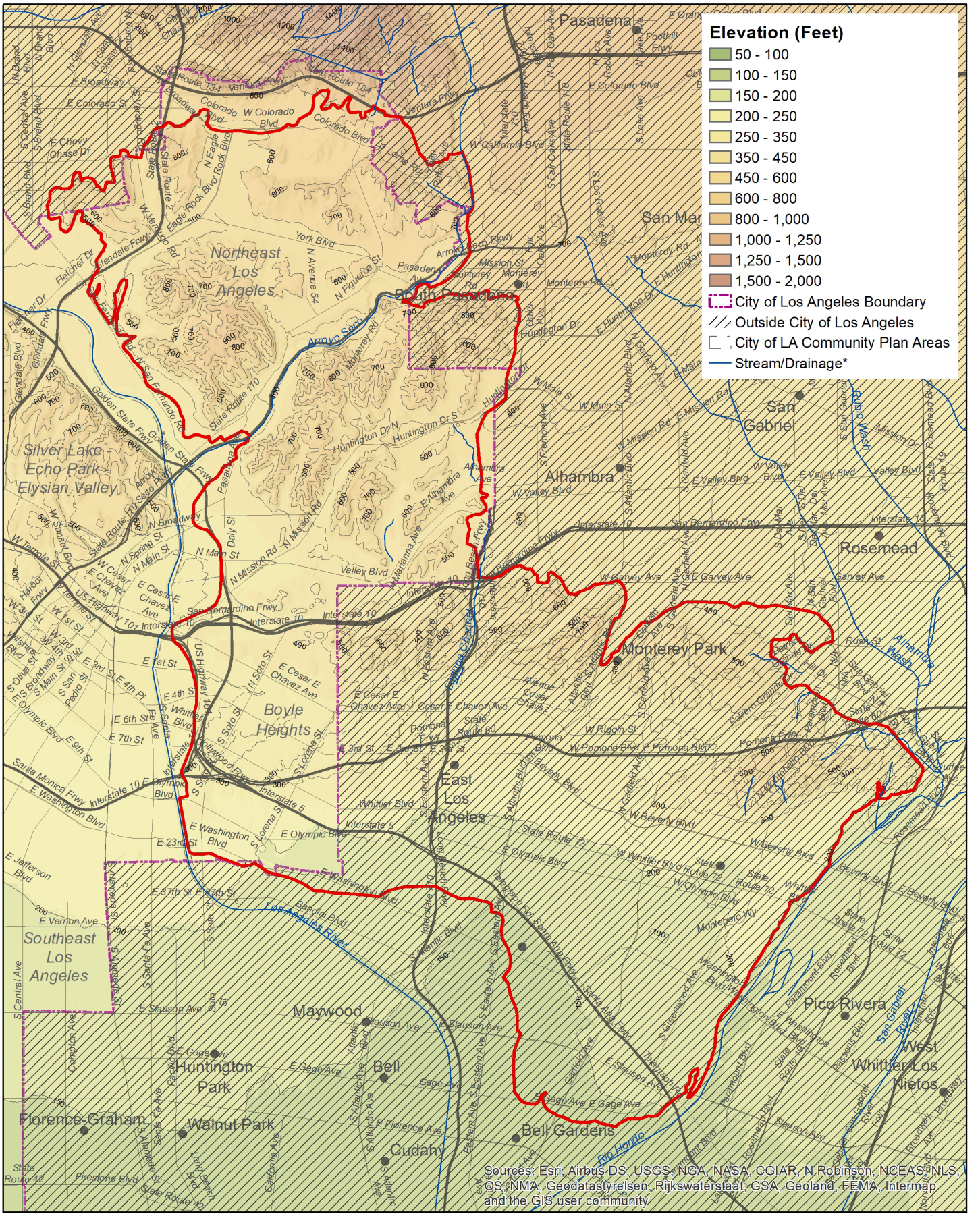
Microclimate

Data source: Sunset Magazine. http://www.sunset.com/garden/climate-zones/climate-zones-intro-us-map



