Culver CITY

GENERAL PLAN UPDATE

ENVIRONMENTAL BACKGROUND REPORT

EXISTING CONDITIONS REPORT | NOVEMBER 2020

COVID-19 and the Culver City General Plan Update Existing Conditions Reports

As part of the General Plan Update (GPU), the City of Culver City produced a series of stand-alone technical reports describing existing conditions and future trends for topics critical to the General Plan. Findings from these reports will inform future phases of the update process, including the creation of alternative land use and transportation scenarios, policy development, and environmental analysis. These reports represent conditions in Culver City that were current as of fall 2019 and early 2020 when most of the analysis was undertaken. The existing conditions reports are meant to reflect a snapshot in time and thus will not be updated throughout the rest of the GPU process.

Before publishing the existing conditions reports in spring 2020, COVID-19 emerged as a threat to global public health crisis that changed all aspects of daily life. Because most of the analysis in these reports had been completed before the pandemic, many important issues that have emerged in recent months are not covered in these reports. Nevertheless, the GPU Team is monitoring the crisis as it develops and is designing engagement opportunities to ensure it hears all stakeholders' experiences and needs, existing before and through this crisis, through the planning process.

The GPU is our opportunity to make Culver City a place where everyone thrives. The pandemic has shown us that everything and everyone—from housing to parks, from our cultural vibrancy to our bustling economy, to our natural assets and community residents, workers, and visitors—are critical to shaping and realizing this vision into the future.

As we continue to follow the Safer at Home Orders, many issues from the existing conditions reports have been magnified. The City, with support and leadership from community members, has begun to respond in ways that align with Culver City's vision for the future. These include but are not limited to:

- **Housing** – As economic activity has declined or shifted, unemployment rates have risen dramatically and more residents than before are in the economically precarious situation of being rent-burdened. Culver City has responded by extending temporary renter protection measures and creating several opportunities for community-wide conversations about long-term solutions. To address housing affordability during this economic downturn, the City has also been working on new affordable housing measures including an inclusionary ordinance, a linkage fee, rental assistance, and an affordable accessory dwelling unit program.

- **Economic Development** – Culver City created an Economic Recovery Task Force that applies an equity lens when developing opportunities for the business community to recover, ensuring that residents and visitors have equitable access to services. As part of the economic recovery effort, the City has been issuing temporary use permits to allow business expansions on private property and the public right of way, passed a commercial eviction moratorium, has relaxed parking standards and intensification of uses.

- **Mobility** – The City has been implementing lane closures in the Downtown area and the Arts District to accommodate outdoor dining and other activities; is reviewing the deployment of Slow Streets on

residential streets with low traffic volumes and speeds to provide for more outdoor space for residents while practicing social distancing; and is planning a pilot Downtown-E Line tactical mobility lane to accommodate the movement of transit buses, bicycles, scooters, and emergency vehicles.

- **Parks and Open Space Programming** – School closures and physical distancing rules for parks and open space have limited the number of recreational activities for families. To support those with young children through summer activity cancelations, the Parks, Recreation, and Community Services Department made summer camps virtual. To support seniors, meal delivery has changed from in-person pickup to a delivery service, that protects vulnerable residents. At the same time, food service provision extended to support more community members in need, regardless of age. From March 15 to May 15, 2020, 7,458 meals were delivered to seniors, 195+ grocery based sere delivered, 9,542 community calls made, 6,000 senior Safer at Home Guides mails, 6,000 postcards sent, 106 links provided for the virtual recreation center, and 810 acres were mowed at our parks to allow for social distancing.

While these changes have been significant, at this moment it is not possible to fully predict COVID-19's impact over the next 25 years. Projections and trends described in these existing conditions reports may differ from future conditions if there are long-lasting fundamental shifts in the economy and society. Thus, the COVID-19 pandemic has sparked questions for the Culver City GPU, including:

- What innovative ways are there to maintain or stimulate the local economy when implementing new, possibly permanent restrictions on how business needs to be conducted?
- What are some creative solutions to deal with the potential impacts of changing demand for commercial space?
- What lessons can be learned from the safer at home orders on how the City addresses mobility?
- How should we design shared spaces, from affordable multifamily housing projects to the public realms, to allow for physical distancing?
- How does the City build resilient systems and protocols to ensure it can continue to provide essential services despite disruptions?
- How can the General Plan guide equitable recovery and resiliency efforts during and after crises?
- How can the General Plan define actionable steps to implement policies and programs while allowing for flexibility in an era of uncertainty and rapid change?

To answer these questions, we need everyone engaged in sharing their different perspectives and unique stories so that, together, we can plan and build a vibrant Culver City for all.

Contact City staff at Advance.Planning@culvercity.org or by calling tel:1-310-253-5740 if you have any questions. Visit the GPU's Picture Culver City project website for more information about the project, where you can find the existing conditions reports, take surveys related to existing conditions, watch summary videos of existing conditions, send the GPU Team a message, sign up for updates, learn about upcoming events, and much more.

The City of Culver City continues to cooperate with the Los Angeles County Department of Public Health and the Centers for Disease Control and Prevention (CDC) to respond to the spread of the novel coronavirus (COVID-19) in Los Angeles County.

For updates on the City's response to COVID-19, please visit the City's Coronavirus webpage.

Para leer esta información en español, por favor visite la página web de Coronavirus de la ciudad.

July 2020

CHAPTER 1 INTRODUCTION

1.1 PURPOSE OF THE REPORT

The Environmental Background Report provides information on existing environmental conditions within Culver City (city) to help inform and support the comprehensive update of the General Plan, including the formulation of planning policies and programs. The document will also provide relevant information for the "environmental setting" sections of the General Plan Environmental Impact Report (to be prepared).

ORGANIZATION AND CONTENT OF THE REPORT

This report is organized into seven chapters, as follows:

Chapter 1 – Introduction. This chapter describes the purpose and organization of the Environmental Background Report and includes a summary of key issues and opportunities by topic area.

Chapter 2 – Water Resources and Quality. This chapter provides an overview of the hydrologic setting of the Ballona Creek Watershed, along with surface water quality of the watershed, the groundwater basins that underlie the city, and planned water quality improvement projects, including ongoing efforts to revitalize Ballona Creek.

Chapter 3 – Noise. This chapter describes existing noise-sensitive receptors throughout the city, existing ambient noise levels, noise sources including transportation and non-residential land uses, and planned improvements.

Chapter 4 – Biological Resources. This chapter describes the potential biological resources within the city, including existing natural communities, sensitive biological resources such as special-status species and sensitive natural communities, critical habitat and jurisdictional wetland features, and key issues and proposed enhancements.

Chapter 5 –Cultural Resources. This chapter identifies known cultural resources within the city and the potential to discover and identify added cultural resources, including paleontological, archaeological, and historic resources.

Chapter 6 – Hazards. This chapter describes soil and geologic hazards within the city, along with seismic hazards, flooding hazards, fire hazards, and hazardous materials.

Chapter 7 – References. This chapter lists the references that informed the description of existing conditions in the preceding chapters.

1.2 ISSUES AND OPPORTUNITIES

The following is an initial list of issues and opportunities that will be expanded and further analyzed in subsequent phases of the General Plan Update (GPU).

BALLONA CREEK WATER RESOURCES AND QUALITY

Pollution levels for Ballona Creek exceed federal water quality standards which is in part due to stormwater runoff from the entire Ballona Creek Watershed, including Culver City. Stormwater runoff contributes to pollution levels in water bodies located outside city limits including the Ballona Creek estuary, Ballona Wetlands, Dockweiler Beach, and Santa Monica Bay.

While the City of Culver City (City) and community have made considerable investments in planning and implementing water quality improvement projects to address these issues, there are opportunities to encourage private developers to address on-site stormwater management beyond what is required under the law. There are also opportunities to use the GPU to articulate the vision for the revitalization of Ballona Creek further.

NOISE

A noise measurement survey was conducted to identify existing ambient noise levels throughout the city. The results of the survey show that generally, noise levels in Culver City have increased since the last citywide noise measurement survey was conducted in 1995 (in support of the preparation of the General Plan Noise Element). The increase in noise levels is likely attributed to an increase in traffic volumes associated with overall increases in jobs and population in Culver City and the surrounding cities. There has also been an increase in aircraft overflight to and from the Los Angeles International Airport (LAX).

A review of local and State guidelines that address the compatibility of various land uses as a function of community noise exposure shows that there are several areas in the city where new construction or development with noise-sensitive receptors should be either discouraged or should be designed with noise reduction features. The City could consider policies and programs that serve to limit or minimize exposure to unacceptable noise levels and consider ambient noise levels when identifying appropriate land use designations and transportation improvements.

BIOLOGICAL RESOURCES

The vast majority of Culver City has been heavily developed; however, significant remnant patches of native vegetation remain, particularly within the Kenneth Hahn State Recreation Area and Inglewood Oil Field (IOF) in the Culver City sphere of influence. These patches of native vegetation, and to a lesser degree ornamental and landscaped vegetation, provide suitable habitat for a variety of special-status plant and wildlife species and nesting birds. As the city continues to develop, there may be increasing pressure to develop sites within or adjacent to the remnant patches of native vegetation, which may harm special-status species. There are opportunities to protect and enhance remaining biological resources, and to re-establish vegetation and other habitat features that are conducive to supporting plant and wildlife suitable for an urban setting.

CULTURAL RESOURCES

There are several known cultural resources (including paleontological, archaeological, and historic) that have been previously identified within the city and still many that have yet to be discovered. These resources include prehistoric archaeological sites, Native American village and campsites, and historic period refuse sites; the remains of a mammoth, fossilized land mammals, and multiple fossil

invertebrates (clams, gastropods, etc.); and historic resources, including residences, entertainment industry resources (e.g., buildings at Sony Pictures Studios and Culver Studios), commercial buildings, and institutional facilities and structures.

Culver City has three designated historic districts located on Braddock Drive, Lafayette Place, and McConnell Boulevard. The Washington Building, Citizen Building, and Culver Hotel are on the National Register of Historic Places. The Culver City Ice Arena is considered a locally significant cultural resource. Because the city is so rich with cultural resources, there are opportunities to improve the City's understanding of the presence of cultural resources to better position the City for grant funding, and to address the variety of factors that adversely impact cultural resources.

HAZARDS

Multiple hazards within the city have the potential to impact life and property significantly. These include the presence of the Newport-Inglewood Fault Zone which passes through the northern portion of the city and can cause surface rupture in the community and significant ground shaking (along with other regional faults), elevated landslide risk, elevated liquefaction risk, elevated risk for flooding, wildfire risk, and potential for hazardous materials release.

While Culver City has a hazard mitigation plan in place that identifies a variety of mitigation actions intended to minimize the community's exposure to these hazards, the GPU process presents the opportunity of evaluating the appropriateness of certain land use designations in the context of certain hazard zones. The mitigation actions in the hazard mitigation plan can be further refined and more thoroughly integrated into the City's planning processes as part of the GPU. There is also the opportunity to identify mitigation actions that would address the increased frequency and magnitude of hazardous events associated with climate change.

CHAPTER 2 WATER RESOURCES AND QUALITY

This section describes the hydrologic setting of the Ballona Creek Watershed, along with surface water quality of the watershed, the groundwater basins that underlie the city, and planned water quality improvement projects.

2.1 KEY FINDINGS

The city is located within the Ballona Creek and Marina Del Rey Watersheds, which includes the following receiving waters: Ballona Creek, Centinela Creek, Ballona Wetlands, Ballona Estuary, Dockweiler Beach, and the Santa Monica Bay. Each of the receiving waters, except for Centinela Creek, are listed with impairments on the Clean Water Act Section 303(d) List. Each of the receiving waters, except for Centinela Creek, have existing designated beneficial uses to both protect aquatic life and human use.

The city is located within three subbasins of the Coastal Plain of Los Angeles Groundwater Basin. A large portion of the city is located within the Santa Monica Subbasin, the eastern portion of the city in the Central Subbasin, and the southern extent of the city in the West Coast Subbasin.

The City has several planned water quality improvement projects, including the Ballona Creek Revitalization Project, Washington Boulevard Stormwater and Urban Runoff Diversion Project, the Culver Boulevard Realignment and Urban Stormwater Treatment Project, and Mesmer Low Flow Diversion Project. The City is also in the process of developing a Citywide Stormwater Quality Master Plan, which will be the City's roadmap for prioritization and implementation of all future stormwater regional projects, low impact development projects, and green streets projects focused towards compliance with the Municipal Separate Storm Sewer System (MS4) Permit.

2.2 HYDROLOGIC SETTING

As shown in **Figure 2-1**, the city is located predominantly within the Ballona Creek Watershed with a few parcels on the western side of the city located within the Marina Del Rey Watershed.

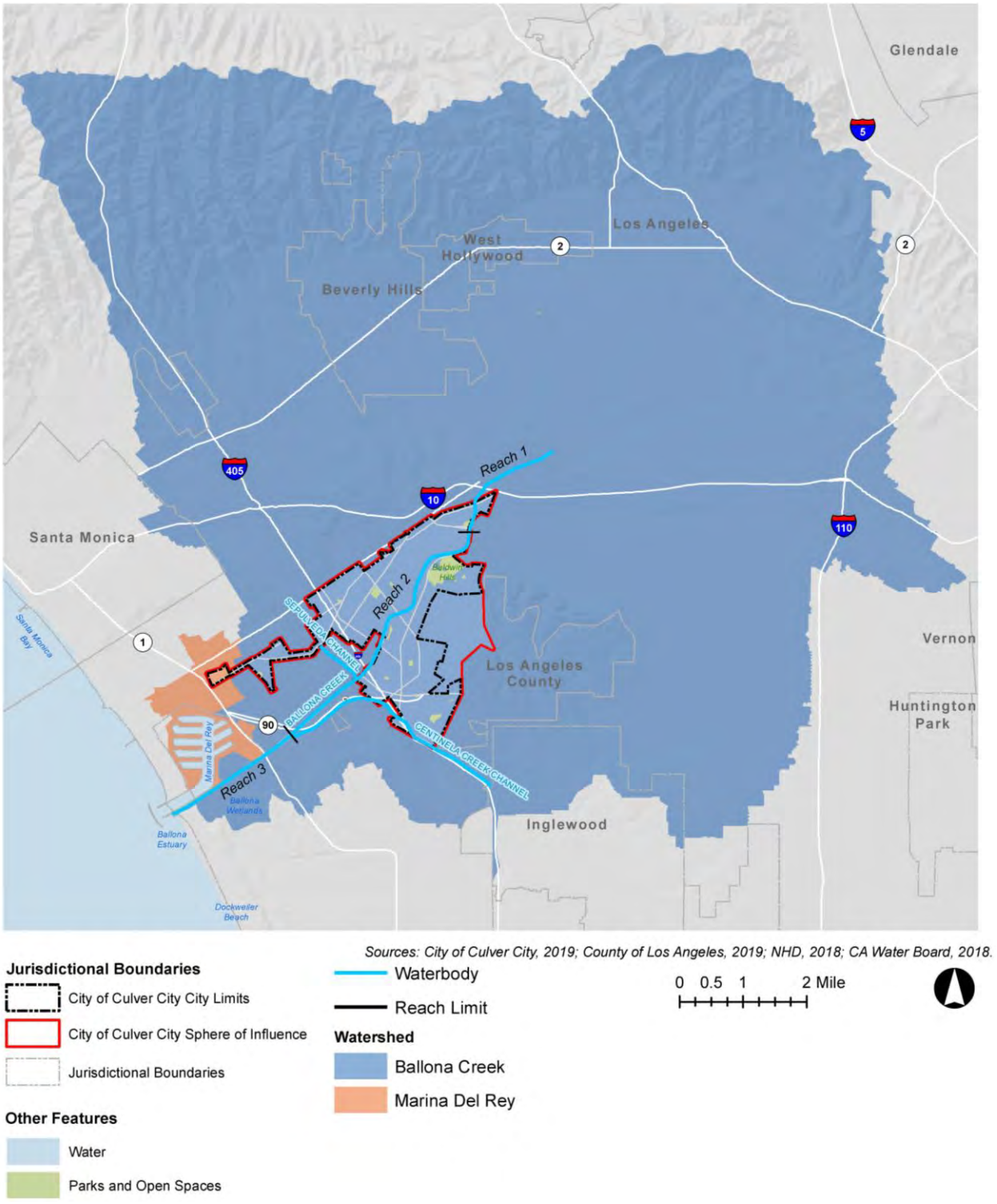
The Ballona Creek Watershed is located on the coastal plain of the Los Angeles Basin, and includes a portion of the Santa Monica Mountains to the north and the Baldwin Hills to the south (BC WMG, 2016). The Ballona Creek Watershed is approximately 128 square miles and extends across the cities of Culver City, Beverly Hills, and West Hollywood, and portions of the cities of Los Angeles, Inglewood, Santa Monica, and unincorporated areas of the County of Los Angeles.

The Marina Del Rey Watershed is also located on the coastal plain of the Los Angeles Basin. The Marina Del Rey Watershed is approximately 2.9 square miles and extends across the portions of the cities of Santa Monica, Los Angeles and Culver City and unincorporated areas of the County of Los Angeles (Los Angeles County, 2009, 2020).

Ballona Creek runs central through the city, extending from the northeast portion of the city to the western boundary, where it continues to Ballona Estuary and the Pacific Ocean. Lined by the Ballona Creek Bicycle Path that follows a former maintenance easement along its western bank, the creek passes through several distinct city neighborhoods, including the predominantly commercial Arts

District and residential neighborhoods, as well as City open space and recreational amenities including Sid Kronenthal Park, Culver City Park, the Baldwin Hills Scenic Overlook, Lindberg Park, Culver/Slauson Park, and Culver City High School's athletic fields.

Figure 2-1: Hydrologic Setting in and around Culver City



The watershed's main water bodies are Ballona Creek, which runs centrally through the city, and Ballona Estuary located southwest of the city adjacent to the Pacific Ocean. Ballona Creek and the Estuary are collectively approximately 9.5 miles long and divided into three hydrological units:

- Ballona Creek Reach 1 is approximately two miles long from Cochran Avenue (which is outside of the city limits) to National Boulevard, in the northeastern portion of the city. This portion of the creek is channelized with vertical concrete walls.
- Ballona Creek Reach 2 extends through the city, and is approximately four miles long between National Boulevard, in the northeast portion of the city, and Centinela Avenue where Ballona Estuary starts (outside of the city limits). Reach 2 is also channelized for the most part, with trapezoidal walls.
- Ballona Estuary Reach 3 is located entirely outside city limits, and starts at Centinela Creek and continues to the Pacific Ocean. This portion of the creek is approximately 3.5 miles of soft-bottom channel and experiences tidal inundation.

Major tributaries to Ballona Creek include Sepulveda Canyon Channel (tributary to Reach 2) and the Centinela Creek (tributary to Ballona Estuary) (BC WMG, 2016). Other water bodies in the watershed include the Del Rey Lagoon and the Ballona Wetlands, which are both connected to the Ballona Estuary through tide gates and are both outside city limits.

2.3 SURFACE WATER QUALITY

STORMWATER RUNOFF

Surface water quality can be affected by many variables, including land use, hydrology, meteorology, geology, and soils. Land uses may affect surface water quality based on associated activities. For example, an office building generates little in the way of exterior pollutants, which can be washed away by runoff, whereas a surface parking lot has deposits of oil, gasoline, and other pollutants that can be washed away by runoff. Meteorology may affect surface water quality through the quantity and intensity of storm events, which determine to what extent pollutants are washed away by runoff. Geology and soils may also affect surface water quality in that they determine infiltration and runoff velocity. The more infiltration of runoff into the soil, and the slower the runoff, the less ability the runoff has to carry sediments and pollutants.

In general, urban stormwater runoff occurs following precipitation events (also known as wet weather runoff), especially during the early phases of precipitation events called first-flush, with the volume of runoff flowing into the drainage system depending on the intensity and duration of the rain event. Contaminants that may be found in stormwater from developed areas include sediments, trash, bacteria, metals, nutrients, organics, and pesticides. The source of contaminants includes surface areas where precipitation falls, as well as the air through which it falls. Contaminants on surfaces such as roads, maintenance areas, parking lots, and buildings, which are usually contained in dry weather conditions, may be carried by rainfall runoff into drainage systems. Dry weather runoff also occurs in urban areas, which can be attributed to watering lawns, washing vehicles, or hosing down sidewalks. Pollutants in dry weather runoff can include fertilizer, pesticides, and pet waste, which are also directed into drainage systems.

In receiving waters, excess sediments can cause high turbidity and rapid accumulation of sediments in lakes and ponds, with adverse impacts on biological organisms. In urban areas, metals such as zinc, copper, and lead, which can cause toxic effects in high concentrations, are most commonly associated with surface runoff. Additionally, other toxic elements, especially those associated with hazardous waste, can be present within surface flows.

RECEIVING WATERS

Figure 2-1 shows the receiving waters from runoff within the city, including Ballona Creek, Centinela Creek, Ballona Creek Estuary, Ballona Wetlands, Dockweiler Beach, Santa Monica Bay, and Marina Del Rey Harbor. Under the Clean Water Act Section 303(d), states are required to submit to the United States Environmental Protection Agency (USEPA) a list identifying waters within its boundaries not meeting water quality standards (impaired waters) and the water parameter (i.e. pollutant) not being met. **Table 2-1** lists the Section 303(d) impairments for the city's receiving waters and beneficial uses for receiving waters as designated by the California Regional Water Quality Control Board (RWQCB) for the Los Angeles Region. Designated beneficial uses allow for appropriate water quality objectives and programs to maintain or enhance water quality.

Table 2-1: Receiving Waters for Urban Runoff in Culver City

Receiving Waters	303(d) List Impairments [a]	Designated Beneficial Uses [b]
Ballona Creek	Cadmium (sediment), Coliform Bacteria, Dissolved Copper, Cyanide, Lead, Selenium, Toxicity, Trash, Viruses (enteric), Zinc	Reach 1: Municipal and Domestic Supply (MUN) (potential), Warm Freshwater Habitat (WARM) (potential), Wildlife Habitat (WILD), Water Contact Recreation (REC1) (potential), Non-contact Water Recreation (REC2) Reach 2: MUN (potential), WARM (potential), WILD (potential), REC1 (potential), Limited Water Contact Recreation (LREC1), REC2,
Centinela Creek (Channel)	None	None
Ballona Creek Estuary	Cadmium, Chlordane (tissue and sediment), Coliform Bacteria, Copper, Lead (sediment), Polycyclic Aromatic Hydrocarbons (PAHs) (sediment), Polychlorinated Biphenyls (PCBs) (tissue and sediment), Sediment Toxicity, Shellfish Harvesting Advisory, Silver, Zinc (sediment)	Navigation (NAV), Commercial and Sport Fishing (COMM), Estuarine Habitat (EST), Marine Habitat (MAR), WILD, Rare, Threatened, or Endangered Species (RARE), Migration of Aquativ Organisms (MIGR), Spawning Reproduction, and/or Early Development (SPWN), Shellfish Harvesting (SHELL), REC1, REC2
Ballona Wetlands	Exotic Vegetation, Habitat Alterations, Hydromodification, Reduced Tidal Flushing, Trash	EST, WILD, RARE, MIGR, SPWN, Wetland Habitat (WET), REC1, REC2
Dockweiler Beach	Indicator Bacteria	Industrial Service Supply (IND), NAV, COMM, MAR, WILD, SPWN (potential), REC1, REC2

Receiving Waters	303(d) List Impairments [a]	Designated Beneficial Uses [b]
Santa Monica Bay	DDT (tissue and sediment), Debris, Fish Consumption Advisory, PCBs (tissue and sediment), Sediment Toxicity	NAV, COMM, MAR, WILD, MIGR, SPWN, SHELL, REC1, REC2
Marina Del Rey Harbor (Back Basins)	Chlordane (tissue and sediment), Copper (sediment), DDT (tissue), Dieldrin (tissue), Fish Consumption Advisory, Indicator Bacteria, Lead (sediment), PCBs (tissue and sediment), Sediment Toxicity, Zinc (sediment)	Harbor: NAV, COMM, MAR, WILD, SHELL, REC1, REC2 Entrance Channel: NAV, COMM, MAR, WILD, RARE, SHELL, REC1, REC2 All Other Areas: NAV, COMM, MAR, WILD, RARE, SHELL, REC1 (potential), REC2
Marina Del Rey Harbor (Beach)	Indicator Bacteria	Public Beach Areas: NAV, COMM, MAR, WILD, RARE, REC1, REC2
*Sources: [a] State Water Resources Control Board (SWRCB). 2016; [b] **RWQCB,** 2014.*		

As shown in **Table 2-1**, Ballona Creek is considered an impaired water body. Multiple entities and agencies monitor water quality and implement programs seeking to prevent further creek degradation (e.g., Ballona Wetlands Foundation, Friends of Ballona Wetlands Education/Ecology Center, Santa Monica Bay Restoration Project, Los Angeles RWQCB Trash Total Maximum Daily Load for Ballona Creek and Wetland).

STORMWATER TREATMENT AND PREVENTION

Urban runoff and stormwater in the city are managed by the City's Public Works Department Environmental Programs and Operations Division (Culver City, 2019a). The City is required to comply with the Municipal Separate Storm Sewer System (MS4) permit issued by the Los Angeles Regional Water Quality Control Board (LARWQCB). The MS4 permit requires the City to implement best management practices (BMPs) that would improve water quality in the Ballona Creek Watershed Plan. The City is a member of the Ballona Creek Watershed Management Group, along with the cities of Beverly Hills, Inglewood, Los Angeles, Santa Monica, West Hollywood, and unincorporated areas of Los Angeles County. The City is also a member of the Marina Del Rey Watershed which includes the cities of Los Angeles and Santa Monica and the County of Los Angeles.

2.4 GROUNDWATER

The California Department of Water Resources (DWR) defines state groundwater basins based on geologic and hydrogeologic conditions. According to the DWR, the city is located within three subbasins of the Coastal Plain of Los Angeles Groundwater Basin as shown in **Figure 2-2** and further detailed below:

- The majority of the city is located within the Santa Monica Subbasin
- An eastern portion of the city is located in the Central Subbasin
- A southern portion of the city is located in the West Coast Subbasin

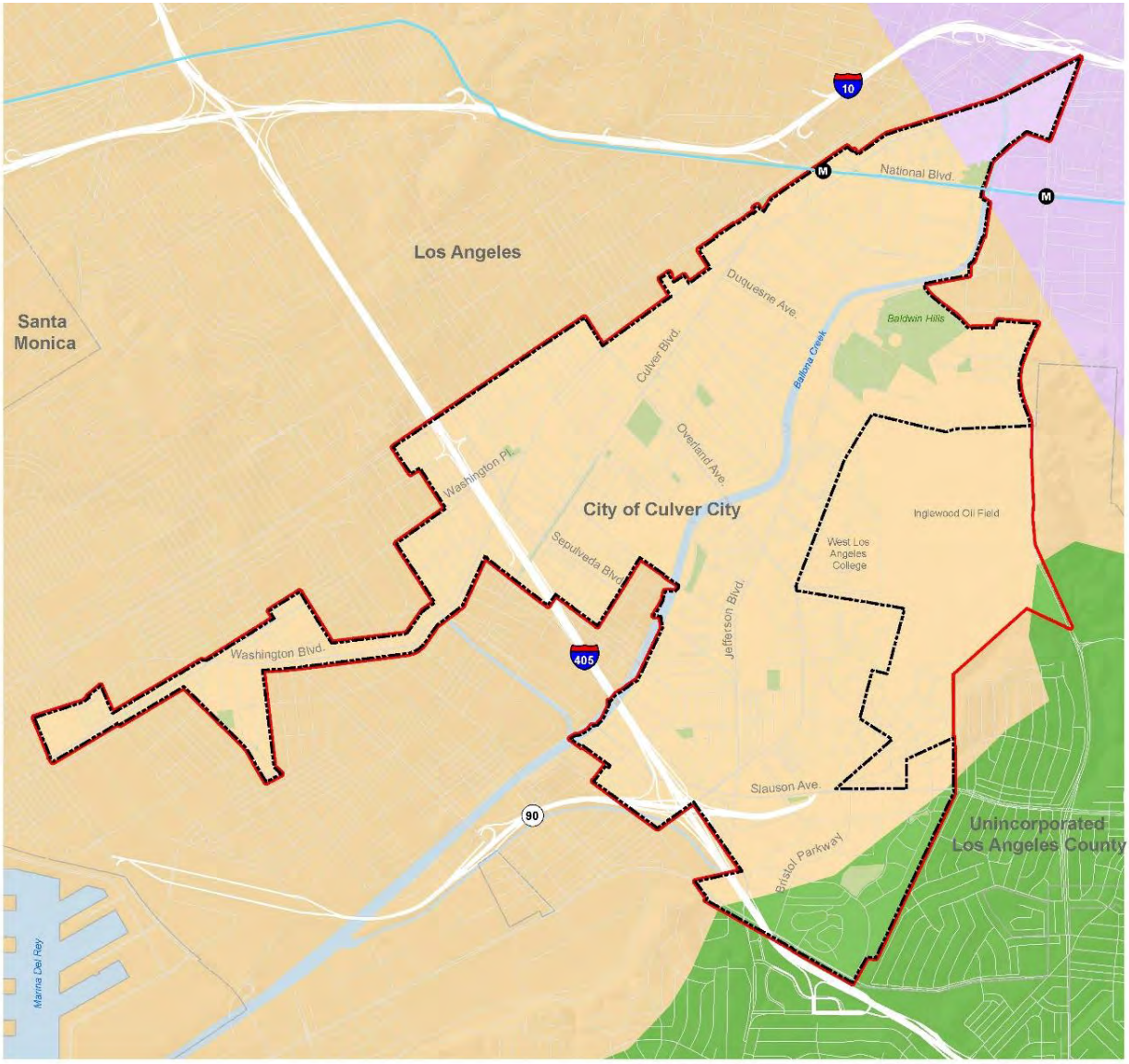
The Coastal Plain of Los Angeles Groundwater Basin is bound on the north by the Santa Monica Mountains, the Hollywood fault, and the Elysian, Repetto, Merced, Puente, and Chino Hills areas; on the west by the Pacific Ocean; on the east by the Santa Ana Mountains; and on the south by the San Juaquin Hills and the Pacific Ocean (DWR, 2015).

The water bearing units in the Coastal Plain of Los Angeles Groundwater Basin include multiple unconfined and confined aquifers. Groundwater basins are divided into forebay and pressure areas. In general, forebay areas refer to areas of higher permeability and recharge to underlying aquifers.

Pressure areas refer to areas where groundwater percolation is impeded by deposits of low permeability and where groundwater is confined. In the Coastal Plain of Los Angeles Groundwater Basin, the primary forebay areas are identified in the northeast portion of the Central Groundwater Sub-Basin. The rest of the Central Groundwater Sub-Basin and the entire West Coast Groundwater Sub-Basin are identified as pressure areas (DWR, 2015).

The Golden State Water Company (GSWC), which provides water to the city, has not used groundwater as a supply source since 1998 (GSWC, 2015). In 2004, the GSWC sold some groundwater pumping rights to the City of Santa Monica. However, the GSWC still has historical water rights in the Santa Monica Subbasin and the unadjudicated portion of the Central Subbasin. The GSWC is assessing the feasibility of potential groundwater development projects within several local subbasins. If developed, each of these projects would provide some increment of local groundwater which would improve the reliability of imported water within the city. However, under the Sustainable Groundwater Management Act of 2014, the unadjudicated portion of the Central Subbasin is considered a “high” priority basin, and as such, the GSWC must form a Groundwater Sustainability Agency and develop a groundwater sustainability plan by 2020. This action may limit the use of the GSWC’s Culver City System’s single well, the Sentney well, in the future.

Figure 2-2: Groundwater Basin in and around Culver City



Sources: City of Culver City, 2019; County of Los Angeles, 2019; DWR, 2000.

Jurisdictional Boundaries
- City of Culver City City Limits
- City of Culver City Sphere of Influence
- Jurisdictional Boundaries

Coastal Plain of Los Angeles Groundwater Basin
- Central Subbasin
- Santa Monica Subbasin
- West Coast Subbasin

0 0.25 0.5 1 Mile

Transportation Features
- Expo Line
- Metro Station

Other Features
- Water
- Parks and Open Spaces

SANTA MONICA SUBBASIN

The Santa Monica Subbasin underlies the northwestern portion of the Coastal Plain of Los Angeles Groundwater Basin (DWR, 2004a). It is bounded by impermeable rocks of the Santa Monica Mountains to the north, the Ballona Escarpment to the south, the Pacific Ocean to the west, and the Inglewood fault to the east. The Ballona Escarpment is an abandoned erosional channel from the Los Angeles River (DWR, 2004c). The Bellflower, Ballona, and Silverado aquifers are present in the subbasin.

Total storage of the subbasin is estimated to be approximately 1,100,000 acre-feet (DWR, 2004a). Under the Sustainable Groundwater Management Act, the Santa Monica Subbasin is considered a "medium" priority basin (GSWC, 2015).

Replenishment of groundwater in the Santa Monica Subbasin is mainly percolation of precipitation and surface runoff from the Santa Monica Mountains. Groundwater in the subbasin moves mainly southward towards the Ballona Gap (an erosional channel cutting into and across the Inglewood fault), then flows toward the ocean (DWR, 2004a).

CENTRAL SUBBASIN

The Central Subbasin occupies a large portion of the southeast part of the Coastal Plain of Los Angeles Groundwater Basin (DWR, 2004b). This subbasin is bounded to the north by a surface divide called the La Brea high and to the northeast and east by the Elysian, Repetto, Merced, and Puente Hills. The southeast boundary between the Central Subbasin and Orange County Groundwater Basin roughly follows Coyote Creek, which is a regional drainage province boundary. The southwest boundary is formed by the Newport Inglewood fault system and the associated folded rocks of the Newport Inglewood uplift.

As previously detailed, the Central Subbasin includes forebay areas (areas of higher permeability that provide recharge to underlying aquifers). This subbasin includes the Los Angeles and Montebello forebays, both of which have unconfined groundwater conditions and relatively interconnected aquifers that extend up to 1,600 feet deep to provide recharge to the aquifer system of this subbasin (DWR, 2004b). Throughout much of the subbasin, the aquifers are confined, but areas with semi-permeable aquicludes (a geologic formation or stratum that confines water in an adjacent aquifer) allow some interaction between aquifers. Aquifers in the Central Subbasin include: Gaspur, Semiperched, Bellflower, Gardena, Gage, Silverado, Lynwood, and Sunnyside.

Total storage capacity of the Central Subbasin is about 13,800,000 acre-feet (DWR, 2004b). Groundwater enters the Central Subbasin through surface and subsurface flow and by direct percolation of precipitation, stream flow, and applied waters. Also, groundwater replenishes the aquifers dominantly in the forebay areas. The Central Subbasin was adjudicated in 1965 (meaning groundwater rights were determined by the courts), and the Department of Water Resources was appointed as water master. Under the Sustainable Groundwater Management Act, the unadjudicated portion of the Central Subbasin is considered a "high" priority basin and must be managed under a Groundwater Sustainability Plan (GSWC, 2015).

WEST COAST SUBBASIN

The West Coast Subbasin is bounded to the north by the Ballona Escarpment, to the east by the Newport-Inglewood fault zone, and to the south and west by the Pacific Ocean and the Palos Verdes Hills. The surface of the subbasin is crossed in the south by the Los Angeles River and the San Gabriel River. In 1961, the West Coast Subbasin was adjudicated, and the Department of Water Resources was retained as water master. Aquifers present in the West Coast Subbasin include: Semiperched, Bellflower, Gaspur, Gardena, Gage, Lynwood, Silverado, and an unnamed aquifer. The water in underlying aquifers is confined throughout most of the Basin, though the Gage and Gardena aquifers are unconfined where water levels have dropped below the Bellflower aquiclude.

The storage capacity of the primary water producing aquifer, the Silverado aquifer, is estimated to be approximately 6,500,000 acre-feet. Natural replenishment of groundwater in the West Coast Subbasin is largely limited to underflow from the Central Subbasin through and over the Newport-Inglewood fault zone. Seawater intrusion occurs in some aquifers that are exposed to the ocean offshore. Also, minor replenishment occurs from the infiltration of surface inflow from both the Los Angeles and San Gabriel Rivers into the uppermost aquifers.

2.5 PLANNED IMPROVEMENTS

WATER QUALITY

To meet water quality requirements, the Ballona Creek Watershed Management Group published the Ballona Creek Enhanced Watershed Management Plan, which addresses water quality issues by implementing institutional and infrastructure BMPs such as green streets and regional projects (Culver City, 2019a). The Ballona Creek Enhanced Watershed Management Plan provides an innovative approach to MS4 Permit compliance. By electing to comply with the optional compliance pathway in the MS4 Permit, the Plan provides a comprehensive stormwater management approach for the Ballona Creek Watershed and addresses the priority water quality conditions in the watershed.

Green streets and regional projects are designed to capture and treat runoff from all drainage areas in the Ballona Creek Watershed. To comply, all agencies, including the City, are required to manage runoff volume by implementing green streets, centralized regional projects, and low impact development projects. In 2016, Culver City residents approved Measure CW, the Clean Water, Clean Beach Parcel Tax which provides funding for such projects (Culver City, 2019b). Funds raised by Measure CW are used for improvements in water quality in Ballona Creek, Marina Del Rey, Santa Monica Bay, and the Pacific Ocean. Funds are used exclusively for reducing and preventing water pollution and managing storm water and urban runoff.

The following projects in Culver City are funded by Measure CW:

- **Washington Boulevard Stormwater and Urban Runoff Diversion Project** – this project will divert stormwater and urban runoff from storm drains, pretreat the runoff, and redirect the runoff to the sanitary sewer main along Washington Boulevard (Culver City, 2019a) for treatment at the City of Los Angeles' Hyperion Water Reclamation Plant with a portion to be re-used for irrigation purposes for the City's future raised landscaped medians along Washington Boulevard. This project is part of the MS4 permit requirements for the Marina Del Rey Watershed.

- **Culver Boulevard Realignment and Urban Stormwater Treatment Project** – this project will implement structural stormwater BMPs by constructing underground retention basins to treat and reuse captured urban runoff (Culver City, 2019d) for irrigation purposes and discharging treated run-off back to the storm drain system as clean water. This project is part of the MS4 permit requirements for the Ballona Creek Watershed.
- **Mesmer Pump Station Diversion Project** – this project will implement a low flow diversion system that will capture dry weather run-off from Centinela Creek into Mesmer Pump Station. The channel would be modified to accept dry weather run-off with a 3 feet wide trench with steel grates that would extend 30 feet out from the channel wall. The dry weather run-off will enter the Mesmer Pump Station from the trench grate into a new 18-inch sewer line and the channel bottom would be modified to remove the existing concrete berm that runs diagonally across as part of the low flow channel. A new 6-inch concrete berm is proposed for the full width of the channel to be designed as retention basin for low flow and aligned to divert the flow into the trench. During the wet weather season the inlet to the pump station will be closed for diversion. Higher flow rates in the channel will fill up the trench and allow to pond up to the depth of the 6-inch concrete berm allowing the higher flow to continue down the channel to Ballona Creek for conveyance to City of Los Angeles' Hyperion Treatment Plant for treatment.

