3.3 BIOLOGICAL RESOURCES

The Project site contains natural vegetation that provides wildlife habitat supporting common and some special-status species. A total of 124 plant taxa (40 native) and 18 wildlife (all native) species have been recorded onsite. At least 17 sensitive or special-status species are either known to be present or have moderate to high potential to be present on the Project site. The Project site lies in Griffith Park, which provides urban wilderness and diverse habitats that support sensitive species in the immediate vicinity of the Zoo. This Project setting may also support wildlife movement and plant propagation between the Zoo, Griffith Park, and the Los Angeles River. The Project would involve redevelopment of Zoo exhibits, visitor-serving areas, and facilities, which would remove native, mature trees and shrubs and buildings potentially serving as habitat for migratory and nesting birds and sensitive bat species. The Project would also involve new development within natural vegetation communities serving as potential habitat for special-status species, such as sensitive legless lizard, woodrat, and bat species. Avoidance and preservation of native vegetation communities and special-status species to the maximum extent feasible would minimize adverse effects. With implementation of MM BIO-1 through MM BIO-5, impacts to biological resources would be less than significant. Mitigation required includes onsite and potentially offsite habitat protection and restoration.

This section describes existing biological resources within presently undeveloped portions of the Los Angeles Zoo and Botanical Gardens (Zoo) and analyzes the potential for impacts to special-status biological resources related to the development or disturbance of existing undeveloped natural communities that could result from implementation of the proposed Zoo Vision Plan (Project) in the City of Los Angeles (City). Biological resources include native vegetation communities (i.e., habitat) supportive of sensitive or special-status species, riparian habitat, wetlands or other sensitive natural community, and wildlife corridors, as further described herein. In addition, important biological resources at the Zoo include some tree and shrub species that are protected or proposed for protection under the City’s Protected Tree Preservation Ordinance and proposed amendments. This section identifies biological resources within the Project site that may be adversely affected by the Project and provides mitigation measures to reduce impacts to biological resources.

While captive species within the Zoo’s resident animal population are not considered biological resources per local and state standards, this section provides analysis of potential impacts to Zoo animals, including sensitive species, in the interest of public disclosure and planning; see Section 3.3.6, Potential Effects on Zoo Animals.
3.3 Biological Resources

3.3.1 Environmental Setting

Regulatory Setting

Federal Regulations

Animal Welfare Act (AWA)

The Animal Welfare Act (AWA) is the only statute that protects the welfare of individual zoo animals per the United States Department of Agriculture (USDA). Under the AWA, animals in the custody of a dealer or exhibitor are protected by regulations governing their care, handling, and transport. All cold-blooded animals are exempt from the AWA’s definition. The AWA gives authority to the Secretary of Agriculture, whose authority is further delegated to the Animal Plant and Health Inspection Service, to administer and enforce the AWA.

Clean Water Act (CWA) Section 404

These provisions regulate the discharge of dredged or fill material in waters of the United States, including rivers and wetlands. The Los Angeles River is considered waters of the United States. Consequently, the CWA Section 404 protects sensitive wetland habitats and riparian species that dwell in or adjacent to wetland areas and rivers. Activities that discharge dredge or fill material into waters of the United States can be authorized by the U.S. Army Corps of Engineers (USACE).

Federal Endangered Species Act (FESA) Sections 7 and 9

The Federal Endangered Species Act (FESA) prohibit the “take” (i.e., harm, harass, or kill individuals, or destroy associated habitat) of species federally listed as threatened or endangered. Take incidental to otherwise lawful activities can be authorized by the U.S. Fish and Wildlife Service (USFWS) through a permit under Section 4(d), 7 or 10(a).

The FESA applies only to animals designated as Endangered or Threatened by the USFWS, the authority that enforces the FESA. The FESA prohibits taking or harassing of listed animals, but the regulations exempt animal husbandry, including exhibition of animals. Therefore, exhibiting an endangered species alone is not a violation of the Act.