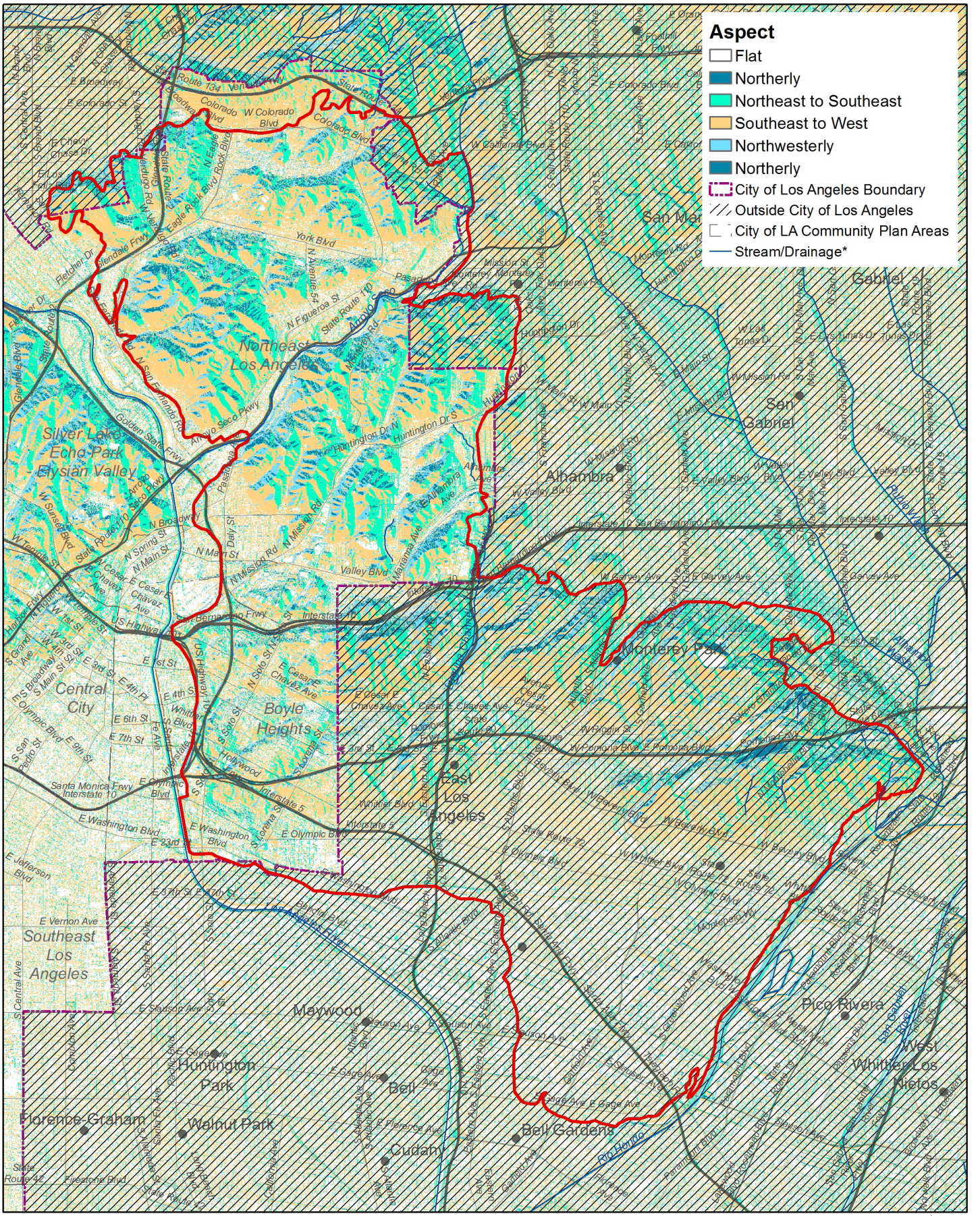
Landform

Data source: I. Brown (2019), https://escholarship.org/uc/item/4c81w4nr



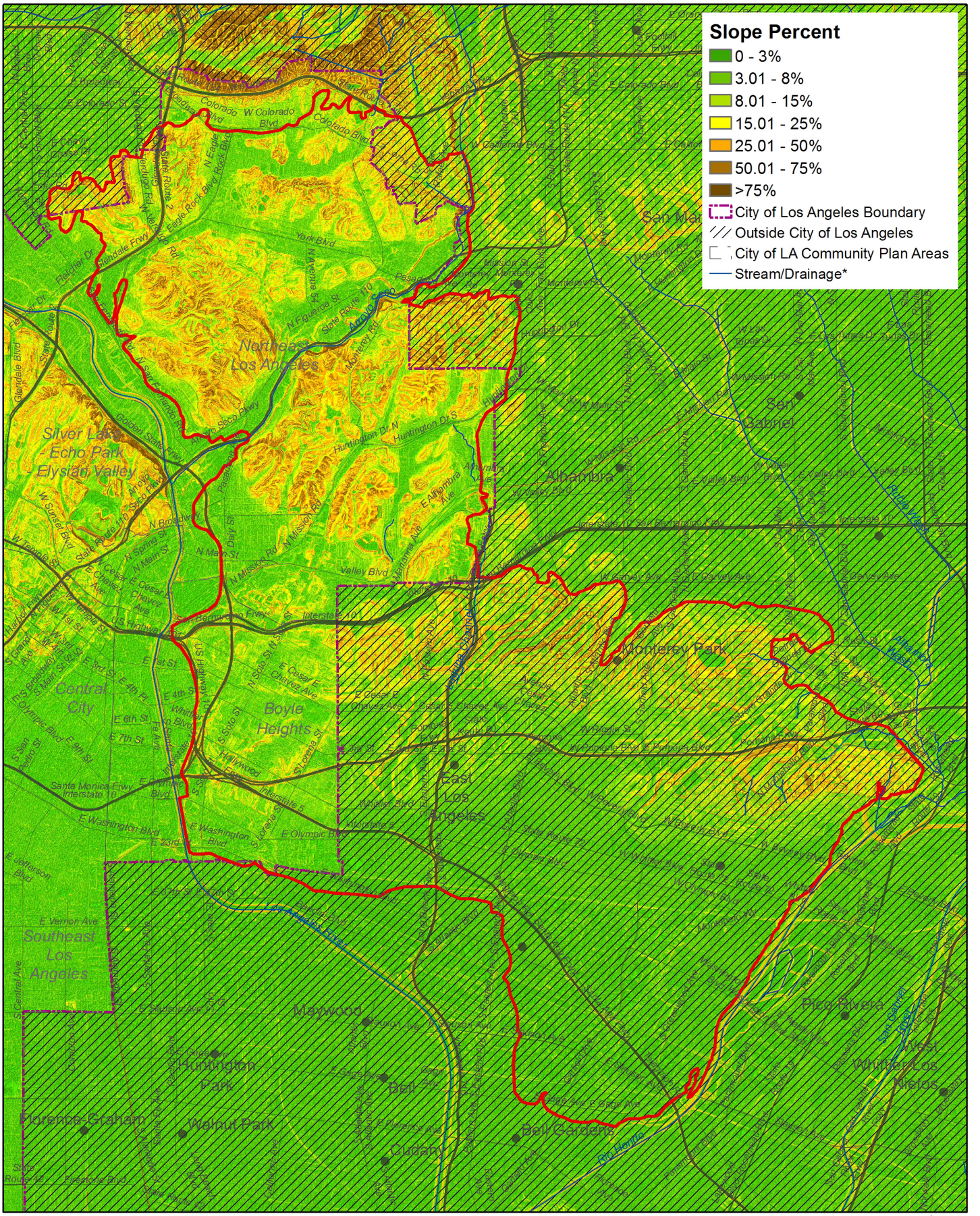
Elevation

Data source: 2006 10-foot Digital Elevation Model (DEM) – LARIAC – Public Domain. https://egis3.lacounty.gov/dataportal/2011/01/26/2006-10-foot-digital-elevation-model-dem-public-domain/