The MS4 Permit was adopted by the LARWQCB on November 8, 2012, and became effective on December 28, 2012 (Culver City, 2019a). The MS4 Permit is up for renewal and requires extensive monitoring requirements and the incorporation of Total Maximum Daily Load regulations. The Ballona Creek and Marina Del Rey Watersheds are subject to Total Maximum Daily Load for metals and bacteria that require compliance by 2021. These Total Maximum Daily Loads also include milestones that require water quality improvements in the near-term. The new MS4 Permit will represent a shift in the way stormwater is regulated in the region. For the first time, a stormwater permit provides permittees with incentives for integrated water planning which combines water supply and water quality planning. This approach will more effectively attract funding for building projects with multiple benefits.

BALLONA CREEK ENHANCEMENTS

Ballona Creek is the focus of several past plans and projects that have contributed to revitalizing it as a mobility, open space, recreational, environmental, and cultural amenity for the city's residents. The City designated Ballona Creek as a focused special study area in the 1996 General Plan, which prompted the City to prepare the Ballona Creek and Trail Focused Special Study in 2004 (Culver City, 2004). This special study identified short, mid, and long-term priorities for the Ballona Creek Corridor, including the development of a cohesive maintenance and operations strategy for the entire creek corridor. The General Plan was then amended to incorporate findings from the special study. Since this special study, the City and community have been identifying opportunities to revitalize the creek over the past 15 years, specifically through the Ballona Creek Revitalization Project (Culver City, 2019c).

The Ballona Creek Revitalization Project aims to enhance the restoration and use of Ballona Creek and make it a more sustainable, walkable, bikeable, and connected recreational attraction. In 2010, the Ballona Creek Greenway Plan conceptualized opportunities to reconnect residents with their creek,

create a green corridor of trails and points of access, enhance habitat, mitigate stormwater runoff, redevelop land to improve watershed functions, and increase the health and sustainability of the region (Culver City, 2010). In 2016, Culver City residents approved Measure CW, the Clean Water, Clean Beach Parcel Tax which provides funding for such projects (Culver City, 2019b). Additionally, in 2019, the Park to Playa Ballona Creek Connection Project completed a segment of the Park to Playa Trail, which is a planned 13-mile trail that will connect a network of trails, parks, and open spaces from the Baldwin Hills to the Pacific Ocean, beyond city limits (Culver City, 2019c).

The City has explored options to restore and enhance the creek including the possible restoration of the concrete-channelized portion of Ballona Creek. However, there are engineering constraints related to handling flood events. Revitalization may also include upgrades to, and extension of, the existing multiuse path; amenities such as benches, picnic tables, shade structures, native landscaping, and potable water sources; shielded lighting for safety; and murals and interpretive signage. Additionally, planned improvements include activating the creek for events, creating multi-modal connections to the creek, and orienting development towards the creek.

The project proposes to develop an action strategy to implement revitalization projects along the creek (Culver City, 2019c). This strategy will identify short-, mid-, and long-term improvements including associated funding requirements, permitting, technical reviews, and multi-agency coordination. Short-term improvements may include art installations, interpretive and wayfinding signage, lighting, unhoused population assistance, repaving, gate openings, safety patrols, and education campaigns. Mid- to long-term goal improvements could include pocket parks, path extension, terracing/reconfiguration, additional ramp access points, water capture, and mobility hubs. As well, the City is considering how to work with commercial developments to have creek facing facades to activate the path

CHAPTER 3 NOISE

3.1 NOISE BASICS

This section provides an overview of the fundamental principles of noise.

KEY TERMS AND CONCEPTS

Sound can be described as the mechanical energy of a vibrating object transmitted by pressure waves through a liquid or gaseous medium (e.g., air). Noise is generally defined as unwanted sound (i.e., loud, unexpected, or annoying sound). Acoustics is defined as the physics of sound. In acoustics, the fundamental scientific model consists of a sound (or noise) source, a receiver, and the propagation path between the two. The loudness of the noise source and obstructions or atmospheric factors affecting the propagation path to the receiver determines the sound level and characteristics of the noise perceived by the receiver. Acoustics addresses the propagation and control of sound primarily.[1]

Sound, traveling in the form of waves from a source, exerts a sound pressure level (referred to as sound level) that is measured in decibels (dB), which is the standard unit of sound amplitude measurement. The dB scale is a logarithmic scale that describes the physical intensity of the pressure vibrations that make up any sound, with 0 dB corresponding roughly to the theoretical threshold of human hearing and 120 to 140 dB corresponding to the threshold of feeling and pain, respectively. Pressure waves traveling through air exert a force registered by the human ear as sound.[2]

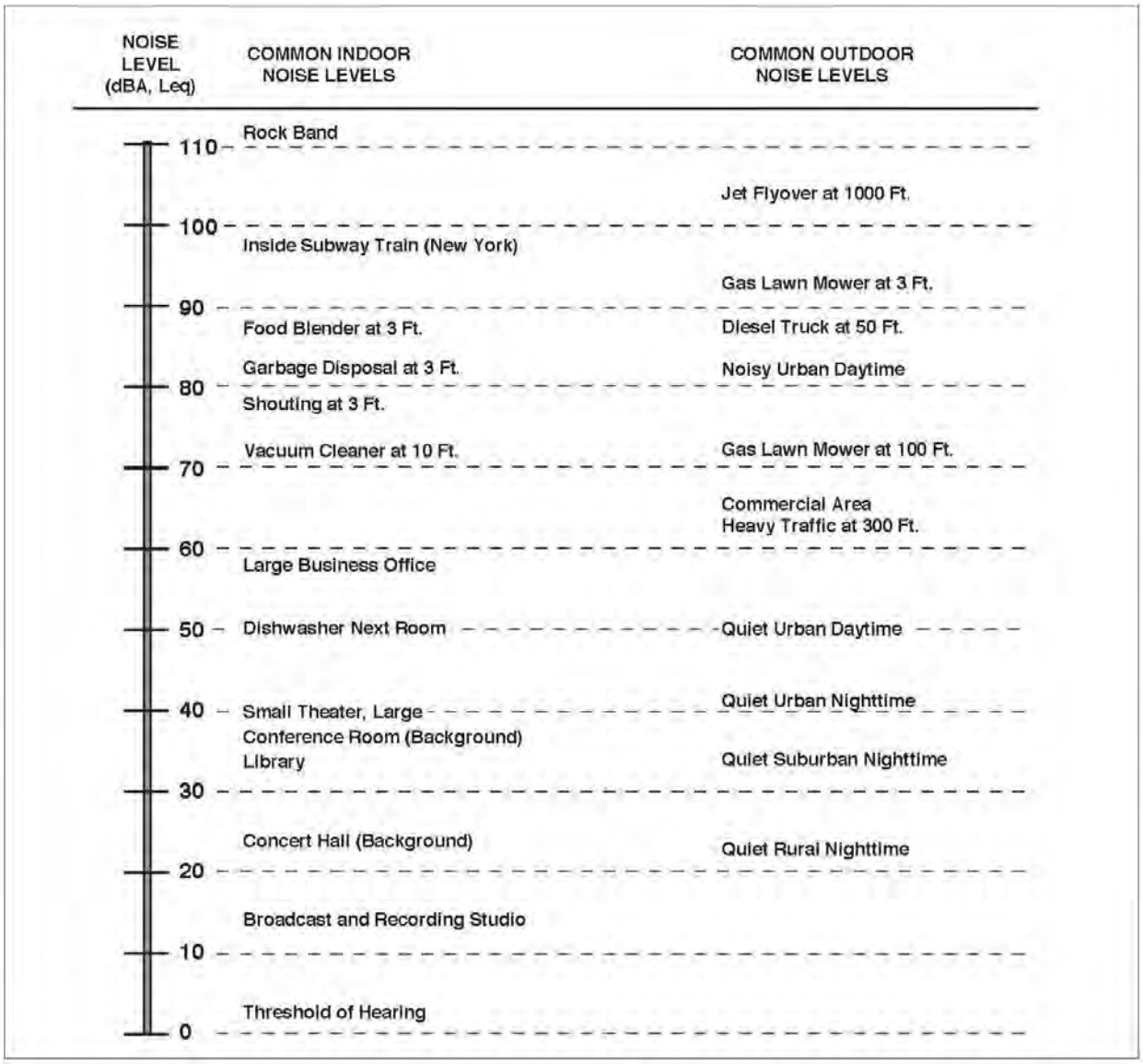
Sound pressure fluctuations can be measured in units of hertz (Hz), which correspond to the frequency of a particular sound. Typically, sound does not consist of a single frequency, but rather a broad band of frequencies varying in levels of magnitude. When all the audible frequencies of a sound are measured, a sound spectrum is plotted consisting of a range of frequency spanning 20 to 20,000 Hz. The typical human ear is not equally sensitive to sound within this frequency range. Therefore, when assessing potential noise impacts, sound is measured using an electronic filter that deemphasizes the frequencies below 1,000 Hz and above 5,000 Hz in a manner corresponding to the human ear's decreased sensitivity to these extremely low and extremely high frequencies. This method of frequency filtering or weighting is referred to as A-weighting, expressed in units of A-weighted decibels (dBA), which is typically applied to community noise measurements.[3] Some representative common outdoor and indoor noise sources and their corresponding A-weighted noise levels are shown in **Figure 3-1**. All noise levels presented are A-weighted unless otherwise stated.

[1] M. David Egan, *Architectural Acoustics*, Chapter 1, March 1988.

[2] Ibid 1.

[3] Ibid 1.

Figure 3-1: Decibel Scale and Common Noise Sources



Sources: State of California, Department of Transportation (Caltrans), Technical Noise Supplement (TeNS). October 1998. Available: http://www.dot.ca.gov/hq/env/noise/pub/Technical Noise Supplement.pdf

NOISE EXPOSURE AND COMMUNITY NOISE

An individual's noise exposure is a measure of noise over a period. A noise level is a measure of noise at a given instant in time. However, noise rarely persists at a given level over a long period. Rather, community noise varies continuously over a period, depending on the sound sources contributing to the community noise environment. Community noise is primarily the product of many distant noise sources, which constitute a relatively stable background noise exposure, with many of the individual contributors unidentifiable. The background noise level changes throughout a typical day, and does so gradually, corresponding with the addition and subtraction of distant noise sources, such as changes in traffic volume. What makes community noise variable throughout a 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.[4]

Successive additions of sound from short-duration single-event noise sources to the community noise environment change the community noise level from instant to instant, requiring the noise exposure to be measured over periods of time to legitimately characterize a community noise environment and evaluate cumulative noise impacts. The following noise descriptors are used to characterize environmental noise levels over time.[5]

Leq: The equivalent sound level over a specified period, typically, 1 hour (Leq). The Leq may also be referred to as the average sound level.

Lmax: The maximum, instantaneous noise level experienced during a given period.

Lmin: The minimum, instantaneous noise level experienced during a given period.

Lx: The noise level exceeded a percentage of a specified period. For instance, L_{50} and L_{90} represent the noise levels that are exceeded 50 percent and 90 percent of the time, respectively.

Ldn: The average A-weighted noise level during a 24-hour day, obtained after an addition of 10 dB to measured noise levels between the hours of 10:00 PM to 7:00 AM to account for nighttime noise sensitivity. The Ldn is also termed the day-night average noise level (DNL).

CNEL: The Community Noise Equivalent Level (CNEL) is the average A-weighted noise level during a 24-hour day that includes an addition of 5 dB to measured noise levels between the hours of 7:00 PM to 10:00 PM and an addition of 10 dB to noise levels between the hours of 10:00 PM to 7:00 AM to account for noise sensitivity in the evening and nighttime, respectively.

EFFECTS OF NOISE ON PEOPLE

Although exposure to high noise levels has been demonstrated to cause physical and physiological effects, the principal human responses to typical environmental noise exposure are related to

[4] California Department of Transportation (Caltrans), Technical Noise Supplement (TeNS), September 2013, Section 2.2.2.1.

[5] Ibid 4, Section 2.2.2.2.

subjective effects and interference with activities. Activities most affected by noise include rest, relaxation, recreation, study, and communications.[6]

Concerning the subjective effects, the responses of individuals to similar noise events are diverse and influenced by many factors, including the type of noise, the perceived importance of the noise, the appropriateness of the noise to the setting, the duration of the noise, the time of day and the type of activity during which the noise occurs, and individual noise sensitivity. Overall, there is no completely satisfactory way to measure the subjective effects of noise or the corresponding reactions of annoyance and dissatisfaction on people. A wide variation in individual thresholds of annoyance exists, 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 (i.e., comparison to the ambient noise environment). In general, the more a new noise level exceeds the previously existing ambient noise level, the less acceptable the new noise level will be judged by those hearing it.

Regarding increases in A-weighted noise level, the following relationships generally occur:[7]

- Except in carefully controlled laboratory experiments, a change of 1 dBA in ambient noise levels cannot be perceived;
- Outside of the laboratory, a three dBA change in ambient noise levels is considered to be a barely perceivable difference;
- A change in ambient noise levels of five dBA is considered to be a readily perceivable difference; and
- A change in ambient noise levels of 10 dBA is subjectively heard as a doubling of the perceived loudness.

These relationships occur in part because of the logarithmic nature of sound and the decibel scale. The human ear perceives sound in a non-linear fashion, which is why the dBA scale was developed. Because the dBA scale is based on logarithms, two noise sources do not combine in a simple additive fashion. Under the dBA scale, a doubling of sound energy corresponds to a three dBA increase. In other words, when two sources are each producing sound of the same loudness, the resulting sound level at a given distance would be approximately three dBA higher than one of the sources under the same conditions. For example, if two identical noise sources produce noise levels of 50 dBA, the combined sound level would be 53 dBA, not 100 dBA. Under the dB scale, three sources of equal loudness together produce a sound level of approximately five dBA louder than one source, and ten sources of equal loudness together produce a sound level of approximately 10 dBA louder than the single source.[8]

[6] Ibid 4, Section 2.2.4.2.

[7] Ibid 4, Section 2.2.1.

[8] Ibid 4, Section 2.2.1.1.

NOISE ATTENUATION

When noise spreads over a distance, the noise level reduces with distance depending on the type of noise source and the propagation path. Noise from a localized source (i.e., point source) propagates uniformly outward in a spherical pattern, referred to as "spherical spreading." Stationary point sources of noise, including stationary mobile sources such as idling vehicles, attenuate (i.e., reduce) at a rate between six dBA for acoustically "hard" sites and 7.5 dBA for "soft" sites for each doubling of distance from the reference measurement, as their energy is continuously spread out over a spherical surface (e.g., for hard surfaces, 80 dBA at 50 feet attenuates to 74 at 100 feet, 68 dBA at 200 feet, etc.). Hard sites are those with a reflective surface between the source and the receiver, such as asphalt or concrete surfaces or smooth bodies of water. No excess ground attenuation is assumed for hard sites and the reduction in noise levels with distance (drop-off rate) is simply the geometric spreading of the noise from the source. Soft sites have an absorptive ground surface, such as soft dirt, grass, or scattered bushes and trees, which in addition to geometric spreading, provides an excess ground attenuation value of 1.5 dBA (per doubling distance).[9]

Roadways and highways consist of several localized noise sources on a defined path, and hence are treated as "line" sources, which approximate the effect of several point sources. Noise from a line source propagates over a cylindrical surface, often referred to as "cylindrical spreading."[10] Line sources (e.g., traffic noise from vehicles) attenuate at a rate between three dBA for hard sites and 4.5 dBA for soft sites for each doubling of distance from the reference measurement.[11] Therefore, noise due to a line source attenuates less with distance than that of a point source with increased distance.

Additionally, receptors located downwind from a noise source can be exposed to increased noise levels relative to calm conditions, whereas locations upwind can have lowered noise levels. Atmospheric temperature inversion (i.e., increasing temperature with elevation) can increase sound levels at long distances (e.g., more than 500 feet). Other factors, such as air temperature, humidity, and turbulence can also have significant effects on noise levels.[12]

FUNDAMENTALS OF VIBRATION

As described in the Federal Transit Administration's (FTA's) *Transit Noise and Vibration Impact Assessment* (FTA 2018), ground-borne vibration can be a serious concern for nearby neighbors of a transit system route or maintenance facility, causing buildings to shake and rumbling sounds to be heard. In contrast to airborne noise, ground-borne vibration is not a common environmental problem. It is unusual for vibration from sources such as buses and trucks to be perceptible, even in locations close to major roads. Some common sources of ground-borne vibration are trains, buses on

[9] Ibid 4, Section 2.1.4.2.

[10] Ibid 4, Section 2.1.4.1

[11] Ibid 4, Section 2.1.4.1.

[12] Ibid 4, Section 2.1.4.3.

rough roads, and construction activities such as blasting, pile driving, and the operation of heavy earthmoving equipment.[13]

Several different methods are used to quantify vibration. The peak particle velocity (PPV) is defined as the maximum instantaneous peak of the vibration signal. PPV is most frequently used to describe vibration impacts to buildings. The root mean square (RMS) amplitude is most frequently used to describe the effect of vibration on the human body. The RMS amplitude is defined as the average of the squared amplitude of the signal. Decibel notation (VdB) is commonly used to measure RMS. The decibel notation acts to compress the range of numbers required to describe vibration. The relationship of PPV to RMS velocity is expressed in terms of the "crest factor," defined as the ratio of the PPV amplitude to the RMS amplitude. PPV is typically a factor of 1.7 to six times greater than RMS vibration velocity.[14] Typically, ground-borne vibration generated by human-made activities attenuates rapidly with distance from the source of the vibration. Sensitive receptors for vibration include structures (especially older masonry structures), people (especially residents, students, the elderly, and the sick), and vibration-sensitive equipment.[15]

The effects of ground-borne vibration include movement of building floors, rattling of windows, shaking of items on shelves or hanging on walls, and rumbling sounds. In extreme cases, the vibration can cause damage to buildings. Annoyance from vibration often occurs when the vibration exceeds the threshold of perception by only a small margin. A vibration level that causes annoyance will be well below the damage threshold for normal buildings. The FTA measure of the threshold of architectural damage for conventional sensitive structures is 0.2 inches per second (in/sec) PPV.[16]

In residential areas, the background vibration velocity level is usually around 50 VdB (approximately 0.0013 in/sec PPV). This level is well below the vibration velocity level threshold of perception for humans, which is approximately 65 VdB. A vibration velocity level of 75 VdB is the approximate dividing line between barely perceptible and distinctly perceptible levels for many people.[17]

3.2 KEY FINDINGS

Culver City is in the western portion of Los Angeles County, which is highly developed and urbanized and subject to noise from a variety of sources typical of an urban environment. As an urbanized and generally built-out city, Culver City experiences a set of noise issues common to urbanized areas.

- Major sources of noise in Culver City, whose noise affects everyday life, include transportation facilities (aircraft overflight from LAX, train noise along railroad tracks, vehicular traffic noise on major arterials and freeways) and stationary sources (industrial/warehouse uses,

[13] Caltrans, Transportation and Construction Vibration Guidance Manual, page 1, September 2013.

[14] FTA, Transit Noise and Vibration Impact Assessment, September 2018, Section 7.2.

[15] Ibid 14, Section 6.4.

[16] Ibid 14, Section 7.2.

[17] Ibid 14, Section 6.2.

school/parks, construction/maintenance activities, late-night entertainment, machinery sources).

- Noise measurements show that generally, noise levels in Culver City have increased since 1995 when the Noise Element was prepared. The increase in noise levels is likely attributed to an increase in traffic volumes associated with overall increases in jobs and population in and around Culver City. There has also been an increase in aircraft overflight to and from LAX.
- Noise and vibration standards and guidelines have been adopted at the federal, state, and local levels. California's Department of Health Services established land use and noise compatibility guidelines for consideration when determining the siting of appropriate land uses. Culver City adopted these guidelines in the 1995 Noise Element. The Noise Element also set limits on interior and exterior noise exposure levels for various land uses (residential, commercial retail, office space, open space and parks). The Culver City Municipal Code has standards limiting the timing of construction activity.

3.3 NOISE SENSITIVE RECEPTORS

According to the 1995 Noise Element, a noise-sensitive receptor would be any location where excessive noise levels would interfere with an individual's normal sleeping activities, normal conversation, or ability to work. As mandated by the State, noise-sensitive receptors include residential neighborhoods, hospitals, hotels and motels, trailer parks, long-term medical or mental care facilities, various public and private schools, libraries, business and professional office buildings, churches and other places of worship, concert halls, and restaurants. These are areas where the occupants are more susceptible to the adverse effects of exposure to noise. Extra care must be taken when dealing with noise sources near areas recognized as sensitive receptors. Sensitive wildlife habitat, including the habitat of rare, threatened, or endangered species, are also considered noise-sensitive, and shall be protected from excessive noise exposure.

Certain land uses are considered more sensitive to noise than others. Noise-sensitive land uses are locations where people reside or where the presence of unwanted sound could adversely affect the use of the land.

3.4 EXISTING AMBIENT NOISE LEVELS

A community noise measurement survey was conducted in Culver City in October 2019 to assist in identifying existing ambient noise levels. This section presents the results of the survey as well as the noise sources and noise-sensitive land uses present in the city.

NOISE MEASUREMENTS

The survey reviewed noise issues and identified major noise sources in the community, using 32 sites to measure the noise environment in Culver City. The measurement locations were selected based on proximity to major noise sources and noise sensitivity of the surrounding land uses. Also, several sites were selected because the City received complaints due to residential uses abutting a commercial corridor or being located in the overflight path of LAX. The measurement locations are shown in **Figure 3-2.** Twenty-eight measurement locations were at or near the same area as those measurement

locations used in the 1995 Noise Element. A comparison of the data from these sites is under the Findings section and reveals how the noise environment throughout the city has changed in the past 24 years.

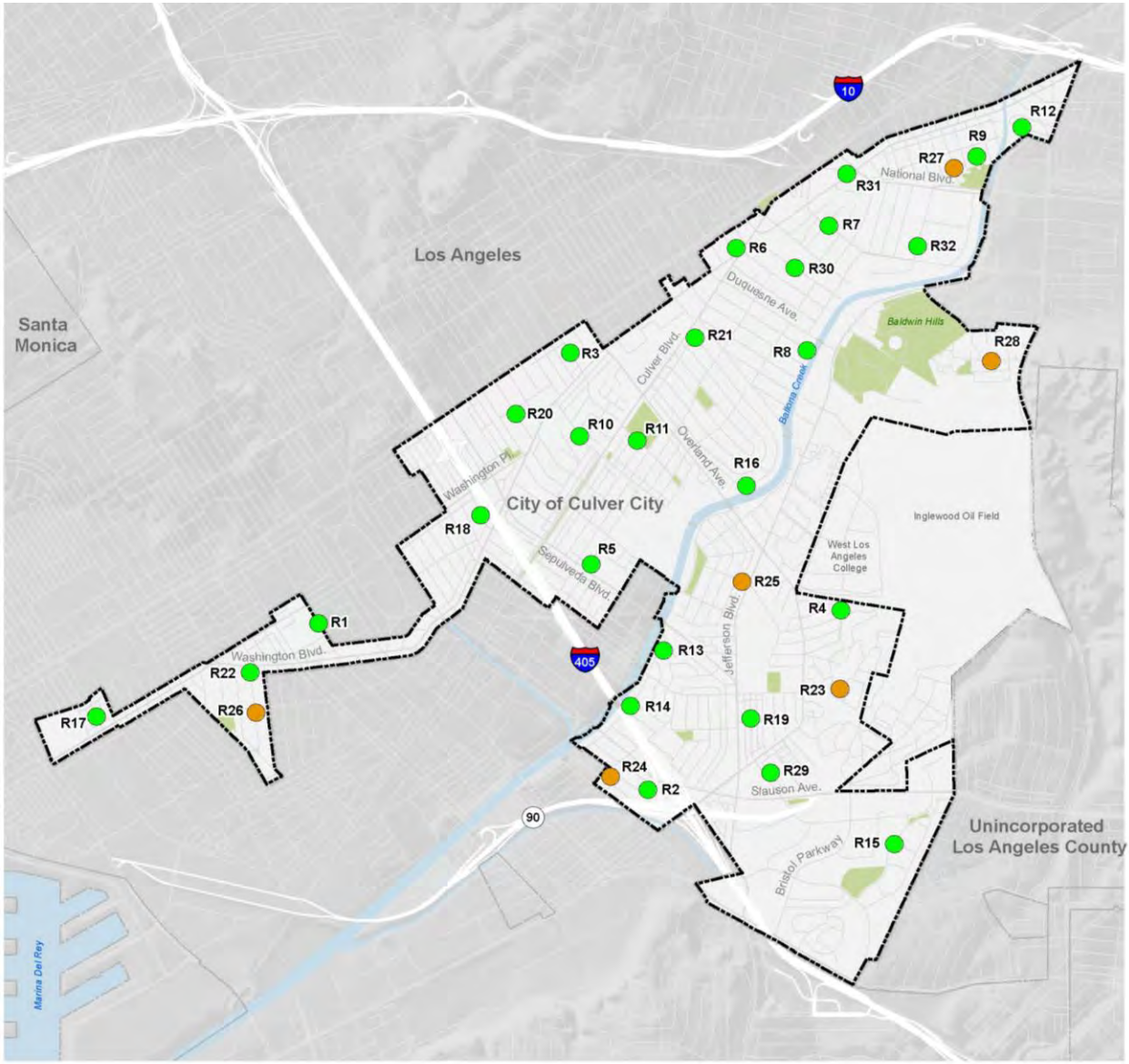
The noise measurement survey was conducted in two phases. The short-term (15-minute Leq and percentile distribution) measurements were taken on October 22-24, 2019, during the day between 9:00 AM and 5:00 PM, at 26 locations throughout the city. The long-term (24-hour Leq and Community Noise Equivalent Level [CNEL]) measurements were taken at six locations throughout the city between October 22 and October 25, 2019.

Table 3-1 shows the location and the primary noise-sensitive land uses surrounding each of the short-term noise measurement sites. These data are intended to identify noise levels over a broad range of the city and are not an assessment of impacts at these sites. In all cases, the major sources of noise are motor vehicles on local streets. The maximum noise levels are usually owing to trucks or loud cars, with notable contributions from aircraft overflights and people. The minimum noise levels occur when traffic is very light when no cars or aircraft are passing by, and when child-related activities are minimal.

The results of the ambient long-term noise measurements are shown in **Table 3-2**, including daytime and nighttime Leq as well as the calculated CNEL for the given 24-hour period.

There is a morning peak hour after which traffic noise remains somewhat consistent throughout the day, until the afternoon peak hour when the traffic noise goes up again and then tapers off when traffic volumes subside. In the evening, traffic, and noise decrease to very low levels in the middle of the night. This pattern is typical for an urban area.

Figure 3-2: Noise Measurement Locations in Culver City



Sources: City of Culver City, 2019; County of Los Angeles, 2019. ESA, 2019

0 0.25 0.5 1 Mile

Jurisdictional Boundaries

City of Culver City City Limits

Jurisdictional Boundaries

Noise Measurement Locations

Short Term Measurement Locations

Long Term Measurement Locations

Other Features

Water

Parks and Open Spaces

Table 3-1: Short-Term Ambient Noise Measurement Results in Culver City, 2019

Site	General Location of Noise Measurement	dBA L_{eq}	Orientation/Type of Sensitive Receptor
R1	Grand View Boulevard between Washington Place and Herbert Street	58.6	Multi-family residential to the east, single-family residential to the southeast, and commercial to the west
R2	Emporia Place at junction of Emporia Avenue and Selmaraine Drive	58.8	Single-family to the north, west, and northwest and I-405 and SR-90 interchange to the east
R3	Midway Avenue between Venice Boulevard and Washington Boulevard	62.2	Single-family residential to the west and south and commercial center to the north and east
R4	Near the corner of Drakewood Avenue and Flaxton Street	46.2	Surrounded by single-family residential
R5	Braddock Drive just north of Sepulveda Boulevard	63.4	Single-family residential to the north, commercial uses to the south, east, and west
R6	Along Watseka Avenue near alleyway connecting Watseka Avenue and Cardiff Avenue	62.4	Multi-family residential to the west and commercial uses to the north, south, and east
R7	Higuera Street between Krueger Street and Hubbard Street	67.0	Surrounded by single-family residential
R8	Lincoln Avenue near cul-de-sac above Ballona Creek	51.9	Single-family residential to the north, west, and south
R9	Roberts Avenue across from Washington School	65.0	Single-family residential, open space, and Washington School
R10	Near corner of Elenda Street and Marietta Avenue	66.0	Surrounded by single-family residential
R11	Coombs Avenue across from Veterans Memorial Park	63.9	Veterans Memorial Park to the north and single-family residential to the south, east, and west
R12	Blackwelder Street west of La Cienega Boulevard	65.4	Light Industrial and commercial uses
R13	Near corner of Orville Street and McDonald Street	45.6	Single-family residential to the south, east, and west and Ballona Creek to the north
R14	Near corner of McDonald Street and Purdue Avenue	56.9	Single-family residences to the east, north, and south and freeway overpass to the west
R15	Near corner of Buckingham Parkway and Windsor Way	61.9	Multi-family residences to the north, east, and south and commercial center to the west
R16	At the terminus of Jasmine Avenue west of Le Bourget Avenue	49.9	Single-family residences to the north, east, and south and multi-family residences to the west
R17	Walgrove Avenue between Zanja Street and Washington Boulevard	60.4	Surrounded by single-family residential and one block from Costco
R18	Globe Avenue near vacant lot west of I-405	61.1	Single-family residences to the west and northwest and I-405 overpass to the east

Site	General Location of Noise Measurement	dBA L_{eq}	Orientation/Type of Sensitive Receptor
R19	Near corner of Hannum Avenue and Bush Way	55.8	Surrounded by single-family residential and commercial corridor on Sepulveda Boulevard to the west
R20	Near Corner of Huron Avenue and Matteson Avenue	59.8	Surrounded by single-family residential
R21	Jasmine Avenue near Culver Boulevard	58.5	Single- and multi-family residences to the south and east. Commercial uses to the north and east
R22	Near corner of Washington Boulevard and Mildred Avenue	65.1	Single-family residences to the south and commercial uses to the east, west, and north
R29	Hannum Avenue near entrance to Playa Pacific community	70.2	Multi-family residences to the north, east, and south and commercial center to the west
R30	Van Buren Place across from Linwood E. Howe Elementary School	56.4	Linwood E. Howe Elementary School to the west and single-/multi-family residences to the northwest, south, and east
R31	Near corner of Washington Boulevard and National Boulevard	70.1	Multi-family residences to the east and light industrial/commercial uses to the north, south, and west
R32	Near corner of Hayden Avenue and Warner Drive	61.0	Light industrial/commercial uses

Source: ESA, 2019.

Table 3-2: Long-Term Ambient Noise Measurement Results in Culver City, 2019

Site	2019 Dates	General Location of Noise Measurement	Hourly Leq dBA				CNEL dBA	Orientation/ Type of Sensitive Receptor
			Daytime (7 AM to 10 PM)	Daytime Average	Night-time (10 PM to 7 AM)	Night-time Average		
R23	October 21 - 22	Near northeast corner of Tellefson Road and Cranks Road	46.2 - 60.9	53.8	43.6 - 64.3	56.0	62.2	Single-family residential uses in every direction
R24	October 23 - 24	Near northeast corner of Port Road and Emporia Avenue	56.7 - 61.5	59.9	56.9 - 64.1	60.4	66.9	Single-family residential uses in every direction
R25	October 21 - 22	Near southeast corner of Pickford Way and Kinston Avenue	52.8 - 68.1	60.3	47.0 - 57.9	52.6	61.6	Single-family residential uses in every direction, shopping center across

Site	2019 Dates	General Location of Noise Measurement	Hourly Leq dBA				CNEL dBA	Orientation/ Type of Sensitive Receptor
			Daytime (7 AM to 10 PM)	Daytime Average	Night-time (10 PM to 7 AM)	Night-time Average		
								Jefferson Blvd to the east
R26	October 21 - 22	Near southeast corner of Mildred Avenue and Louise Avenue	54.2 - 69.3	62.3	43.2 - 65.5	56.8	64.7	Single-family residential uses in every direction
R27	October 23 - 24	Halfway down Fay Avenue south of Jacob Street	55.3 - 61.7	58.5	49.7 - 61.3	56.6	63.6	Single-family residential uses in every direction, Syd Kronenthal Park to the east
R28	October 22 - 23	Near southwest corner of Wrightcrest Drive and Lenawee Avenue	55.7 - 63.3	59.7	50.4 - 65.0	57.7	64.7	Single- and multi-family residential uses in every direction

Source: ESA, 2019.

FINDINGS

The ambient noise measurement results conducted for the 2019 GPU are compared to those corresponding measurement sites conducted in the 1995 Noise Element. **Table 3-3** lists these ambient noise levels for the two studies. For a total of 22 repeated noise measurement locations, there are 11 sites with ambient noise levels higher than those measured in 1995, and 11 sites with ambient noise levels lower than those measured in 1995. Those with higher ambient noise levels now vary with increases ranging from 0.4 dBA higher to 14.4 dBA higher than their corresponding 1995 levels. Those with lower ambient noise levels now vary with decreases ranging from 0.1 dBA to 8.4 dBA lower than their corresponding 1995 levels.

Even with the growth in the past 24 years in most of the city, the measured noise levels only show a snapshot in time of the ambient noise levels within the areas that each noise measurement site is located. Many community noise events, such as passing vehicles and barking dogs, may contribute to the noise levels measured during that specific measurement period. Measurement sites R29, R31, and R32 are new measurement locations that are closer to commercial or industrial uses and show higher ambient noise levels than one new measurement site, R30, primarily surrounded by residential uses.

For the long-term, 24-hour noise measurements at the same six locations as those conducted in 1995, the CNEL levels at all six locations are higher compared to their corresponding 1995 levels. **Table 3-4** lists these long-term ambient noise levels for the two studies. The increase in CNEL ranges from 2.5

dBA to 11.8 dBA. These increases in long-term ambient noise levels in the same communities show that, over the past 24 years, growth in the city has overall raised the ambient noise levels throughout the city, with some areas showing perceptibly higher ambient noise than the other areas in the city.

The noise measurements show that generally, noise levels in Culver City have increased since 1995. The increase in noise levels is likely attributed to an increase in traffic volumes associated with overall increases in jobs and population in Culver City and the surrounding cities. Other community activities or events such as children playing outdoors has also increased as a result of overall growth in Culver City, further contributing to increases in ambient noise levels. There has also been an increase in aircraft overflight to and from LAX, discussed in further detail below under sections titled Noise Sources and Planned Improvements.

Table 3-3: Comparison of Short-term Ambient Noise Measurement Results in Culver City, 2019

Site	General Location of Noise Measurement	dBA L_{eq} 2019 GPU	dBA L_{eq} 1995 GPU	Difference dBA	Increase in Ambient Noise?
R1	Grand View Boulevard between Washington Place and Herbert Street	58.6	63	(4.4)	No
R2	Emporia Place at junction of Emporia Avenue and Selmaraine Drive	58.8	61	(2.2)	No
R3	Midway Avenue between Venice Boulevard and Washington Boulevard	62.2	60	2.2	**Yes**
R4	Near the corner of Drakewood Avenue and Flaxton Street	46.2	52	(5.8)	No
R5	Braddock Drive just north of Sepulveda Boulevard	63.4	49	14.4	**Yes**
R6	Along Watseka Avenue near alleyway connecting Watseka Avenue and Cardiff Avenue	62.4	70	(7.6)	No
R7	Higuera Street between Krueger Street and Hubbard Street	67.0	64	3.0	**Yes**
R8	Lincoln Avenue near cul-de-sac above Ballona Creek	51.9	49	2.9	**Yes**
R9	Roberts Avenue across from Washington School	65.0	55	10.0	**Yes**
R10	Near corner of Elenda Street and Marietta Avenue	66.0	56	10.0	**Yes**
R11	Coombs Avenue across from Veterans Memorial Park	63.9	56	7.9	**Yes**
R12	Blackwelder Street west of La Cienega Boulevard	65.4	65	0.4	**Yes**
R13	Near corner of Orville Street and McDonald Street	45.6	54	(8.4)	No
R14	Near corner of McDonald Street and Purdue Avenue	56.9	63	(6.1)	No

Site	General Location of Noise Measurement	dBA L_{eq} 2019 GPU	dBA L_{eq} 1995 GPU	Difference dBA	Increase in Ambient Noise?
R15	Near corner of Buckingham Parkway and Windsor Way	61.9	62	(0.1)	No
R16	At the terminus of Jasmine Avenue west of Le Bourget Avenue	49.9	51	(1.1)	No
R17	Walgrove Avenue between Zanja Street and Washington Boulevard	60.4	64	(3.6)	No
R18	Globe Avenue near vacant lot west of I-405	61.1	60	1.1	**Yes**
R19	Near corner of Hannum Avenue and Bush Way	55.8	57	(1.2)	No
R20	Near Corner of Huron Avenue and Matteson Avenue	59.8	59	0.8	**Yes**
R21	Jasmine Avenue near Culver Boulevard	58.5	60	(1.5)	No
R22	Near corner of Washington Boulevard and Mildred Avenue	65.1	59	6.1	**Yes**
R29	Hannum Avenue near entrance to Playa Pacific community	70.2	--	NA	NA
R30	Van Buren Place across from Linwood E. Howe Elementary School	56.4	--	NA	NA
R31	Near corner of Washington Boulevard and National Boulevard	70.1	--	NA	NA
R32	Near corner of Hayden Avenue and Warner Drive	61.0	--	NA	NA

Source: Culver City, 1995; ESA, 2019.

Table 3-4: Comparison of Long-term Ambient Noise Measurement Results in Culver City, 2019

Site	General Location of Noise Measurement	dBA CNEL 2019 GPU	dBA CNEL 1995 GPU	Difference dBA	Increase in Ambient Noise?
R23	Near northeast corner of Tellefson Road and Cranks Road	62.2	53.1	9.1	**Yes**
R24	Near northeast corner of Port Road and Emporia Avenue	66.9	56.6	10.3	**Yes**
R25	Near southeast corner of Pickford Way and Kinston Avenue	61.6	59.1	2.5	**Yes**
R26	Near southeast corner of Mildred Avenue and Louise Avenue	64.7	52.9	11.8	**Yes**
R27	Halfway down Fay Avenue south of Jacob Street	63.6	59.8	3.8	**Yes**
R28	Near southwest corner of Wrightcrest Drive and Lenawee Avenue	64.7	53.3	11.4	**Yes**

Source: Culver City, 1995; ESA 2019.

3.5 EXISTING AMBIENT VIBRATION LEVELS

Aside from periodic construction work that may occur throughout the city, other sources of ground-borne vibration include heavy-duty vehicular travel on local roadways (e.g., refuse trucks, delivery trucks, and transit buses) and trains along the Metro E Line (Expo). Trucks and buses typically generate ground-borne vibration velocity levels of around 63 VdB, and these levels could reach 72 VdB where trucks and buses pass over bumps in the road. In terms of PPV levels, a heavy-duty vehicle traveling at 50 feet can result in a vibration level of approximately 0.001 inches per second.[18]

3.6 NOISE SOURCES

Sources of noise in Culver City fall into two major categories: transportation-related and stationary-related.