The FESA does not regulate possession of endangered species, nor the welfare of those possessed. Rather, it regulates only the movement of those species within the U.S. and even then, only where interstate commerce or a “take” is involved. Section 7 of the FESA makes it unlawful to import or export listed species from the U.S. or to take any species within the U.S. The term “take” is defined in Section 3 of the Act, “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.” “Harass” is further defined in the regulations as “an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns, which include, but are not limited to, breeding, feeding, or sheltering.
Migratory Bird Treaty Act

The Federal Migratory Bird Treaty Act prohibits the direct or indirect take of migratory birds and their active nests unless permitted. The USFWS periodically updates the list of Migratory Birds protected by the Act by both adding and removing species, based on new taxonomy and new evidence of natural occurrence in the U.S. or U.S. territories, removing species no longer known to occur within the United States or U.S. territories, and changing names to conform to accepted use. This list was last updated in March 2020. The net increase of 67 species (75 added and 8 removed) brings the total number of species protected by the Act to 1,093.

State Regulations

Birds of Prey Protection Provision

This provision prohibits the taking of birds of prey (Order Falconiformes and Strigiformes) including their nests and eggs.

California Endangered Species Act (CESA)

Section 2050 of the California Fish and Game Code constitutes the California Endangered Species Act (CESA) and prohibits any activities that would jeopardize or take a species designated as threatened or endangered by the state.

California Fish and Game Code Section 1602

Section 1602 regulates water resources in the State of California. Activities that divert or obstruct the natural flow of, or change or use material from the bed, channel, or bank of any river stream or lake may be authorized by the California Department of Fish and Wildlife (CDFW). CDFW jurisdiction includes intermittent and perennial watercourses and extends to the top of the bank of a stream or lake if unvegetated, or to the limit of the adjacent riparian vegetation, located contiguous to the watercourse, if the stream or lake is vegetated.

California Fish and Game Code Section 3503

Section 3503 of the California Fish and Game Code prohibits the take, possession, or needless destruction of the nests or eggs of any birds, except as otherwise provided by the code or any regulation made pursuant thereto.

California Fully Protected Wildlife Species Provision

These provisions prohibit the taking of fully protected birds, mammals, amphibians, and fish.

California Native Plant Protection Act of 1977

These provisions preserve, protect, and enhance endangered or rare native plants of the state.

California Native Plant Society

The California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants is a widely recognized database that directly guides rare plant protection, conservation planning,
and land acquisition and management in California. CNPS published the first edition of its Inventory of Rare and Endangered Plants in 1974 and published its last print edition (V. 6) in 2001. In 2001, the Inventory switched to being online (V. 7) and is currently in its 8th edition. This Inventory focuses on plants that are native to and rare in California. A very small number of plants that are still somewhat common in California are included because they are in decline and face further immediate threats. The CNPS ranking system includes the following plant ranks and threat ranks:

**Plant Ranks**

- California Rare Plant Rank 1A: Plants presumed extirpated in California and either rare or extinct elsewhere
- California Rare Plant Rank 1B: Plants rare, threatened, or endangered in California and elsewhere
- California Rare Plant Rank 2A: Plants presumed extirpated in California but common elsewhere
- California Rare Plant Rank 2B: Plants rare, threatened, or endangered in California but more common elsewhere
- California Rare Plant Rank 3: Review List: Plants about which more information is needed
- California Rare Plant Rank 4: Watch List: Plants of limited distribution

**Threat Ranks**

- 0.1-Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)
- 0.2-Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)
- 0.3-Not very threatened in California (less than 20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

The Southern California black walnut is designated on the CNPS Inventory of Rare and Endangered Plants with a rating of 4.2.