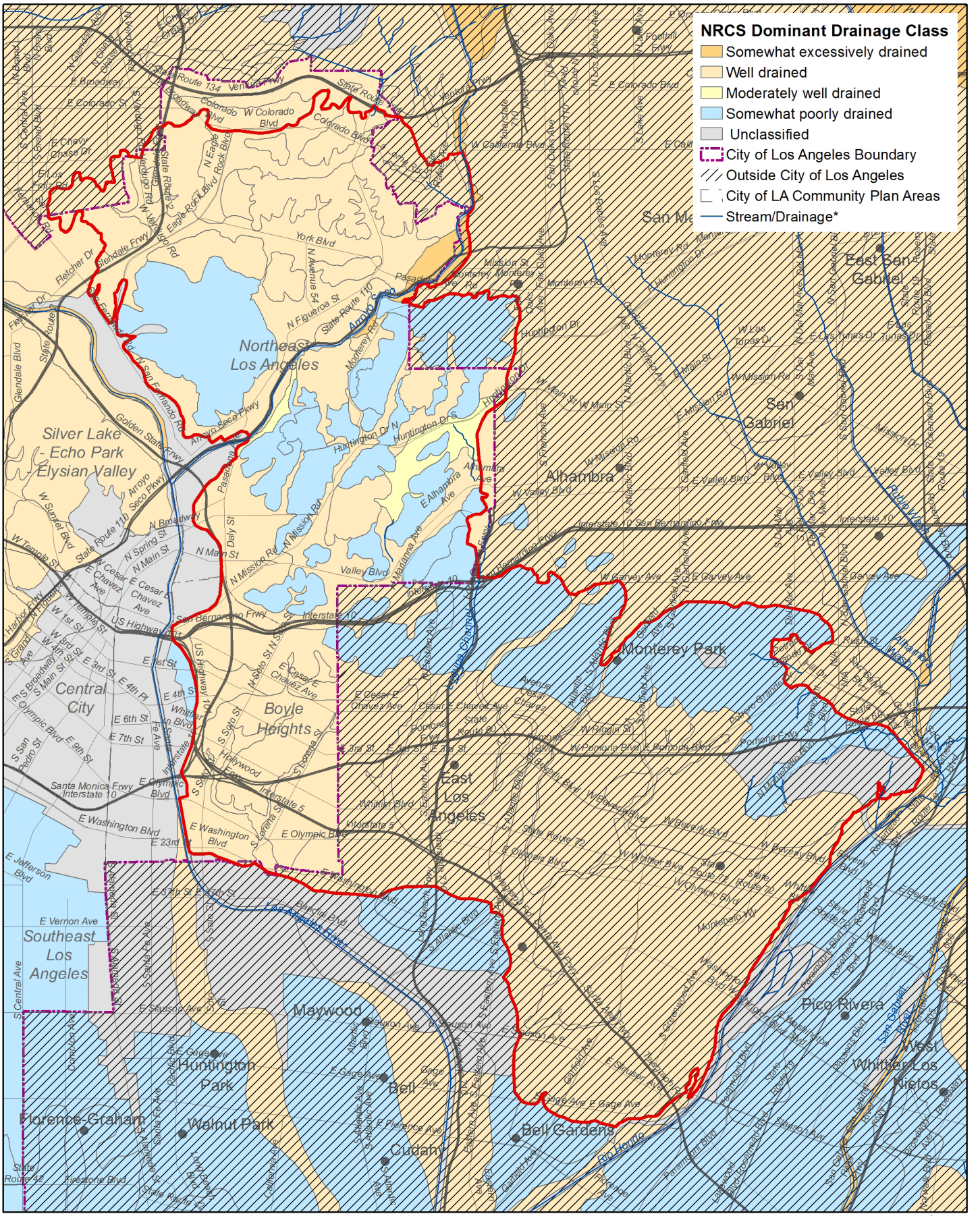
Aspect

Data source: 2006 10-foot Digital Elevation Model (DEM) – LARIAC – Public Domain. https://egis3.lacounty.gov/dataportal/2011/01/26/2006-10-foot-digital-elevation-model-dem-public-domain/