TRANSPORTATION-RELATED NOISE

Transportation-related noise sources can be categorized by freeways, aircraft overflights, major and minor arterial roadways, and rail lines. These include noise from automobiles, trucks, motorcycles, trains, and aircraft. Motor vehicle noise is of concern because it is characterized by a high number of individual events that often combine to create a sustained noise level, and because of its proximity to areas sensitive to noise exposure.

Culver City is in an area of southern California that is saturated by regional noise sources, such as freeways and airports. These sources generate noise that can be heard in noise-sensitive areas throughout many areas of the city. Three major freeways border the city. The Marina (SR-90) Freeway is in the southwest area of the city and ends at Slauson Avenue. The San Diego (I-405) Freeway runs through the western half of the city. The Santa Monica (I-10) Freeway, the busiest freeway in the state, runs adjacent to the northern city limits. Unlike the other two freeways, the I-10 does not enter the city. However, I-10 noise does affect Culver City because of its proximity to the northern city limits. The city is also located within a few miles of two busy southland airports. LAX, the busiest airport in southern California, is located approximately two miles to the southwest. Santa Monica Airport, a municipal general aviation airport, is located about two miles north of the western part of Culver City. As a result, the city is subject to a variety of aircraft and helicopter noise events.

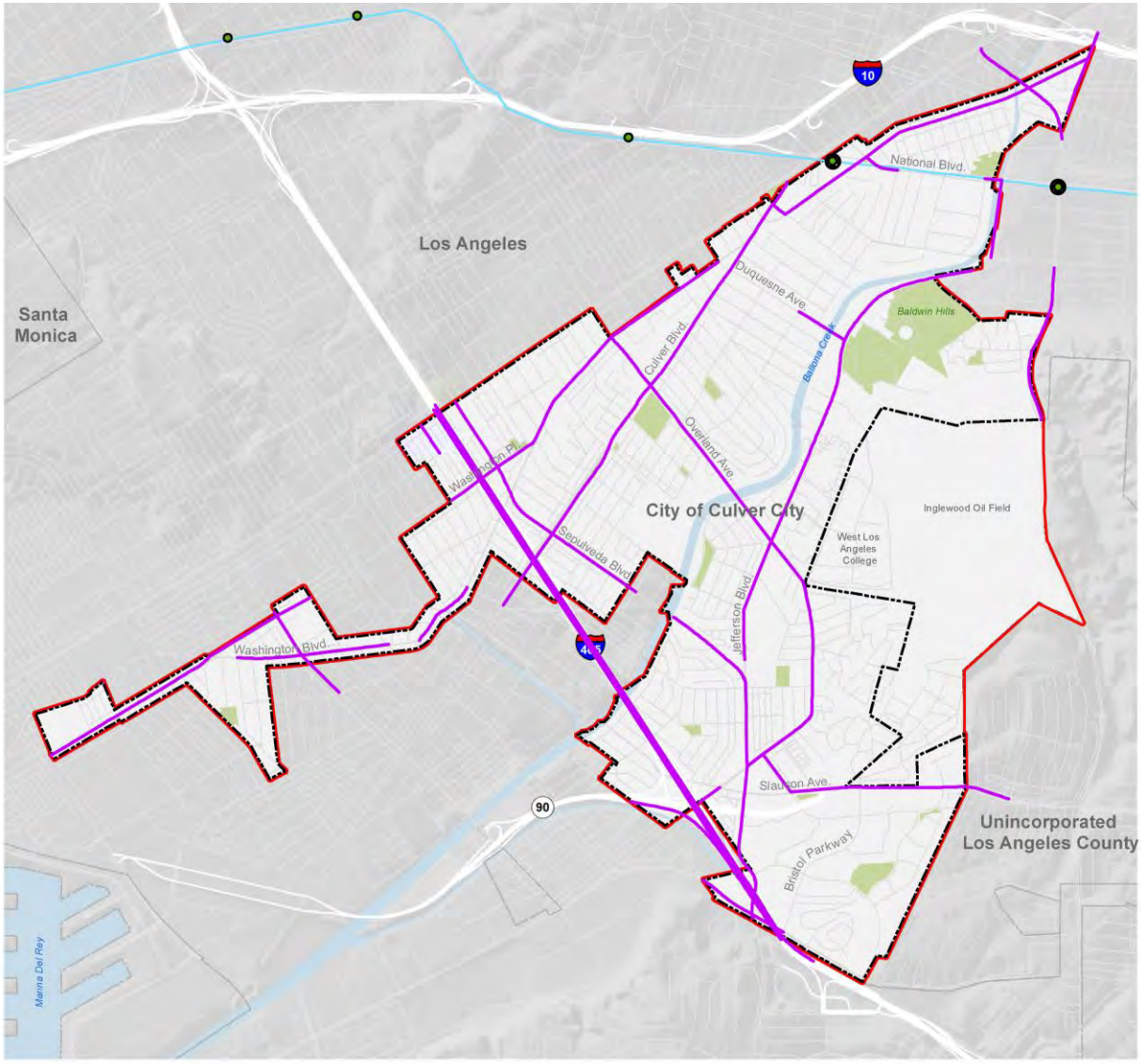
Aircraft operations, though infrequent, may generate high noise levels that can be disruptive to human activity. The city is not within the aircraft noise exposure area or 65 dBA CNEL noise contour of LAX. However, Culver City is in the flight path for landings at LAX, when planes are coming from the north and the west, crossing over certain parts of Santa Monica and other areas of the Westside, flying through Culver City, as the planes head further east before turning around to make their final descent into LAX. Therefore, aircraft overflight from LAX operations contributes to the ambient noise level in the city.

[18] Ibid 14, Figure 6-4.

In addition to the freeways and airports described above, major roadways and rail lines are major noise sources in the city:

- The following roadways pass through the city's boundary and carry volumes of traffic that exceed 20,000 vehicles a day. This amount of traffic volume is associated with high traffic noise with a 65 dBA Ldn noise contour extending beyond the roadway right-of-way:
  - Sepulveda Boulevard
  - Slauson Avenue
  - W. Slauson Avenue
  - Culver Boulevard
  - Overland Avenue
  - Washington Boulevard
  - Washington Place
  - Jefferson Boulevard
  - W. Jefferson Boulevard
  - Sawtelle Boulevard
  - S. Centinela Avenue
  - W. Centinela Avenue
  - National Boulevard
  - Playa Street
  - Hannum Avenue
  - Duquesne Avenue
  - S. Fairfax Avenue
- In addition to the roadway segments listed above that have a minimum of 20,000 average vehicles a day, there are also the following major arterials that pass within city limits that are likely associated with high noise levels: Venice Boulevard, Short Avenue, Inglewood Boulevard, and Barrington Avenue.
- The Los Angeles Metro Rail E Line (Expo) passes through the city in an east-west orientation. The E Line's Culver City Station is located just east of the intersection of Venice Boulevard and S. Robertson Boulevard.

Figure 3-3: Roadways and Rail Lines with Major Noise Sources in Culver City



Sources: City of Culver City, 2019; Fehr and Peers, 2020.

Jurisdictional Boundaries

- City of Culver City City Limits
- City of Culver City Sphere of Influence
- Jurisdictional Boundaries

Roadway Segments with Average Daily Traffic of 20,000 or more Vehicles

0 0.25 0.5 1 Mile

Transportation Features

- Expo Line
- Metro Station

Other Features

- Water
- Parks and Open Spaces

STATIONARY-RELATED NOISE

Noise that falls into the stationary source category typically includes industrial and commercial, entertainment, sporting or other outdoor events including those at educational institutions, construction and maintenance, machinery, and passenger and delivery vehicle noise. Passenger and delivery vehicle noise is included with the stationary sources because the noise occurs at certain sites where the activity is generated. In Culver City, these sources include business centers, such as Fox Hills Mall and Studio Village Shopping Center; employment centers that range in size from major movie studios, such as Sony Pictures Studios; small industrial operations, such as Westside Business Park; and institutional sources, such as West Los Angeles Community College and Culver City High School.

Many of the smaller operations are in strip-commercial zones along Washington and Sepulveda Boulevards next to residential land use. The types of noise disturbance from stationary source activities can range from short-duration, loud events, such as trucks accessing a facility, to continuous noise from mechanical sources, such as refrigeration units or compressors. Stationary sources in the city generally include the following:

- **Industrial/warehouse uses:** Most of the city's industrial/warehouse uses are located in the northeast corner of the city's boundary, with some located near the city's northern boundary.
- **Schools/Parks:** Schools and neighborhood parks are located throughout the city, mostly within or near residential areas, generate noise due to sports and other outdoor activities. Sports and outdoor events at West Los Angeles College, located to the southeast of the city, Veterans Memorial Park, and Culver City High School are also sources of noise for the local residents.
- **Construction and maintenance activity:** The primary noise sources during construction and maintenance are excavating equipment, trucks traveling on and off-site, and machinery and power tools required for the project. Although construction and maintenance activities may only occur from a few days to a couple of months for smaller projects, the noise levels from these activities and projects with longer-term construction can at times, be quite high and very annoying to surrounding residents.
- **Late-night entertainment (restaurants, bars, and clubs) activity:** The primary noise sources at venues supporting late-night entertainment are people and their automobiles (including parking lot noise) at very late hours, and live or recorded music emanating from an establishment. Due to its growing popularity, Downtown Culver City is an area with increasing noise from late-night activity.
- **Machinery noise:** The primary sources of machinery noise in residential areas include pumps from pools and spas, power tools in garages, gardening tools, and gasoline-powered leaf blowers. Specific issues of concern are enforcing the noise ordinance, especially at night, and whether or not the ordinance is an effective means of controlling machinery noise.

The City should consider noise impacts as they identify where new development could occur when analyzing land use alternatives.

3.7 PLANNED IMPROVEMENTS

The City of Culver City regularly coordinates with neighboring cities, as well as state and federal elected officials, to address potential and ongoing noise impacts (and other impacts, such as air quality) related to projects proposed at LAX. On July 19, 2019, the City requested permission from the United States Court of Appeals for the Ninth Circuit to intervene in the lawsuit brought in June 2019 by the City of Los Angeles, challenging changes made by the Federal Aviation Administration (FAA) in three flight paths for arriving aircraft at LAX. Even though the City believes that FAA's changes may potentially cause more aircraft to fly over Culver City and surrounding communities, with resulting noise and air quality impacts, the FAA did not perform an environmental review for the new arrival routes. Culver City asked the Court to allow Culver City to join with Los Angeles in ensuring that the FAA will take responsibility for, and, where necessary, mitigate the impacts of its new arrival routes. Permission to intervene was granted August 22, 2019, and the lawsuit is ongoing. (Culver City 2019d; Culver City 2019e)

The City does not have any planned citywide projects to attenuate noise. Past projects that may have done so include the placement of sound walls along the Metro E Line (Expo) when the line was being constructed and placement of temporary sound blankets at West LA College during construction (recently removed after being in place for 10 years). A project that may have exacerbated noise conditions involved the removal of trees by Caltrans from the I-405 right-of-way in the Sunkist Park neighborhood near El Marino Elementary School during construction activities. The community has expressed a desire to have new trees planted to help attenuate freeway noise and the City will be contacting Caltrans with the request (Herbertson, 2020).

3.8 REGULATORY SETTING

NOISE STANDARDS

FEDERAL

Many federal government agencies, such as the Federal Aviation Administration (FAA), Federal Highway Administration (FHWA), Federal Railroad Administration (FRA), Federal Transit Administration (FTA), Department of Housing and Urban Development (HUD), have adopted noise standards for projects that they fund or have jurisdiction over, or for projects that occur on land owned by the federal agency.

Federal noise standards also include OSHA regulations, which apply to workers to safeguard the hearing of workers exposed to occupational noise. Federal regulations also establish noise limits for medium and heavy trucks of 80 dBA at 15 meters (or approximately 50 feet) from the vehicle pathway centerline. These controls are implemented through regulatory controls on truck manufacturers.

STATE

The California Department of Health Services (DHS) has established guidelines for evaluating the compatibility of various land uses as a function of community noise exposure. These guidelines were

adopted by the City and are included in the 1995 Noise Element. Community noise exposure levels for specific land uses are classified into four categories:

- 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. Normally acceptable levels range from 50-70 CNEL, depending on the land use type.
- 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. Conditionally acceptable levels range from 50-75 CNEL, depending on the land use type.
- 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 and needed noise insulation features included in the design. Normally unacceptable levels range from 70-80 CNEL, depending on the land use type.
- Clearly Unacceptable: New construction or development should generally not be undertaken. Clearly unacceptable levels are above 75 or 80 CNEL, depending on the land use type.

Based on the results of the noise measurements described in Section 4.3, there are land uses being exposed to conditionally acceptable and normally unacceptable CNEL.

The State requires each county and city to prepare and adopt a comprehensive long-range General Plan for its physical development, including a noise chapter (Sections 65302(f) and y 65302(g) of the California Government Code). The noise chapter must: (1) identify and appraise noise problems in the community; (2) recognize Office of Noise Control guidelines; and (3) analyze and quantify current and projected noise levels.

The State establishes noise limits for vehicles licensed to operate on public roads. For heavy trucks, the state pass-by standard is consistent with the federal limit of 80 dBA. The State pass-by standard for light trucks and passenger cars (less than 4.5 tons, gross vehicle rating) is also 80 dBA at 15 meters (or approximately 50 feet) from the centerline. These standards are implemented through controls on vehicle manufacturers and by legal sanction of vehicle operators by State and local law enforcement officials.

The State establishes noise insulation standards for new multifamily residential units, hotels, and motels that would be subject to relatively high levels of transportation-related noise. These requirements are collectively known as the California Noise Insulation Standards (Title 24, California Code of Regulations). The noise insulation standards set forth an interior standard of 45 dBA L_{dn} in any habitable room. They require an acoustical analysis demonstrating how dwelling units have been designed to meet this interior standard, where such units are proposed in areas subject to noise levels greater than 60 dBA L_{dn}. Local jurisdictions typically enforce Title 24 standards through the building permit application process.

LOCAL

Local noise issues are addressed through the implementation of general plan policies, including noise and land use compatibility guidelines, and enforcement of noise ordinance standards.

General Plan Noise Element

The Noise Element includes standards developed from those of several federal and State agencies, including the FHA, USEPA, HUD, the American National Standards Institute, and DHS. These standards set limits on the noise exposure level for various land uses (residential, commercial retail, office space, open space, and parks). The standards establish limits of 45-55 dBA for interior CNEL and 65 dBA for exterior CNEL, depending on the land use type. The Noise Element also includes the State's land use compatibility guideline, which illustrates land use compatibility concerning noise. These standards and criteria are intended to inform a GPU process to reduce future noise and land use incompatibilities.

The Noise Element also includes Policy 2A to develop a comprehensive ordinance that establishes noise regulations on stationary noise sources:

> *Create a comprehensive ordinance establishing noise regulation criteria, and standards for noise sources and receptors to include but not be limited to the following:*
>
> - *Noise reduction features during site planning to mitigate anticipated noise impacts on affected noise sensitive land uses, such as schools, hospitals, convalescent homes, and libraries.*
> - *Temporary sound barrier installation at construction site if construction noise is impacting nearby noise sensitive land uses.*
> - *Noise abatement and acoustical design criteria for construction and operation of any new development.*

Municipal Code

Chapter 9.07 of the Culver City Municipal Code (CCMC) provides specific noise restrictions and exemptions for noise sources within the city. CCMC noise regulations state that construction activity shall be prohibited, except between the hours of 8:00 AM and 8:00 PM Mondays through Fridays, 9:00 AM and 7:00 PM Saturdays, and 10:00 AM and 7:00 PM Sundays. It is prohibited for any person to operate any radio, disc player, cassette player, or similar device at a construction site in a manner that results in noise levels that are audible beyond the construction site property line. Chapter 9.07 does not establish dba limits for construction noise. Section 9.07.055 of the CCMC's Noise Regulations Chapter 9.07 also regulates sound-amplifying equipment, requiring permits and limiting the time of day during which such equipment can be used.

VIBRATION STANDARDS

FEDERAL

The FTA adopted vibration standards that can be used to evaluate potential building damage impacts related to construction activities, ranging from 0.12 in/sec PPV for buildings extremely susceptible to vibration damage to 0.50 in/sec PPV for reinforced-concrete, steel or timber buildings (without plaster) (FTA, 2018). The FTA has also adopted standards associated with human annoyance for

ground-borne vibration impacts for three different land use categories (Category 1, 2, and 3). The FTA defines Category 1 as buildings where vibration would interfere with operations within the building, including vibration-sensitive research and manufacturing facilities, hospitals with vibration-sensitive equipment, and university research operations. Category 2 refers to all residential land uses and any buildings where people sleep, such as hotels and hospitals. Category 3 refers to institutional land uses such as schools, churches, other institutions, and quiet offices that do not have vibration-sensitive equipment but still have the potential for activity interference. The standards vary for category 2 and 3 depending on the frequency of a vibration event):

- Vibration Category 1 – High Sensitivity: 65 VdB
- Vibration Category 2 – Residential: 75 or 80 VdB
- Vibration Category 3 – Institutional: 78 or 83 VdB

STATE

There are no relevant State vibration standards. Moreover, according to the Transportation- and Construction-Induced Vibration Guidance Manual (2013), there are no official Caltrans standards for vibration. However, this manual provides guidelines for assessing vibration damage potential to various types of buildings, ranging from 0.08 to 0.12 in/sec PPV for extremely fragile historic buildings, ruins, and ancient monuments to 0.50 to 2.0 in/sec PPV for modern industrial/commercial buildings

LOCAL

The City of Culver City has no adopted vibration standards.

CHAPTER 4 BIOLOGICAL RESOURCES

4.1 INTRODUCTION

This section describes biological resources within the GPU Planning Area, which includes the City of Culver City and the City's Sphere of Influence within the Baldwin Hills. The focus of the section is on existing natural communities; sensitive biological resources, including special-status species and sensitive natural communities; critical habitat and jurisdictional wetland features; and key issues and proposed enhancements.

4.2 KEY FINDINGS

The vast majority of the Planning Area is urbanized and has been heavily developed; however, significant remnant patches of native vegetation remain, particularly within the northwest section of the Kenneth Hahn State Recreation Area and IOF. These patches of native vegetation and to a lesser degree, ornamental and landscaped vegetation existing elsewhere within the GPU Planning Area, provide suitable habitat for a variety of special-status plant and wildlife species and nesting birds. Limited jurisdictional wetland features (i.e., concrete-channelized portions of Ballona Creek) traverse the GPU Planning Area.

Potential planning issues include future development within or adjacent to the remnant patches of native vegetation, as this may harm special-status species. Proposed natural resource improvements include the possible restoration of Ballona Creek that may include the designation of this feature as a City park and protection and enhancement of the biological resources at the IOF as part of ongoing maintenance and use of the oil field, with a long-term vision of oil decommissioning and change in use.

4.3 SETTING

LOCAL SETTING

The majority of the GPU Planning Area has been heavily developed and land use primarily consists of residential neighborhoods interspersed with commercial, industrial, and other non-residential uses. The city is bisected by various roads and major highways, most notably I-405 and SR-90 with I-10 near the city's northern city limit. Few undeveloped or semi-open space areas remain, including Blair Hills, Culver City and Fox Hills Parks, Hillside Memorial and Holy Cross Cemeteries, and portions of the IOF and Kenneth Hahn State Recreation Area. Concrete-channelized portions of Ballona Creek traverse the GPU Planning Area eventually opening into a soft-bottomed channel downstream and outside the city limits, flowing into the Pacific Ocean adjacent to the Ballona Wetlands located in the City of Los Angeles.

VEGETATION COMMUNITIES AND HABITAT

Various habitats and vegetation communities are present within the GPU Planning Area including Coastal Scrub, Coastal Scrub – Degraded, Channelized Streambed (Ballona Creek), Coast Live Oak Woodland, Non-native/Ornamental, Non-native Tree Stands, and Disturbed. Most of the city is

developed and mapped as Urban/Developed. **Figure 4-1** depicts all communities mapped within the GPU Planning Area and each is described in detail below.

COASTAL SCRUB

Coastal scrub is restricted to the eastern portion of the GPU Planning Area, and within the IOF and Kenneth Hahn State Recreation Area. Small, remnant patches of this natural community are situated amongst unpaved and gravel access roads and hiking trails, oil infrastructure and various hardscape.

This community is characterized by a shrub layer of plant species such as California sagebrush (*Artemisia californica*), coyote brush (*Baccharis pilularis*), bush sunflower (*Encelia californica*) and deerweed (*Acmispon glaber*) dominant intermixed with various other plant species including sticky monkey-flower (*Diplacus aurantiacus*), California buckwheat (*Eriogonum fasciculatum*), giant wild rye (*Elymus condensatus*), mock heather (*Ericameria ericioides*), toyon (*Heteromeles arbutifolia*), and black sage (*Salvia mellifera*).

A sparse herbaceous plant layer may be present as well, including various non-native grasses and forbs such as black mustard (*Brassica nigra*), rip-gut brome (*Bromus diandrus*), red brome (*B. madritensis* ssp. *rubens*), fennel (*Foeniculum vulgare*), and shortpod mustard (*Hirschfeldia incana*).

COASTAL SCRUB - DEGRADED

Coastal scrub – degraded, is also restricted to the eastern portion of the GPU Planning Area, within the IOF and Kenneth Hahn State Recreation Area, interspersed throughout the remnant patches of coastal scrub natural community. This plant community is similar to the coastal scrub vegetation; however, it supports less than a 50 percent cover of native species. Dominant non-native grasses and forbs present within this community include black mustard, castor bean (*Ricinus communis*), fennel, red brome, ripgut brome, and shortpod mustard.

CHANNELIZED STREAMBED (BALLONA CREEK)

Roughly a total of three linear miles of Ballona Creek traverses the GPU Planning Area. The portions of the creek are concrete-lined and up to 200 feet in width, bank-to-bank. Outside city limits, it eventually opens up into a soft-bottomed, concrete-lined channel near Marina Del Rey and terminates at the Pacific Ocean, adjacent to the Ballona Wetlands. The portion of the creek within the GPU Planning Area is virtually devoid of vegetation, aside from weedy, herbaceous species present along the adjacent upland or arising from anomalies in the concrete channel.

COAST LIVE OAK WOODLAND

A small, remnant swath of coast live oak woodland was documented within a steep but shallow canyon in the eastern portion of the GPU Planning Area, within the IOF of the City's Sphere of Influence. A dense tree and shrub layer characterizes this community with coast live oak (*Quercus agrifolia*) as the dominant plant species; however, it is otherwise very similar to the adjacent coastal scrub vegetation.

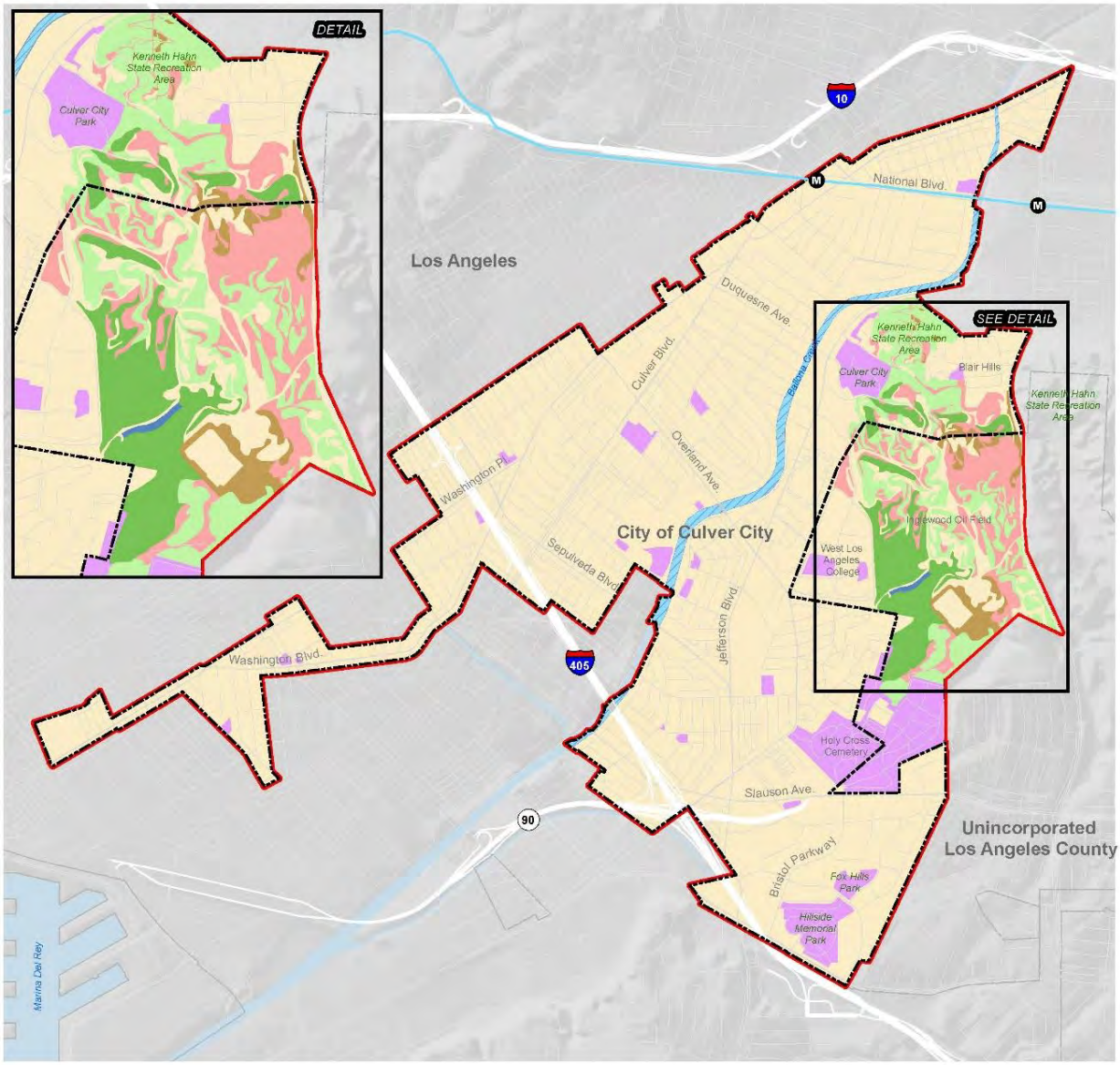
NON-NATIVE/ORNAMENTAL

Non-native/Ornamental vegetation is interspersed throughout the GPU Planning Area and includes partially developed, open space areas including various public parks (i.e., Blair Hills, Culver City, Fox Hills, and Veterans Memorial Park), heavily disturbed portions of the Kenneth Hahn State Recreation Area, and the Hillside Memorial and Holy Cross Cemeteries. Vegetation in these areas generally includes large maintained lawns, augmented with ornamental trees and shrubs, and cultivated gardens.

NON-NATIVE TREE STAND

Non-native tree stands are present in small patches throughout the IOF and Kenneth Hahn State Recreation Area. Tree (or tree-like) species present within these areas include, but are not limited to, Peruvian pepper tree (*Schinus molle*), eucalyptus (*Eucalyptus* spp.), pine (*Pinus* spp.), Mexican fan palm (*Washingtonia robusta*), and Spanish dagger (*Yucca aloifolia*).

Figure 4-1: Vegetation Communities and Habitat in Culver City



Sources: City of Culver City, 2019; County of Los Angeles, 2019; ESA,2019.

Jurisdictional Boundaries
- City of Culver City City Limits
- City of Culver City Sphere of Influence
- Jurisdictional Boundaries

Transportation Features
- Expo Line
- Metro Station

Other Features
- Water

Natural Communities and Land Uses
- Channelized Streambed (Ballona Creek)
- Coastal Scrub
- Coastal Scrub - Degraded
- Coast Live Oak Woodland
- Non-native/Ornamental
- Non-native Tree Stands
- Disturbed
- Urban/Developed

0 0.25 0.5 1 Mile

DISTURBED

Disturbed areas are generally restricted to isolated patches within the eastern portion of the GPU Planning Area, primarily within the boundaries of the IOF and the Kenneth Hahn State Recreation Area. Disturbed areas includes those with limited vegetation, which tends to be predominately various non-native grasses and forbs such as black mustard, castor bean, fennel, red brome, rip-gut brome and shortpod mustard. Additional weedy plant species found in these areas include wild oats (*Avena* spp.), filarees (*Erodium* spp.), Mediterranean barley (*Hordeum murinum*), Bermuda grass (*Cynodon dactylon*), and wild radish (*Raphanus sativus*).

URBAN/DEVELOPED

The vast majority of the GPU Planning Area is heavily developed, much of which is devoid of vegetation. Vegetation within these areas is limited to ornamental trees, including street trees, and irrigated landscaping.

SENSITIVE BIOLOGICAL RESOURCES

A desktop analysis, including a database search and review of available resources, was completed to discern known occurrences of sensitive biological resources within the GPU Planning Area and provide a background for determining what resources have the potential to occur.[19] The database search results are provided in Appendix A.

SPECIAL-STATUS SPECIES

Special-status species are defined as those that, because of their recognized rarity or vulnerability to various forms of habitat loss or population decline, are considered by federal, State, or other agencies to be under threat from human-associated developments. Some of these species receive specific protection that is defined by federal or State endangered species legislation, and others have been designated as special-status based on adopted local policies (i.e., city and county) or the educated opinion of respected resource interest groups (i.e., California Native Plant Society [CNPS]). Special-status species are defined as follows:

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[19] As part of the research conducted, a query of the California Department Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB) (2019), CNPS Rare Plant Inventory (2019), and U.S. Fish and Wildlife Service (USFWS) Information Planning and Conservation System (2019a) was conducted for the Beverly Hills, Hollywood, Inglewood and Venice USGS 7.5-minute topographic quadrangle maps. The following documents prepared for projects located within the vicinity of the GPU Planning Area were also reviewed: (1) Baldwin Hills Conservancy. May 2002. *Baldwin Hills Park, Master Plan*. (2) Los Angeles County. June 2008. *Baldwin Hills Community Standards District, Public Draft Environmental Impact Report*. (3) Bonterra. June 16, 2015. *Results of Focused Presence/Absence Coastal California Gnatcatcher Surveys for Segment C of the Proposed Park to Playa Trail Project, Los Angeles County, California.* (4) Bonterra. August 26, 2015. *Results of Special Status Plant Surveys for the Blair Hills Corridor (Segment C) Portion of the Proposed Park to Playa Trail Project, Los Angeles County, California.* (5) Longcore, T. (ed). 2016. *Urban Biodiversity Assessment: Baldwin Hills Biota Update.* Los Angeles: University of Southern California for Baldwin Hills Conservancy (Proposition 84) and Baldwin Hills Regional Conservation Authority (Proposition A).

- Plants or wildlife listed or proposed for listing as threatened or endangered, or are candidates for possible future listing as threatened or endangered, under the federal Endangered Species Act or the California Endangered Species Act;
- Plants of wildlife that meet the definitions of rare or endangered under California Environmental Quality Act (CEQA) Guidelines Section 15380;
- Wildlife designated by CDFW as species of special concern, included on the Watch List, or are considered Special Animals.
- Wildlife "fully protected" in California (Fish and Game Code Sections 3511, 4700, and 5050);
- Bird species protected by the Migratory Bird Treaty Act;
- Plants that meet the definitions of rare or endangered under CEQA Guidelines Section 15380;
- Plants considered by CNPS to be rare, threatened, or endangered (California Rare Plant Rank 1A, 1B, 2A and 2B plants) in California;
- Plants listed by CNPS as those for which more information is needed to determine their status and plants of limited distribution (California Rare Plant Rank 3 and 4 plants); and
- Plants listed as rare under the California Native Plant Protection Act (Fish and Game Code 1900 et seq.)

Figure 4-2 depicts occurrences of special-status plants and wildlife that have been previously reported within the immediate vicinity of the GPU Planning Area.

SPECIAL-STATUS PLANTS

Based on the results of the desktop analysis, it has been determined that five special-status plants have either been detected within the immediate vicinity of the GPU Planning Area or have the potential to occur based on the presence of suitable habitat.[20] These species are presented in **Table 4-1** which provides a brief description of each species, it's preferred habitat, and the general location(s) within the GPU Planning Area within which each has been previously observed or has potential to occur.

SPECIAL-STATUS WILDLIFE

Based on the results of the desktop analysis, it has been determined that a total of 16 special-status wildlife species have either been detected within the immediate vicinity of the GPU Planning Area or have the potential to occur based on the presence of suitable habitat.[21]

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[20] Four additional species have been historically reported within the GPU Planning Area; however, suitable habitat for these species is no longer present. The species include: Ventura marsh milk vetch (*Astragalus pycnostachyus* var. *lanosissimus*), salt marsh birds beak (*Chloropyron maritimum* ssp. *maritimum*), Coulter's goldfields (*Lasthenina glabrata* ssp. *coulteri*), and salt spring checkerbloom (*Sidalcea neomexicana*). These species are not discussed further.

[21] Two additional wildlife species have been historically reported within the GPU Planning Area; however, suitable habtiat for these species may no longer be present. The species include: California mastiff bat (*Eumops perotis* ssp. *californicus*) and south coast marsh vole (*Microtus californicus* ssp. *stephensi*). While foraging habitat for the California mastiff bat is present within the IOF and Kenneth Hahn State Recreation Area, suitable roosting habitat is not present. These species are not discussed further.

These special-status wildlife species are presented in **Table 4-2** which provides a brief description of each species, it's preferred habitat, and the general location(s) within the GPU Planning Area within which each has been previously observed or has potential to occur.

Figure 4-2: California Natural Diversity Database Species Occurrences in Culver City

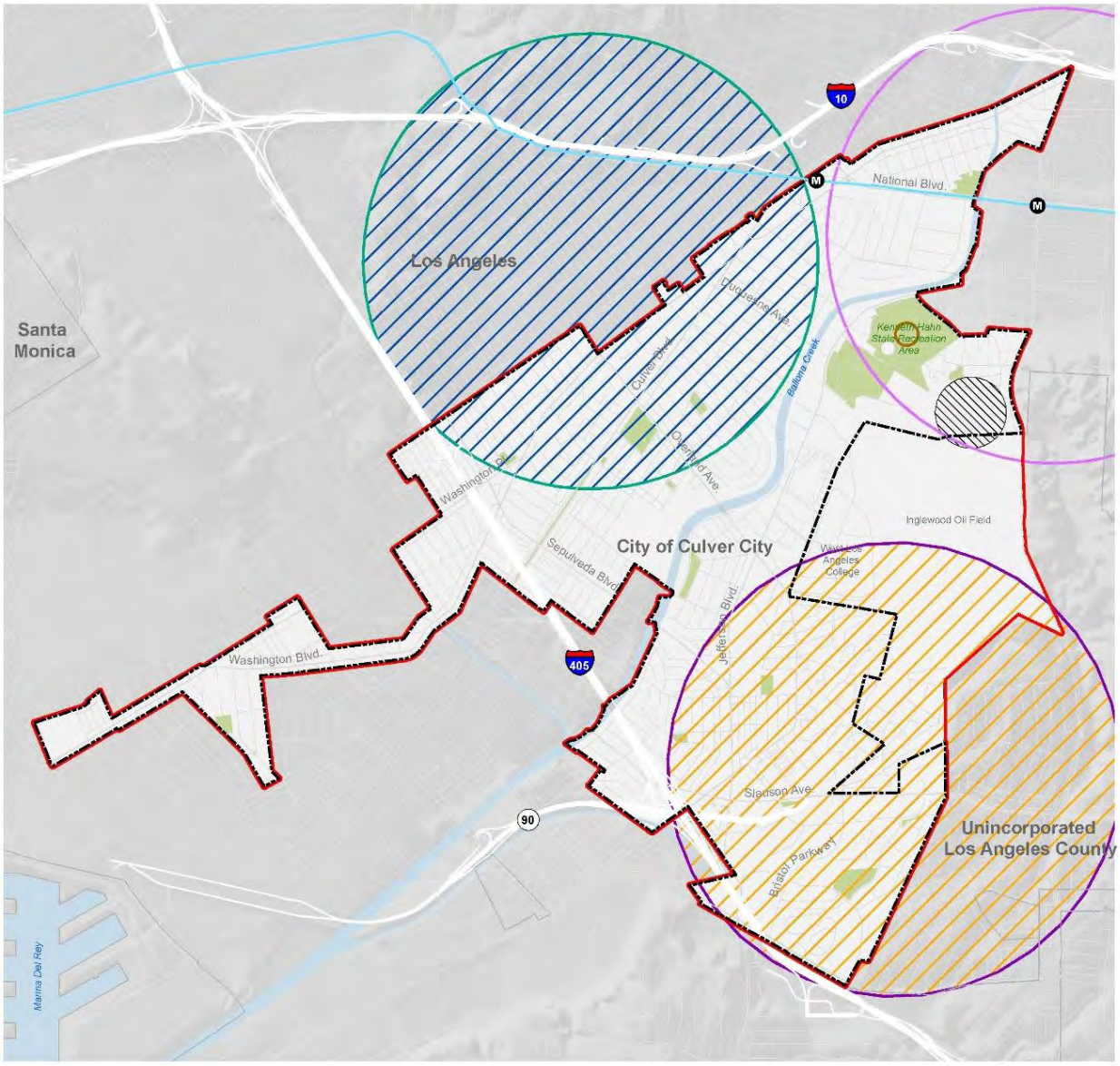

Table 4-1: Special-Status Plants in Culver City

Species	Status/ Element Ranking	Habitat	Potential within GPU Planning Area
Southern tarplant (*Centromadia parryi* ssp. *australis*)	California Rare Plant Rank (CRPR) 1B	Generally, this species is associated with wetlands, such as vernal pools; however, it is commonly found in heavily disturbed areas within or adjacent to scrub, chaparral and grassland communities.	This species may occur in the scrub and chaparral habitat within portions of the IOF and Kenneth Hahn State Recreation Area. This species was observed in 1994 within 1 mile of the Kenneth Hahn State Recreation Area (CDFW California Natural Diversity Database [CNDDB], 2019).
Many-stemmed dudleya (*Dudleya multicaulis*)	CRPR 1B	This species is known to occur within scrub and chaparral, and cismontane woodland communities.	There is limited potential for this species to occur in the scrub and chaparral habitat within portions of the IOF and Kenneth Hahn State Recreation Area. This species was historically observed within the Hollywood USGS quadrangle; however, it may have since been destroyed. Furthermore, most occurrences within Los Angeles County are situated at the base of the San Gabriel Mountains, far from the boundary of the GPU Planning Area (Calflora, 2019).
Southern California black walnut (*Juglans californica*)	CRPR 4	This species is known to occur along riparian corridors; within scrub and chaparral, and cismontane woodland communities.	This species may occur in the scrub and chaparral habitats within portions of the IOF and Kenneth Hahn State Recreation Area.
Nuttall's scrub oak (*Quercus dumosa*)	CRPR 1B	This species is known to occur within scrub and chaparral, and cismotane woodland communities.	This species was previously detected in the coastal scrub habitat within the Kenneth Hahn State Recreation Area in 2014 (CNDDB, 2019) and may occur within the IOF, as well.
San Bernardino Aster (*Symphyotrichum defoliatum*)	CRPR 1B	This species is known to occur within meadows and seeps, marshes and swamps, and mesic areas within scrub and chaparral, and woodland and coniferous forest communities.	There is limited potential for this species to occur in the coastal scrub vegetation within portions of the IOF and Kenneth Hahn State Recreation Area. This species was historically observed within Cienega, CA; however, it may have been destroyed as a result of urbanization. The close proximity of suitable habitat within the GPU Planning Area to this historical occurrence suggests that this species may occur within areas of suitable habitat (Calflora, 2019).