**Regional Water Quality Control Board (RWQCB)**

The Regional Water Quality Control Board (RWQCB) regulates impacts to water quality under Section 401 of the CWA. A project must comply with Section 401 of the CWA before the USACE can issue a Section 404 Permit. The RWQCB will issue a Section 401 Water Quality Certification or Waiver of Certification, depending upon the extent of impacts to waters of the United States. The RWQCB also regulates impact to “waters of the State” (usually limited to “isolated” waters or swales that may not fall under USACE jurisdiction) under the Porter Cologne Water Quality Control Act.
Local Regulations

City of Los Angeles Protected Tree Preservation Ordinance

City Ordinance No. 177404 constitutes the City’s Protected Tree Preservation Ordinance, which aims to secure the preservation and sustain the health of native Southern California tree species recognized for their ecological and cultural value. This ordinance regulates the protection, removal, and replacement of trees deemed to be protected by the City, which include the following four native Southern California tree species measuring four inches or more in cumulative diameter at four and one-half feet above the ground level at the base of the tree:

- Oak trees, including valley oak (*Quercus lobata*) and California (coast) live oak (*Quercus agrifolia*), or any other tree of the oak genus indigenous to California but excluding the scrub oak (*Quercus dumosa*)
- Southern California black walnut (*Juglans californica* var. *californica*)
- Western sycamore (*Platanus racemosa*)
- California bay (*Umbellularia californica*)

All trees meeting the criteria above are protected trees and removal or relocation would require a permit from the Board of Public Works and replacement of each tree removed by a ratio of at least 2:1. A protected tree report is required to be submitted to the Board of Public Works to apply for a tree removal permit and must contain the required information listed in the City’s Standard Tree Removal Application Checklist.

In January of 2017, a Protected Tree Code Amendment was proposed to the City to amend the existing Tree Preservation Ordinance and expand the definition of “Protected Tree” to include Mexican elderberry (*Sambucus mexicana*) trees species, and toyon (*Heteromeles arbutifolia*)-shrub species. Under the proposed amendment, the defined term “Protected Tree” would be changed to “Protected Tree or Shrub” to accommodate addition of these two species. Further, the proposed amendment would increase the current replacement requirement from a ratio of 2:1 to 4:1.

City of Los Angeles General Plan, Framework, and Conservation Elements

The City’s General Plan is a comprehensive declaration of purposes, policies, and programs for the development of the City. The Citywide General Plan Framework Element (Framework Element) establishes the overall policy and direction for the General Plan. It includes a long-range strategy to guide the comprehensive update for the General Plan’s other elements. Chapter 6, Open Space and Conservation of the Framework Element includes goals, objectives, and policies for the provision, management, and conservation of the City’s open space resources, including Significant Ecological Areas, wildlife corridors, and natural animal ranges. The Conservation Element of the General Plan addresses endangered species, habitats, wildlife corridors, and wetlands occurring in the City and identifies policies intended to protect, restore, and enhance these biological resources. Goals, objectives, and policies
from the Framework and Conservation Elements related to biological resources and relevant to the proposed project are listed below in Table 3.3-1.

<table>
<thead>
<tr>
<th>Goal/Objective/Policy</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Framework Element – Chapter 6 Open Space and Conservation</strong></td>
<td></td>
</tr>
<tr>
<td>Objective 6.1</td>
<td>Protect the City’s natural settings from the encroachment of urban development, allowing for the development, use, management, and maintenance of each component of the City’s natural resources to contribute to the sustainability of the region.</td>
</tr>
</tbody>
</table>
| Policy 6.1.2 | Coordinate City operations and development policies for the protection and conservation of open space resources, by:  
a) Encouraging City departments to take the lead in utilizing water re-use technology, including graywater and reclaimed water for public landscape maintenance purposes and such other purposes as may be feasible;  
b) Preserving habitat linkages, where feasible, to provide wildlife corridors and to protect natural animal ranges; and  
c) Preserving natural viewsheds, whenever possible, in hillside and coastal areas. |
| Policy 6.1.3 | Reassess the environmental importance of the County of Los Angeles designated Significant Ecological Areas (SEAs) that occur within the City of Los Angeles and evaluate the appropriateness of the inclusion of other areas that may exhibit equivalent environmental value. |
| Policy 6.1.4 | Conserve, and manage the undeveloped portions of the City’s watersheds, where feasible, as open spaces which protect, conserve, and enhance natural resources. |
| Policy 6.1.5 | Provide for an on-site evaluation of sites located outside of targeted growth areas, as specified in amendments to the community plans, for the identification of sensitive habitats, sensitive species, and an analysis of wildlife movement, with specific emphasis on the evaluation of areas identified on the Biological Resource Maps contained in the Framework Element’s Technical Background Report and Environmental Impact Report. |
| Policy 6.1.6 | Consider preservation of private land open space to the maximum extent feasible. In areas where open space values determine the character of the community, development should occur with special consideration of these characteristics. |
| Policy 6.1.7 | Encourage an increase of open space where opportunities exist throughout the City to protect wild areas such as the Sepulveda Basin and Chatsworth Reservoir. |
| **Conservation Element – Endangered Species** | |
| Policy 1 | Continue to require evaluation, avoidance, and minimization of potential significant impacts, as well as mitigation of unavoidable significant impacts on sensitive animal and plant species and their habitats and habitat corridors relative to land development activities. |
Table 3.3-1.  City of Los Angeles General Plan Open Space and Conservation Element Relevant Policies (Continued)