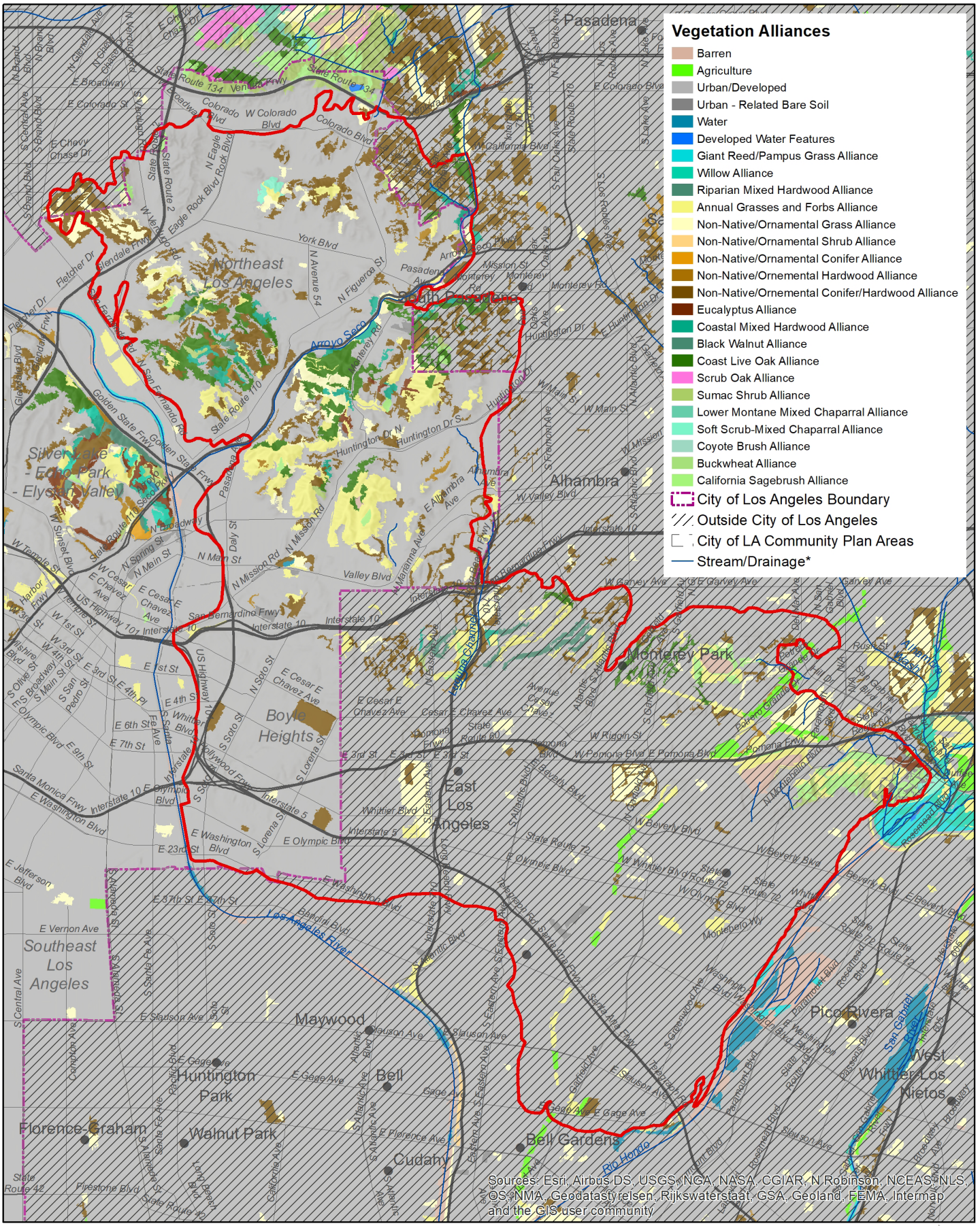
Slope Percent

Data source: 2006 10-foot Digital Elevation Model (DEM) – LARIAC – Public Domain. https://egis3.lacounty.gov/dataportal/2011/01/26/2006-10-foot-digital-elevation-model-dem-public-domain/



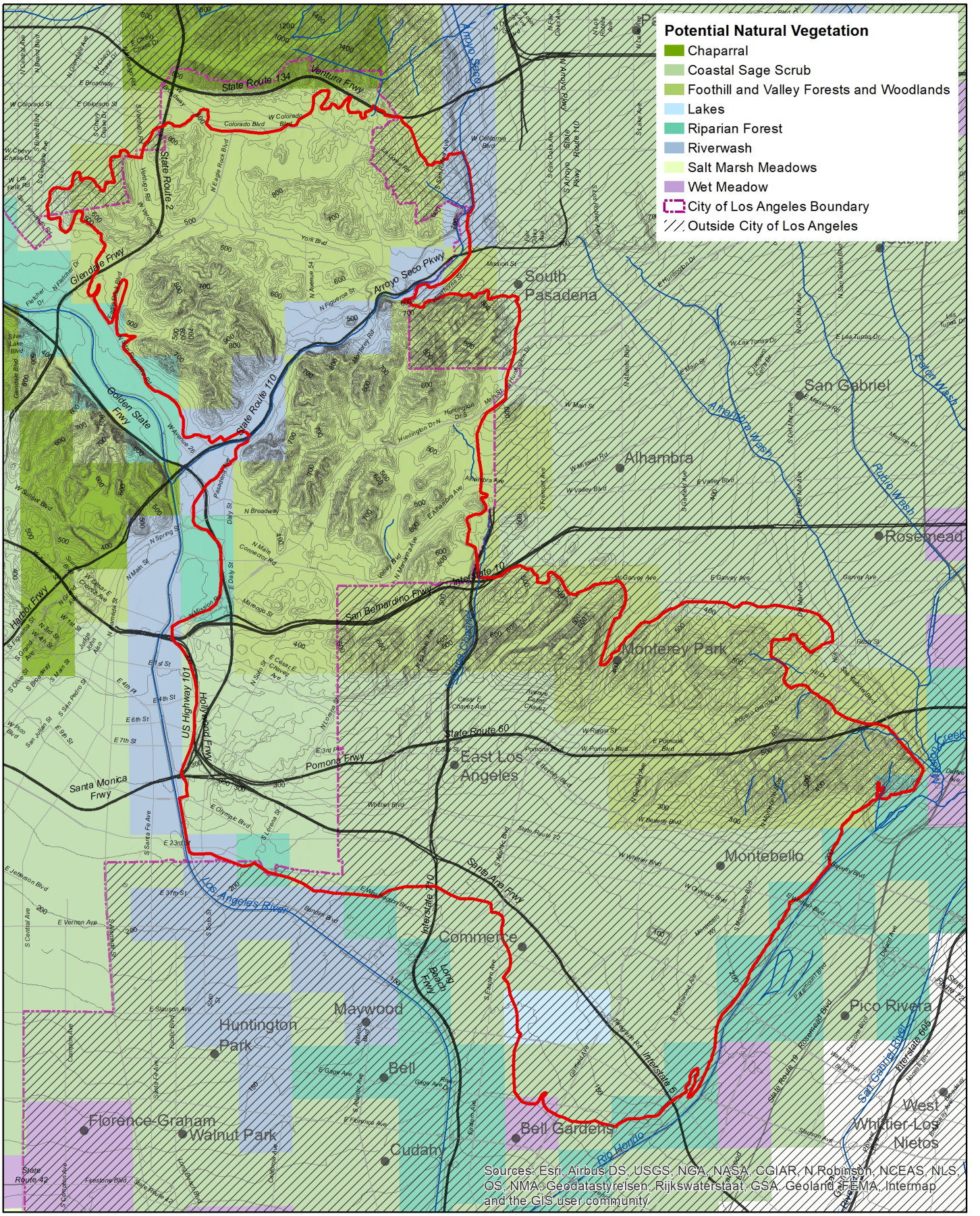
Drainage

Data source: Soil Survey Geographic (SSURGO) Database for Los Angeles County, Southeastern Part, CA; National Hydrography Dataset, U.S. Geological Survey, Reston, Virginia. 2002-2016.