Source: CNPS, 2019. Notes: CRPR 1B – Plants rare, threatened or endangered in California and elsewhere. CRPR 4 – Plants of limited distribution; Locally Important – Identified as rare in the Baldwin Hills.

Table 4-2: Special-Status Wildlife in Culver City

Species	Status/ Element Ranking[a]	Habitat	Potential within GPU Planning Area
Invertebrates			
Crotch bumble bee (*Bombus crotchii*)	SA	This species occurs in various forms of scrub and chaparral communities.	This species has been previously reported within approximately 1 mile of the Kenneth Hahn State Recreation Area and IOF, within the Baldwin Hills in 1951 and again in 1953 (CNDDB, 2019). Marginal habitat for this species is present in the scrub and chaparral habitat within these areas.
Reptiles			
Coastal western whiptail (*Aspidoscelis tigris* ssp. *stejnegeri*)	SSC	This species occurs in various forms of scrub and chaparral, and cismontane woodland communities.	This species has the potential to occur in the scrub and chaparral habitat within the IOF and Kenneth Hahn State Recreation Area.
Coast horned lizard (*Phrynosoma coronatum* ssp. *blainvillei*)	SSC	This species occurs in various forms of scrub and chaparral communities.	This species has the potential to occur in the scrub and chaparral habitat within portions of the IOF and Kenneth Hahn State Recreation Area.
Birds			
Cooper's hawk (*Accipiter cooperii*)	WL	This species forages in a variety of habitats, including scrub and chaparral and grassland communities and utilizes various trees, both native and ornamental for nesting.	This species may forage and nest within the various habitats present within the IOF and Kenneth Hahn State Recreation Area.
Southern California rufous-crowned sparrow (*Aimophila ruficeps*)	WL	This species forages and nests within various scrub and chaparral communities on rocky, steep slopes.	This species may forage and nest in the scrub and chaparral habitat within portions of the IOF and Kenneth Hahn State Recreation Area.
Northern harrier (*Circus cyaneus*)	SSC	This species forages in a variety of habitats including scrub and chaparral and grassland communities, and utilizes various trees, both native and ornamental for nesting.	This species may forage and nest within the various habitats present within the IOF and Kenneth Hahn State Recreation Area.
White-tailed kite (*Elanus caeruleus*)	FP	This species is most commonly found foraging within open grassland communities and utilizes nearby trees, both native and ornamental, to nest.	This species could forage within the various habitats present within the IOF and Kenneth Hahn State Recreation Area, but the habitat has low suitability.
Loggerhead shrike (*Lanius ludovicianus*)	SSC	This species can be found foraging and nesting within scrub, chaparral, and grassland communities.	This species may forage and nest within the various habitats present within the IOF and Kenneth Hahn State Recreation Area.
California horned lark (*Eremophila alpestris* ssp. *actia*)	WL	This species can be found foraging and nesting within grassland communities.	This species could forage and nest within the various habitats present within the IOF and Kenneth Hahn State Recreation Area.

Species	Status/ Element Ranking[a]	Habitat	Potential within GPU Planning Area
Coastal cactus wren (*Campylorhynchus brunneicapillus* ssp. *couesi*)	SSC	This species can be found foraging or nesting in coastal scrub communities, primarily those supporting cactus species (*Cylindropuntia* spp. and *Opuntia* spp.).	This species may forage and nest in the coastal scrub habitat within portions of the IOF and Kenneth Hahn State Recreation Area. A large population of this species was recorded as occurring within the greater Baldwin Hills area until the early 1990s, last documented in 1996. It is thought that this population may be destroyed (Cooper et al 2012).
Coastal California gnatcatcher (*Polioptila californica*)	FT, SSC	This species is most commonly found foraging and nesting within coastal scrub communities, in particular, those dominated by California sagebrush (*Artemisia californica*) with gentle slopes.	This species has the potential to forage and nest in the coastal scrub vegetation within portions of the IOF and Kenneth Hahn State Recreation Area. This species has been previously documented within the Ingleside Oil Field on two occasions, in 1980 (CNDDB, 2019) and again in 2014 (US Fish and Wildlife Service [USFWS], 2019b).
Mammals			
Pallid bat (*Antrozous pallidus*)	SSC, SA	This species occurs in various scrub and chaparral, cismontane woodland communities, and roosts in abandoned buildings/structures, metal clad structures and tree cavities.	This species may forage and nest in the scrub and chaparral habitat within portions of the IOF and Kenneth Hahn State Recreation Area. This species was documented within 1 mile of the GPU Planning Area in 1925 and again in 1932 (CNDDB, 2019).
Hoary bat (*Lasiurus cinereus*)	SA	This species occurs in various scrub and chaparral, cismontane woodland communities; and roosts within coniferous and deciduous trees.	This species may forage and nest in the scrub and chaparral habitat within portions of the IOF and Kenneth Hahn State Recreation Area. This species was documented within 1 mile of the GPU Planning Area in 1939 (CNDDB, 2019).
San Diego black-tailed (*Lepus californicus* ssp. *bennettii*)	SSC	This species occurs in various forms of scrub, chaparral and grassland/agricultural communities.	This species may occur in the scrub and chaparral habitat within portions of the IOF and Kenneth Hahn State Recreation Area.
Los Angeles pocket mouse (*Perognathus longimembris* ssp. *brevinasus*)	SSC	This species occurs in various forms of scrub, chaparral and grassland communities.	This species may occur in the scrub and chaparral habitat within portions of the IOF and Kenneth Hahn State Recreation Area.
San Diego desert woodrat (*Neotoma lepida* ssp. *intermedia*)	SSC	This species occurs in various forms of scrub, chaparral and grassland communities.	This species may occur in the scrub and chaparral habitat within portions of the IOF and Kenneth Hahn State Recreation Area. This species was documented within the greater Baldwin Hills area in 2001 (LA County 2008).

Sources: CNDDB, 2019; LA County, 2008; ***USFWS, 2019b***
Notes: a. Federal: FT – Federally Threatened; State: SSC – Species of Special Concern, SA – Special Animal, FP – Fully Protected, WL – watch List.

NESTING BIRDS

Various birds protected by the Migratory Bird Treaty Act may utilize the GPU Planning Area to forage and breed. Most avian species, such as the California scrub jay (*Aphelocoma californica*), California quail (*Callipepla californica*), wrentit (*Chamaea fasciata*), northern flicker (*Colaptes auratus*), spotted towhee (*Pipilo maculatus*), and bushtit (*Psaltriparus minimus*) are more likely to occur within the native scrub and chaparral habitat located within the Kenneth Hahn State Recreation Area and the IOF; however, others, such as the red-tailed hawk (*Buteo jamaicensis*), common raven (*Corvus corax*), northern mockingbird (*Mimus polyglottos*), and mourning dove (*Zenaida macroura*) are regularly observed foraging and nesting in heavily developed residential areas, dominated by mature street trees and other ornamentally planted trees and shrubs found throughout much of the GPU Planning Area.

SENSITIVE NATURAL COMMUNITIES

No sensitive natural communities are present within the GPU Planning Area. CDFW defines sensitive natural communities as those that have a reduced range or are imperiled as a result of residential and commercial development, agriculture, or an influx of invasive and other non-native species.

CRITICAL HABITAT

No critical habitat is present within the GPU Planning Area. The closest critical habitat is for the western snowy plover (*Charadrius nivosus* ssp. *nivosus*) and located approximately 2.75 miles to the southwest, in Marina Del Rey (USFWS 2019b).

WETLANDS AND OTHER JURISDICTIONAL FEATURES

No wetlands, as designated by the CDFW, RWQCB , or U.S. Army Corps of Engineers are present within the GPU Planning Area. However, the channelized portion of Ballona Creek would likely be considered by these agencies as jurisdictional and any impact to the bed and banks of the channel would require consideration when planning new development near the creek or restoration of the creek.

4.4 PLANNING ISSUES AND PROPOSED IMPROVEMENTS

PLANNING ISSUES

The vast majority of the GPU Planning Area is heavily developed and provides little biological value; however, fragmented, isolated swathes of coastal scrub and chaparral vegetation remain throughout portions of the IOF and Kenneth Hahn State Recreation Area. New development/proposed improvements within or adjacent to these areas may harm special-status species.

NATURAL RESOURCE IMPROVEMENTS

The Ballona Creek Revitalization Project will enhance the restoration and use of Ballona Creek. The City and community have been identifying opportunities to revitalize the creek over the past 15 years, which include improving access and recreational opportunities along the creek and measures to

improve the ecology and water quality of the creek. The City has explored options to restore and enhance the creek to improve biological diversity, including the possible restoration of the concrete-channelized portion of Ballona Creek; however, there are engineering constraints related to handling flood events. Also, the enhancement of Ballona Creek may include its possible designation as a City park. Proposed upgrades may include a northern extension of the existing bike path, security lighting, bike path upgrades, benches, picnic tables, potable water sources, etc.

Biological resources improvements include the protection and enhancement of the biological resources at the IOF as part of ongoing maintenance and use, with a long-term vision for decommissioning and a change in use. As part of the Draft IOF Specific Plan, biological resources could be protected under a Special Status Species and Habitat Protection Plan, project-specific surveys, compliance with USFWS and CDFW requirements, monitoring of nesting birds or sensitive species, avoidance of trees during nesting season, and habitat restoration after completion of drilling activities. As further detailed in Chapter 6, Hazards, in the summer of 2018, City Council held a special community meeting to receive an update and review the status of the Specific Plan and related Environmental Impact Report. After receiving public comment and discussing the status, the City Council directed that the Specific Plan be placed on hold. City Council requested staff to identify qualified expert(s) and obtain a proposal to prepare an informational study that could outline options for addressing the potential amortization of oil-related activities and end-of-field life considerations for IOF, which would provide further protection and enhancement of biological resources.

CHAPTER 5 CULTURAL RESOURCES

This section describes known cultural resources and the potential to discover and identify additional cultural resources within the GPU Planning Area, which includes the City of Culver City's Sphere of Influence within the Baldwin Hills.[22] Cultural resources are categorized into three types: paleontological, archaeological, and historic.

5.1 KEY FINDINGS

Several known archaeological resources have been previously identified within the city and many that may yet to be discovered. These resources include prehistoric archaeological sites, Native American village, and campsites, and historic period refuse sites. There is potential to encounter yet to be discovered buried archaeological resources given the prehistoric and historical occupation of the region, prior identification of archaeological resources within the city, and the favorable natural conditions (e.g., proximity to the Pacific Ocean and the presence of Ballona Creek and vegetation communities) that attracted prehistoric and historical inhabitants to the area. Moreover, archaeological monitoring of numerous construction projects throughout the region in recent years has demonstrated the existence of multiple buried archaeological deposits.

As with archaeological resources, paleontological resources have been previously identified within the city and nearby in certain geologic units/formations that underlie large portions of the city. These previously identified resources include the remains of a mammoth, mastodon, camel, human, horse, saber-toothed cat, duck, and multiple invertebrates (e.g., clams, gastropods, etc.). The potential to encounter paleontological resources below the ground surface varies between low, high, unknown, or none throughout the city depending on the underlying geologic unit present and the depths of any proposed excavation activity. **Table B-1**, provided in Appendix B, includes a description and location of the geologic units within the city and their potential to retain paleontological resources.

The vast majority of the GPU Planning Area is heavily developed with numerous historic resources, many of which are listed or have the potential to be eligible for listing in the National Register of Historic Places (NRHP), California Register of Historical Resources (CRHR), and/or the city's list of

[22] The discussion is based on existing information derived from a cultural resources records search through the California Historic Resources Inventory System - South Central Coastal Information Center (SCCIC), a review of the Culver City Historical Society's Historic Sites listing, a review of the City's Cultural Resource (Historically Designated Properties) listing, a review of the Office of Historic Preservation (OHP) Historical Resources Inventory (HRI), a Sacred Lands File (SLF) search through the California Native American Heritage Commission (NAHC), historical map and aerial photograph review, geologic map review, a paleontological resources records search through the Natural History Museum of Los Angeles County (NHMLAC), and results of recent archaeological and paleontological construction monitoring projects conducted by ESA. In addition, the City's Cultural Affairs Division maintains information on locally identified historic resources such as Council-designated resources, historic resources identified as significant based on historic resources surveys, and resources identified as historic as part of CEQA documentation for a plan or project.

Cultural Resources. The historic resources include a mix of residential buildings (single-family, duplex, and apartment), entertainment studios, commercial buildings (a bathhouse [The Plunge community pool], a restaurant, a theater, and hotels), a post office, churches, an airline/railroad segment, a substation, a school, a public utilities building and utilities (utility pole and cell tower), a flood control channel, and historic period commercial development along Main Street.[23]

5.2 PREHISTORIC AND HISTORICAL SETTING

PREHISTORIC SETTING

Based on recent research in the region (Homburg et al., 2014), the following prehistoric chronology has been divided into four general periods: the Paleocoastal (12,000 to 8,000 Before Present[24] [BP]), Millingstone (8,000 to 3,000 BP), Intermediate (3,000 to 1,000 BP), and Late (1,000 BP to Anno Domino [AD] 1542) Periods. This chronology is manifested in the archaeological record by artifacts and burial practices that indicate specific technologies, economic systems, trade networks, and other aspects of culture.

PALEOCOASTAL PERIOD (12,000–8,000 BP)

While it is not certain when humans first came to California, their presence in Southern California by about 11,000 BP has been well documented. At Daisy Cave, on San Miguel Island, cultural remains have been radiocarbon dated to between 11,100 and 10,950 BP. During this period, the climate of Southern California became warmer and arider and the human population, residing mainly in coastal or inland desert areas, began exploiting a wider range of plant and animal resources (Byrd and Raab, 2007).

MILLINGSTONE PERIOD (8,000–3,000 BP)

During this period, there is evidence for the processing of acorns for food and a shift toward a more generalized economy that is broadly focused on obtaining a wide variety of goods and resources. The first evidence of human occupation in the Los Angeles area dates to at least 9,000 years BP and is associated with the Millingstone cultures (Wallace, 1955; Warren, 1968). Millingstone cultures were characterized by the collection and processing of plant foods, particularly acorns, and the hunting of a wider variety of game animals (Byrd and Raab, 2007; Wallace, 1955). Millingstone cultures also established more permanent settlements that were located primarily on the coast and in the vicinity of estuaries, lagoons, lakes, streams, and marshes where a variety of resources, including seeds, fish, shellfish, small mammals, and birds, were exploited. Early Millingstone occupations are typically identified by the presence of handstones (manos) and millingstones (metates), while those

[23] These historic resources were not evaluated to determine their eligibility for listing on national, State or City registers as part of this report.

[24] Before Present (or BP) is a time scale used by archaeologists and geologists that represents the number of years before the present. Archaeologists use AD 1950 to represent the present and not the current year, or 2020.

Millingstone occupations dating later than 5,000 BP contain a mortar and pestle complex as well, signifying the exploitation of acorns in the region.

INTERMEDIATE PERIOD (3,000–1,000 BP)

During this period, many aspects of Millingstone culture persisted, but several socioeconomic changes occurred (Erlandson, 1994; Wallace, 1955; Warren, 1968). The native populations of Southern California were becoming less mobile and populations began to gather in small sedentary villages with satellite resource-gathering camps. Increasing population size necessitated the intensified use of existing terrestrial and marine resources (Erlandson, 1994). Evidence indicates that the overexploitation of larger, high-ranked food resources may have led to a shift in subsistence, towards a focus on acquiring greater amounts of smaller resources, such as shellfish and small-seeded plants (Byrd and Raab, 2007). This period is characterized by increased labor specialization, expanded trading networks for both utilitarian and non-utilitarian materials, and extensive travel routes. Although the intensity of trade had already been increasing, it now reached its zenith, with asphaltum (tar), seashells, and steatite being traded from Southern California to the Great Basin. The use of the bow and arrow spread to the coast around 1,500 BP, largely replacing the dart and atlatl (Homburg et al., 2014). Increasing population densities, with ensuing territoriality and resource intensification, may have given rise to increased disease and violence between 3,300 and 1,650 BP (Raab et al. 1995).

LATE PERIOD (1,000 BP–AD 1542)

The Late Period is associated with the florescence of the Gabrielino, who are estimated to have had a population numbering around 5,000 in the pre-contact period.[25] The Gabrielino occupied what is presently Los Angeles County and northern Orange County, along with the southern Channel Islands, including Santa Catalina, San Nicholas, and San Clemente (Kroeber, 1925). This period saw the development of elaborate trade networks and use of shell-bead currency. Fishing became an increasingly significant part of subsistence strategies at this time, and investment in fishing technologies, including the plank canoe, are reflected in the archaeological record (Erlandson, 1994; Raab et al., 1995). Settlement at this time is believed to have consisted of dispersed family groups that revolved around a relatively limited number of permanent village settlements that were located centrally with respect to a variety of resources (Koerper et al., 2002).

ETHNOGRAPHIC SETTING–INDIGENOUS PEOPLES

The GPU Planning Area is in a region traditionally occupied by Indigenous Peoples. Groups of Indigenous Peoples of Los Angeles include Gabrieleño, Gabrielino, Tongva, and Kizh. "Gabrielino" and "Gabrieleño" are Spanish names deriving from the San Gabriel Mission. "Tongva" was likely a Native village in the same vicinity. The name the Indigenous Peoples may have originally called themselves is “Kizh,” meaning home (Stickel, 2016). However, there is pan-tribal name for LA's Indigenous Peoples that predates the arrival of Europeans (Los Angeles Almanac, 2019). For this

[25] The pre-contact period is the time before contact with Europeans, which began around 12,000 years ago and ended prior to AD 1542.

report, the term "Gabrielino" will be used, in keeping with the State-recognized name of San Gabriel Band of Mission Indians.

Their neighbors included the Chumash and Tataviam to the north, the Juañeno to the south, and the Serrano and Cahuilla to the east. The Gabrielino are reported to have been second only to the Chumash in terms of population size and regional influence (Bean and Smith, 1978). The Gabrielino language is part of the Takic branch of the Uto-Aztecan language family.

At the time of Spanish contact, many Gabrielino practiced a religion that was centered around the mythological figure Chinigchinich (Bean and Smith, 1978). This religion may have been relatively new when the Spanish arrived, and was spreading at that time to other neighboring Takic groups. The Gabrielino practiced both cremation and inhumation[26] of their dead. A wide variety of grave offerings, such as stone tools, baskets, shell beads, projectile points, bone and shell ornaments, and otter skins, were interred with the deceased.

Coming ashore on Santa Catalina Island in October of 1542, Juan Rodriguez Cabrillo was the first European to make contact with the Gabrielino; the 1769 expedition of Portolá also passed through Gabrielino territory (Bean and Smith, 1978). Native Americans suffered severe depopulation, and their traditional culture was radically altered after Spanish contact. Nonetheless, Gabrielino descendants still reside in the greater Los Angeles and Orange County areas and maintain an active interest in their heritage.

A Gabrielino village, or "rancheria," known as Guaspet, Guasna, Guashna, Guachpet, Guashpet, and Guaspita, appears to have been located southwest of the city. Based on mission baptism records, the rancheria appears to have been occupied from about 1790 to 1820 (Reedy, 2015; McCawley, 1996). At least 193 people are known to have lived at the rancheria and been baptized. Records suggest that recruitment into the mission system did not occur until native populations in closer proximity to Mission San Gabriel had been assimilated, and after grazing expanded into the vicinity of the GPU Planning Area, bringing native inhabitants of the region into closer contact with Spanish-era ranchers (Stoll et al., 2009). Two archaeological sites with components dating to the Spanish era (CA-LAN-62 and -211), located within about 2.0 miles from the city, may be the location of Guaspet, although this has not been confirmed in the historical record (Reedy, 2015).

HISTORIC SETTING

SPANISH PERIOD (AD 1542–1821)

Although Spanish explorers made brief visits to the region in 1542 and 1602, sustained contact with Europeans did not commence until the onset of the Spanish Period. In 1769 Gaspar de Portolá led an expedition from San Diego, passing through the Los Angeles Basin and the San Fernando Valley, on its way to the San Francisco Bay (McCawley, 1996). Father Juan Crespi, who accompanied the 1769 expedition, noted the suitability of the Los Angeles area for supporting a large settlement. This was followed in 1776 by the expedition of Father Francisco Garcés (Johnson and Earle, 1990).

[26] Inhumation is the action of burying the corpse of the dead (as opposed to cremating the remains).

In the late 18th century, the Spanish began establishing missions in California and forcibly relocating and converting native peoples. Mission San Gabriel Arcángel was founded on September 8, 1771 and Mission San Fernando Rey de España on September 8, 1797. By the early 1800s, the majority of the surviving Gabrielino population had entered the mission system, either at San Gabriel or San Fernando. Mission life offered some degree of security in a time when traditional trade and political alliances were failing and epidemics and subsistence instabilities were increasing (Jackson, 1999). This lifestyle change also brought with it significant negative consequences for Gabrielino health and cultural integrity.

On September 4, 1781, El Pueblo de la Reina de los Angeles was established (approximately 5.5 miles northeast of the GPU Planning Area) not far from the site where Portolá and his men camped during their 1769 excursion, with a land grant of 28 acres issued to California Governor Felipe de Neve in 1781 (Gumprecht, 2001). The pueblo was first established in response to the increasing agricultural needs of Spanish missions and presidios in Alta California.[27] The original pueblo consisted of a central square surrounded by 12 houses and a series of agricultural fields. Thirty-six fields occupied 250 acres between the town and the river to the east (Gumprecht, 2001).

By 1786, the flourishing pueblo attained self-sufficiency, and funding by the Spanish government ceased. Fed by a steady supply of water and an expanding irrigation system, agriculture and ranching grew, and by the early 1800s the pueblo produced surplus wheat, corn, barley, and beans for export. A large number of livestock, including cattle and sheep, grazed in the surrounding lands (Gumprecht, 2001).

MEXICAN PERIOD (AD 1821–1848)

Mexico gained its independence from Spain in 1821 (Gumprecht, 2001). Mexico promoted the settlement of California with the issuance of land grants. In 1833, Mexico began the process of secularizing the missions, reclaiming most mission lands, and redistributing them as land grants. According to the terms of the Secularization Law of 1833 and Regulations of 1834, at least a portion of the lands would be returned to the Native populations, but this did not always occur (Milliken et al., 2009).

Many ranchos continued to be used for cattle grazing by settlers during the Mexican Period. Hides and tallow from cattle became a major export for Californios,[28] many of whom became wealthy and prominent members of society. The Californios led generally easy lives, leaving the hard work to vaqueros[29] and Indian laborers (Pitt, 1994; Starr, 2007).

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[27] Alta California encompasses the former Spanish possessions along the Pacific coast and north of the peninsula of Baja California. Originally, early maps of the area showed California as an island. Later, when this mistake was corrected in the 18th century, the peninsula came to be called Baja California and the rest of the mainland, Alta California.

[28] Spanish speaking, Catholic persons of Latin American descent born in Alta California between 1769 and 1848.

[29] Horsemen and cattle herders of Spanish Mexico and Alta California.

AMERICAN PERIOD (AD 1848–PRESENT)

Mexico ceded California to the United States as part of the Treaty of Guadalupe Hidalgo in 1848. California officially became one of the United States in 1850. While the treaty recognized the right of Mexican citizens to retain ownership of land granted to them by Spanish or Mexican authorities, the claimant was required to prove their right to the land before a patent was given. The process was lengthy and generally resulted in the claimant losing at least a portion of their land to attorney's fees and other costs associated with proving ownership (Starr, 2007).

When the discovery of gold in northern California was announced in 1848, a huge influx of people from other parts of North America flooded into California, and the population of Los Angeles tripled between 1850 and 1860. The increased population provided an additional outlet for the Californios' cattle. As demand increased, the price of beef skyrocketed, and Californios reaped the benefits. However, a devastating flood in 1861, followed by droughts in 1862 and 1864, led to a rapid decline of the cattle industry; over 70 percent of cattle perished during these droughts (McWilliams, 1946; Dinkelspiel, 2008). These natural disasters, coupled with the burden of proving ownership, caused many Californios to lose their lands during this period. Former ranchos were subsequently subdivided and sold for agriculture and residential settlement (Gumprecht, 2001; McWilliams, 1946).

Los Angeles was connected to the transcontinental railroad via San Francisco on September 5, 1876, and the population again exploded. The city would experience its greatest growth in the 1880s when two more direct rail connections to the East Coast were constructed. The Southern Pacific completed its second transcontinental railway, the Sunset Route from Los Angeles to New Orleans, in 1883 (Orsi, 2005). In 1885, the Santa Fe Railroad completed a competing transcontinental railway to San Diego, with connecting service to Los Angeles (Mullaly and Petty, 2002). The resulting fare wars led to an unprecedented real estate boom. Despite a subsequent collapse of the real estate market, the population of Los Angeles increased 350 percent from 1880 to 1890 (Dinkelspiel, 2008). Los Angeles continued its upward trajectory in the first few decades of the 20th century with the rise of tourism, automobile travel, and the movie industry (McWilliams, 1946).

EARLY SETTLERS AND LA BALLONA VALLEY

Early families that settled in La Ballona Valley came on different expeditions. Francisco Salvador Lugo, for example, came on Rivera's 1774 trip from Sinaloa, Mexico, and was one of the soldiers present at the founding of the pueblo of Los Angeles in 1781. José Manuel Machado and his wife, Maria, traveled from Sinaloa, Mexico on the Rivera expedition of 1781. Machado continued to serve as a soldier in different locations until he retired to the pueblo of Los Angeles in 1797. Jose Machado's death in 1810 forced the sons to provide for the family's future. Agustín and his brother Ygnacio Machado, after unsuccessful attempts to acquire land near the pueblo, decided to settle in La Ballona Valley and raise cattle on Rancho La Ballona which they established in 1819 with two partners, Felipe Talamantes and his son Tomás.

In 1839, the Machados began to work towards legal ownership of La Ballona. Governor Alvarado granted legal title on the condition that a house was built on the land and was occupied by the grantee and that a survey was done (Cerra, Julie Lugo, 1992). After Augustín Machado's death in 1865, Rancho La Ballona was divided into long strips of land due to the variation in soil type and quality, and to

ensure that all new owners had some land that was fertile and irrigable with water from Ballona Creek (Pennington and Baxter, 1976).

Another rancho, Rancho Rincón de los Bueyes, was originally the property of Bernardo Higuera and Cornelio Lopez, and about a third the size of La Ballona. The area occupied by Rincón de los Bueyes, from Ince Boulevard east, included the natural corner created by the Baldwin Hills. The full name of the grant, however, was Corral Viejo del Rincón, and indeed, the corner was used to corral and protect the livestock. Eventually, Bernardo Higuera verbally gave this land to his brothers Policarpio and Mariano Higuera, son Francisco Higuera and Pedro Mendez. That land extended from Ince Boulevard east to La Cienega, north to Airdrome, and south to the Baldwin Hills (Culver City, 2020c).

Culver City was formed from portions of the 14,000-acre Rancho La Ballona (Machado/Talamantes property) and Rincón de Los Bueyes (Higuera/Lopez property). Rancho La Ballona stretched to Pico Boulevard (abutting Rancho San Vicente y Santa Monica) and to what we know as Ince Boulevard, where Rancho Rincón de los Bueyes began.

HARRY CULVER AND CULVER CITY

Harry H. Culver (1880 - 1946), the founder of Culver City, was born in Milford, Nebraska on January 22, 1880 (Cerra, 2013). The middle child of five, Culver was raised on a farm along with three brothers and a sister. His father, Jacob Hazel Culver, was a brigadier general in the National Guard and a strict disciplinarian. Culver followed in his father's footsteps, enlisting in the military during the Spanish-American War. He studied at Doane College before spending three years at the University of Nebraska. In 1901, Culver traveled to the Philippines, where he began working in the mercantile business, worked as a reporter for the *Manila Times*, and served as a special agent for the Customs Department. After more than three years in the Philippines, Culver returned to the United States, performing his customs duties in Detroit and Saint Louis. He resigned from the Customs Department in 1910 when he moved to California and began working for real estate giant I.N. Van Nuys. "As the story goes, after Van Nuys offered to make him a manager because of his exemplary work, Culver decided to venture out on his own. After intense study, Harry Culver pinpointed the area between Los Angeles and Abbot Kinney's resort of Venice for his city" (Cerra, 2013).

At the California Club in 1913, Harry Culver announced his plans to develop a city west of downtown Los Angeles. Culver saw an opportunity to capitalize on the excitement generated by Abbot Kinney's Venice of America development along the California coast south of Santa Monica. Between Venice and Los Angeles sat open land, originally part of Rancho La Ballona and Rancho Rincón de los Bueyes, and as the relationship between Los Angeles and Venice took shape, Culver saw a spot in between that was ideal for a new town site. "If you draw a line from the Story Building to the Ocean Front at Venice, at the halfway mark you will find three intersecting electric lines—the logical center for what we propose to develop a townsite" (Cerra, 2013). Soon after Culver's speech, Culver City was established. Culver promoted his new community by holding special events like "prettiest baby contests" and an annual marathon race. Newspaper advertisements exclaimed, "All Roads Lead to Culver City!" Culver City continued to grow and incorporated in 1917.

5.3 CULTURAL RESOURCE TYPES

Cultural resources can include prehistoric and historic period archaeological sites, structures, districts, and landscapes, or any other physical evidence associated with human activity considered important to a culture, a subculture, or a community for scientific, traditional, religious or any other reason. For purposes of this report, paleontological resources, although not typically associated with past human activity, are grouped within cultural resources. Cultural resources are categorized into three types: archaeological resources, historic resources, and paleontological resources. These resource types are further defined in the discussion below.

In general, cultural resources are evaluated for significance by determining whether they are listed in or are eligible for listing in the NRHP, the CRHR, or as part of a local register. The City of Culver City's Historical Preservation Ordinance, enacted in 1991, is administered through the City's Administrative Services Department, Cultural Affairs Division. The Ordinance outlines a designation process and criteria, as well as procedures for altering or modifying designated cultural resources.[30]

PALEONTOLOGICAL RESOURCES

Paleontology is a branch of geology that studies the life forms of the past, especially prehistoric life forms, through the study of plant and animal fossils. Paleontological resources represent a limited, non-renewable, and impact-sensitive scientific and educational resource. As defined in this section, paleontological resources are the fossilized remains or traces of multi-cellular invertebrate and vertebrate animals and multi-cellular plants, including their imprints from a previous geologic period and are greater than 5,000 years in age. Fossil remains such as bones, teeth, shells, and leaves are found in the geologic deposits (rock formations or geologic units) where they were originally buried. Paleontological resources include not only the actual fossil remains, but also the fossil localities, and the geologic formations containing those localities.

ARCHAEOLOGICAL RESOURCES

Archaeology is the recovery and study of material evidence of human life and culture of past ages. Over time, this material evidence becomes buried, fragmented or scattered or otherwise hidden from view. It is not always evident from a field survey if archaeological resources exist within a given GPU Planning Area. Thus, the possible presence of archaeological materials must often be determined based upon secondary indicators, including the presence of geographic, vegetative, and rock features which are known or thought to be associated with early human life and culture, as well as knowledge of events or material evidence in the surrounding area. In urban areas such as the GPU Planning Area

[30] Pursuant to the City's Historical Preservation Ordinance, a Cultural Resource is a property that has aesthetic, cultural, architectural or historical significance to the city, state, or nation, and may have been designated as a Landmark Structure, Significant Structure, or Recognized Structure. After satisfying at least one of the threshold criteria, classification is based on a ranking system, outlined in Resolution No. 91-R015. The "Landmark" designation is reserved for properties considered exceptional examples of the highest architectural/cultural/historical significance to the Culver City community; "Significant" applies to properties determined to be of substantial architectural/historic/cultural significance; and "Recognized" applies properties determined to be of architectural/historic/cultural interest.

and its environs, archaeological resources may include both prehistoric remains and remains dating to the historic period.

- Prehistoric (or Native American) archaeological resources are physical remains resulting from human activities that predate written records and are generally identified as isolated finds or sites. Prehistoric resources can include village sites, temporary camps, lithic (stone tool) scatters, rock art, roasting pits/hearths, milling features, rock features, and burials/human remains.
- Historic archaeological resources can include refuse heaps, bottle dumps, ceramic scatters, privies, foundations, and graves, and are generally associated in California with the Spanish Mission Period (AD 1769) to the mid-20th century of the American Period (AD 1848 – 1970).

HISTORIC RESOURCES

Historic resources include standing structures, buildings, districts, roads, bridges, other infrastructure, objects, and landscapes of historic or aesthetic significance that are generally 45 or 50 years of age or older. Historic resources typically date to the historical period (i.e., AD 1769 – 1970) and include resources that are evaluated for significance for their architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California.

5.4 EXISTING RESOURCES

The following discussion of existing resources within the city is based on information derived from the cultural resources records searches previously discussed in the first footnote of this chapter.

PALEONTOLOGICAL RESOURCES

Results of the archival research indicate that four known fossil localities have been previously identified within the city. In addition, eight other fossil localities (LACM 1159, 3366, 3367, 3368, 3369, 3370, 4232, and 4247) are located outside the city (either immediately adjacent or within several miles) but from the same sedimentary deposits (older Quaternary alluvium deposits and the San Pedro Sand) that occur within and throughout the city (McLeod, 2019). Refer to Appendix B, **Table B-1** for a list of paleontological resources, their relative location to the city, description, and depths in which the resources were encountered. The resources encountered in the city and within the vicinity include the remains of a mammoth, mastodon, camel, human, horses, saber-toothed cat, duck, and multiple invertebrates (clams, gastropods, etc.).

The geologic map and literature review indicate that within the northern, southern, and western portions of the city, younger alluvium deposits (*Qa*) exist. Additionally, in the southern portion of the city, older alluvium (*Qoa*), Paleosol (*Qop*), artificial fill (af), and Sand Pedro Sand (*Qsp*) sediments are present. Lastly, landslide debris (*Qls*) and Inglewood Formation deposits (*Qi*) are also found within the northeastern portion of the city. Refer to Appendix B, **Table B-2**, for a description of the sediments within the city and their potential to retain paleontological resources. In sum, the geologic map and literature review indicate the following:

- The northern, southern, and western portions of the city have a low to high potential for yielding fossil localities associated with younger alluvium. The deeper the excavations extend in these portions of the city which may reach into older alluvium deposits, the higher the chances are for encountering fossils.
- The northeastern portion of the city has a high potential for producing fossils associated with the Inglewood Formation and an undetermined potential for encountering landslide debris.
- The southern portion of the city has a high potential for yielding fossiliferous deposits associated with older alluvium and San Pedro Sand. Paleosol soils also exist within the southern portion of the city; however, the potential for finding fossils is undetermined. Lastly, artificial fill is also found within the southern portion of the city, but there is no potential for finding fossils since these are modern and disturbed soils.

ARCHAEOLOGICAL RESOURCES

Results of the archival research indicate that 16 archaeological resources have been previously identified within the city. Of the 16 archaeological resources, five are historic period archaeological resources, 10 are prehistoric archaeological resources, and one is a multicomponent resource. All but one resource has been evaluated for potential eligibility on the federal, State, and/or local level. Refer to Appendix B, **Table B-3**, for a list of archaeological resources within the city. The Native American Heritage Commission Sacred Lands File results were positive for the identification of a resource in their database and recommended the city contact the Gabrielino Tongva Indians of California Tribal Council for more information (Quinn, 2019).[31] The Native American Heritage Commission identifies and catalogs Native American cultural resources in Sacred Lands Files which can include ancient places of special religious or social significance to Native Americans and known ancient graves and cemeteries of Native Americans on private and public lands in California. The records for these resources may not always be available at the California Historic Resources Inventory System - South Central Coastal Information Center.

HISTORIC RESOURCES

Results of the archival research indicate that 204 historic resources have been previously identified from a variety of sources within the GPU Planning Area, as shown in Appendix B, **Table B-4**. One of these sources is the Culver City Historic Preservation Advisory Committee Report ("HPAC Report") which, in 1990, ranked over 100 structures (including film studio, commercial and residential properties) for designation as Cultural Resources at either "Landmark," "Significant," or "Recognized" levels. With adjustments in certain designation levels, the City adopted these by Resolution on April 22, 1991. Culver City also has three designated historic districts: 11027 - 11047 Braddock Drive, 4052 - 4070 Lafayette Place, and 4128 - 4181 McConnell Boulevard. Three of Culver City's "Landmark" structures are also included in the NRHR. These are the Washington Building (9720-9730 Washington Blvd.), Citizen Building (9355 Culver Blvd.) and Culver Hotel (9400 Culver Blvd.).

[31] Native American outreach will be conducted as part of AB 52 and SB 18 prior to the start of the Environmental Impact Report.

Other sources for **Table B-4**, located in Appendix B, include the California Historic Resources Inventory System - South Central Coastal Information Center, the City's Cultural Resources (Historically Designated Properties) listing, and the Office of Historic Preservation Historical Resources Inventory. The historic resources include a mix of residential buildings (single-family, duplex, and apartment), entertainment studios, commercial buildings (a bathhouse [this is in reference to The Plunge, a community pool], a restaurant, a theater, and hotels), a post office, churches, an airline/railroad segment, a substation, a school, a public utilities building and utilities (utility pole and cell tower), a flood control channel and historic period commercial development along Main Street .

In addition, there are a number of historic resources not included in the CHRIS System or local City listings that have been identified through focused surveys and Historic Resources Evaluation Reports for specific plan or other private development projects. In 2014, the City Council designated the former Culver City Ice Arena, located at 4545 Sepulveda Blvd., a Cultural Resource at the "Significant" level because of its association with post-war indoor recreation that catered to youth of the baby boom generation in a developing suburban context and its association with ice skating. As for entertainment industry resources, Sony Pictures Studios and The Culver Studios both have buildings that are individually eligible at the federal, State, and/or local level. For example, individual structures were identified as eligible at The Culver Studios through a survey completed in conjunction with Comprehensive Plan Amendment Nos. 6 and 7.

CHAPTER 6 HAZARDS

This section describes soil and geologic hazards within the City of Culver City, along with seismic hazards, flooding hazards, fire hazards, and hazardous materials.

6.1 KEY FINDINGS

The Newport-Inglewood Fault Zone, a designated Alquist-Priolo fault, passes through the northern portion of the city and can cause surface rupture in the community. The Newport-Inglewood Fault, along with other regional faults, are capable of significant ground shaking in the city. The Blair Hills neighborhood is at an elevated landslide risk. Also, most of the city is in an area of elevated liquefaction risk, except for the city's northwestern and southeastern borders. The northern part of the city is at an elevated risk for flooding, and the eastern part of the city is located in a Very High Fire Severity Zone. The IOF is located in the city, with one reportable release of hazardous materials in the last five years.

6.2 SOILS AND GEOLOGIC HAZARDS

REGIONAL SETTING

The city is on the western side of the Los Angeles Basin, approximately 1.5 miles from the Pacific Ocean. Much of the terrain of the city is mostly level or comprised of rolling hills that vary in elevation from 40 feet above mean sea level on the west to approximately 100 feet in the central part. The Baldwin Hills are in the northeastern portion of the city and rise to above 400 feet above mean sea level.