<table>
<thead>
<tr>
<th>Goal/Objective/Policy</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policy 2</td>
<td>Continue to administer city-owned and managed properties to protect and/or enhance the survival of sensitive plant and animal species to the greatest practical extent.</td>
</tr>
</tbody>
</table>

**Conservation Element - Habitats**

<table>
<thead>
<tr>
<th>Goal/Objective/Policy</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policy 1</td>
<td>Continue to identify significant habitat areas, corridors, and buffers and to take measures to protect, enhance and/or restore them.</td>
</tr>
<tr>
<td>Policy 2</td>
<td>Continue to protect, restore, and/or enhance habitat areas, linkages, and corridor segments, to the greatest extent practical, within City owned or managed sites.</td>
</tr>
<tr>
<td>Policy 3</td>
<td>Continue to work cooperatively with other agencies and entities in protecting local habitats and endangered, threatened, sensitive, and rare species.</td>
</tr>
</tbody>
</table>

Source: City of Los Angeles 2001.

**Los Angeles County Significant Ecological Areas**

The County of Los Angeles has designated Significant Ecological Areas (SEAs) to allow controlled development in areas of critical biodiversity. A majority of Griffith Park is within SEA 37, which encompasses the coastal sage scrub, chapparal, riparian, and southern oak.
woodland plant communities within Griffith Park. The Zoo property is outside of SEA 37 with the nearest the SEA boundary on the west and north of the Zoo.

**Existing Conditions**

**Regional Setting**

The Zoo is situated at the base of the foothills of the eastern Santa Monica Mountains, part of the Transverse Ranges physiographic region. The climate of the region is Mediterranean, with hot dry summers and wet winters, and semi-arid. Total precipitation for the year is about 16 inches of rainfall, with most falling between November and April. Winter low temperatures average about 42°F, while summer highs average about 86°F (Western Regional Climate Center 2019). The 133-acre Zoo is located in the northeast corner of the 4,310-acre Griffith Park, and is one of the largest urban parks in the United States. Griffith Park supports an extensive, relatively undisturbed island of natural vegetation in an urbanized, metropolitan area. Other land uses surrounding Griffith Park include residential neighborhoods, open space, commercial/manufacturing uses, the Los Angeles River, and the U.S. Highway 101 (Hwy 101) and Interstate 5 (I-5) freeways within heavily urbanized portions of the cities of Los Angeles, Glendale, and Burbank.

Griffith Park supports an extensive, relatively undisturbed island of natural vegetation in an urbanized, metropolitan area. Existing extensive stands of chaparral and oak woodland in Griffith Park provide significant areas of wildlife habitat. Griffith Park also has channelized connections through urban development to open lands in the vicinity that support wildlife movement and sustain biological diversity. Runyon Canyon Park lies to the west, separated from Griffith Park by Hwy 101 and provides 160 acres of parkland. Both parks are managed by the Los Angeles Department of Recreation and Parks (RAP). Further west, Topanga State Park (managed by California State Parks) covers 11,500 acres. Together, these three parks and other parks and open spaces within the Santa Monica Mountains provide extensive natural undeveloped coastal sage scrub, chaparral, oak woodlands, and other habitats that...
3.3 Biological Resources

act as important natural resources to the Los Angeles area. Griffith Park is also linked to the Los Angeles River, which provides some regional wildlife connectivity to other open lands and the Pacific Ocean.