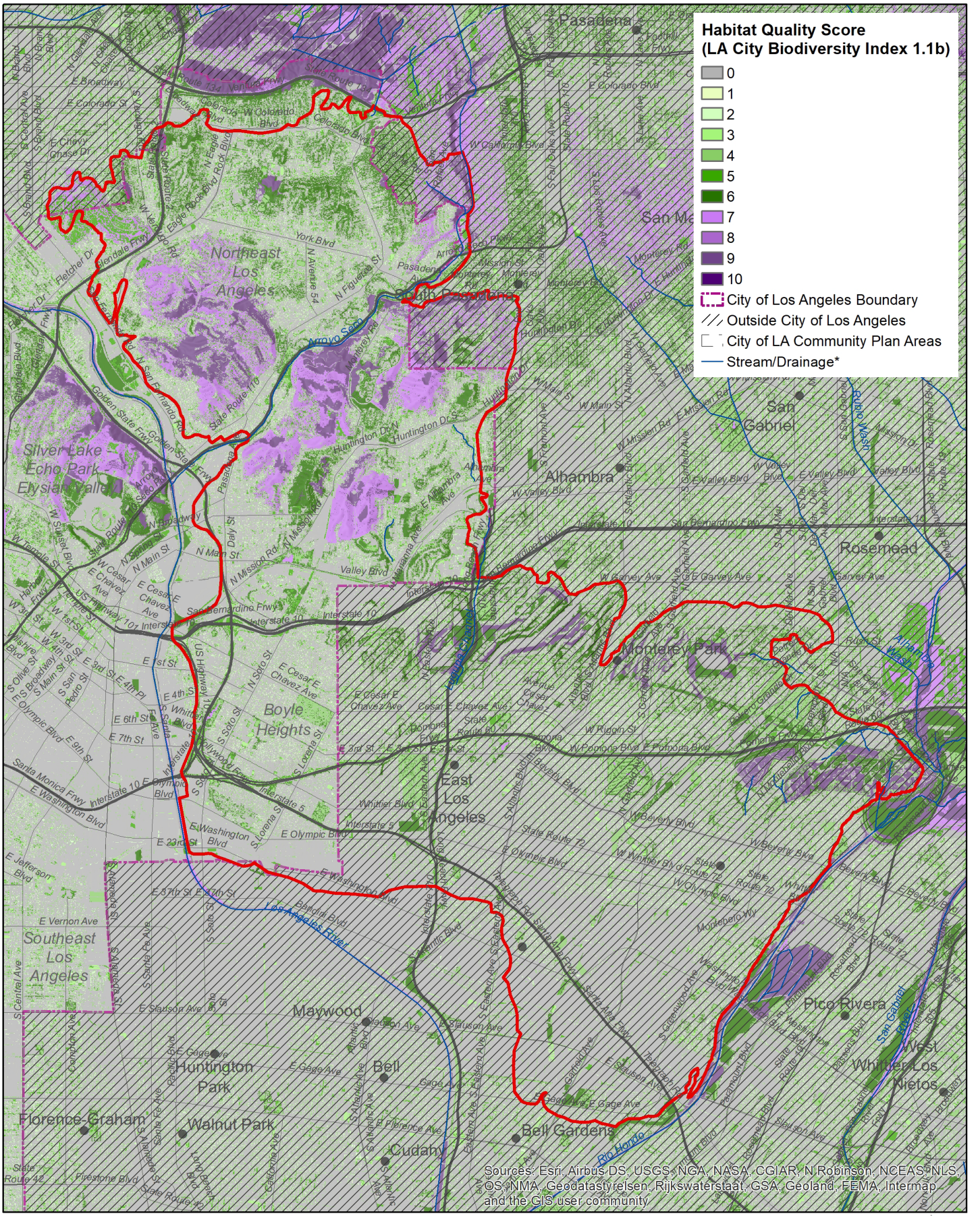
Vegetation Alliances

Data source: CALVEG. https://www.fs.usda.gov/detail/r5/landmanagement/resourcemanagement/?cid=stelprdb5347192



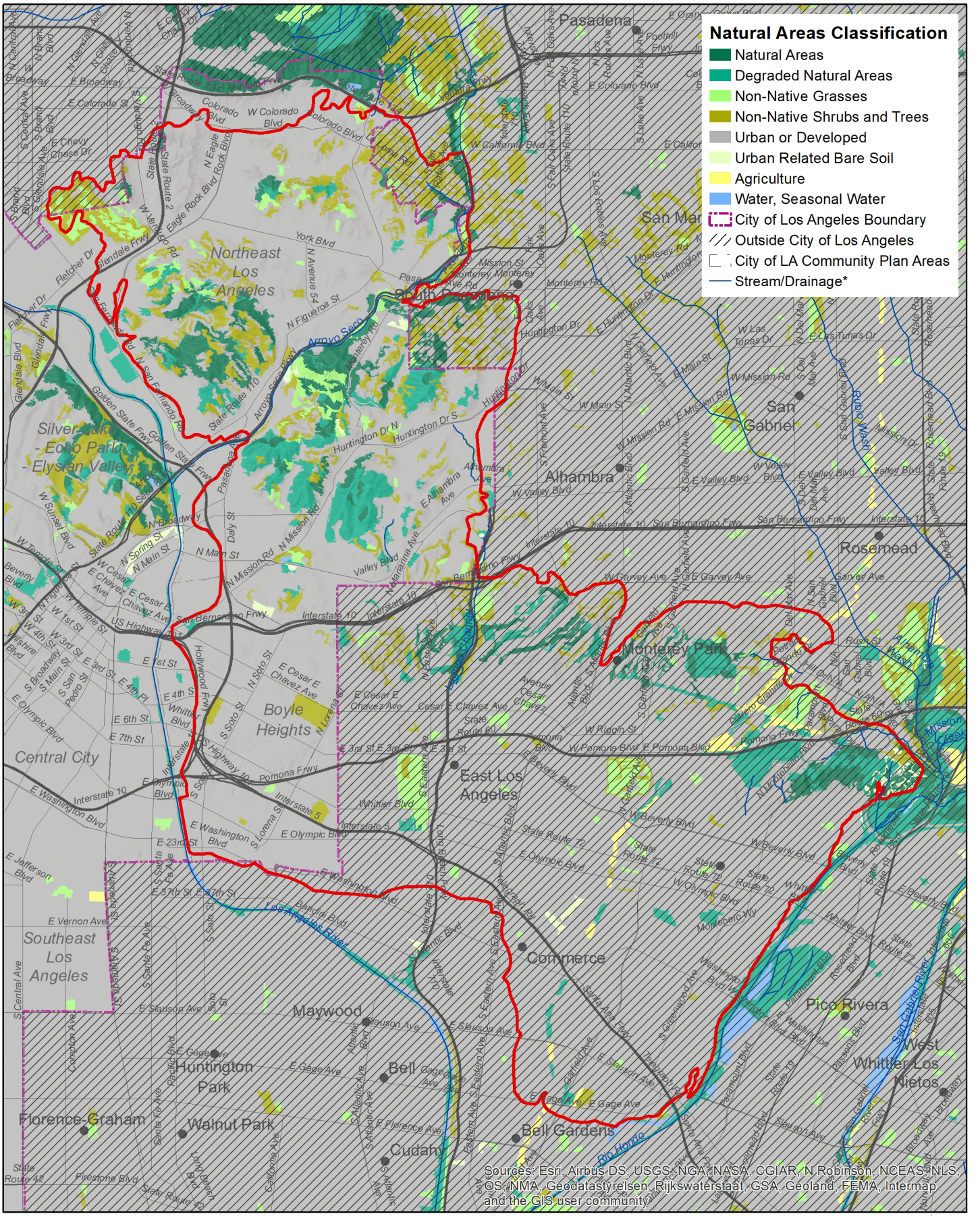
Hypothesized Potential Natural Vegetation