The city is in the Peninsular Ranges Geomorphic Province and Los Angeles Basin. The Peninsular Ranges are characterized by northwest-trending blocks of mountain ridges and sediment-floored valleys. The dominant geologic structure features are northwest-trending fault zones that either fade out to the northwest or terminate at east trending faults that form the southern margin of the Transverse Ranges. The Los Angeles Basin is bound on two sides the Palos Verdes fault to the south and the San Gabriel Foothill fault to the north. The basin is bound to the east and southeast by the Santa Ana Mountains and San Joaquin Hills, and to the northwest by the Santa Monica Mountains. Erosion of the surrounding mountains has resulted in the deposition of alluvial materials (unconsolidated sediments) in low-lying areas by the Los Angeles River and Ballona Creek.

SOILS AND EXPANSIVE SOILS

Surface soils are mapped and classified by the United States Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS). Depending on localized conditions, these general classifications are grouped into more specific soil types by location, climate, and slope. A variety of soils and soil types can be found throughout the city, as shown in **Figure 6-1**. Soils throughout the city include Cropley-Urban land complex, Longshore-Pachic Haploxerolls complex, mined land, and a variety of urban land complexes in large portions of the city made up of Anthraltic Xerorthents, Ballona-Typic Xerorthents, and Biscailuz-Hueneme soils.

Expansive soils are soils that possess a "shrink-swell" characteristic. Shrink-swell is the cyclic change in volume (expansion and contraction) that occurs in fine-grained clay sediments from the process of wetting and drying. Changes in soil moisture can result from rainfall, landscape irrigation, utility leakage, roof drainage, and/or perched groundwater. Expansive soils are typically very fine-grained and have a high to very high percentage of clay. Structural damage may occur incrementally over a prolonged period, usually as a result of inadequate soil and foundation engineering or the placement of structures directly on expansive soils. Soils with high clay content, such as clayey soils within the Baldwin Hills, are subject to significant volume change due to variation in soil moisture content (Culver City, 2017b).

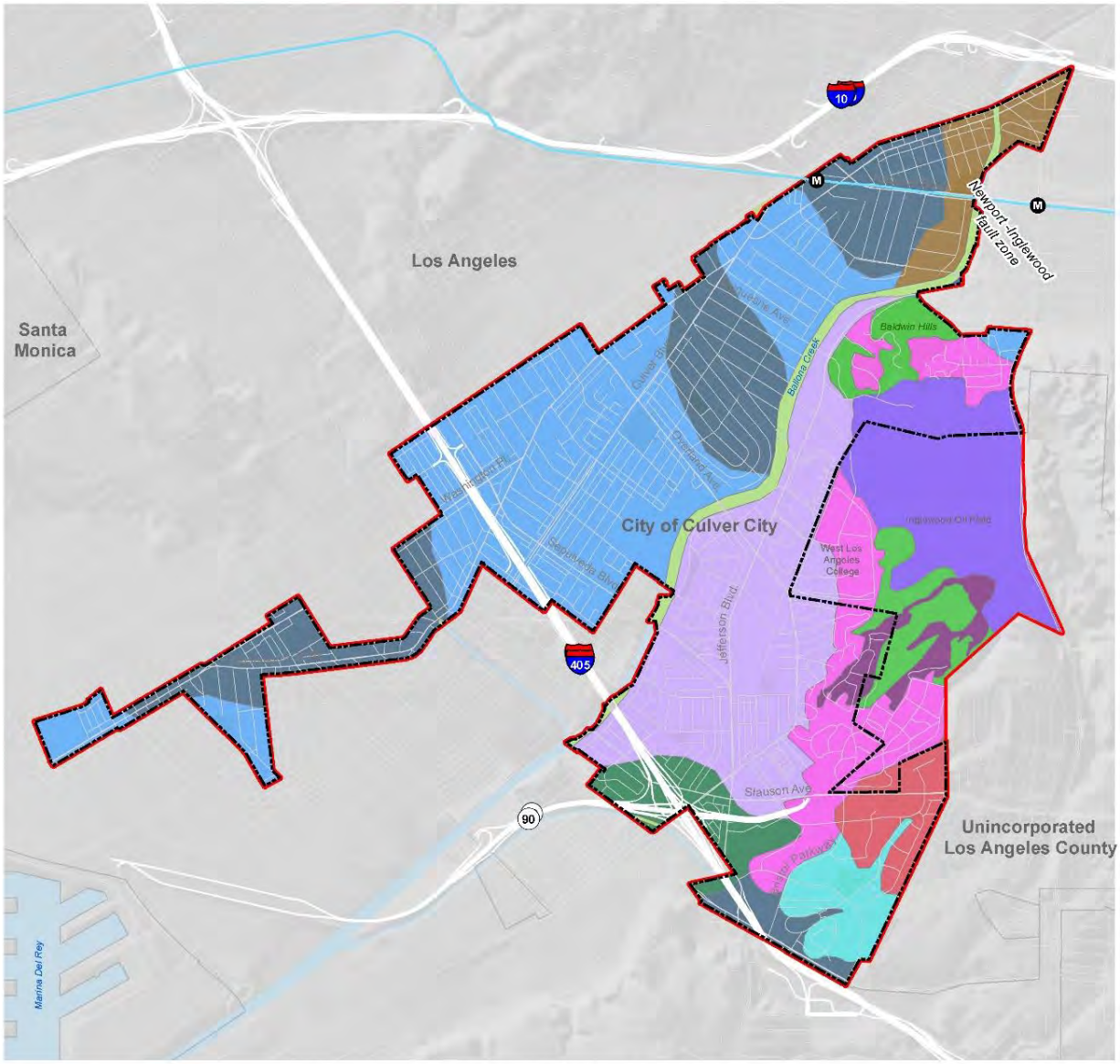
LANDSLIDES AND SLOPE FAILURES

Slope failures, commonly referred to as landslides, include many phenomena that involve the downslope displacement and movement of material, either triggered by static (i.e., gravity) or dynamic (i.e., earthquake) forces. A slope failure is a mass of rock, soil, and debris displaced downslope by sliding, flowing, or falling. Exposed rock slopes undergo rockfalls, rockslides, or rock avalanches, while soil slopes experience shallow soil slides, rapid debris flows, and deep-seated rotational slides. Landslides may occur on slopes of 15 percent or less; however, the probability is greater on steeper slopes that exhibit historic landslide features such as scarps, slanted vegetation, and transverse ridges. Landslide-susceptible areas are characterized by steep slopes and downslope creep of surface materials. Debris flows consist of a loose mass of rocks and other granular material that, if saturated and present on a steep slope, can move downslope. The rate of rock and soil movement can vary from a slow creep over many years to a sudden mass movement.

Slope stability can depend on many complex variables. The geology, structure, and amount of groundwater in the slope affects slope failure potential, as do external processes (i.e., climate, topography, slope geometry, and human activity). Earthquake motions can induce significant horizontal and vertical dynamic stresses in slopes that can trigger failure. Earthquake-induced landslides can occur in areas with steep slopes that are susceptible to strong ground motion during an earthquake.

As shown in **Figure 6-2**, the Blair Hills (located near the Baldwin Hills) and Culver Crest neighborhoods are at an elevated landslide risk. Past landslides in this area have been comparatively small, although still potentially large enough to significantly damage or destroy buildings. Seismic-related landslides would likely be confined to this specific region of the city, although under the right conditions, there could be widespread damage or destruction in the Blair Hills neighborhood (Culver City, 2017a).

Figure 6-1: Soils in Culver City



Sources: City of Culver City, 2019; County of Los Angeles, 2019; USDA, 2019.

Jurisdictional Boundaries
- City of Culver City City Limits
- City of Culver City Sphere of Influence
- Jurisdictional Boundaries

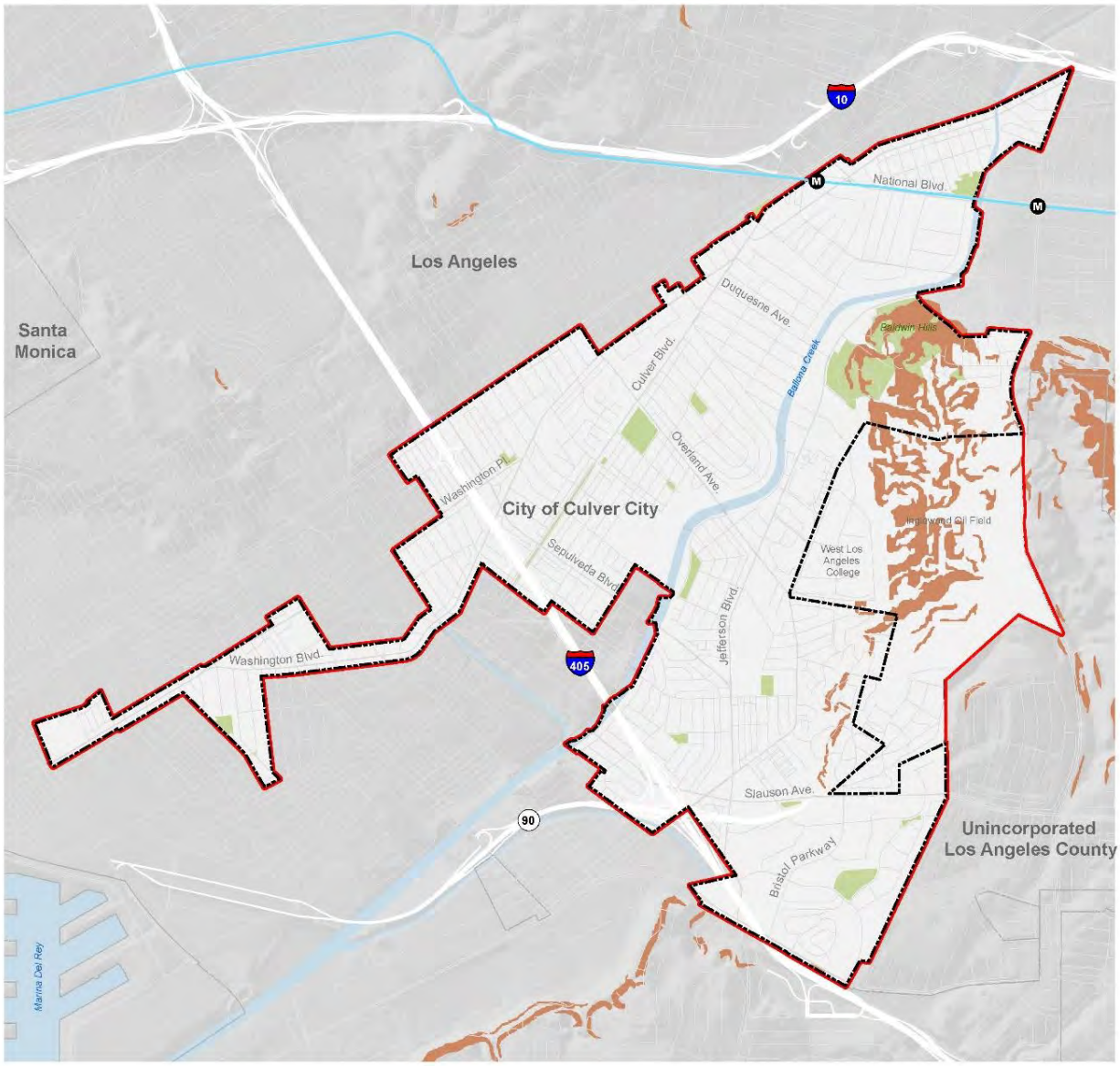
Transportation Features
- Expo Line
- Metro Station

Other Features
- Water
- Parks and Open Spaces

Soils
- Cropley-Urban land complex, 0 to 5 percent slopes
- Longshore-Pachic Haploxerolls complex, 20 to 55 percent slopes
- Mined land, oil wells
- Urban land, frequently flooded, 0 to 5 percent slopes
- Urban land-Anthraltic Xerorthents, loamy substratum-Grommet complex, 0 to 5 percent slopes
- Urban land-Aquic Xerorthents, graded-Pacheco, warm complex, 0 to 2 percent slopes
- Urban land-Ballona-Typic Xerorthents, fine substratum complex, 0 to 5 percent slopes
- Urban land-Biscailuz-Hueneme, drained complex, 0 to 2 percent slopes
- Urban land-Biscailuz-Pico complex, 0 to 2 percent slopes
- Urban land-Sepulveda-Longshore, graded complex, 3 to 12 percent slopes
- Urban land-Typic Xerorthents, terraced complex, 10 to 35 percent slopes
- Urban land-Typic Xerorthents, terraced-Windfetch complex, 2 to 9 percent slopes
- Urban land-Windfetch-Centinela complex, 0 to 5 percent slopes

0 0.25 0.5 1 Mile

Figure 6-2: Potential Landslide Zones in Culver City



Sources: City of Culver City, 2019; County of Los Angeles, 2019.

0 0.25 0.5 1 Mile

Jurisdictional Boundaries

- City of Culver City City Limits
- City of Culver City Sphere of Influence
- Jurisdictional Boundaries

Transportation Features

- Expo Line
- Metro Station

Other Features

- Water
- Parks and Open Spaces
- Potential Landslide Zone

6.3 SEISMIC HAZARDS

The city is located within Southern California, a tectonically active region with high seismic activity. Seismic hazards relate to faults, which are areas where large sections of the earth's surface called tectonic plates move past each other. The deformation of the plates and the accumulated stress between them causes faults in a wider area than the precise boundary between plates. In California, the Pacific and North American plates are sliding horizontally past each other, creating what is known as a "strike-slip fault" (Culver City, 2017a). The boundary between the two plates is known as the San Andres Fault, although the stress caused by this movement has created thousands of fault areas throughout the state. Most of California lies on the North American plate, although the coastal areas of Central and Southern California, including the city, sit on the Pacifica Plate.

Seismic hazards occur when accumulated stress between portions of the earth's crust is released, resulting in the sudden ground movement perceived as an earthquake. Primary seismic hazards are the direct result of the release of this accumulated stress and are typically characterized as earthquake fault rupture (displacement of the ground surface at the earthquake site) and seismic shaking (the ground movement itself, which can cause damage a significant distance from the earthquake site). Earthquakes can also cause secondary seismic hazards, such as liquefaction and earthquake-induced landslides.

Seismic hazards, both primary and secondary hazards, pose a greater risk to buildings that lack certain resilient features. Any new structure would be required to be constructed per the California Building Code and CCMC. The California Building Code requires a structural design that can accommodate ground accelerations expected from known active faults. Compliance with the applicable regulatory California Building Code standards and CCMC ensures that the recently-constructed structures (approximately in the last 45 years) have been designed to withstand the effects of ground shaking caused by a seismic event without sustaining substantial damage. Also, starting approximately in the 1970s, the California Building Code and standard design and construction practices started to include measures to minimize the effects of liquefaction. For this reason, structures that have been built after the 1970s should be able to withstand potential damage associated with liquefaction.

In general, older buildings that were constructed before modern building codes are more likely to have vulnerable features and thus face greater vulnerabilities from seismic hazards. According to the US Census, over 87 percent of houses in the city were constructed before 1980, and therefore may be vulnerable if not retrofitted (Culver City, 2017a). Unreinforced masonry (masonry buildings that lack steel reinforcing) and soft-story buildings (buildings with large open spaces on the ground floor, such as garages and commercial space) face greater threats from fault rupture and ground shaking (Culver City, 2017a). Similarly, buildings with weak foundations and ground reinforcements, or lacking deep foundation pylons, may face increased risks from liquefaction and landslides. Seismic hazards of all types may also interrupt service along with important infrastructure networks such as power and communication lines, natural gas pipes, water and sewer pipes, and roadways. In addition to interrupting service, damage to natural gas pipes may cause gas leaks that could result in fires. To address the threat of seismic hazards, the City is in the process of preparing a Soft Story Seismic Retrofit Program that will include identification of all soft-story structures within the city and development of a draft building code amendment. The building code amendment will specify requirements for retrofitting soft-story buildings and will include an implementation schedule for impacted properties to comply with the code (City of Culver City, 2018).

FAULT RUPTURE AND REGIONAL FAULTS

Seismically induced ground rupture is defined as the physical displacement of surface deposits in response to an earthquake's seismic waves. The magnitude and nature of fault rupture can vary for different faults or even along different strands of the same fault. Structures, transportation facilities, and utility systems crossing fault traces are at risk during a major earthquake due to ground rupture caused by differential lateral and vertical movement on opposite sides of the active fault trace.

Newport-Inglewood Fault Zone. The Newport-Inglewood Fault Zone, a designated Alquist-Priolo fault, runs from the Santa Monica Mountains near Beverly Hills southeast to Newport Beach, passing through the northern portion of the city, as shown in **Figure 6-3**. The fault zone is made up of three distinct segments and several faults and fractures and is responsible for the topography of the Blair Hills and Baldwin Hills area and nearby Ladera Heights. The Newport-Inglewood Fault Zone caused the 1933 Long Beach earthquake, which was the last major event along this fault. The Southern California Earthquake Center estimates that a future major event along this fault could measure 6.0 to 7.4 on the moment magnitude scale (Culver City, 2017a). As a major fault passing through the city, it can cause surface rupture in the community.

Palos Verdes Fault Zone. The Palos Verdes Fault Zone extends from the Palos Verdes peninsula south out into the Pacific Ocean, running approximately 10 miles from the city at its closest point (Culver City, 2017a). This fault zone has not produced a significant earthquake in recorded history, although the last event is believed to have happened within the past 10,000 years. The Southern California Earthquake Data Center estimates that this fault can produce an earthquake measuring 6.0 to 7.0 or more on the moment magnitude scale. Due to its location, this fault zone is unlikely to result in fault surface rupture in the city, but it can produce earthquakes that could cause significant ground shaking in the city.

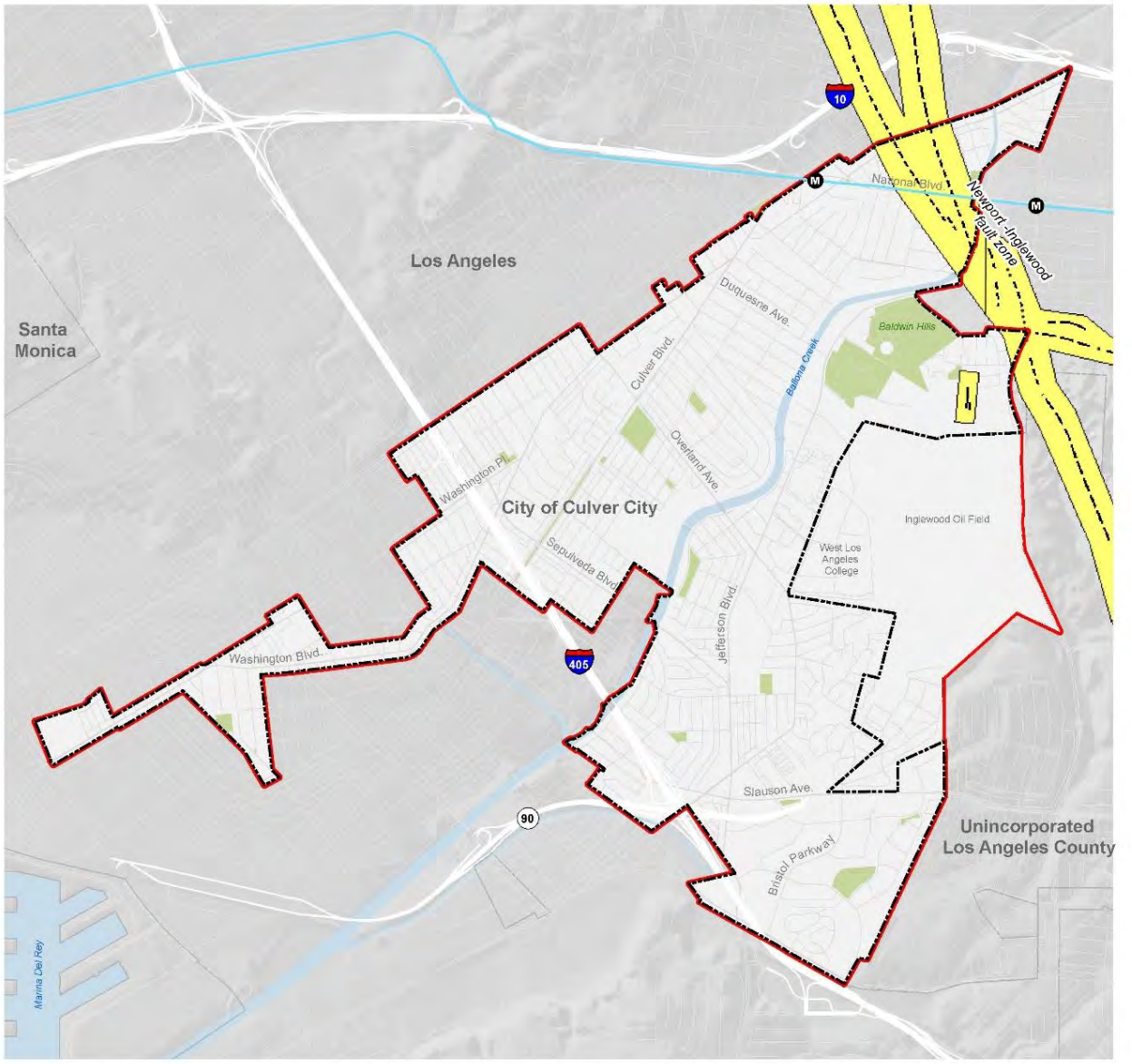
Sierra Madre Fault Zone. The Sierra Madre Fault Zone runs along the southern edge of the San Gabriel Mountains from La Canada-Flintridge to Claremont, approximately 16 miles from the city at its closest point (Culver City, 2017a). The last major event along the Sierra Madre Fault Zone is believed to have happened within the past 10,000 years, although no specific event is known. The Southern California Earthquake Data Center estimates that it can produce an event measuring 6.0 to 7.0 on the moment magnitude scale. Due to its location, this fault zone is unlikely to result in fault surface rupture in the city, but it can produce earthquakes that could cause significant ground shaking in the city.

Whittier-Elsinore Fault Zone. The Whittier-Elsinore Fault Zone runs from the Chino Hills region to the California-Mexico border and is approximately 22 miles from the city at its closest point (Culver City, 2017a). The last major event along this fault was a 1910 earthquake measuring an estimated 6.0 on the moment magnitude scale. This fault is believed to cause a major event approximately event 250 years with a probable magnitude of 6.5 to 7.5 (Culver City, 2017a). Due to its location, this fault zone is unlikely to result in fault surface rupture in the city, but it can produce earthquakes that could cause significant ground shaking in the city.

San Andreas Fault. The San Andreas Fault is the largest and most well-known of California's faults, which runs from Cape Mendocino to the Salton Sea. The fault is approximately 40 miles from the city at its closest point (Culver City, 2017a). It has caused numerous major earthquakes throughout

California's history, including the 1906 San Francisco earthquake and the 1989 Loma Prieta earthquake. The central portion of the San Andreas Fault was responsible for an earthquake measuring an estimated 7.9 on the moment magnitude scale, the strongest in California's recorded history in 1857 near Parkfield (approximately 170 miles from the city). The Southern California Earthquake Data Center estimates that a future major event along the southern part of the San Andreas Fault could measure 6.8 to 8.0 on the moment magnitude scale. Due to its location, this fault zone is unlikely to result in fault surface rupture in the city, but it can produce earthquakes that could cause significant ground shaking in the city.

Figure 6-3: Fault Zone in Culver City



A major earthquake along any of these faults could cause significant damage to the city. As detailed in the City of Culver City and Culver City Unified School District Multi-Hazard Mitigation Plan (Multi-Hazard Mitigation Plan), the list above is not a comprehensive list of all known faults capable of producing a significant earthquake near the city. There is a risk of earthquakes from faults that have not yet been discovered. The 1994 Northridge earthquake, which caused more property damage than any other earthquake in the United States and was the ninth most damaging earthquake in history, occurred along a then-undiscovered fault (Culver City, 2017a). The Northridge Earthquake measured 6.7 on the moment magnitude scale, had a Mercalli intensity of IX, killed 57 people, caused over 5,000 injuries, spawned multiple strong aftershocks, caused an estimated $20 billion or more in damages, and caused extensive damage in Culver City (Culver City, 2017a). The I-10 overpasses at La Cienega Boulevard, Venice Boulevard, Fairfax Avenue, and Washington Boulevard, immediately north of the city, were significantly damaged and had to be rebuilt.

GROUND SHAKING

Strong ground shaking from a major earthquake could affect the city at any time in the coming years. Ground shaking may affect areas hundreds of miles distant from the earthquake's epicenter. The intensity of ground movement during an earthquake can vary depending on the overall magnitude, distance from the fault, the focus of earthquake energy, and type of geologic material. Areas that are underlain by bedrock tend to experience less ground shaking than those underlain by unconsolidated sediments such as artificial fill. **Table 6-1** shows the two commonly used scales to measure earthquakes: the moment magnitude and Mercalli intensity scales. The moment magnitude scale is based on the Richter scale and measures the amount of energy released by the earthquake, while the Mercalli intensity scale is a common measure of earthquake effects due to ground shaking intensity and qualitative observations. The two scales measure different elements of an earthquake and do not precisely correlate to each other, although an approximate comparison is shown in **Table 6-2**. As identified above, the known fault lines that could cause significant ground shaking in the city can produce a 6.0 to 8.0 on the moment magnitude scale (depending on the fault line) which corresponds to a Mercalli intensity scale of VII to IX and, VIII and greater.

Table 6-1: Mercalli Intensity Scale

Intensity	Description
I	Not felt, except by a very few people under especially favorable conditions.
II	Felt only by a few people at rest, especially on the upper floors of buildings.
III	Noticeable by people indoors, especially on the upper floors of buildings, although it is not widely recognized as an earthquake. Parked vehicles may move slightly.
IV	Felt indoors by many and felt outdoors by some. May awaken sleeping people. Dishes, windows, and doors disturbed. Parked vehicles move noticeably.
V	Felt by almost everyone. Sleeping people awaken, and some dishes and windows broken. Unstable objects overturned, and pendulum clocks may stop.

Intensity	Description
VI	Felt by everyone. Some heavy furniture moved, and some instances of falling plaster. Damage slight, although many people may be frightened.
VII	Considerable damage in poorly built or badly designed structures, slight to moderate damage in well-built ordinary structures, and negligible damage in buildings of good design and construction. Some chimneys broken.
VIII	Great damage in poorly built structures, considerable damage and partial collapse of well-built ordinary structures, and slight damage in specially designed structures. Chimneys, factory stacks, columns, monuments, and walls fall. Heavy furniture overturned.
IX	Well-designed structures thrown out of plum, considerable damage in specially-designed structures. Substantial buildings suffer great damage and partial collapse. Buildings shifted off foundations.
X	Some well-built wood structures destroyed. Most masonry and frame structures and foundations destroyed. Rails bent.
XI	Few if any masonry structures remain standing. Bridges destroyed and rails greatly bent.
XII	Total damage. Lines of sight and level are distorted. Objects thrown into the air.
Source: USGS, 2019.	

Table 6-2: Approximate Comparison of Moment Magnitude and Mercalli Intensity Scales

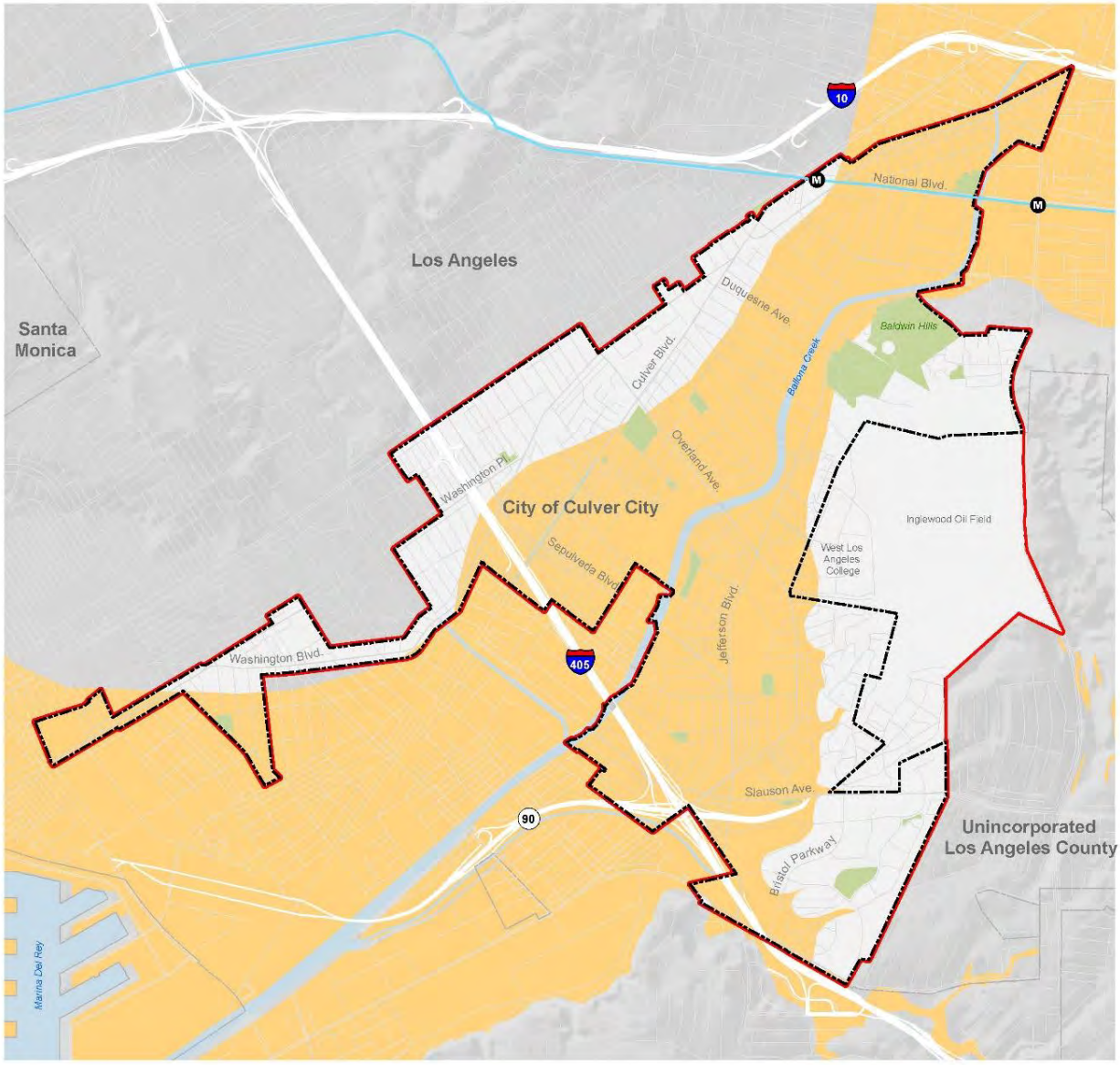
Moment Magnitude	Mercalli Intensity
1.0 to 3.0	I
3.0 to 3.9	II to III
4.0 to 4.9	IV to V
5.0 to 5.9	VI to VII
6.0 to 6.9	VII to IX
7.0 and higher	VIII and greater
Source: USGS, 2019.	

LIQUEFACTION

Liquefaction occurs when the force of an earthquake's shaking causes groundwater to mix with the soil. This mixture temporarily becomes fluid and loses its strength, which may in turn, cause buildings and other structures built on or in it to tilt, collapse, or otherwise suffer damage. Liquefaction can also occur independently of an earthquake if any other sudden and significant stress causes the mixing of groundwater and soil. The risk of liquefaction depends on many different factors, including the height of the groundwater table and the types of soil in an area.

Most of the city is in an area of elevated liquefaction risk, except for the city's northwestern and southeastern borders, as shown in **Figure 6-4**. While the likelihood of liquefaction occurring in a future seismic event is dependent on several factors, there is a possibility for widespread and damaging liquefaction in the community.

Figure 6-4: Potential Liquefaction Zone in Culver City



6.4 FLOODING HAZARDS

Flooding occurs when a waterway, either natural or artificial, receives more water than it is capable of conveying, causing the water level in the waterway to rise. Depending on how long these conditions last and the amount of water the waterway receives in proportion to its capacity, the rising water level may eventually overtop the waterway's banks or any other boundaries to the drainage area, resulting in flooding in the surrounding area. The severity of a flood event also depends on the local topography and the ability of the soil in the area to absorb water. Floods often occur during heavy precipitation events, when the amount of rainwater exceeds the capacity of storm drains or flood control channels. Floods can also happen when infrastructure, such as levees, dams, or culverts fail, or when a section of drainage infrastructure fails, and water cannot be drained from an area fast enough. These failures can be linked to precipitation events or can be a consequence of other emergencies, such as earthquakes.

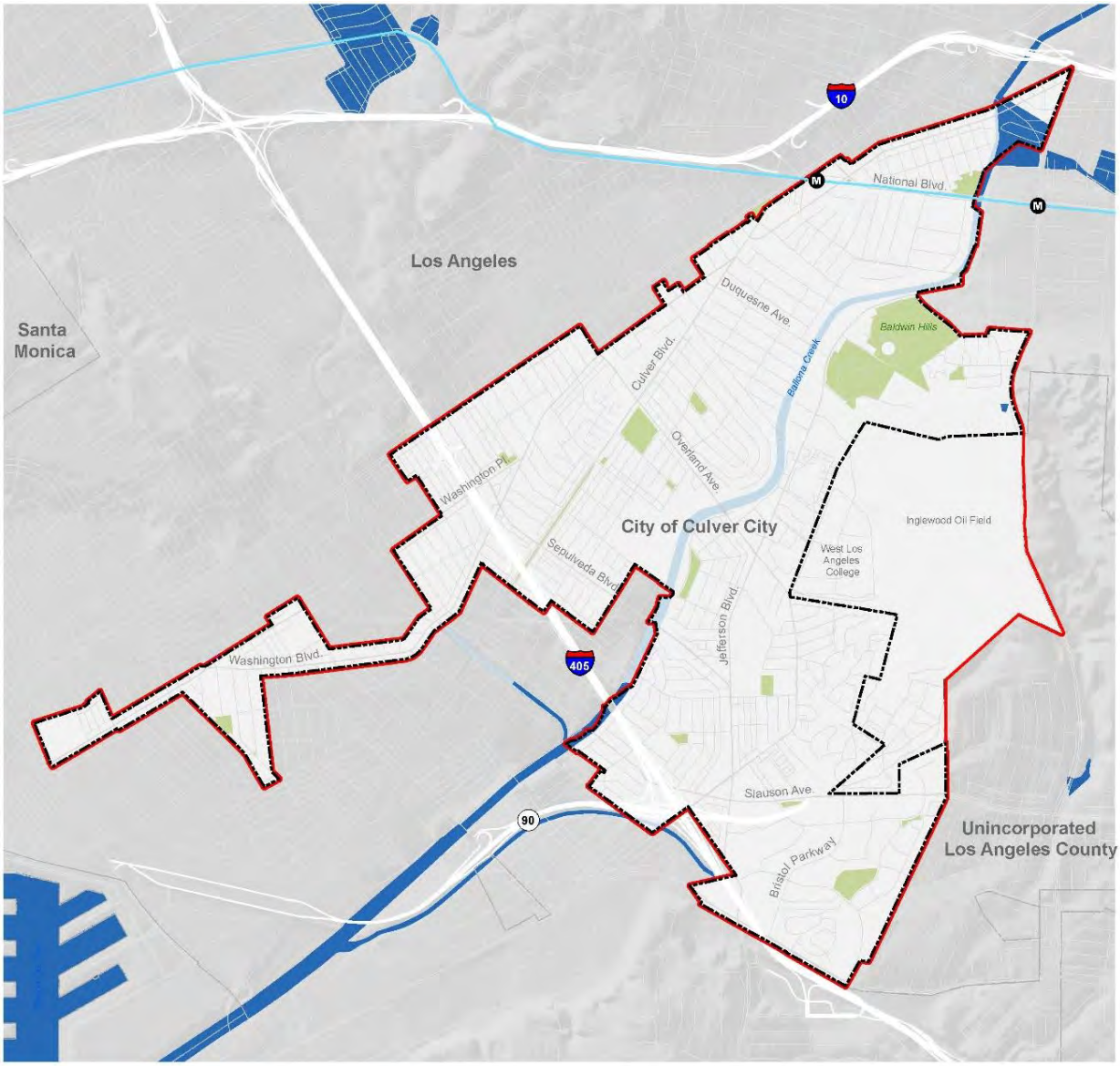
The main waterway in the city is Ballona Creek, which runs approximately 9 miles from the Mid-Wilshire neighborhood of Los Angeles through the city and out to the Pacific Ocean at Marina Del Rey (Culver City, 2017a). Ballona Creek was channelized, straightened, and deepened in the 1930s to control flooding. A tributary of Ballona Creek, Centinela Creek, runs along part of the community's southern border and was channelized in the 1960s.

The city has been relatively free of major flood events, although small-scale flooding has occurred during intense precipitation (Culver City, 2017a). According to the Federal Emergency Management Agency (FEMA), the northern part of the city is at an elevated risk for flood, as shown in **Figure 6-5**. A small area, bordered roughly by Ballona Creek, Fairfax Avenue, and Adams Boulevard lies within a 100-year flood zone for a 1 to 3-foot flood, meaning that there is a one in 100 chance that a flood event sufficient to cause 1 to 3 feet of inundation will occur in any given year (Zone AO) (Culver City, 2017a). Two additional areas nearby, one between Eastham Drive and Ballona Creek and the second in the area immediately adjacent to Ballona Creek between National Boulevard and Sentney Avenue, are also within a 100-year flood zone, although FEMA does not specify the potential amount of inundation in this area (Zone A). Another part of the city, between Adams Boulevard and Dauphin Street, is at risk from a flood capable of causing inundation of less than 1 foot with a chance of occurring between one in 100 and one in 500 in any given year (Zone X).

CLIMATE CHANGE CONSIDERATIONS

As detailed in the Multi-Hazard Mitigation Plan, while climate change is expected to cause an overall decrease in precipitation levels and a general increase in drought conditions, some evidence suggests it may increase the number of more intense storms, which would increase flooding risk in the city (Culver City, 2017a). More intense storms are likely to drop a larger amount of water in a shorter period, increasing the risk of the volume of water overwhelming the ability of the soil or infrastructure to drain it away, and thus creating flooding. The overall drier conditions are expected to dry out the soil, which makes it more difficult for water to soak into the ground, further increasing the risk of flooding. It is not yet known if climate change will affect the frequency or severity of El Niño events.

Figure 6-5: Flood Zone in Culver City



Sources: City of Culver City, 2019; County of Los Angeles, 2019; FEMA, 2018.

Jurisdictional Boundaries

- City of Culver City City Limits
- City of Culver City Sphere of Influence
- Jurisdictional Boundaries

Transportation Features

- Expo Line
- Metro Station

Other Features

- Water
- Parks and Open Spaces

- 100-year Flood Zone

0 0.25 0.5 1 Mile

6.5 FIRE HAZARDS

A wildland fire is a large destructive fire that can spread quickly over woodland or brush (Culver City, 2017a). A wildfire is an uncontrolled fire spreading through vegetative fuels. Wildfires can be caused by human error (such as campfires), intentionally by arson, by mechanical sources of ignition (such as heaters and generators), and by natural events (such as lightning). Wildfires often occur in forests or other areas with ample vegetation. In areas where structures and other human development meets or intermingles with wildland or vegetative fuels (referred to as the wildland-urban interface [WUI]), wildfires can cause significant property damage and pose extreme threats to public health and safety.

There are three categories of WUI fire: where well defined urban and suburban development presses up against open wildland areas, isolated homes characterize the mixed WUI (subdivisions and small communities situated predominantly in wildland settings), and islands of wildland vegetation occur inside a largely urbanized area. Southern California faces challenges with wildfire hazards from the increasing number of houses being built in the WUI. Every year the growing population has expanded further and further into the hills and mountains, including into forest lands. The increased "interface" between urban/suburban areas and the open spaces created by this expansion has produced a significant increase in threats to life and property from fires and has pushed existing fire protection systems beyond original or current design and capability.

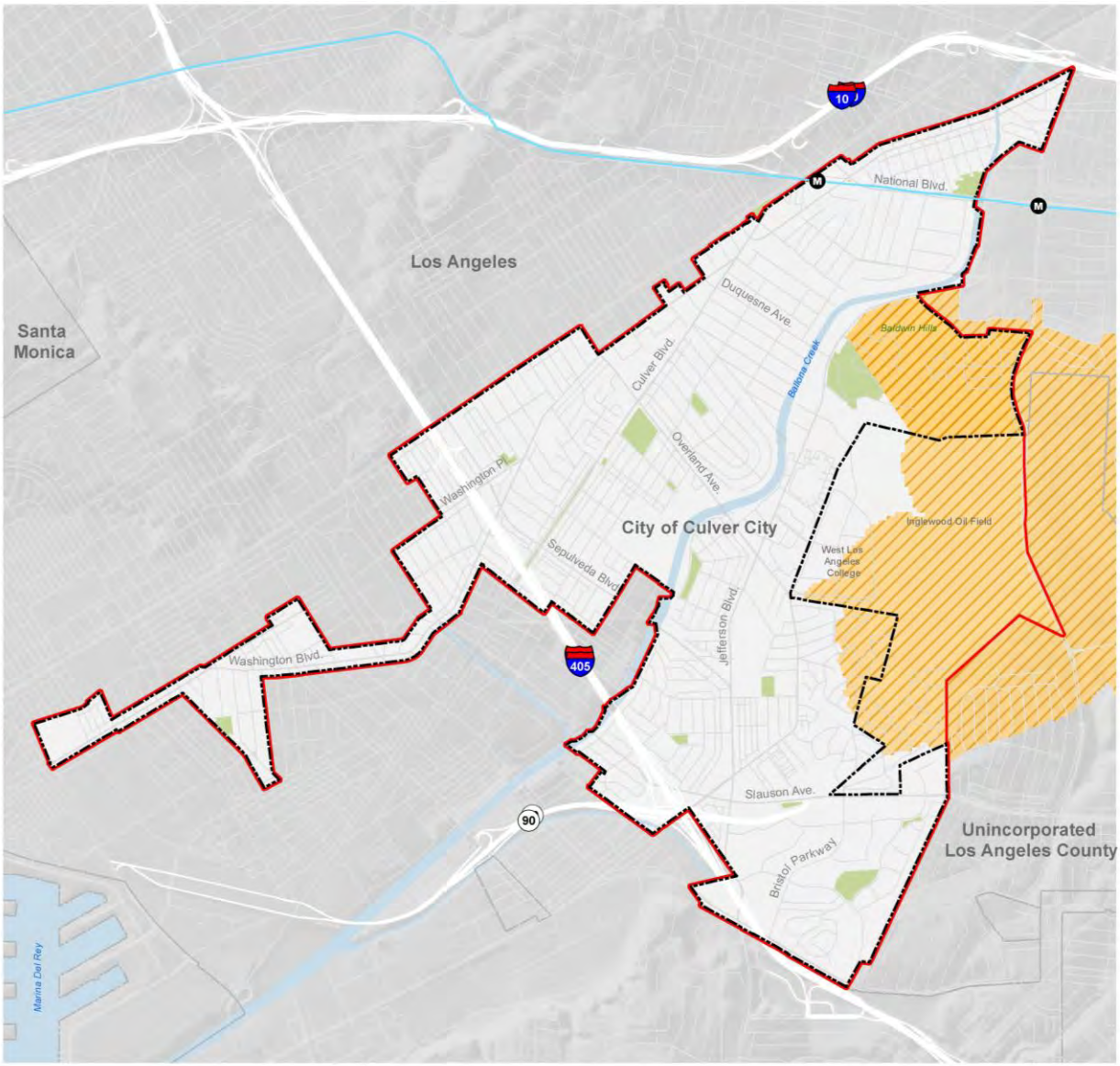
Certain conditions must be present for significant interface fires to occur. The most common conditions include hot, dry and windy weather; the inability of fire protection forces to contain or suppress the fire; the occurrence of multiple fires that overwhelm committed resources; and a large fuel load (dense vegetation). Once a fire has started, several conditions influence its behavior, including fuel topography, weather, drought, and development.

The WUI is present in the eastern portion of the city (Culver City, 2017a). Wildlands located within Los Angeles County are directly adjacent to the city communities of Blair Hills and Culver Crest. Cal Fire prepares fire hazard severity maps including mapping areas of significant fire hazards based on fuels, terrain, weather, and other relevant factors, referred to as Fire Hazard Severity Zones (FHSZ). According to the Los Angeles County FHSZ map, the eastern portion of the city is located in a Very High Fire Severity Zone (VHFSZ), which includes portions of the Culver Crest neighborhood and IOF, considered a WUI (**Figure 6-6**).

CLIMATE CHANGE CONSIDERATIONS

With climate change comes an increase in the frequency, extent, and severity of fires through increased temperatures and drought (Culver City, 2017a). The frequency of large wildfires and the total area burned have been steadily increasing in California and throughout the western United States, with climate change a major contributing factor. Warmer springs and longer summer dry periods since the mid-1980s are linked to a four-fold increase in the number of major wildfires each year and a six-fold increase in the area of forest burned compared with the period between 1970 and 1986. The fire season stretches approximately 78 days longer and individual fires last approximately 30 days longer (Culver City, 2017a). According to the Union of Concerned Scientists, if global warming emissions are not substantially reduced, large wildfires in California are projected to increase 55 percent. According to the Multi-Hazard Mitigation Plan, Global warming increases wildfire risk in several ways:

Figure 6-6: Fire Hazard Zone in Culver City



Sources: City of Culver City, 2019; County of Los Angeles, 2019; CalFire, 2019.

Jurisdictional Boundaries
- City of Culver City City Limits
- City of Culver City Sphere of Influence
- Jurisdictional Boundaries

Local Responsibility Area
- Very High Fire Hazard Zone

0 0.25 0.5 1 Mile

Transportation Features
- Expo Line
- Metro Station

Other Features
- Water
- Parks and Open Spaces

- Longer fire seasons will result as spring runoff occurs earlier, summer heat builds up more quickly, and warm conditions extend further into fall. Western forests typically become combustible within a month of when snowmelt finishes.
- Drier conditions will increase the probability of fire occurrence. Summertime temperatures in western North America are projected to be 3.6 to 9°F higher by mid-century, enhancing evaporation rates, while precipitation is expected to decrease by up to 15 percent. The Southwest will be hit particularly hard, perhaps shifting to a more arid climate.
- More fuel for forest fires will become available because warmer and drier conditions are conducive to widespread beetle and other insect infestations, resulting in broad ranges of dead and highly combustible trees.
- Increased frequency of lightning is expected as thunderstorms become more severe. In the western United States, a 1.8°F increase in temperature is expected to lead to a 6 percent increase in lightning. This means that lightning in the region could increase by 12 to 30 percent by mid-century.

6.6 HAZARDOUS MATERIALS

Materials and waste may be considered hazardous if they are poisonous (toxicity), can be ignited by open flame (ignitability), corrode other materials (corrosivity), or react violently, explode or generate vapors when mixed with water (reactivity). According to the State of California Health and Safety Code (Chapter 6.95 Section 25501(o)), the term "hazardous material" is defined in law as any material that, because of quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or the environment. In some cases, past industrial or commercial uses on a site can result in spills or leaks of hazardous materials and petroleum causing contamination of underlying soil and groundwater as well as contamination in stormwater drains flowing to the Bay. Federal and State laws require that soils and groundwater having concentrations of contaminants such as lead, gasoline, or industrial solvents that are higher than certain acceptable levels must be handled and disposed of as hazardous waste during excavation, transportation, and disposal. The California Code of Regulations (CCR), Title 22, Sections 66261.20–24 contains technical descriptions of characteristics that would cause the soil to be classified as a hazardous waste. The use of hazardous materials and disposal of hazardous wastes are subject to numerous laws and regulations at all levels of government.

POTENTIAL RECEPTORS/EXPOSURE

The sensitivity of potential receptors in the areas of known or potentially hazardous materials contamination is dependent on several factors; the primary factor being an individual's potential pathway for exposure. Exposure pathways include external exposure, inhalation, and ingestion of tainted air, water, or food. The magnitude, frequency, and duration of human exposure can cause a variety of health effects ranging from short term acute symptoms or long term chronic effects. Potential health effects from exposure can be evaluated in a health risk assessment. The principle elements of exposure assessments typically include:

- Evaluation of the fate and transport processes for hazardous materials at a given site;
- Identification of potential exposure pathways;
- Identification of potential exposure scenarios;

- Calculation of representative chemical concentrations; and
- Estimation of potential chemical update.

HAZARDOUS BUILDING MATERIAL

Many buildings and structures can be of an age where the potential exists for the presence of hazardous building materials. Older buildings can contain building materials that consist of hazardous components such as lead-based paint, asbestos, mercury, and polychlorinated biphenyls (PCBs). When these buildings or structures are demolished for renovation or new development, these hazardous building materials can become exposed.

Before the United States Environmental Protection Agency (USEPA) ban in 1978, lead-based paint was commonly used on interior and exterior surfaces of buildings. Old peeling paint has been found to contaminate near-surface soil, and exposure to residual lead has resulted in illness in children.

Asbestos is a naturally occurring fibrous material that was extensively used as a fireproofing and insulating agent in building construction before such uses were banned by the USEPA in the 1970s. Asbestos can lead to lung disease by inhaling its tiny fibers.

Spent fluorescent light tubes commonly contain mercury vapors. In February 2004, regulations took effect in California that classified all fluorescent lamps and tubes as a hazardous waste. When these lamps or tubes are broken, mercury is released to the environment mercury can also be absorbed through the lungs into the bloodstream and can be washed by rainwater into waterways.

PCBs are organic oils that were formerly used primarily as insulators in many types of electrical equipment, including transformers and capacitors. After PCBs were determined to be a carcinogen in the mid to late1970's, the USEPA banned PCB use in most new equipment and began a program to phase out certain existing PCB containing equipment. Fluorescent lighting ballasts manufactured after January 1, 1978, do not have PCBs and are required to have a label clearly stating that PCBs are not present in the unit.

HAZARDOUS STORAGE AND TRANSPORTATION

Releases, leaks, or disposal of chemical compounds, such as petroleum hydrocarbons, on or below the ground surface, can lead to contamination of underlying soil and groundwater and into the bay. Disturbance of a previously contaminated area through grading or excavation operations could expose the public to health hazards from physical contact with contaminated materials or hazardous vapors. Improper handling or storage of contaminated soil and groundwater can further expose the public to these hazards, or potentially spread contamination through surface water runoff or airborne dust. Also, contaminated groundwater can spread down gradient, potentially contaminating subsurface areas of surrounding properties.

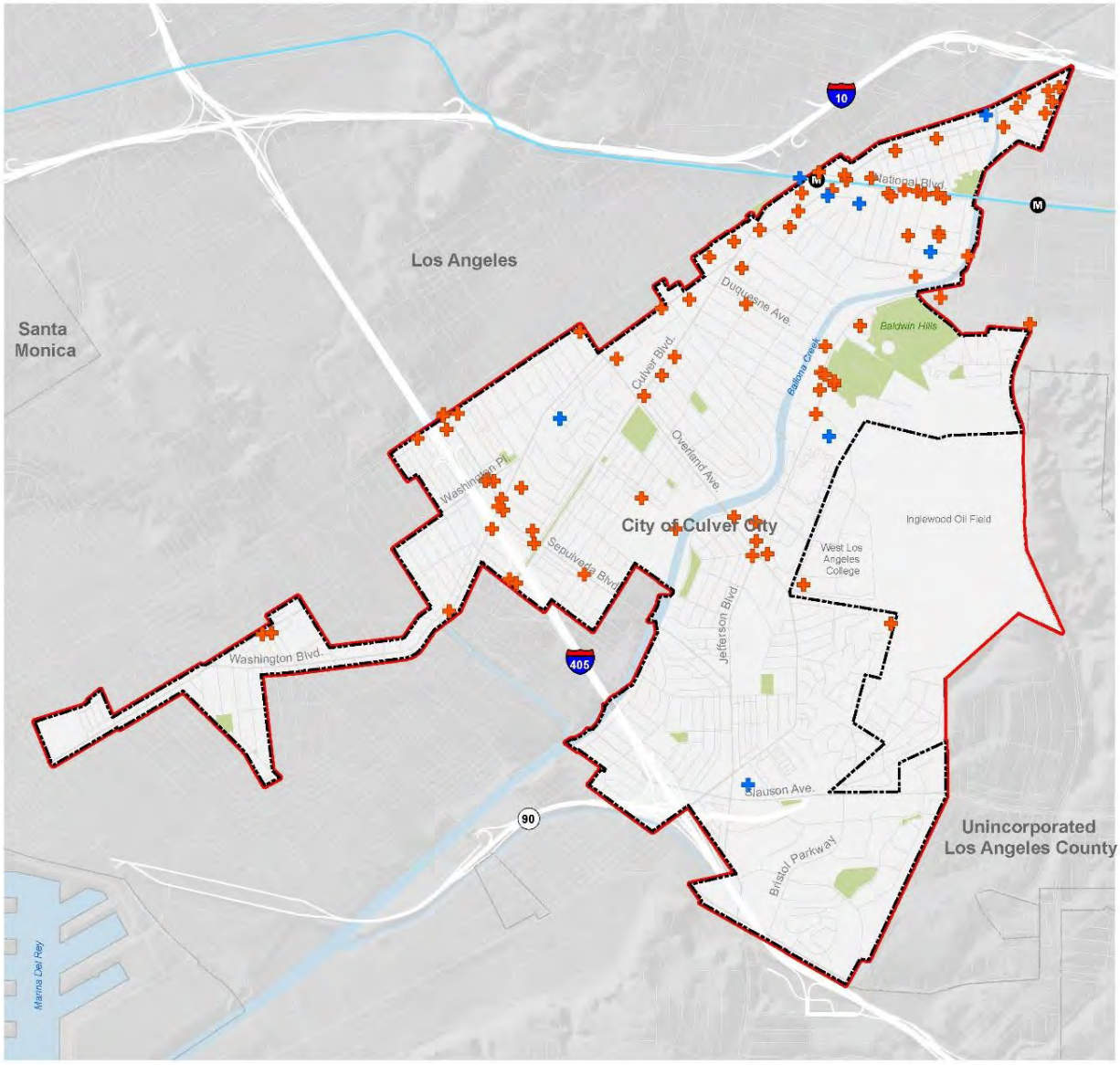
Areas where historical or ongoing activities have resulted in the known or suspected release of hazardous materials to soil and groundwater, and where current investigation and clean-up activities are located, are monitored by the California Department of Toxic Substances (DTSC) or the SWRCB. According to the DTSC Envirostor database, there are eight sites listed in the city, of which two are active cleanup sites, three are certified and require no further action, two are inactive, and one has been referred to another agency (DTSC, 2019). The Geotracker database maintained by the SWRCB,

identified a total of 79 sites for the city (SWRCB, 2019). However, 63 of those listings have been closed and require no further action, and two are eligible for closure. The remaining 14 sites are actively being remediated, assessed, or in a verification monitoring program (**Figure 6-7**).

Various hazardous materials are commonly transported, stored, used, and disposed of in activities such as construction, industry (both light and heavy), dry cleaning, film processing, landscaping, automotive maintenance and repair, and common residential/commercial maintenance activities. The use, transport, storage and disposal of hazardous materials is regulated by the USEPA, California EPA (Cal/EPA) including the six boards, departments and offices: Air Resources Board, Department of Pesticide Regulation, DTSC, Office of Environmental Health Hazard Assessment (OEHHA), and SWRCB. Also, the Department of Public Health Center for Environmental Health and other local regulatory agencies closely monitor businesses and industry in the control of hazardous materials. In addition, businesses that handle more than a certain amount of hazardous materials are required to report their inventories to the California Environmental Reporting System (CERS).

Hazardous materials require special methods of disposal, storage, and treatment, and any unintentional release of hazardous materials requires an immediate response to protect human health and safety, and the environment. Improper disposal can harm the environment and people who work in the waste management industry. Transportation of hazardous materials by truck and rail is regulated by the United States Department of Transportation (USDOT). The USDOT regulations establish criteria for safe handling procedures. Federal safety standards are also included in the California Administrative Code. Also, the California Health Services Department regulates the haulers of hazardous waste.

Figure 6-7: Hazard Sites in Culver City



INGLEWOOD OIL FIELD (IOF)

The IOF is located in Culver City and the unincorporated area of Los Angeles County known as Baldwin Hills, approximately 1,000 acres in size with approximately 78 acres in the city, and one of the largest contiguous urban oil fields in the United States (Wastebits, 2019). The first oil-producing well was drilled in the IOF in 1924, and by 1925 over 50,000 barrels of oil were produced per day (Culver City, 2017b). By the early 2000s, as many as 368 million barrels of oil and 269 billion cubic feet of natural gas (mostly methane) were being produced. As of January 2017, the California Geologic Energy Management Division (CalGEM) (formerly, California Division of Oil, Gas, and Geothermal Resources)) reports that there are 1,550 wells. Based on the annual report for 2015, the IOF produced nearly 2.38 million barrels of oil, 1.07 million cubic feet of gas, and 124 million barrels of water. Numerous laws have been enacted to regulate hazardous materials and wastes, including regulations specific to the oil and gas industry. California has the most stringent regulation and oversight of oil and gas operations in the country, with the primary oversight agency being CalGEM. Also, the CCFD can respond to hazardous materials emergencies at the IOF at the First Responder Operations (FRO) level and has prompt access to specialized hazardous materials resources via the California Master Mutual Aid plan.

Following a series of accidental gas release and odor events in late 2005 and early 2006, community and City interest in the oil field activities peaked and the County initiated the process of establishing regulations for oil and gas production activities within the unincorporated County portion of the oil field. In October 2008, the Los Angeles County Board of Supervisors adopted the Baldwin Hills Community Standards District (County CSD), which established the oil and gas regulations. Following the County process and litigation settlement, the City of Culver City initiated the process of establishing more robust regulation for oil and gas production activities within the city, through the IOF Specific Plan. In the summer of 2018, City Council held a special community meeting to receive an update and review the status of the Specific Plan and related Environmental Impact Report (Culver City, 2019b).

After receiving public comment and discussing the status, the City Council directed that the Specific Plan be placed on hold. Considering public opinion and City Council objectives, the City Council decided to undertake an amortization study to factually support future considerations of the long term use of the IOF and conduct a comprehensive review of the full range of potential options. Accordingly, City Council requested staff to identify qualified expert(s) and obtain a proposal to prepare an informational study that could outline options for addressing the potential amortization of oil-related activities and end-of-field life considerations within the IOF (Culver City, 2019b).

There have been two reportable releases in Culver City in the last five years. On November 24, 2013, an inter-facility pipeline between the FM O&G “Packard” facility in the City of Los Angeles and the IOF, which leaked seven barrels of produced water that drained onto the street and then into the storm drain near Blackwelder Street (near the intersection of La Cienega Boulevard and Fairfax Avenue). The produced water did not reach Ballona Creek (Culver City, 2017b). Then on April 1, 2019, there was an oil-water leak at the IOF along Leash Lane in the vicinity of The Bone Yard dog park (Culver City, 2019c). The leak originated from the “Block 31” oil well and traveled along the curb/gutter to a storm drain inlet. Once redirected from the storm drain, the flow traveled toward but was fully contained just short of the intersection of Jefferson and Duquesne Avenue. The spill did not extend to Ballona Creek.

CHAPTER 7 REFERENCES

CHAPTER 2–WATER RESOURCES AND QUALITY

Ballona Creek Watershed Management Group (BC WMG). 2016. Enhanced Watershed Management Program for the Ballona Creek Watershed. Available at https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/watershed_management/ballona_creek/BallonaCreek_RevisedEWMP_corrected2016Feb1.pdf

California Regional Water Quality Control Board (RWQCB). 2014. Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties. Available at https://www.waterboards.ca.gov/losangeles/water_issues/programs/basin_plan/basin_plan_documentation.html

Culver City. 2004. Ballona Creek and Trail Focused Special Study. Available at https://www.culvercity.org/home/showdocument?id=15570

Culver City. 2010. Ballona Creek Greenway Plan. Available at https://www.culvercity.org/home/showdocument?id=14136

Culver City. 2019a. Stormwater. Available at https://www.culvercity.org/live/home-property/residential-recycling-trash-services/stormwater

Culver City. 2019b. Measure CW. Available at https://www.culvercity.org/city-hall/information/election-information/ballot-measure-information/clean-culver-city

Culver City. 2019c. Ballona Creek Revitalization Project. Available at https://www.culvercity.org/city-hall/city-government/city-projects/ballona-creek-revitalization-project

Culver City. 2019d. Culver Boulevard Realignment and Urban Stormwater Project. Available at https://www.culvercity.org/city-hall/city-government/city-projects/culver-boulevard-realignment-urban-stormwater-project

Los Angeles County. 2009. County of Los Angeles Marina Del Rey Watershed Map. Available at https://pw.lacounty.gov/wmd/watershed/mdr/docs/MarinaDelRey.pdf

Los Angeles County. 2020. Marina Del Rey webpage. Available at: https://dpw.lacounty.gov/wmd/watershed/mdr/index.cfm

Department of Water Resources (DWR). 2015. California's Groundwater Update 2013: A Compilation of Enhanced Content for California Water Plan Update 2013. Available at https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Groundwater-Management/Data-and-Tools/Files/Statewide-Reports/California-Groundwater-Update-2013/California--Groundwater-Update-2013---Chapter-6---South-Coast.pdf

Department of Water Resources (DWR). 2004a. California Groundwater Bulletin 118: Coastal Plain of Los Angeles Groundwater Basin, Santa Monica Subbasin. Available at https://water.ca.gov/LegacyFiles/groundwater/bulletin118/basindescriptions/4-11.01.pdf

Department of Water Resources (DWR). 2004b. California Groundwater Bulletin 118: Coastal Plain of Los Angeles Groundwater Basin, Central Subbasin. Available at https://water.ca.gov/LegacyFiles/groundwater/bulletin118/basindescriptions/4-11.04.pdf

Department of Water Resources (DWR). 2004c. California Groundwater Bulletin 118: Coastal Plain of Los Angeles Groundwater Basin, West Coast Subbasin. Available at https://water.ca.gov/LegacyFiles/pubs/groundwater/bulletin_118/basindescriptions/4-11.03.pdf

Golden State Water Company (GSWC). 2016. 2015 Urban Water Management Plan: Culver City. Available at http://www.gswater.com/download/CulverCity_2015_UWMP-FinalDraft.pdf

State Water Resources Control Board (SWRCB). 2016. 2014 and 2016 California Integrated Report Clean Water Act Section 303(d) List and 305(b) Report. Available at https://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2014_2016.shtml?wbid=CAR405130001998091814230 2

CHAPTER 3 – NOISE

Please refer to the footnotes included in this chapter.

CHAPTER 4 – BIOLOGICAL RESOURCES

Calflora: Information on California plants for education, research, and conservation, with data contributed by public and private institutions and individuals, including the Consortium of California Herbaria. [web application]. 2019. Berkeley, California: The Calflora Database [a non-profit organization]. Available: https://www.calflora.org/. Accessed: Oct 21, 2019.

California Department of Fish and Wildlife (CDFW), California Natural Diversity Database (CNDDB), 2019. Available online: http://www.dfg.ca.gov/biogeodata/cnddb/mapsanddata.asp. Accessed October 2019.

California Native Plant Society (CNPS). 2019. Inventory of Rare and Endangered Plants (online edition, v8-01a). California Native Plant Society. Sacramento, CA. Available online: http://www.rareplants.cnps.org/. Accessed October 2019.

Cooper, D.S., R.A. Hamilton, and S.D. Lucas. 2012. A Population Census of the Cactus Wren in Coastal Los Angeles County. Western Birds 43: 151-163.

Los Angeles County. 2008. Baldwin Hills Community Standards District, Public Draft Environmental Impact Report. State Clearinghouse No. 2007061133. June 2008.

U.S. Fish and Wildlife Service (USFWS). 2019a. Information, Planning, and Conservation System (IPaC). Available online: https://ecos.fws.gov/ipac/. Accessed October 2019.

U.S. Fish and Wildlife Service (USFWS). 2019b. Critical Habitat Portal. Accessed at http://ecos.fws.gov/crithab/. Accessed October 2019.

CHAPTER 5 – CULTURAL RESOURCES

Bean, L.J., and C.R. Smith. 1978. Gabrielino, in *California*, edited by R.F. Heizer, pp. 538-549 Handbook of North American Indians, Vol. 8, W. C. Sturtevant, general editor, Smithsonian Institution, Washington, D.C.

Byrd, Brian F., and L. Mark Raab. 2007. Prehistory of the Southern Bight: Models for a New Millennium, in *California Prehistory: Colonization, Culture, and Complexity*, edited by Terry L. Jones and Kathryn A. Klar, pp 215-227.

Cerra, Julie Lugo. 1992. *Culver City: The Heart of Screenland.* Windsor Publications.

Cerra, Julie Lugo. 2013. *Culver City Chronicles*, Charleston, History Press, pp 35.

Connin, S., J. Betancourt, and J. Quade. 1998. *Late Pleistocene C4 plant dominance and summer rainfall in the Southwestern United States from isotopic study of herbivore teeth.* Quaternary Research 50: 179-193.

Culver City. 2020a. History of Culver City Overview website. Accessed September 1, 2020 at: https://www.culvercity.org/how-do-i/learn/about-culver-city/history-of-culver-city/early-settlers-of-culver-city/overview.

Culver City. 2020b. History of Culver City-Early Settlers of La Ballona (Machados/Talamantes) website. Accessed September 1, 2020 at: https://www.culvercity.org/how-do-i/learn/about-culver-city/history-of-culver-city/early-settlers-of-culver-city/early-settlers-of-la-ballona-machados-talamantes.

Culver City. 2020c. History of Culver City- Rancho Rincon de los Bueyes (Higueras) website. Accessed September 1, 2020 at: https://www.culvercity.org/how-do-i/learn/about-culver-city/history-of-culver-city/early-settlers-of-culver-city/rancho-rincon-de-los-bueyes-higueras.

Dibblee, T. W. and J. A. Minch. 2007. *Geologic map of the Venice and Inglewood quadrangles, Los Angeles County, California.* Dibblee Foundation Map DF-322. Scale 1: 24,000.

Dinkelspiel, Frances. 2008. *Towers of Gold*, St. Martin's Press, New York.

Erlandson, Jon M. 1994. *Early Hunter-Gatherers of the California Coast.* Plenum Press, New York.

Graham, R.W., and E.L. Lundelius. 1994. *FAUNMAP: A database documenting the late Quaternary distributions of mammal species in the United States.* Illinois State Museum Scientific Papers XXV(1).

Gumprecht, Blake. 2001. *Los Angeles River: Its Life, and Possible Rebirth.* The Johns Hopkins University Press, Baltimore, 1999, Reprinted 2001.

Homburg, Jeffrey A., Diane L. Doublas, Eric C. Brevik, Caroline Tepley, and Antony Orme. 2014. Paleoenvironmental Reconstruction of the Ballona Lagoon. In *People in a Changing Land: The Archaeology and History of the Ballona in Los Angeles, California. Volume I:*

Paleoenvironment and Culture History, edited by J. Homburg, J. Douglass, and S. Reddy, pp. 85-110. Statistical Research, Inc., Tucson, Arizona.

Jackson, Robert H., Agriculture. 1999. Drought & Chumash Congregation in the California Missions (1782-1834), Articles, California Mission Studies Association Newsletter, 1999.

Jefferson, G.T. 1991a. *A catalogue of Late Quaternary Vertebrates from California: Part One, nonmarine lower vertebrate and avian taxa.* Natural History Museum of Los Angeles County Technical Reports No. 5.

–––. 1991b. *A catalogue of Late Quaternary Vertebrates from California: Part Two, Mammals.* Natural History Museum of Los Angeles County Technical Reports No. 7.

Johnson, J. R., and D. D. Earle. 1990. Tataviam Geography and Ethnohistory. *Journal of California and Great Basin Anthropology*, Vol. 12, No. 2, pp. 191-214.

Koerper, H.C., R.D. Mason, and M.L. Peterson. 2002. Complexity, Demography, and Change in Late Holocene Orange County. In *Catalysts to Complexity: Late Holocene Societies of the California Coast*, edited by J.M.

Kroeber, A. L. 1925. *Handbook of the Indians of California*. Dover Publications, Inc., New York, reprinted 1976.

Los Angeles Almanac. January 2, 2019. Original Settlers of Los Angeles. Available at: http://www.laalmanac.com/history/hi03c.php

McCawley, William, 1996. *The First Angelinos, The Gabrielino Indians of Los Angeles. Malki Museum Press, Morongo Indian Reservation.*

McLeod, S. 2019. Paleontological Resources for the Proposed Culver City GPU Project, in Culver City, Los Angeles County, project area. Letter on file at the Environmental Science Associates, Irvine, CA.

McWilliams, Carey. 1946. *Southern California: An Island on the Land.* Gibbs Smith, Layton, Utah.

Milliken, Randall, Laurence H. Shoup, and Beverly R. Ortiz. 2009. *Ohlone/Costanoan Indians of the San Francisco Peninsula and their Neighbors, Yesterday and Today*, prepared by Archaeological and Historical Consultants, Oakland, California, prepared for National Park Service Golden Gate National Recreation Area, San Francisco, California, June 2009.

Miller, W. E. 1971. *Pleistocene Vertebrates of the Los Angeles Basin and Vicinity: exclusive of Rancho La Brea.* Los Angeles County Museum of Natural History, No. 10.

Minch, John and Richard B. Guttenberg. 2016. *Paleontological Survey of the 1/2 Acre Multi-Use Commercial Development Building Site, 8888 Washington Boulevard, Culver City, Los Angeles County, California.* Prepared for The Runyon Group. Prepared by John Minch and Associates, Inc.

Mullaly, Larry and Bruce Petty. 2002. *The Southern Pacific Railroad in Los Angeles, 1873 - 1996.* Golden West Books, San Marino, California.

Orsi, Richard J. 2005. *Sunset Limited – the Southern Pacific Railroad and the Development of the American West, 1850 - 1930.* University of California Press, Berkeley and Los Angeles, California.

Pennington, L. W. and Baxter, W. K. 1976. *A Past to Remember: The History of Culver City.*

Pitt, Leonard. 1994. *The Decline of the Californios: A Social History of the Spanish-speaking Californians, 1846-1890.* University of California Press, Berkeley.

Quinn, S. 2019. Native American Tribal Consultation, Pursuant to the Assembly Bill 52 (AB 52), Amendments to the California Environmental Quality Act (CEQA) (Chapter 532, Statutes of 2014), Public Resources Code Sections 5097.94 (m), 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2 and 21084.3, Culver City GPU Project, Los Angeles County. Letter on file at the Environmental Science Associates, Irvine, CA.

Raab, L. Mark, Judith F. Porcasi, Katherine Bradford, and Andrew Yatsko. 1995. Debating Cultural Evolution: Regional Implications of Fishing Intensification at Eel Point, San Clemente Island. *Pacific Coast Archaeological Society Quarterly* 31(3):3–27.

Reedy, Seetha N. 2015. Feeding Family and Ancestors: Persistence of Traditional Native American Lifeways during the Mission Period in Coastal Southern California. *Journal of Anthropological Archaeology*, No. 37, pg. 48-66.

Roy, K., J. Valentine, D. Jablonski, and S. Kidwell. 1996. *Scales of climatic variability and time averaging in Pleistocene biotas: implications for ecology and evolution.* Trends in Ecology and Evolution 11: 458-463.

Sandom, C., S. Faurby, B. Sandel, and J.-C. Svenning. 2014. *Global late Quaternary megafauna extinctions linked to humans, not climate change.* Proceedings of the Royal Society B 281, 9 pp.

Scott, E. 2010. *Extinctions, scenarios, and assumptions: Changes in latest Pleistocene large herbivore abundance and distribution in western North America.* Quaternary International 217: 225-239.

Scott, E. and S. Cox. 2008. *Late Pleistocene distribution of Bison (Mammalia; Artiodactyla) in the Mojave Desert of Southern California and Nevada.* In Wang, X. and L. Barnes, eds. Geology and Vertebrate Paleontology of Western and Southern North America. Natural History Museum of Los Angeles County, Science Series 41: 359-382.

Starr, Kevin. 2007. *California: A History.* Modern Library, New York.

Stickel, Gary E., PhD. 2016. Why the Original Indian Tribe of the Greater Los Angeles Area is Called Kizh not Tongva. Available at: https://www.cpp.edu/~tgyoung/Pom_Parks/Kizh%20not%20Tongva_9-27-17.pdf

Stoll, Anne Q., John G. Douglass, and Richard Ciolek-Torrello. 2009. Searching for Guaspet: A Mission Period Rancheria in West Los Angeles. *SCA Proceedings*, Vol. 22.

Wallace, W. J. 1955. A Suggested Chronology for Southern California Coastal Archaeology. *Southwestern Journal of Anthropology* 11(3):214-230.

Warren, C. N. 1968. Cultural Traditions and Ecological Adaptation on the Southern California Coast. *Archaic Prehistory in the Western United States*, edited by Cynthia Irwin-Williams. Eastern New Mexico University Contributions in Anthropology 1(3):1-14.

Yerkes, R. F., T. H. McCulloh, J. E. Schoellhamer, and J. G. Vedder. 1965. *Geology of the Los Angeles Basin – an introduction*. U.S. Geological Survey Professional paper 420-A. 64 pp.

CHAPTER 6 – HAZARDS

City of Culver City and Culver City Unified School District (Culver City). 2017a. City of Culver City and Culver City Unified School District Multi-Jurisdictional Hazard Mitigation Plan. Available at https://www.culvercity.org/live/public-safety/hazard-mitigation-plan

City of Culver City (Culver City). 2017b. IOF Specific Plan Project Draft Environmental Impact Report. Available at https://www.culvercity.org/how-do-i/learn/inglewood-oil-field/environmental-review-process

City of Culver City (Culver City). 2019a. IOF Background. Available at https://www.culvercity.org/how-do-i/learn/inglewood-oil-field/background

City of Culver City (Culver City). 2019b. City of Culver City Staff Report File # 19-1174, May 28, 2019. Available at https://culver-city.legistar.com/ViewReport.ashx?M=R&N=Text&GID=535&ID=3534335&GUID=1963D813-6572-4A48-ADB9-803383EBC02F&Title=Staff+Report

City of Culver City (Culver City). 2019c. IOF. Available at https://www.culvercity.org/how-do-i-/learn/inglewood-oil-field.

City of Culver City (Culver City). 2018. *Request for Proposals for Soft Story Seismic Retro-Fit Consultant Services*. September 20,2018. Available at https://www.culvercity.org/home/showdocument?id=15695. Accessed on December 4, 2019.