Data source: USC Spatial Sciences Institute/UCLA Institute of the Environment: Historical Ecology of the Los Angeles River Watershed Project.



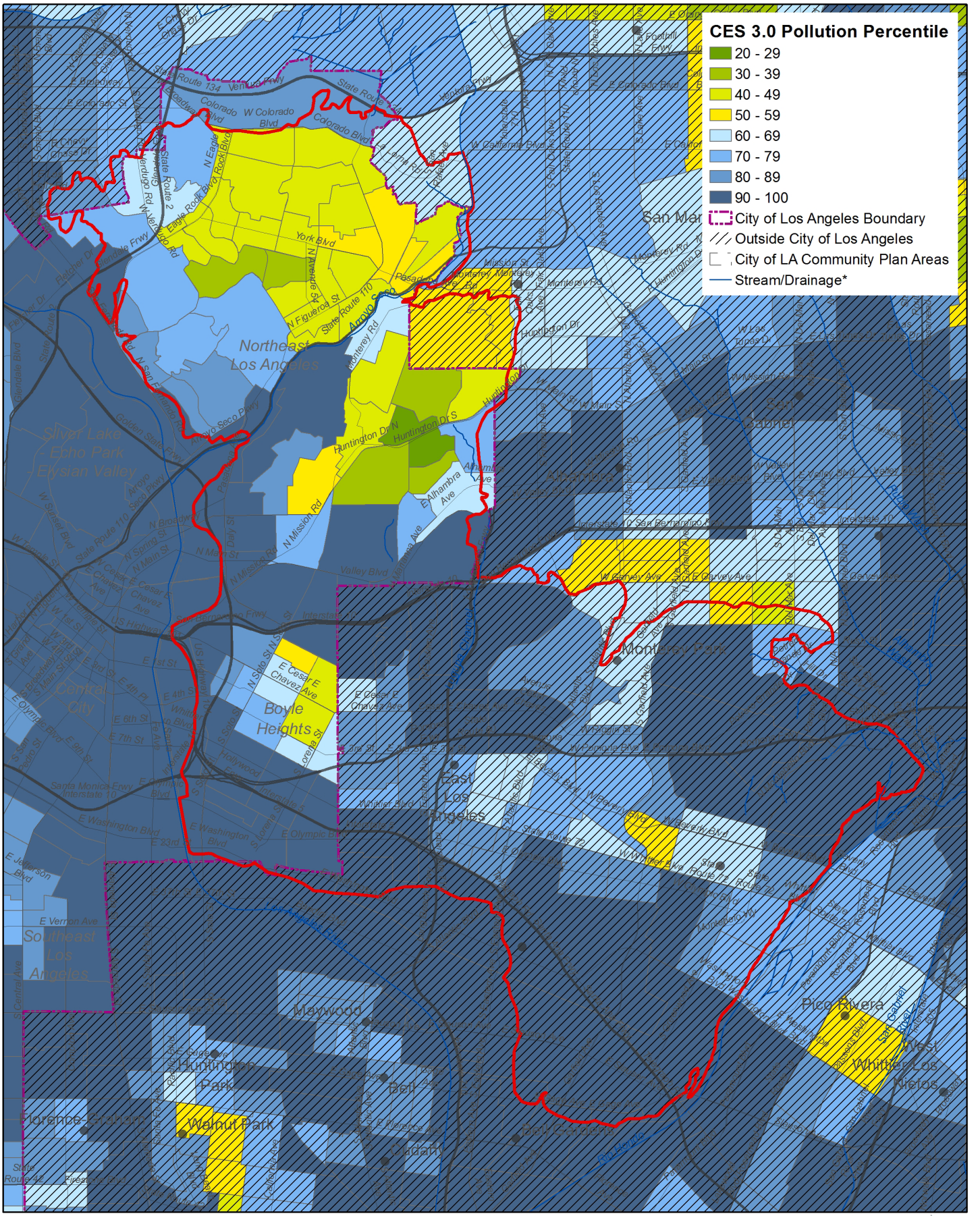
General Habitat Quality

Data source: I. Brown (2019). https://escholarship.org/uc/item/4c81w4nr



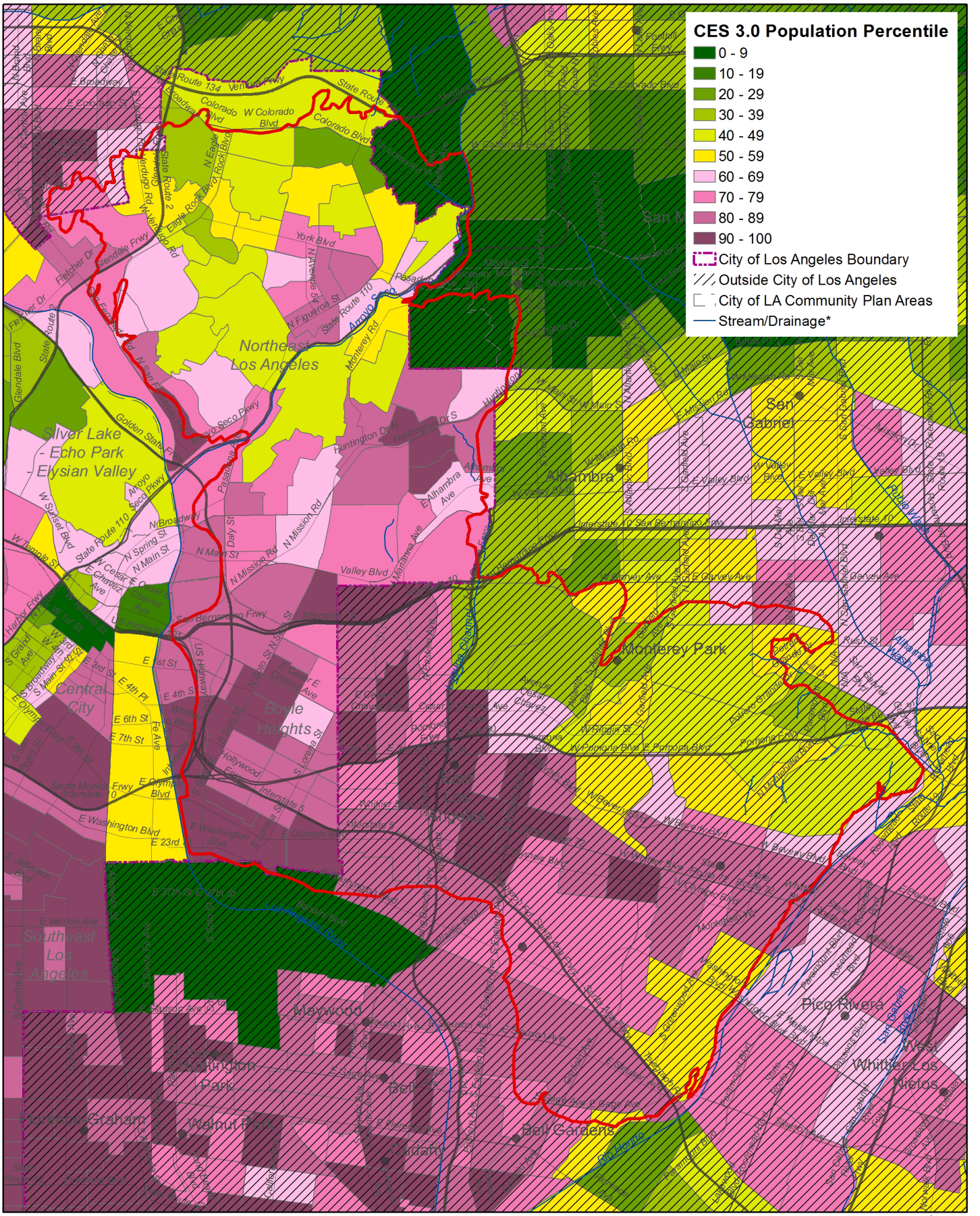
Natural Areas Classification

Data source: 2018 City of Los Angeles Biodiversity Report, Appendix B. https://www.lacitysan.org/cs/groups/public/documents/document/y250/mdi0/~edisp/cnt024943.pdf



CalEnviroScreen Pollution Precentile (pollution exposure)

Data source: CalEnviroScreen 3.0. The California Office of Environmental Health Hazard Assessment (OEHHA). https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-30