US Geological Survey (USGS). 2019. Magnitude/Intensity Comparison. Available at https://earthquake.usgs.gov/learn/topics/mag_vs_int.php

APPENDIX A: DATABASE SEARCH

CALIFORNIA DEPARTMENT OF FISH and WILDLIFE RareFind

Query Summary:
Quad IS (Beverly Hills (3411814) OR Inglewood (3311883) OR Venice (3311884) OR Hollywood (3411813))

Print Close

CNDDB Element Query Results

Scientific Name	Common Name	Taxonomic Group	Element Code	Total Occs	Returned Occs	Federal Status	State Status	Global Rank	State Rank	CA Rare Plant Rank	Other Status	Habitats
Agelaius tricolor	tricolored blackbird	Birds	ABPBXB0020	955	1	None	Threatened	G2G3	S1S2	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_EN-Endangered, NABCI_RWL-Red Watch List, USFWS_BCC-Birds of Conservation Concern	Freshwater marsh, Marsh & swamp, Swamp, Wetland
Aimophila ruficeps canescens	southern California rufous-crowned sparrow	Birds	ABPBX91091	230	1	None	None	G5T3	S3	null	CDFW_WL-Watch List	Chaparral, Coastal scrub
Anniella stebbinsi	southern California legless lizard	Reptiles	ARACC01060	417	20	None	None	G3	S3	null	CDFW_SSC-Species of Special Concern, USFS_S-Sensitive	Broadleaved upland forest, Chaparral, Coastal dunes, Coastal scrub
Antrozous pallidus	pallid bat	Mammals	AMACC10010	420	2	None	None	G5	S3	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern, USFS_S-Sensitive, WBWG_H-High Priority	Chaparral, Coastal scrub, Desert wash, Great Basin grassland, Great Basin scrub, Mojavean desert scrub, Riparian woodland, Sonoran desert scrub, Upper montane coniferous forest, Valley & foothill grassland
Arenaria paludicola	marsh sandwort	Dicots	PDCAR040L0	16	1	Endangered	Endangered	G1	S1	1B.1	SB_SBBG-Santa Barbara Botanic Garden	Freshwater marsh, Marsh & swamp, Wetland
Aspidoscelis tigris stejnegeri	coastal whiptail	Reptiles	ARACJ02143	146	1	None	None	G5T5	S3	null	CDFW_SSC-Species of Special Concern	null
Astragalus brauntonii	Braunton's milk-vetch	Dicots	PDFAB0F1G0	44	2	Endangered	None	G2	S2	1B.1	SB_RSABG-Rancho Santa Ana Botanic Garden, SB_SBBG-Santa Barbara Botanic Garden	Chaparral, Coastal scrub, Limestone, Valley & foothill grassland
Astragalus pycnostachyus var. lanosissimus	Ventura Marsh milk-vetch	Dicots	PDFAB0F7B1	7	2	Endangered	Endangered	G2T1	S1	1B.1	SB_RSABG-Rancho Santa Ana Botanic Garden, SB_SBBG-Santa Barbara Botanic Garden	Coastal dunes, Coastal scrub, Marsh & swamp, Salt marsh, Wetland
Astragalus tener var. titi	coastal dunes milk-vetch	Dicots	PDFAB0F8R2	6	2	Endangered	Endangered	G2T1	S1	1B.1	SB_RSABG-Rancho Santa Ana Botanic Garden	Coastal bluff scrub, Coastal dunes, Coastal prairie
Athene cunicularia	burrowing owl	Birds	ABNSB10010	1988	2	None	None	G4	S3	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern, USFWS_BCC-Birds of Conservation Concern	Coastal prairie, Coastal scrub, Great Basin grassland, Great Basin scrub, Mojavean desert scrub, Sonoran desert scrub, Valley & foothill grassland

Atriplex coulteri	Coulter's saltbush	Dicots	PDCHE040E0	121	2	None	None	G3	S1S2	1B.2	SB_RSABG-Rancho Santa Ana Botanic Garden	Coastal bluff scrub, Coastal dunes, Coastal scrub, Valley & foothill grassland
Atriplex pacifica	south coast saltscale	Dicots	PDCHE041C0	109	1	None	None	G4	S2	1B.2	null	Alkali playa, Coastal bluff scrub, Coastal dunes, Coastal scrub
Atriplex parishii	Parish's brittlescale	Dicots	PDCHE041D0	15	1	None	None	G1G2	S1	1B.1	USFS_S-Sensitive	Alkali playa, Chenopod scrub, Meadow & seep, Vernal pool, Wetland
Atriplex serenana var. davidsonii	Davidson's saltscale	Dicots	PDCHE041T1	27	2	None	None	G5T1	S1	1B.2	null	Coastal bluff scrub, Coastal scrub
Berberis nevinii	Nevin's barberry	Dicots	PDBER060A0	32	2	Endangered	Endangered	G1	S1	1B.1	SB_RSABG-Rancho Santa Ana Botanic Garden, SB_SBBG-Santa Barbara Botanic Garden	Chaparral, Cismontane woodland, Coastal scrub, Riparian scrub
Bombus crotchii	Crotch bumble bee	Insects	IIHYM24480	234	8	None	Candidate Endangered	G3G4	S1S2	null	null	null
Brennania belkini	Belkin's dune tabanid fly	Insects	IIDIP17010	4	4	None	None	G1G2	S1S2	null	IUCN_VU-Vulnerable	Coastal dunes
Buteo swainsoni	Swainson's hawk	Birds	ABNKC19070	2510	2	None	Threatened	G5	S3	null	BLM_S-Sensitive, IUCN_LC-Least Concern, USFWS_BCC-Birds of Conservation Concern	Great Basin grassland, Riparian forest, Riparian woodland, Valley & foothill grassland
California Walnut Woodland	California Walnut Woodland	Woodland	CTT71210CA	76	2	None	None	G2	S2.1	null	null	Cismontane woodland
Calochortus plummerae	Plummer's mariposa-lily	Monocots	PMLIL0D150	230	2	None	None	G4	S4	4.2	SB_RSABG-Rancho Santa Ana Botanic Garden	Chaparral, Cismontane woodland, Coastal scrub, Lower montane coniferous forest, Valley & foothill grassland
Calystegia felix	lucky morning-glory	Dicots	PDCON040P0	10	2	None	None	G1Q	S1	1B.1	null	Meadow & seep, Riparian scrub
Carolella busckana	Busck's gallmoth	Insects	IILEM2X090	4	2	None	None	G1G3	SH	null	null	Coastal dunes, Coastal scrub
Centromadia parryi ssp. australis	southern tarplant	Dicots	PDAST4R0P4	94	7	None	None	G3T2	S2	1B.1	SB_RSABG-Rancho Santa Ana Botanic Garden	Marsh & swamp, Salt marsh, Valley & foothill grassland, Vernal pool, Wetland
Chaenactis glabriuscula var. orcuttiana	Orcutt's pincushion	Dicots	PDAST20095	36	5	None	None	G5T1T2	S1	1B.1	BLM_S-Sensitive, SB_CRES-San Diego Zoo CRES Native Gene Seed Bank, SB_RSABG-Rancho Santa Ana Botanic Garden	Coastal bluff scrub, Coastal dunes
Charadrius alexandrinus nivosus	western snowy plover	Birds	ABNNB03031	138	2	Threatened	None	G3T3	S2S3	null	CDFW_SSC-Species of Special Concern, NABCI_RWL-Red Watch List, USFWS_BCC-Birds of Conservation Concern	Great Basin standing waters, Sand shore, Wetland
Chenopodium littoreum	coastal goosefoot	Dicots	PDCHE091Z0	13	1	None	None	G1	S1	1B.2	null	Coastal dunes
Chloropyron maritimum ssp. maritimum	salt marsh bird's-beak	Dicots	PDSCR0J0C2	30	2	Endangered	Endangered	G4?T1	S1	1B.2	SB_CRES-San Diego Zoo CRES Native Gene Seed Bank, SB_RSABG-Rancho Santa Ana Botanic Garden, SB_SBBG-Santa Barbara Botanic Garden	Coastal dunes, Marsh & swamp, Salt marsh, Wetland

Chorizanthe parryi var. fernandina	San Fernando Valley spineflower	Dicots	PDPGN040J1	21	1	Proposed Threatened	Endangered	G2T1	S1	1B.1	SB_RSABG-Rancho Santa Ana Botanic Garden, USFS_S-Sensitive	Coastal scrub, Valley & foothill grassland
Cicindela hirticollis gravida	sandy beach tiger beetle	Insects	IICOL02101	34	3	None	None	G5T2	S2	null	null	Coastal dunes
Cicindela senilis frosti	senile tiger beetle	Insects	IICOL02121	9	1	None	None	G2G3T1T3	S1	null	null	Mud shore/flats, Wetland
Coelus globosus	globose dune beetle	Insects	IICOL4A010	50	3	None	None	G1G2	S1S2	null	IUCN_VU-Vulnerable	Coastal dunes
Coturnicops noveboracensis	yellow rail	Birds	ABNME01010	45	2	None	None	G4	S1S2	null	CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern, NABCI_RWL-Red Watch List, USFS_S-Sensitive, USFWS_BCC-Birds of Conservation Concern	Freshwater marsh, Meadow & seep
Danaus plexippus pop. 1	monarch - California overwintering population	Insects	IILEPP2012	383	11	None	None	G4T2T3	S2S3	null	USFS_S-Sensitive	Closed-cone coniferous forest
Dithyrea maritima	beach spectaclepod	Dicots	PDBRA10020	28	4	None	Threatened	G1	S1	1B.1	BLM_S-Sensitive, SB_SBBG-Santa Barbara Botanic Garden	Coastal dunes, Coastal scrub
Dudleya multicaulis	many-stemmed dudleya	Dicots	PDCRA040H0	154	1	None	None	G2	S2	1B.2	BLM_S-Sensitive, SB_RSABG-Rancho Santa Ana Botanic Garden, USFS_S-Sensitive	Chaparral, Coastal scrub, Valley & foothill grassland
Empidonax traillii extimus	southwestern willow flycatcher	Birds	ABPAE33043	70	1	Endangered	Endangered	G5T2	S1	null	NABCI_RWL-Red Watch List	Riparian woodland
Emys marmorata	western pond turtle	Reptiles	ARAAD02030	1375	1	None	None	G3G4	S3	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_VU-Vulnerable, USFS_S-Sensitive	Aquatic, Artificial flowing waters, Klamath/North coast flowing waters, Klamath/North coast standing waters, Marsh & swamp, Sacramento/San Joaquin flowing waters, Sacramento/San Joaquin standing waters, South coast flowing waters, South coast standing waters, Wetland
Eryngium aristulatum var. parishii	San Diego button-celery	Dicots	PDAPI0Z042	82	1	Endangered	Endangered	G5T1	S1	1B.1	SB_CRES-San Diego Zoo CRES Native Gene Seed Bank, SB_RSABG-Rancho Santa Ana Botanic Garden	Coastal scrub, Valley & foothill grassland, Vernal pool, Wetland
Eucosma hennei	Henne's eucosman moth	Insects	IILEM0R390	1	1	None	None	G1	S1	null	null	Coastal dunes
Eumops perotis californicus	western mastiff bat	Mammals	AMACD02011	296	6	None	None	G5T4	S3S4	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, WBWG_H-High Priority	Chaparral, Cismontane woodland, Coastal scrub, Valley & foothill grassland
Euphilotes battoides allyni	El Segundo blue butterfly	Insects	IILEPG201B	4	2	Endangered	None	G5T1	S1	null	XERCES_CI-Critically Imperiled	Coastal dunes
Helianthus nuttallii ssp. parishii	Los Angeles sunflower	Dicots	PDAST4N102	7	1	None	None	G5TH	SH	1A	null	Freshwater marsh, Marsh & swamp, Salt marsh, Wetland
Horkelia cuneata var. puberula	mesa horkelia	Dicots	PDROS0W045	103	3	None	None	G4T1	S1	1B.1	USFS_S-Sensitive	Chaparral, Cismontane woodland, Coastal scrub
Lasionycteris noctivagans	silver-haired bat	Mammals	AMACC02010	139	1	None	None	G5	S3S4	null	IUCN_LC-Least Concern,	Lower montane coniferous forest,

											WBWG_M-Medium Priority	Oldgrowth, Riparian forest
Lasiurus cinereus	hoary bat	Mammals	AMACC05030	238	6	None	None	G5	S4	null	IUCN_LC-Least Concern, WBWG_M-Medium Priority	Broadleaved upland forest, Cismontane woodland, Lower montane coniferous forest, North coast coniferous forest
Lasthenia glabrata ssp. coulteri	Coulter's goldfields	Dicots	PDAST5L0A1	111	4	None	None	G4T2	S2	1B.1	BLM_S-Sensitive, SB_RSABG-Rancho Santa Ana Botanic Garden, SB_SBBG-Santa Barbara Botanic Garden	Alkali playa, Marsh & swamp, Salt marsh, Vernal pool, Wetland
Laterallus jamaicensis coturniculus	California black rail	Birds	ABNME03041	303	1	None	Threatened	G3G4T1	S1	null	BLM_S-Sensitive, CDFW_FP-Fully Protected, IUCN_NT-Near Threatened, NABCI_RWL-Red Watch List, USFWS_BCC-Birds of Conservation Concern	Brackish marsh, Freshwater marsh, Marsh & swamp, Salt marsh, Wetland
Microtus californicus stephensi	south coast marsh vole	Mammals	AMAFF11035	7	3	None	None	G5T1T2	S1S2	null	CDFW_SSC-Species of Special Concern	null
Nama stenocarpa	mud nama	Dicots	PDHYD0A0H0	22	1	None	None	G4G5	S1S2	2B.2	null	Marsh & swamp, Wetland
Nasturtium gambelii	Gambel's water cress	Dicots	PDBRA270V0	13	1	Endangered	Threatened	G1	S1	1B.1	SB_RSABG-Rancho Santa Ana Botanic Garden, SB_SBBG-Santa Barbara Botanic Garden	Brackish marsh, Freshwater marsh, Marsh & swamp, Wetland
Navarretia fossalis	spreading navarretia	Dicots	PDPLM0C080	78	1	Threatened	None	G2	S2	1B.1	SB_CRES-San Diego Zoo CRES Native Gene Seed Bank, SB_RSABG-Rancho Santa Ana Botanic Garden	Alkali playa, Chenopod scrub, Marsh & swamp, Vernal pool, Wetland
Navarretia prostrata	prostrate vernal pool navarretia	Dicots	PDPLM0C0Q0	60	4	None	None	G2	S2	1B.2	null	Coastal scrub, Meadow & seep, Valley & foothill grassland, Vernal pool, Wetland
Nyctinomops femorosaccus	pocketed free-tailed bat	Mammals	AMACD04010	90	1	None	None	G4	S3	null	CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern, WBWG_M-Medium Priority	Joshua tree woodland, Pinon & juniper woodlands, Riparian scrub, Sonoran desert scrub
Nyctinomops macrotis	big free-tailed bat	Mammals	AMACD04020	32	1	None	None	G5	S3	null	CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern, WBWG_MH-Medium-High Priority	null
Onychobaris langei	Lange's El Segundo Dune weevil	Insects	IICOL4W010	1	1	None	None	G1	S1	null	null	Coastal dunes
Orcuttia californica	California Orcutt grass	Monocots	PMPOA4G010	37	1	Endangered	Endangered	G1	S1	1B.1	SB_CRES-San Diego Zoo CRES Native Gene Seed Bank, SB_RSABG-Rancho Santa Ana Botanic Garden	Vernal pool, Wetland
Panoquina errans	wandering (=saltmarsh) skipper	Insects	IILEP84030	14	1	None	None	G4G5	S2	null	IUCN_NT-Near Threatened	Marsh & swamp, Wetland
Passerculus sandwichensis beldingi	Belding's savannah sparrow	Birds	ABPBX99015	39	2	None	Endangered	G5T3	S3	null	null	Marsh & swamp, Wetland
Pelecanus occidentalis californicus	California brown pelican	Birds	ABNFC01021	27	1	Delisted	Delisted	G4T3T4	S3	null	BLM_S-Sensitive, CDFW_FP-Fully Protected, USFS_S-Sensitive	null

Perognathus longimembris pacificus	Pacific pocket mouse	Mammals	AMAFD01042	14	1	Endangered	None	G5T1	S1	null	CDFW_SSC-Species of Special Concern	Coastal scrub
Phacelia stellaris	Brand's star phacelia	Dicots	PDHYD0C510	15	2	None	None	G1	S1	1B.1	SB_RSABG-Rancho Santa Ana Botanic Garden	Coastal dunes, Coastal scrub
Phrynosoma blainvillii	coast horned lizard	Reptiles	ARACF12100	781	3	None	None	G3G4	S3S4	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern	Chaparral, Cismontane woodland, Coastal bluff scrub, Coastal scrub, Desert wash, Pinon & juniper woodlands, Riparian scrub, Riparian woodland, Valley & foothill grassland
Polioptila californica californica	coastal California gnatcatcher	Birds	ABPBJ08081	845	1	Threatened	None	G4G5T2Q	S2	null	CDFW_SSC-Species of Special Concern, NABCI_YWL-Yellow Watch List	Coastal bluff scrub, Coastal scrub
Potentilla multijuga	Ballona cinquefoil	Dicots	PDROS1B120	1	1	None	None	GX	SX	1A	null	Meadow & seep
Pseudognaphalium leucocephalum	white rabbit-tobacco	Dicots	PDAST440C0	62	1	None	None	G4	S2	2B.2	null	Chaparral, Cismontane woodland, Coastal scrub, Riparian woodland
Quercus dumosa	Nuttall's scrub oak	Dicots	PDFAG050D0	180	2	None	None	G3	S3	1B.1	USFS_S-Sensitive	Chaparral, Closed-cone coniferous forest, Coastal scrub
Sidalcea neomexicana	salt spring checkerbloom	Dicots	PDMAL110J0	30	3	None	None	G4	S2	2B.2	USFS_S-Sensitive	Alkali playa, Chaparral, Coastal scrub, Lower montane coniferous forest, Mojavean desert scrub, Wetland
Socalchemmis gertschi	Gertsch's socalchemmis spider	Arachnids	ILARAU7010	3	1	None	None	G1	S1	null	null	Coastal scrub
Sorex ornatus salicornicus	southern California saltmarsh shrew	Mammals	AMABA01104	4	1	None	None	G5T1?	S1	null	CDFW_SSC-Species of Special Concern	Salt marsh
Southern Coast Live Oak Riparian Forest	Southern Coast Live Oak Riparian Forest	Riparian	CTT61310CA	246	1	None	None	G4	S4	null	null	Riparian forest
Southern Coastal Salt Marsh	Southern Coastal Salt Marsh	Marsh	CTT52120CA	24	1	None	None	G2	S2.1	null	null	Marsh & swamp, Wetland
Southern Dune Scrub	Southern Dune Scrub	Dune	CTT21330CA	10	1	None	None	G1	S1.1	null	null	Coastal dunes
Southern Sycamore Alder Riparian Woodland	Southern Sycamore Alder Riparian Woodland	Riparian	CTT62400CA	230	1	None	None	G4	S4	null	null	Riparian woodland
Spea hammondii	western spadefoot	Amphibians	AAABF02020	1057	4	None	None	G3	S3	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_NT-Near Threatened	Cismontane woodland, Coastal scrub, Valley & foothill grassland, Vernal pool, Wetland
Sternula antillarum browni	California least tern	Birds	ABNNM08103	75	3	Endangered	Endangered	G4T2T3Q	S2	null	CDFW_FP-Fully Protected, NABCI_RWL-Red Watch List	Alkali playa, Wetland
Streptocephalus woottoni	Riverside fairy shrimp	Crustaceans	ICBRA07010	83	3	Endangered	None	G1G2	S1S2	null	IUCN_EN-Endangered	Coastal scrub, Valley & foothill grassland, Vernal pool, Wetland
Symphyotrichum defoliatum		Dicots	PDASTE80C0	102	2	None	None	G2	S2	1B.2	BLM_S-Sensitive, USFS_S-Sensitive	Cismontane woodland,

	San Bernardino aster											Coastal scrub, Lower montane coniferous forest, Marsh & swamp, Meadow & seep, Valley & foothill grassland
Symphyotrichum greatae	Greata's aster	Dicots	PDASTE80U0	56	2	None	None	G2	S2	1B.3	BLM_S-Sensitive	Broadleaved upland forest, Chaparral, Cismontane woodland, Lower montane coniferous forest, Riparian woodland
Taxidea taxus	American badger	Mammals	AMAJF04010	591	1	None	None	G5	S3	null	CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern	Alkali marsh, Alkali playa, Alpine, Alpine dwarf scrub, Bog & fen, Brackish marsh, Broadleaved upland forest, Chaparral, Chenopod scrub, Cismontane woodland, Closed-cone coniferous forest, Coastal bluff scrub, Coastal dunes, Coastal prairie, Coastal scrub, Desert dunes, Desert wash, Freshwater marsh, Great Basin grassland, Great Basin scrub, Interior dunes, Ione formation, Joshua tree woodland, Limestone, Lower montane coniferous forest, Marsh & swamp, Meadow & seep, Mojavean desert scrub, Montane dwarf scrub, North coast coniferous forest, Oldgrowth, Pavement plain, Redwood, Riparian forest, Riparian scrub, Riparian woodland, Salt marsh, Sonoran desert scrub, Sonoran thorn woodland, Ultramafic, Upper montane coniferous forest, Upper Sonoran scrub, Valley & foothill grassland
Trigonoscuta dorothea dorothea	Dorothy's El Segundo Dune weevil	Insects	IICOL51021	4	2	None	None	G1T1	S1	null	null	Coastal dunes
Tryonia imitator	mimic tryonia (=California brackishwater snail)	Mollusks	IMGASJ7040	39	1	None	None	G2	S2	null	IUCN_DD-Data Deficient	Aquatic, Brackish marsh, Estuary, Lagoon, Marsh & swamp, Salt marsh, Wetland
Vireo bellii pusillus	least Bell's vireo	Birds	ABPBW01114	501	7	Endangered	Endangered	G5T2	S2	null	IUCN_NT-Near Threatened, NABCI_YWL-Yellow Watch List	Riparian forest, Riparian scrub, Riparian woodland

CNPS California Native Plant Society

Inventory of Rare and Endangered Plants

*The database used to provide updates to the Online Inventory is under construction. View updates and changes made since May 2019 here.

Plant List

48 matches found. *Click on scientific name for details*

Search Criteria

California Rare Plant Rank is one of [1A, 1B, 2A, 2B, 3, 4], FESA is one of [Endangered, Threatened, Candidate, Not Listed], CESA is one of [Endangered, Threatened, Rare, Not Listed], Found in Quads 3411814, 3311884, 3311883 and 3411813; Lifeform is one of [Tree, Shrub, Leaf succulent, Herb, Vine, Stem succulent, Lichen, Moss, Liverwort], Duration is one of [ann, per, ephem], Bloom Time is one of [January, February, March, April, May, June, July, August, September, October, November, December]

Modify Search Criteria | Export to Excel | Modify Columns | Modify Sort | Display Photos

Scientific Name	Common Name	Family	Lifeform	Blooming Period	CA Rare Plant Rank	State Rank	Global Rank
Abronia maritima	red sand-verbena	Nyctaginaceae	perennial herb	Feb-Nov	4.2	S3?	G4
Arenaria paludicola	marsh sandwort	Caryophyllaceae	perennial stoloniferous herb	May-Aug	1B.1	S1	G1
Astragalus brauntonii	Braunton's milk-vetch	Fabaceae	perennial herb	Jan-Aug	1B.1	S2	G2
Astragalus pycnostachyus var. lanosissimus	Ventura marsh milk-vetch	Fabaceae	perennial herb	(Jun)Aug-Oct	1B.1	S1	G2T1
Astragalus tener var. titi	coastal dunes milk-vetch	Fabaceae	annual herb	Mar-May	1B.1	S1	G2T1
Atriplex coulteri	Coulter's saltbush	Chenopodiaceae	perennial herb	Mar-Oct	1B.2	S1S2	G3
Atriplex pacifica	South Coast saltscale	Chenopodiaceae	annual herb	Mar-Oct	1B.2	S2	G4
Atriplex parishii	Parish's brittlescale	Chenopodiaceae	annual herb	Jun-Oct	1B.1	S1	G1G2
Atriplex serenana var. davidsonii	Davidson's saltscale	Chenopodiaceae	annual herb	Apr-Oct	1B.2	S1	G5T1
Berberis nevinii	Nevin's barberry	Berberidaceae	perennial evergreen shrub	(Feb)Mar-Jun	1B.1	S1	G1
Calochortus catalinae	Catalina mariposa lily	Liliaceae	perennial bulbiferous herb	(Feb)Mar-Jun	4.2	S3S4	G3G4
Calochortus plummerae	Plummer's mariposa lily	Liliaceae	perennial bulbiferous herb	May-Jul	4.2	S4	G4
Calystegia felix	lucky morning-glory	Convolvulaceae	annual rhizomatous herb	Mar-Sep	1B.1	S1	G1Q
Camissoniopsis lewisii	Lewis' evening-primrose	Onagraceae	annual herb	Mar-May (Jun)	3	S4	G4
Centromadia parryi ssp. australis	southern tarplant	Asteraceae	annual herb	May-Nov	1B.1	S2	G3T2
Chaenactis glabriuscula var. orcuttiana	Orcutt's pincushion	Asteraceae	annual herb	Jan-Aug	1B.1	S1	G5T1T2
Chenopodium littoreum	coastal goosefoot	Chenopodiaceae	annual herb	Apr-Aug	1B.2	S1	G1
Chloropyron maritimum ssp. maritimum	salt marsh bird's-beak	Orobanchaceae	annual herb (hemiparasitic)	May-Oct (Nov)	1B.2	S1	G4?T1
		Polygonaceae	annual herb	Apr-Jul	1B.1	S1	G2T1

Chorizanthe parryi var. fernandina	San Fernando Valley spineflower						
Convolvulus simulans	small-flowered morning-glory	Convolvulaceae	annual herb	Mar-Jul	4.2	S4	G4
Deinandra paniculata	paniculate tarplant	Asteraceae	annual herb	(Mar)Apr-Nov(Dec)	4.2	S4	G4
Dichondra occidentalis	western dichondra	Convolvulaceae	perennial rhizomatous herb	(Jan)Mar-Jul	4.2	S3S4	G3G4
Dithyrea maritima	beach spectaclepod	Brassicaceae	perennial rhizomatous herb	Mar-May	1B.1	S1	G1
Dudleya multicaulis	many-stemmed dudleya	Crassulaceae	perennial herb	Apr-Jul	1B.2	S2	G2
Eryngium aristulatum var. parishii	San Diego button-celery	Apiaceae	annual / perennial herb	Apr-Jun	1B.1	S1	G5T1
Erysimum suffrutescens	suffrutescent wallflower	Brassicaceae	perennial herb	Jan-Jul(Aug)	4.2	S3	G3
Helianthus nuttallii ssp. parishii	Los Angeles sunflower	Asteraceae	perennial rhizomatous herb	Aug-Oct	1A	SH	G5TH
Hordeum intercedens	vernal barley	Poaceae	annual herb	Mar-Jun	3.2	S3S4	G3G4
Horkelia cuneata var. puberula	mesa horkelia	Rosaceae	perennial herb	Feb-Jul(Sep)	1B.1	S1	G4T1
Juglans californica	Southern California black walnut	Juglandaceae	perennial deciduous tree	Mar-Aug	4.2	S4	G4
Juncus acutus ssp. leopoldii	southwestern spiny rush	Juncaceae	perennial rhizomatous herb	(Mar)May-Jun	4.2	S4	G5T5
Lasthenia glabrata ssp. coulteri	Coulter's goldfields	Asteraceae	annual herb	Feb-Jun	1B.1	S2	G4T2
Nama stenocarpa	mud nama	Namaceae	annual / perennial herb	Jan-Jul	2B.2	S1S2	G4G5
Nasturtium gambelii	Gambel's water cress	Brassicaceae	perennial rhizomatous herb	Apr-Oct	1B.1	S1	G1
Navarretia fossalis	spreading navarretia	Polemoniaceae	annual herb	Apr-Jun	1B.1	S2	G2
Navarretia prostrata	prostrate vernal pool navarretia	Polemoniaceae	annual herb	Apr-Jul	1B.1	S2	G2
Orcuttia californica	California Orcutt grass	Poaceae	annual herb	Apr-Aug	1B.1	S1	G1
Phacelia hubbyi	Hubby's phacelia	Hydrophyllaceae	annual herb	Apr-Jul	4.2	S4	G4
Phacelia ramosissima var. austrolitoralis	south coast branching phacelia	Hydrophyllaceae	perennial herb	Mar-Aug	3.2	S3	G5?T3Q
Phacelia stellaris	Brand's star phacelia	Hydrophyllaceae	annual herb	Mar-Jun	1B.1	S1	G1
Potentilla multijuga	Ballona cinquefoil	Rosaceae	perennial herb	Jun-Aug	1A	SX	GX
Pseudognaphalium leucocephalum	white rabbit-tobacco	Asteraceae	perennial herb	(Jul)Aug-Nov (Dec)	2B.2	S2	G4
Quercus dumosa	Nuttall's scrub oak	Fagaceae	perennial evergreen shrub	Feb-Apr (May-Aug)	1B.1	S3	G3
Sidalcea neomexicana	salt spring checkerbloom	Malvaceae	perennial herb	Mar-Jun	2B.2	S2	G4
Suaeda esteroa	estuary seablite	Chenopodiaceae	perennial herb	(May)Jul-Oct (Jan)	1B.2	S2	G3
Suaeda taxifolia	woolly seablite	Chenopodiaceae	perennial evergreen shrub	Jan-Dec	4.2	S4	G4
Symphyotrichum defoliatum	San Bernardino aster	Asteraceae	perennial rhizomatous herb	Jul-Nov(Dec)	1B.2	S2	G2
Symphyotrichum greatae	Greata's aster	Asteraceae	perennial rhizomatous herb	Jun-Oct	1B.3	S2	G2

Suggested Citation

California Native Plant Society, Rare Plant Program. 2019. Inventory of Rare and Endangered Plants of California (online edition, v8-03 0.39). Website http://www.rareplants.cnps.org [accessed 17 October 2019].

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IPaC Information for Planning and Consultation **U.S. Fish & Wildlife Service**

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Los Angeles County, California

Local office

Carlsbad Fish And Wildlife Office

(760) 431-9440
(760) 431-5901

2177 Salk Avenue - Suite 250
Carlsbad, CA 92008-7385

http://www.fws.gov/carlsbad/

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species

[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

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1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information.
2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Birds

NAME	STATUS
California Least Tern Sterna antillarum browni No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/8104	Endangered
Coastal California Gnatcatcher Polioptila californica californica There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/8178	Threatened
Least Bell's Vireo Vireo bellii pusillus There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/5945	Endangered
Western Snowy Plover Charadrius nivosus nivosus There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/8035	Threatened

Insects

NAME	STATUS
El Segundo Blue Butterfly Euphilotes battoides allyni There is **proposed** critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/3135	Endangered

Flowering Plants

NAME	STATUS
Gambel's Watercress Rorippa gambellii No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/4201	Endangered

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act

[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Measures for avoiding and minimizing impacts to birds http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Nationwide conservation measures for birds http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE"

INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)

Allen's Hummingbird Selasphorus sasin — Breeds Feb 1 to Jul 15
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9637

Bald Eagle Haliaeetus leucocephalus — Breeds Jan 1 to Aug 31
This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.
https://ecos.fws.gov/ecp/species/1626

Black Oystercatcher Haematopus bachmani — Breeds Apr 15 to Oct 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9591

Black Skimmer Rynchops niger — Breeds May 20 to Sep 15
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/5234

Black Swift Cypseloides niger — Breeds Jun 15 to Sep 10
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/8878

Black Turnstone Arenaria melanocephala — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Burrowing Owl Athene cunicularia — Breeds Mar 15 to Aug 31
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/9737

California Thrasher Toxostoma redivivum — Breeds Jan 1 to Jul 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Clark's Grebe Aechmophorus clarkii — Breeds Jan 1 to Dec 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Common Yellowthroat Geothlypis trichas sinuosa — Breeds May 20 to Jul 31
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/2084

Costa's Hummingbird Calypte costae — Breeds Jan 15 to Jun 10
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/9470

Lawrence's Goldfinch Carduelis lawrencei — Breeds Mar 20 to Sep 20
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9464

Lewis's Woodpecker Melanerpes lewis — Breeds Apr 20 to Sep 30
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9408

Long-billed Curlew Numenius americanus — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/5511

Marbled Godwit Limosa fedoa — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9481

Nuttall's Woodpecker Picoides nuttallii — Breeds Apr 1 to Jul 20
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/9410

Oak Titmouse Baeolophus inornatus — Breeds Mar 15 to Jul 15
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9656

Rufous Hummingbird selasphorus rufus — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/8002

Short-billed Dowitcher Limnodromus griseus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9480	Breeds elsewhere
Song Sparrow Melospiza melodia This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Feb 20 to Sep 5
Spotted Towhee Pipilo maculatus clementae This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/4243	Breeds Apr 15 to Jul 20
Tricolored Blackbird Agelaius tricolor This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3910	Breeds Mar 15 to Aug 10
Whimbrel Numenius phaeopus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9483	Breeds elsewhere
Willet Tringa semipalmata This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
Wrentit Chamaea fasciata This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 15 to Aug 10

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

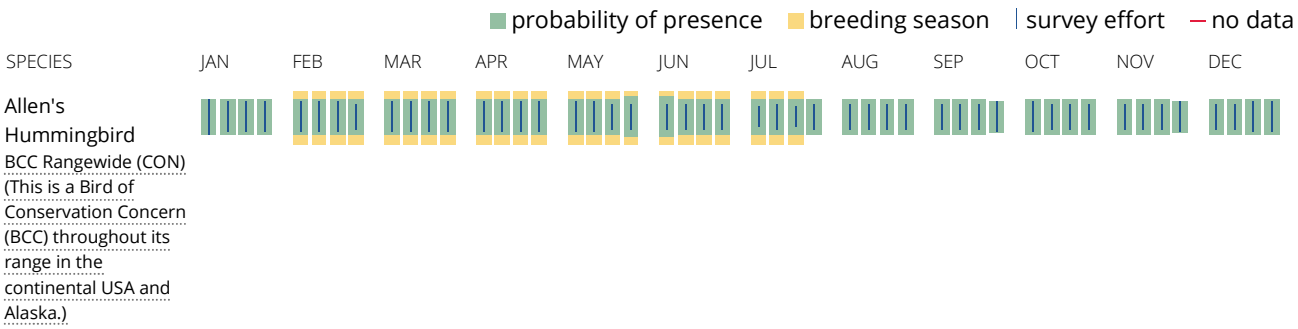
Breeding Season (▪)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

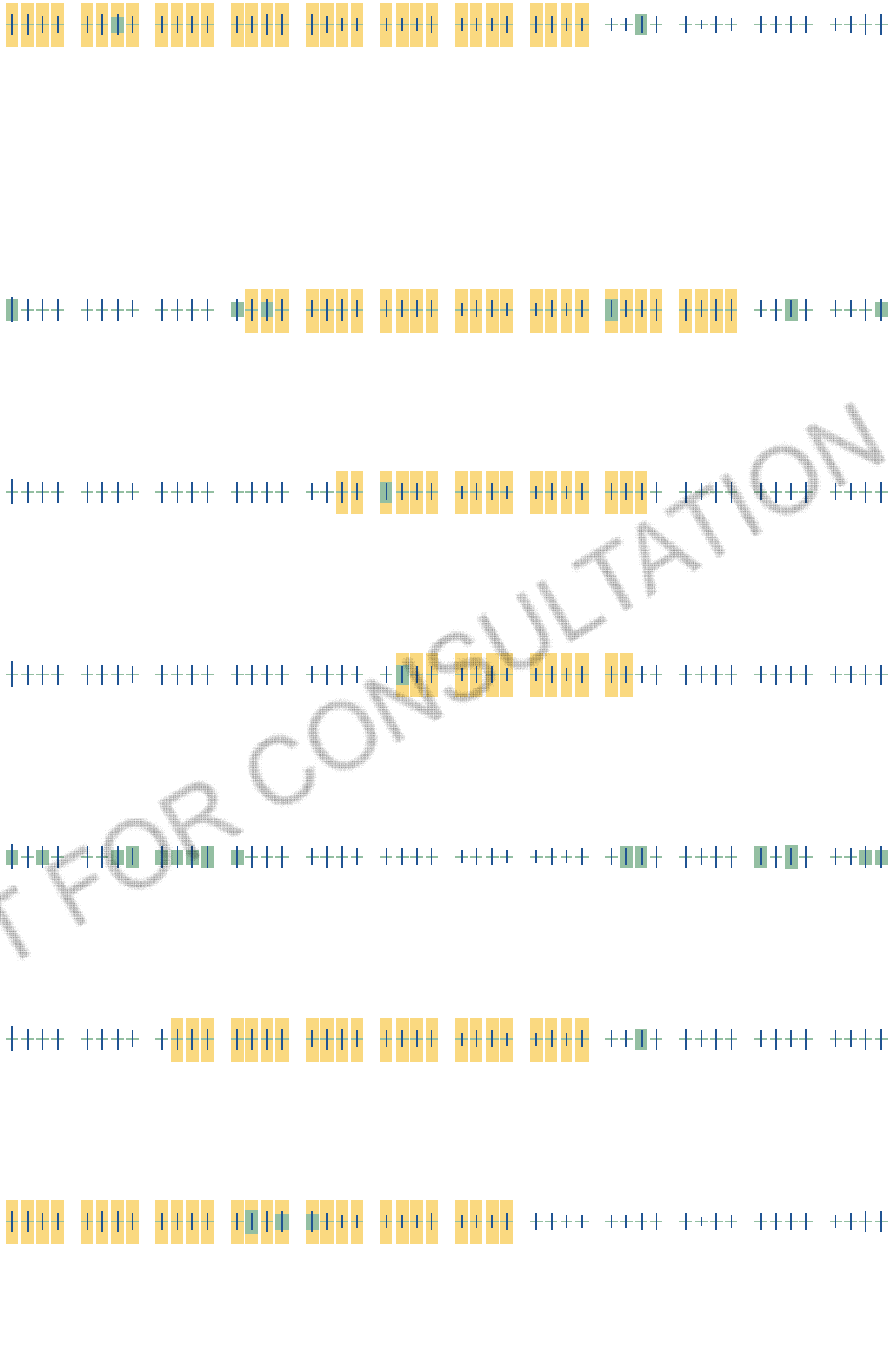
Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.





Bald Eagle
Non-BCC Vulnerable (This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.)

Black Oystercatcher
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

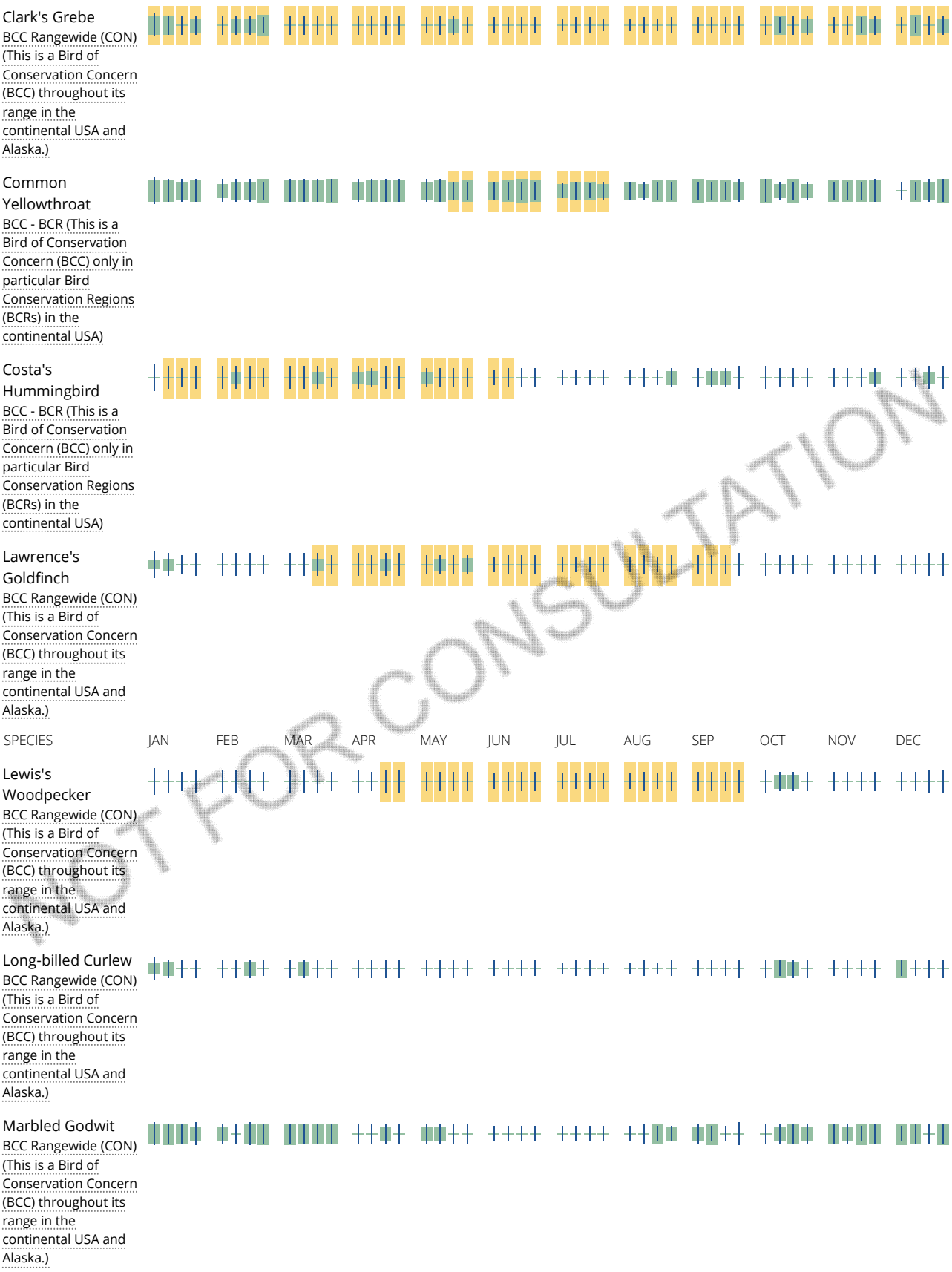
Black Skimmer
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Black Swift
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

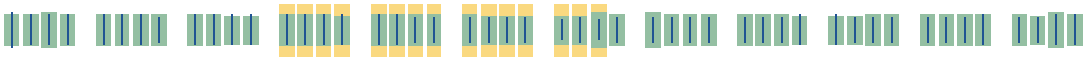
Black Turnstone
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Burrowing Owl
BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)

California Thrasher
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



Nuttall's Woodpecker
BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)

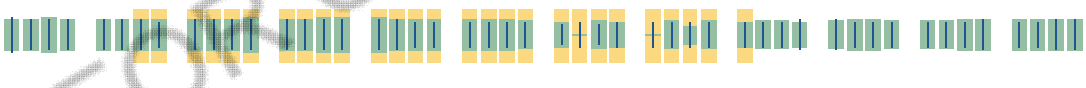


Oak Titmouse
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

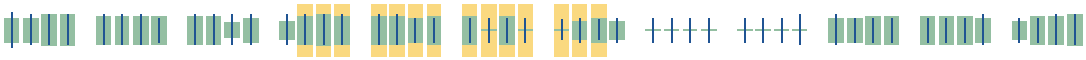
Rufous Hummingbird
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Short-billed Dowitcher
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

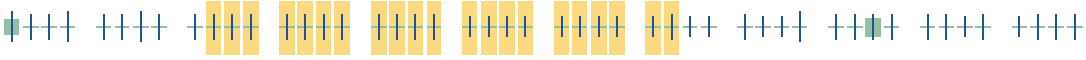
Song Sparrow
BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)

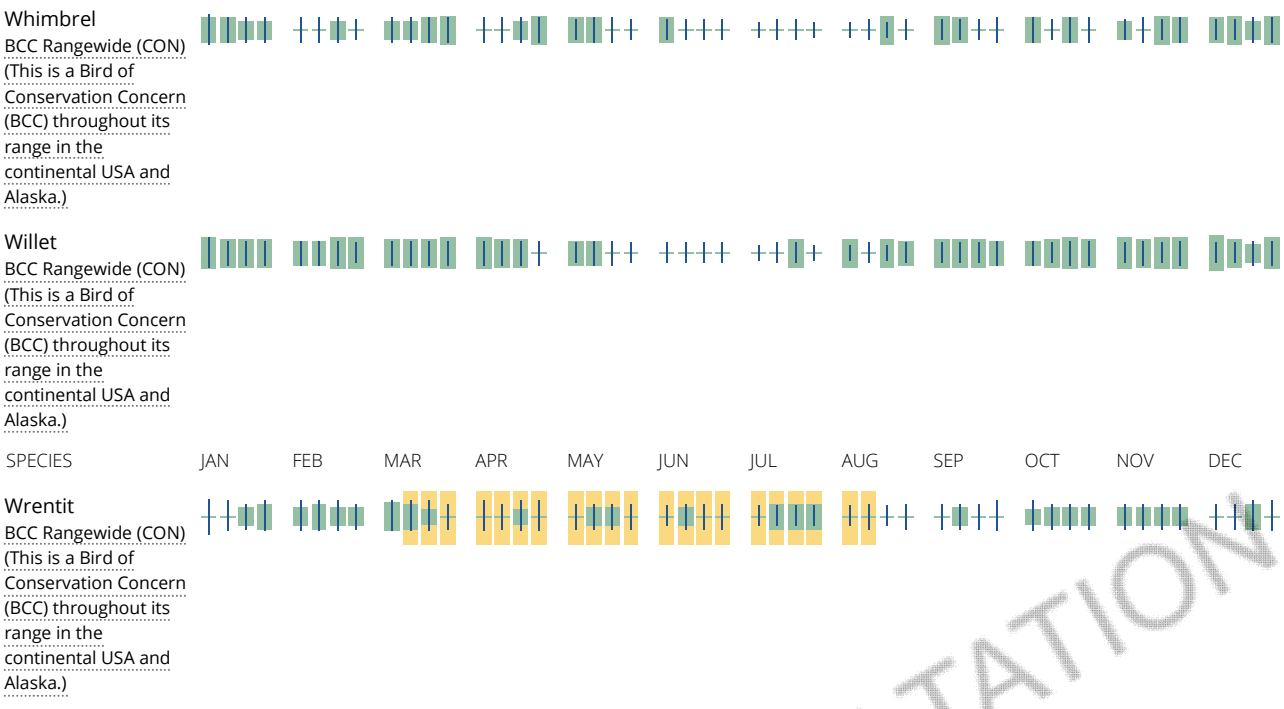


Spotted Towhee
BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)



Tricolored Blackbird
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)





Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures and/or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the AKN Phenology Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets .