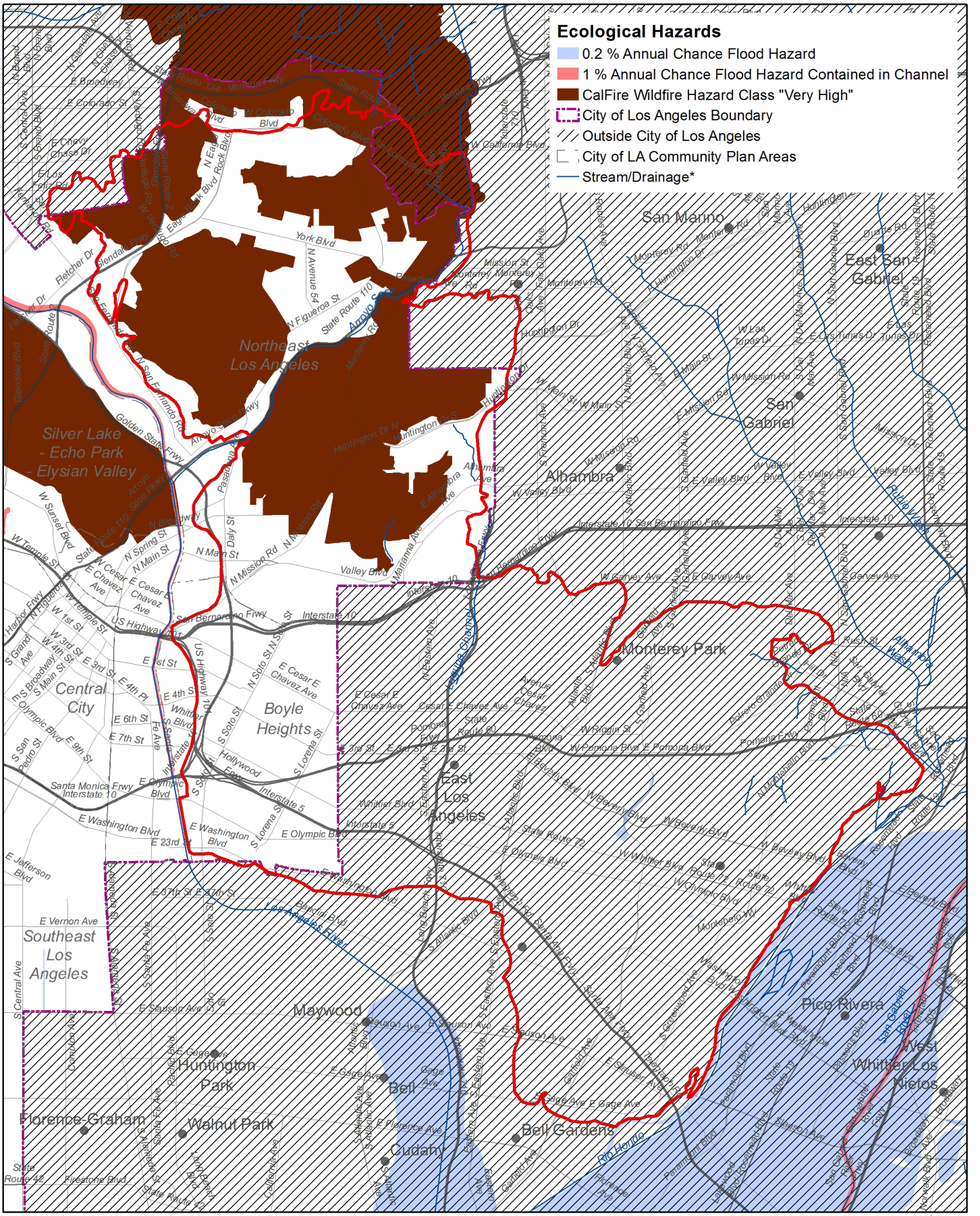


CalEnviroscreen Population Percentile (population vulnerability)

Data source: CalEnviroScreen 3.0. The California Office of Environmental Health Hazard Assessment (OEHHA). https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-30

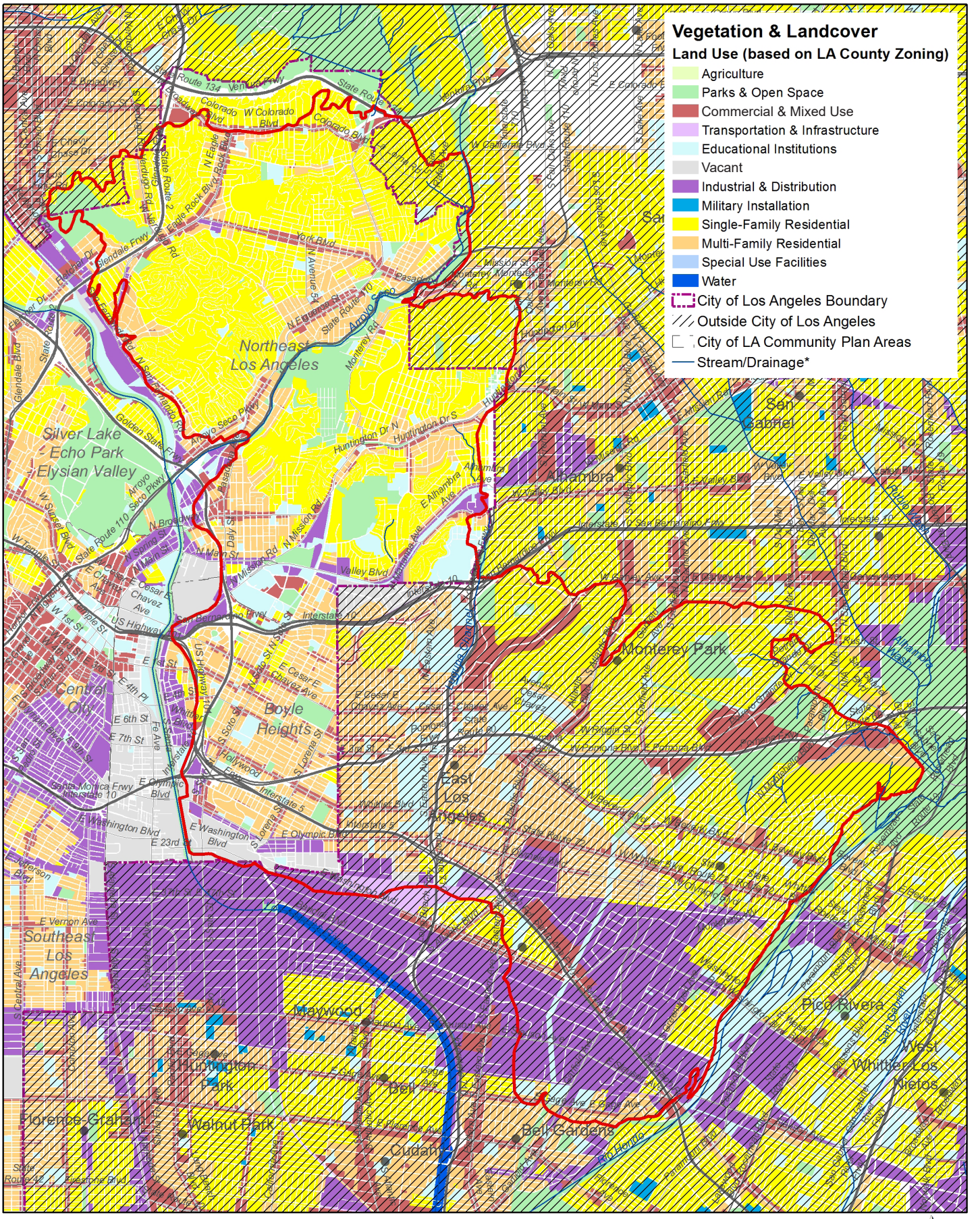
0 0.5 1 2 Miles

N



Ecological Hazards

Data sources: Coastal Storm Modeling System (CoSMoS) for Southern California, v3.0, Phase 2; Calfire Fire Hazard Severity Zone Maps; Federal Emergency Management Agency, National Flood Hazard Layer, Version 1.1.1.0, 11/01/2016.



Land Use

Data source: 2008 Los Angeles County Countywide Zoning by the Southern California Association of Governments (SCAG). https://egis3.lacounty.gov/dataportal/2012/04/10/county-wide-zoning/