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ “What does IPaC use to generate the migratory birds potentially occurring in my specified location”. Please be aware this report provides the “probability of presence” of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey

effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

FRESHWATER EMERGENT WETLAND

- PEM1Ah
- PEM1A

FRESHWATER FORESTED/SHRUB WETLAND

PSSA
PFOAh
PFOCh
PSSCx
PSSAx

FRESHWATER POND
PUBHx
PUBFh
PABHx
PUSCh

RIVERINE
R2UBHr
R2UBHx
R4SBCx
R4SBA
R4SBCr

A full description for each wetland code can be found at the National Wetlands Inventory website

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or

local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

APPENDIX B: CULTURAL RESOURCES

Acronyms

- CDPR = California Department of Parks and Recreation
- CPA7 = Culver Studios Innnovation Plan, Comprehensive Plan Amendment No. 7 Final Environmental Impact Report State Clearinghouse No. 2016111044
- CR = California Register of Historical Resources
- ESA = Environmental Science Associates, City's General Plan Update environmental consultant/report preparer
- HD = Historic District
- HDP = Culver City Historically Designated Properties
- HPAC = Culver City Historic Preservation Advisory Committee Report
- HRI = Historical Resources Inventory
- L = Landmark structure
- LAHCM = Los Angeles Historic-Cultural Monument
- OHP = Office of Historic Preservation
- NR = National Register of Historic Places
- R = Recognized structure, an honorific category with no associated protections
- S = Significant structure
- SCCIC = California Historic Resources Inventory System - South Central Coastal Information Center

California Historical Resource Status Codes, Resources in Culver City[1]

- 1S = Individual property listed in NR by the Keeper of the NR and also listed in the CR
- 3S = Appears eligible for NR as an individual property through survey evaluation
- 3CS = Appears eligible for CR as an individual property through survey evaluation.
- 2S2 = Individual property determined eligible for NR by a consensus through the Section 106 process and listed in the CR
- 5S1 = Individual property that is listed or designated locally.
- 5S2 = Individual property that is eligible for local listing or designation
- 6Y = Determined ineligible for NR by consensus through Section 106 process and is not evaluated for CR or local listing
- 6Z = Found ineligible for NR, CR, or local designation through survey evaluation
- 7L = State Historical Landmarks 1-769 and Points of Historical Interest designated prior to January 1998 – Needs to be reevaluated using current standards

[1] The full list of California Historical Resource Status Codes is available on the OHP website at: https://ohp.parks.ca.gov/pages/1069/files/chrstatus%20codes.pdf

Table B-1: Previously Identified Paleontological Resources within Culver City and Vicinity

Designation	Location	Description	Depth
LACM 4250	Within northeastern most portion of city	Mammoth, *Mammuthus* within older Quaternary deposits	Unknown
ESA-CS-Paleo-001	Within city in Downtown area	Clams, gastropods, fossil long bones, teeth, vertebra	20-55 feet below ground surface
ESA-Wash1-Paleo-001	Within city in Downtown area	Clams, gastropods, fossil long bones, vertebra	15–32 feet below ground surface
ESA-Wash2-Paleo-001	Within city in Downtown area	Clams and gastropods	15–20 feet below ground surface
LACM 1159	East of the city, along Southern Pacific Railway and Rodeo Road and between La Cienega & Crenshaw Blvds.	Fossil human, *Home sapiens* collected during the 1920s excavations for the Outfall Sewer in the area in shallow areas	19-23 feet below ground surface
LACM 3366	East of the city, along Southern Pacific Railway and Rodeo Road and between La Cienega & Crenshaw Blvds.	Fossil camel, *Camelops* collected during the 1920s excavations for the Outfall Sewer in the area in shallow areas	Unknown
LACM 3367	East of the city, along Southern Pacific Railway and Rodeo Road and between La Cienega & Crenshaw Blvds.	Fossil mastodon, *Mammut* collected during the 1920s excavations for the Outfall Sewer in the area in shallow areas	Unknown
LACM 3368	Just outside northeastern boundaries of city	Fossil horse, *Equus* within older Quaternary deposits	Unknown
LACM 3369	East of the city, along Southern Pacific Railway and Rodeo Road and between La Cienega & Crenshaw Blvds.	Fossil horse, *Equus* collected during the 1920s excavations for the Outfall Sewer in the area in shallow areas	6 feet below ground surface
LACM 3370	East of the city, along Southern Pacific Railway and Rodeo Road and between La Cienega & Crenshaw Blvds.	Fossil sabretooth cat, *Smilodon* collected during the 1920s excavations for the Outfall Sewer in the area in shallow areas	Unknown
LACM 4232	Near boundaries of northeastern portion of city	Fossil human, *Homo sapiens* within older Quaternary deposits	12-13 feet below ground surface
LACM 4247	5.25 miles northwest	Holotype (species new to science) of marine duck, *Chendytes lawi* within San Pedro Sand deposits	Unknown

Sources: McLeod, 2019, ESA.

Table B-2: Geologic Units and Paleontological Resource Potential within Culver City

Name of Geologic Unit	Location	Description	Paleontological Resource Potential
Younger alluvium (Qa)	Northern, southern, and western portions of city	These sediments consist of unconsolidated gravel, sand, and clay derived from the Santa Monica Mountains (Dibblee and Minch, 2007, Dibblee, 2007). These deposits date from recent times to the middle or end of the Holocene (i.e., present day to 6,000 years ago).	Low to High (dependent on depth)
Older alluvium (Qoa):	Southern portion of city	These sediments date to the Pleistocene and consist of grey to light brown sand, silt, and pebble-gravel (Dibblee and Minch, 2007). These Pleistocene sediments have a rich fossil history in southern California (Jefferson 1991a and b, Miller 1971, Scott and Cox 2008). In addition to Pleistocene invertebrate fossils (Yerkes et al., 1965), terrestrial mammal fossils are well known from the Los Angeles Basin. The most common of these include the bones of mammoth, bison, deer, and small mammals, but other taxa, including horse, lion, cheetah, wolf, camel, antelope, peccary, mastodon, capybara, and giant ground sloth, have been reported (Graham and Lundelius, 1994). In addition to illuminating the striking differences between Southern California in the Pleistocene and today, this abundant fossil record has been vital in studies of extinction (e.g. Sandom, et al., 2014, Scott, 2010), ecology (e.g. Connin et al., 1998), and climate change (e.g. Roy et al., 1996).	High
Paleosol (Qop):	Southern portion of city	Sediments consist of gray to rusty brown, sandy, locally pebbly, moderately indurated "hardpan" on Qoa (Minch and Guttenberg, 2016).	Undetermined
Artificial fill (af):	Southern portion of city	Artificial cut and fill (Minch and Guttenberg, 2016).	None
San Pedro Sand (Qsp):	Southern portion of city	Sediments consist of light gray to light brown sand, fine to coarse grained or pebbly, locally contains shell fragments (Minch and Guttenberg, 2016).	High
Landslide debris (Qls):	Northeastern portion of city	Unconsolidated detrital sediments, generally undissected (Minch and Guttenberg, 2016).	Undetermined
Inglewood Formation (Qi):	Northeastern portion of city	Light gray, friable, fine grained sandstone and interbedded soft gray siltstone, base not exposed (Minch and Guttenberg, 2016).	High
Sources: McLeod, 2019, Yerkes et al., 1965, Minch and Guttenberg, 2016.			

Table B-3: Previously Identified Archaeological Resources within Culver City

Designation[1]	Description	Date Recorded
Evaluation Status = Recommended not elibible for CR		
P-19-004829/ CA-LAN-4829H	Historic period archaeological site consisting of 13 features that include the remnants of two wells/cisterns, structural remnants, two metal tanks, and eight refuse deposits dating from the 1880s to the 1920s (found at depth during construction monitoring)	2017
Evaluation Status =Unevaluated		
P-19-000053 /CA-LAN-53	Prehistoric archaeological site described as a village or campsite on the bank of La Ballona Creek. Among the artifacts found at the site consist of a double basin metate, a slab metate, metate fragments, a mortar fragment, a discoidal stone, shell fragments, manos, projectile points, and a stone disc	1950
P-19-000055/ CA-LAN-55	Prehistoric archaeological site described as a camp site near Ballona Creek with shell fragments, projectile points, a bone awl, a metate, and some skeletal material	1950
P-19-000056/ CA-LAN-56	Prehistoric archaeological site described as a camp site near Ballona Creek. A mano, scraper, and a thin smoothed oval pebble are among the items found at the site	1950 2013
P-19-000057/ CA-LAN-57	Prehistoric archaeological site described as a village or camp site on the south bank of La Ballona Creek. Shell fragments, projectile points, and large bowls were found at the site	1939 1950
P-19-000058/ CA-LAN-58	Prehistoric archaeological site described as a village or camp site on the north bank of La Ballona Creek. Mortars, complete and broken pestles, metates, manos, a blade, and cog stones were found at the site	1950
P-19-000067/ CA-LAN-67	Prehistoric archaeological site described as a temporary dwelling and located on a small wash. A small amount of shell was found at this site	1950
P-19-000068/CA-LAN-68	Prehistoric archaeological site described as a seasonal village on the west bank of La Ballona Creek. Among the items found at the site consist of manos, mano fragments, metate fragments, a knife, bone fragments, a "rock chip", a chert rock, and a piece of gray-green stone	1950
P-19-002966/ CA-LAN-2966	Prehistoric archaeological site consisting of groundstone fragments, a mano, shell fragments and fire affected rock	2000
P-19-002967/ CA-LAN-2967H	Historic period archaeological site consisting of a trash deposit containing pop bottles, sanitary seam cans, liquor bottles, household utility bottles, cosmetic bottles and jars	2000
P-19-002968/ CA-LAN-2968	Prehistoric archaeological site consisting of a lithic scatter	2000
P-19-003755/ CA-LAN-3755H	Historic period archaeological site consisting of a moderate density trash scatter containing broken/complete glass beverage and medicine bottles, china fragments, and construction materials	2007
P-19-100249/ CA-LAN-100249	Prehistoric archaeological isolate consisting of a contracting-stemmed biface made of chalcedony	1998
ESA-CS-Iso-001HP*	Multicomponent site: Prehistoric archaeological isolate consisting of two whole metate artifacts and historic period isolate consisting of historic period refuse found at depth during construction monitoring project	2018/2019
ESA-Wash1-Site-001H*	Historic period archaeological site consisting of one feature (possible privy vault structural remnants) and several isolated bottles found at depth during construction monitoring project	2018
ESA-Wash2-Iso-001H*	Historic period archaeological isolate consisting of ceramic insulator and bottle found at depth during construction monitoring project	2018

*Sources: SCCIC, 2019, ESA, CR * CDPR Site Records for these resources have not yet been submitted to the SCCIC by ESA, which is why these resources do not have formal designations.*
Note: 1. Primary number/trinomial or temporary number.

Table B-4: Previously Identified Historic Resources within Culver City

Address	Property Type/ Description	Year Built	Source	Primary No.	Other Designation[1]	Status Code	Status Date
-	Santa Monica Air Line segment: six-miles of the historic Southern Pacific Railroad Right-of-Way, including some visible portions of track		SCCIC	003803	CA-LAN-003803H	Unknown	
-	Utility pole #2088003E, T-Mobile West LLC		SCCIC	190268	LA02926A/LA 926 La Cienega Pass JPA	Unknown	
-	Ballona Creek Flood Control Channel & Drainage System: flood control facility encompassing 129 square miles with open waterway, subsurface box culverts, and reinforced concrete pipes	1930s	SCCIC	187805	-	6Z	
11215 Barman Ave/ 4374 Tuller Ave	Residential, single-story, four-unit apartment building, Moderne style	c. 1930	HDP	-	Recognized Structure	R	
11330 Barman Ave	Residential one-story, single-family building	c. 1947	SCCIC	188725	126173	Unknown	
5136 Berryman Ave	-	1951	OHP HRI	-	126098	6Y	2000-2002
5140 Berryman Ave	-	1951	OHP HRI	-	126097	6Y	2000-2002
5144 Berryman Ave	-	1951	OHP HRI	-	126096	6Y	2000-2002
5152 Berryman Ave	-	1951	OHP HRI	-	126095	6Y	2000-2002
11027 Braddock Drive	Residential building, Spanish Eclectic style	1927	HDP	-	HD Recognized Structure	R, HD	
11033 Braddock Drive	Residential building, Spanish Eclectic style	1927	HDP	-	HD Recognized Structure	R, HD	
11034 Braddock Drive	Residential building, Spanish Eclectic style	1927	HDP	-	HD Recognized Structure	R, HD	
11037 Braddock Drive	Residential building, Spanish Eclectic style	1927	HDP	-	HD Recognized Structure	R, HD	

Address	Property Type/ Description	Year Built	Source	Primary No.	Other Designation[1]	Status Code	Status Date
11043 Braddock Drive	Residential building, Spanish Eclectic style	1927	HDP	-	HD Recognized Structure	R, HD	
11047 Braddock Drive	Residential building, Spanish Eclectic style	1927	HDP	-	HD Recognized Structure	R, HD	
11323 Braddock Dr	-	1947	OHP HRI	-	126171	6Y	2000-2002
11329 Braddock Dr	Residential one-story, single-family building	1947	SCCIC, OHP HRI	188726	126174	2S2	2000-2002
11333 Braddock Dr	Residential one-story, single-family building	c. 1947	SCCIC	188727	-	Unknown	
3847 Cardiff Ave	Pacific Bell Switch Building: public utilities building, Modern style	c. 1927 - 1978	SCCIC	186673	-	Unknown	
9026 Carson St	Residential building, Craftsman Bungalow	1922	HDP	-	Recognized Structure	R	
9054-56 Carson St	Residential, single-story court with five bungalows and two garages, Colonial Revival style	1922	HDP	-	Recognized Structure	R	
9058 Carson St	Residential, bungalow court, Spanish colonial style	1925	HDP	-	Recognized Structure	R	
4428 Corinth Ave	Residential one-story, single-family building	c. 1946	SCCIC	188723	-	Unknown	
4434 Corinth Ave	Residential one-story, single-family building	c. 1946	SCCIC	188724	-	Unknown	
9355 Culver Blvd	Citizen Publishing Company Building: community newspaper building, Beaux Arts and Art Deco elements	c. 1929	SCCIC, HDP	177338	028014, SPHI-LAN-38, Landmark Structure	1S	
9400 Culver Blvd	Culver/Hunt Hotel: Renaissance Revival style	c. 1924	SCCIC, HDP	150323	NR 19-0243, 073799, Landmark Structure	1S	1997
9543 Culver Blvd	Hull Building: first hospital		HDP	-	Landmark Structure	L	
9942 Culver Blvd	Gateway Station Post Office	c. 1939	OHP HRI, HDP	-	155290, Recognized Structure	2S2	2001
10858 Culver Blvd	Veterans of Foreign Wars Culver-Palms Post No. 1476		HDP	-	Recognized Structure	R	

Address	Property Type/ Description	Year Built	Source	Primary No.	Other Designation[1]	Status Code	Status Date
11256 Culver Blvd	-		OHP HRI	-	126126	6Y	2000-2002
11258 Culver Blvd	-		OHP HRI	-	126127	6Y	2000-2002
11277 Culver Blvd		c. 1950	OHP HRI	-	126167	6Y	2000-2002
11279 Culver Blvd	-		OHP HRI	-	126168	6Y	2000-2002
11281 Culver Blvd	-		OHP HRI	-	126165	6Y	2000
11283 Culver Blvd	-		OHP HRI	-	126166	6Y	2002
11284 Culver Blvd	-		OHP HRI	-	126169	6Y	2000-2002
11288 Culver Blvd	-		OHP HRI	-	126170	6Y	2000-2002
4105 Duquesne Ave	Residential, bungalow court, Spanish Colonial style	1925	HDP	-	Recognized Structure	R	
4133-35 Duquesne St	Residential, two-story duplex, Spanish Colonial style	1928	HDP	-	Recognized Structure	R	
4151-53 Duquesne St	Residential, two-story duplex, Norman Revival style	1938	HDP	-	Recognized Structure	R	
4154-56 Duquesne St	Residential, two-story building, Norman Revival style	1938	HDP	-	Recognized Structure	R	
4245 Duquesne St	Residential building		HDP	-	Landmark Structure	L	
3823 Girard Ave	Residential building, Tudor Revival style	1930	HDP	-	Recognized Structure	R	
4037 Globe Ave	-		OHP HRI	-	126144	6Y	2000-2002
4047 Globe Ave	-		OHP HRI	-	126147	6Y	2000-2002
4048 Globe Ave	-		OHP HRI	-	126145	6Y	2000-2002
4050 Globe Ave	-		OHP HRI	-	126148	6Y	2000-2002
4054 Globe Ave	-		OHP HRI	-	126149	6Y	2000-2002
4058 Globe Ave	-		OHP HRI	-	126151	6Y	2000-2002
4062 Globe Ave	-		OHP HRI	-	126155	6Y	2000-2002
4072 Globe Ave	-		OHP HRI	-	126156	6Y	2000-2002
4315 Globe Ave	-		OHP HRI	-	126125	6Y	2000-2002
4323 Globe Ave	-		OHP HRI	-	126123	6Y	2000-2002

Address	Property Type/ Description	Year Built	Source	Primary No.	Other Designation[1]	Status Code	Status Date
4327 Globe Ave	-		OHP HRI	-	126122	6Y	2000-2002
4321Globe Ave	-		OHP HRI	-	126120	6Y	2000-2002
4335 Globe Ave	-		OHP HRI	-	126118	6Y	2000-2002
4339 Globe Ave	-		OHP HRI	-	126116	6Y	2000-2002
4343 Globe Ave	-		OHP HRI	-	126115	6Y	2000-2002
4347 Globe Ave	-		OHP HRI	-	126113	6Y	2000-2002
4351 Globe Ave	-		OHP HRI	-	126112	6Y	2000-2002
4359 Globe Ave	-		OHP HRI	-	130661	6Y	2000-2002
17890 Globe Ave	-		OHP HRI	-	126110	6Y	2000-2002
3505 Hayden Ave	-		OHP HRI, HDP	-	100359, Recognized Structure	R, 6Y	1995
11373 Herbert St	Residential, single-story building, Craftsman Bungalow	1913	HDP	-	Recognized Structure	R	
4117-19 Higuera St	Residential, two-story duplex, Byzantine Revival style	1932	HDP	-	Recognized Structure	R	
3824 Hughes Ave	Legion Building: two-story building with a red clay tile roof, Spanish Colonial style		HDP	-	Significant Structure	S	
3914-16 Huron Avenue	Residential, two-story apartment building, Spanish Colonial style	1920s	HDP	-	Recognized Structure	R	
4215 Huntley Ave	-		OHP HRI	-	126157	6Y	2000-2002
4221 Huntley Ave	-		OHP HRI	-	126159	6Y	2000-2002
4338 Huntley Ave	-		OHP HRI	-	126117	6Y	2000-2002
4346 Huntley Ave	-		OHP HRI	-	126114	6Y	2000
4347 Huntley Ave	-		OHP HRI	-	130663	6Y	2002
4354 Huntley Ave	-		OHP HRI	-	126111	6Y	2000-2002
4034 Irving Place (Rear)	Apartment building, Spanish Colonial style	1920	HPAC (not in HDP)	-	Significant Structure	-	
4230 Irving Place	Residential single-story building, Spanish Colonial style	c. 1930	HDP	-	Recognized Structure	R	

Address	Property Type/ Description	Year Built	Source	Primary No.	Other Designation[1]	Status Code	Status Date
3832 Jasmine Ave	Convent for St. Augustine's Catholic Church and school, Spanish Colonial style	1948	HDP	-	Recognized Structure	R	
3850 Jasmine Ave	Two-story, stucco clad rectory, Spanish Churiqueresque style	1926	HDP	-	Recognized Structure	R	
4120 Jasmine Ave	Residential Rehabilitation		OHP HRI	-	066300	6Y	1987
4249 Jasmine Ave	Residential building	c. 1941	SCCIC, OHP HRI	177340	028016	6Y	
4222 Keystone Ave	Residential building, Tudor Revival style	1939	HDP	-	Recognized Structure	R	
9031-33 Krueger St	Residential two-story building, Spanish Colonial style	1938	HDP	-	Recognized Structure	R	
9034 A-F, Krueger St	Residential, five building court, Colonial Revival style	1920s	HDP	-	Recognized Structure	R	
4041 Lafayette Pl	Residential, court, Spanish Colonial style	1924	HDP	-	Recognized Structure	R	
4052-A Lafayette Pl	Residential building		HDP	-	HD Landmark Structure	L, HD	
4052-B Lafayette Pl	Residential building		HDP	-	HD Landmark Structure	L, HD	
4052-C LaFayette Pl	Residential, Dist.		HDP	-	HD Landmark Structure	L, HD	
4058-A Lafayette Pl	Residential building		HDP	-	HD Landmark Structure	L, HD	
4058-B Lafayette Pl	Residential building		HDP	-	HD Landmark Structure	L, HD	
4058-C Lafayette Pl	Residential building		HDP	-	HD Landmark Structure	L, HD	
4068-A Lafayette Pl	Residential building		HDP	-	HD Landmark Structure	L, HD	
4068-B Lafayette Pl	Residential building		HDP	-	HD Landmark Structure	L, HD	
4068-C Lafayette Pl	Residential building		HDP	-	HD Landmark Structure	L, HD	
4070-A Lafayette Pl	Residential building		HDP	-	HD Landmark Structure	L, HD	

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4070-B Lafayette Pl	Residential building		HDP	-	HD Landmark Structure	L, HD	
4070-C Lafayette Pl	Residential building		HDP	-	HD Landmark Structure	L, HD	
4114 Lafayette Pl	Residential, duplex, Spanish Colonial style	1920	HDP	-	Recognized Structure	R	
4125 Lafayette Pl	Residential, court, Spanish Colonial style	1922	HDP	-	Recognized Structure	R	
4144-46 Lafayette Pl	Residential, two-story building, Spanish Colonial style	1930	HDP	-	Recognized Structure	R	
3801 Lenawee Ave	Sybil Furthman Residence: two-story, late Beaux Arts (influence) style	c. 1920	SCCIC	150439	-	Unknown	
4058 Lincoln Ave	Residential, single-story building, Spanish Colonial style	1925	HDP	-	Recognized Structure	R	
4077 Lincoln Ave	Residential building, Tudor Revival style	1929	HDP	-	Recognized Structure	R	
4105 Lincoln Ave	Residential, single-story building, Colonial Revival bungalow	1922	HDP	-	Recognized Structure	R	
4190 Lincoln Ave	Residential building, Early Colonial Revival bungalow	1906	HDP	-	Recognized Structure	R	
4191 Lincoln Ave	Residential building, Craftsman Bungalow	1910	HDP	-	Landmark Structure	L	
4210 Lincoln Ave	Residential building, Spanish Eclectic style	1926	HDP	-	Recognized Structure	R	
4049 Madison Ave	Madison Apartments: Residential, two-story building, Spanish Colonial-style	1928	HDP	-	Recognized Structure	R	
4155 Madison Ave	Residential, multi-gabled building, Tudor Revival style	1926	HDP	-	Recognized Structure	R	
4179-81 Madison Ave	Residential, duplex, Spanish Colonial style	1928	HDP	-	Recognized Structure	R	
4214 Madison Ave	Cereghino House: residential, single-story California Bungalow	c. 1913	HDP	-	Recognized Structure	R	
4128 McConnell Blvd	Residential building, Spanish Colonial style	1926	HDP	-	HD Recognized Structure	R, HD	

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4132 McConnell Blvd	Residential building, Spanish Colonial style	1926	HDP	-	HD Recognized Structure	R, HD	
4138 McConnell Blvd	Residential building, Tudor Revival style	1926	HDP	-	HD Recognized Structure	R, HD	
4141 McConnell Blvd	Residential building, Spanish Colonial style	1926	HDP	-	HD Recognized Structure	R, HD	
4148 McConnell Blvd	Residential building, Spanish Colonial style	1926	HDP	-	HD Recognized Structure	R, HD	
4150 McConnell Blvd	Residential building, Spanish Colonial style	1926	HDP	-	HD Recognized Structure	R, HD	
4154 McConnell Blvd	Residential building, Spanish Colonial style	1926	HDP	-	HD Recognized Structure	R, HD	
4158 McConnell Blvd	Residential building, Spanish Colonial style	1926	HDP	-	HD Recognized Structure	R, HD	
4160 McConnell Blvd	Residential building, Spanish Colonial style	1926	HDP	-	HD Recognized Structure	R, HD	
4161 McConnell Blvd	Residential building, Spanish Colonial style	1928	HDP	-	HD Recognized Structure	R, HD	
4163-65 McConnell Blvd	Residential building, Spanish Colonial style	1928	HDP	-	HD Recognized Structure	R, HD	
4166 McConnell Blvd	Residential building, Spanish Colonial style	1926	HDP	-	HD Recognized Structure	R, HD	
4173 McConnell Blvd	Residential building, Spanish Colonial style	1926	HDP	-	HD Recognized Structure	R, HD	

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4177 McConnell Blvd	Residential building, Spanish Colonial style	1926	HDP	-	HD Recognized Structure	R, HD	
4181 McConnell Blvd	Residential building, Spanish Colonial style	1926	HDP	-	HD Recognized Structure	R, HD	
11485 McDonald St	-		OHP HRI	-	126184	6Y	2000-2002
11495 McDonald St	-		OHP HRI	-	126183	6Y	2000-2002
11506 McDonald St	-		OHP HRI	-	126185	6Y	2000-2002
3430 McManus Ave	Washington School (Horizon/Echo): two-story school building, Modern style	c. 1920s	SCCIC, HPAC	187052	097746, Significant Structure	2S2	
10834 Oregon Ave	Residential, bungalow, Greek Revival style	1920s	HDP	-	Recognized Structure	R	
4175 Overland Ave	Culver City Plunge-Bath House		OHP HRI	-	154922	6Y	2005
4427 Overland Ave	Grace Evangelical Lutheran Church		OHP HRI	-	159548	6Y	2006
10412 Park Ave	Residential building, Tudor Revival style	1928	HDP	-	Recognized Structure	R	
10865 Pickford Way	Residential building, Spanish Colonial Revival style	1926	HDP	-	Recognized Structure	R	
3923 Prospect Ave	Residential, four single story stucco-clad buildings	1926	HDP	-	Landmark Structure	R	
3125 Roberts Avenue	Residential building	c. 1936	SCCIC, OHP HRI	177339	028015, 064882	6Y	
10664 Saint James Dr	Residential, multi-level building, Spanish Colonial style	c. 1930	HDP	-	Landmark Structure	L	
4260 Sawtelle Blvd	-		OHP HRI	-	126160	6Y	2000-2002
4265 Sawtelle Blvd	-		OHP HRI	-	126161	6Y	2000-2002
4269 Sawtelle Blvd	-		OHP HRI	-	126162	6Y	2000-2002
4270 Sawtelle Blvd	-		OHP HRI	-	126164	6Y	2000-2002
4325 Sawtelle Blvd	Residential one-story duplex	c. 1947	SCCIC	188720	-	Unknown	
4339 Sawtelle Blvd	Residential one-story, single-family building	c. 1949	SCCIC	188721	-	Unknown	

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3535 Schaefer St	Craftsman Bungalow	1922	HDP	-	Recognized Structure	R	
4225 Sepulveda Blvd	AT&T Mobility, LLC LAC237: one-story, rectangular shaped commercial building, Modern style	c. 1949	SCCIC	190592	-	Unknown	
4545 Sepulveda Blvd	Culver City Ice Arena		Designated by City Council, 2014	-	Significant Structure	S	
3801-3803 Tilden Ave, 11030-11036 Venice Blvd	Single-story duplexes, Minimal Traditional style	c. 1940	SCCIC	189762	-	6Z	
3918 Tuller Ave	-		OHP HRI	-	126135	6Y	2000-2002
3924 Tuller Ave	-		OHP HRI	-	126134	6Y	2000-2002
4132 Tuller Ave	-		OHP HRI	-	126132	6Y	2000-2002
4208 Tuller Ave	-		OHP HRI	-	126131	6Y	2000-2002
4215 Tuller Ave	-		OHP HRI	-	126129	6Y	2000-2002
4216 Tuller Ave	-	1946	OHP HRI	-	126130	6Y	2000-2002
4221 Tuller Ave	-	1947	OHP HRI	-	126128	6Y	2000-2002
3927 Van Buren Pl	Washington Hotel: residential, three-story building, Zigzag Moderne-style		HDP	-	Significant Structure	S	
4115 Van Buren Pl	Residential building, Tudor Revival style	1928	HDP	-	Recognized Structure	R	
4122 Van Buren Pl	Residential, apartment building containing four dwellings, Spanish Colonial style	1930	HDP	-	Recognized Structure	R	
9015 Venice Blvd	Los Angeles Pacific Co, Ivy Substation: two-story building, Mission Revival-style	c. 1907	SCCIC	162271	LAHCM No. 182	1S	
10966 Venice Blvd	Residential, one-story building, Spanish Eclectic style	c. 1927	SCCIC	189760	-	6Z	
11300-04 Venice Blvd	Brick commercial building	1920s	HDP	-	Recognized Structure	R	
4019 Wade St	Residential, two-story building, Spanish Colonial style	1928	HDP	-	Recognized Structure	R	

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4121 Wade St	Residential building		HDP	-	Landmark Structure	L	
10852 Wagner St	Residential building, Tudor Revival style	1927	HDP	-	Recognized Structure	R	
5788-90 Washington Blvd	Commercial building, Neo-classical style	1925	HDP	-	Landmark Structure	S	
5812 Washington Blvd	Commercial building, Neo-classical style	1923	HDP	-	Recognized Structure	R	
5835 Washington Blvd	Eclectic commercial building featuring an elongated "v" shape with a flat roof, Spanish style	1928	HPAC (not in HDP)	-	Significant Structure	-	
5879 Washington Blvd	Metropolitan Community Church	1930	OHP HRI	-	097877	6Y	1994
8695 Washington Blvd	Beacon Laundry building: zigzag Moderne style	1931	HDP	-	Significant Structure	S	
8703-35 Washington Blvd	Helms Bakery Building, Zigzag Moderne style	1930	HDP	-	Landmark Structure	L	-
9336 Washington Blvd	Culver Studios: complex of sound stages, dressing rooms, prop buildings, Southern Colonial-style	c. 1918	SCCIC	177336	028012	3S	
9336 Washington Blvd	The Culver Studios: Mansion Building (Building C), Ince Appendage (Building D), and DeMille Theatre		HDP	-	Landmark Structure	L, 3S, 3CS, 5S1	
9336 Washington Blvd	The Culver Studios: Building E		CPA7	-		5S3	
9336 Washington Blvd	The Culver Studios: Building H		CPA7	-		5S3	
9336 Washington Blvd	The Culver Studios: Building I		CPA7	-		5S3	
9336 Washington Blvd	The Culver Studios: Bungalow S		HDP	-	Significant Structure	S, 3S, 3CS,5S1	
9336 Washington Blvd	The Culver Studios: Bungalow T		HDP	-	Significant Structure	S, 3S, 3CS,5S1	
9336 Washington Blvd	The Culver Studios: Bungalow U		HDP	-	Significant Structure	S, 3S, 3CS,5S1	
9336 Washington Blvd	The Culver Studios: Bungalow V		HDP	-	Significant Structure	S, 3S, 3CS,5S1	
9336 Washington Blvd	The Culver Studios: Stage 7/8/9		CPA7	-		3S,3CS, 5S3	

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9336 Washington Blvd	The Culver Studios: Stage 11/12/14		CPA7	-		3S, 3CS, 5S3	
9336 Washington Blvd	The Culver Studios: Stage 15/16		CPA7	-		3S, 3CS, 5S3	
9400-10 Washington Blvd	Commercial, two-story building, Spanish Colonial style	1925	HDP	-	Recognized Structure	R	
9540 Washington Blvd	Commercial building, Neo-classical style	1928	HDP	-	Recognized Structure	R	
9720-30 Washington Blvd	Washington Building: two-story commercial building, nicknamed the "Flatiron Building" due to its triangular shape, Builder's Beaux Arts Classicism style	c. 1926	OHP HRI, SCCIC, HDP	-	073357, 180748, Landmark Structure	L, 1S	1991
9820 Washington Blvd	Culver Theater	1945	OHP HRI, HDP	-	097878, Landmark Structure	5S2	1994
10195 Washington Blvd	St. Augustine Church: built of poured-place concrete	1955	HDP	-	Landmark Structure	L	
10202 Washington Blvd	Sony Pictures Studios: Thalberg Building		HDP	-	Landmark Structure	L	
10202 Washington Blvd	Sony Pictures Studios: grand entrance (The Colonnade) to the MGM Lorimar Studios		HDP	-	Landmark Structure	L	
10202 Washington Blvd	Triangle New York Motion Picture Studio	c. 1915	SCCIC, OHP HRI	177337	028013	3S	
10202 Washington Blvd	Triangle New York Motion Picture Studio, Metro Goldwyn Mayer Studio: 1. film exchange building, two-story concrete and brick structure, 2. Administration building, Colonial-Italian style	1. c. 1929, 2. c. 1915	SCCIC	187723	-	Unknown	
10202 Washington Blvd	Sony Pictures Studios: Crawford Building (Schoolhouse)		HDP	-	Significant Structure	S	
10202 Washington Blvd	Sony Pictures Studios: Sound Stages 3, 4, 5, 6		HDP	-	Significant Structures	S	
10202 Washington Blvd	Sony Pictures Studios: Jean Harlow Building (Sound Department Offices)		HDP	-	Significant Structures	S	
10202 Washington Blvd	Sony Pictures Studios: Garland Building		HDP	-	Significant Structure	S	

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10202 Washington Blvd	Sony Pictures Studios: Tracy Building		HDP	-	Significant Structure	S	
10202 Washington Blvd	Sony Pictures Studios: Hepburn Building		HDP	-	Significant Structure	S	
10202 Washington Blvd	Sony Pictures Studios: Myrna Loy Building		HDP	-	Significant Structure	S	
10202 Washington Blvd	Sony Pictures Studios: Gable Building		HDP	-	Significant Structure	S	
10202 Washington Blvd	Sony Pictures Studios: Commissary		HDP	-	Significant Structure	S	
10202 Washington Blvd	Sony Pictures Studios: Water Tower		HDP	-	Significant Structure	S	
10722 Washington Blvd	Commercial, single-story stone building	1923	HDP	-	Significant Structure	S	
11218 Washington Blvd	-	1947	OHP HRI	-	126133	6Y	2000-2002
12400-04 Washington Blvd	Commercial building, Neo-Classical style	1920s	HDP	-	Recognized Structure	R	
12841 W. Washington Blvd	-		OHP HRI	-	168088	6Y	2007
7015 Wrightcrest Dr	Mary A. & John Ewing House: contemporary single-family building with a detached garage	c. 1953	SCCIC	189102	-	6Y	

Sources: SCCIC, 2019; OHP HRI, 2012; HDP, 1999; HPAC, 1990; CPA7, 2017.

Note: 1. Designations (other than the Primary Numbers by SCCIC) are provided by different sources such as OHP, HDP, and SCCIC [such as trinomials (i.e. CA-LAN-003803H)].