The migration of the famed cougar P-22 (*Puma concolor*) from the Santa Monica Mountains to Griffith Park is an important illustration of the suitability of the area as habitat and the role the park plays in regional wildlife connectivity. Other larger more common wildlife that utilize Griffith Park include bobcat (*Lynx rufus*), coyote (*Canis latrans*), mule deer (*Odocoileus hemionus*), raccoon (*Procyon lotor*), and striped skunk (*Mephitis mephitis*) (Cooper Ecological Monitoring, Inc. and USGS 2012). Western gray squirrel (*Sciurus griseus*), California ground squirrel (*Otospermophilus beecheyi*), the non-native Fox Squirrel (*Sciurus niger*), Brush Rabbit (*Sylvilagus bachmani*), Botta’s pocket gopher (*Thomomys bottae*), California vole (*Microtus californicus*), and woodrat (*Neotoma* spp.) are relatively common small mammals that utilize Griffith Park. Other characteristic wildlife species include birds like the acorn woodpecker (*Melanerpes formicivorus*), oak titmouse (*Baeolophus inornatus*), and purple finch (*Haemorhous purpureus*). Griffith Park also provides roosting and some foraging habitat for several bat species, including Yuma myotis (*Myotis yumanensis*), California myotis (*Myotis californicus*), Western pipistrelle (*Parastrellus hesperus*), big brown bat (*Eptesicus fuscus*), western red bat (*Lasiurus blossevillii*), hoary bat (*Lasiurus cinereus*), and Mexican free-tailed bat (*Tadarida brasiliensis*) (Remington, S. and Cooper Ecological Monitoring, Inc. 2009).

**Project Site and Vicinity**

The Zoo is bordered to the north, west, and east by several hundred acres of chaparral, oak woodland, and coastal sage scrub habitats located within the surrounding hillsides, ridges, and canyons of Griffith Park. The Project site is in the Bull Canyon planning watershed. This includes three canyons with limited watersheds that support ephemeral drainages that discharge into small Zoo catchment or sediment basins from the north and northwest, and then are conveyed into underground storm drains which ultimately discharge to the Los Angeles River. The topography of the site ranges from relatively level to hilly, with elevations ranging from about 440 feet to 660 feet (135 meters to 200 meters) above mean sea level, with most public spaces lying below 540 feet (165 meters) in elevation. Regional geologic maps indicate that the lower elevations of the site, including the parking lot and the central portion of the Zoo, are underlain by younger alluvium consisting of moderately to poorly consolidated clay, sand, and gravel. The alluvium is overlain in the central portion of the Zoo by fill soils placed during the original construction of the Zoo in the mid-1960s and during later projects. The hills located on the northern and northwestern portions of the Zoo are composed of igneous quartz diorite bedrock. The quartz diorite is moderately to intensely weathered and composed of plagioclase feldspar, quartz, biotite, and hornblende. The hills along the southern edge of the site and south of the Zoo are composed of sedimentary sandstone and shale of the Topanga Formation.
The hillside and canyon areas within the Zoo support a range of common species and potentially some special-status species. Although direct habitat connectivity is somewhat disrupted by trails, roads, clearing of fire buffers, and perimeter security fencing, wildlife movement and plant propagation between Griffith Park and the Zoo appears to occur. For example, areas such as Amir’s Garden to the south support dense stands of coast live oak woodlands and chaparral, which support diverse avian and small wildlife that can cross narrow Griffith Park Drive to access Zoo habitats. Similarly, the chaparral and coastal live oak woodland habitats located along the ridges and canyons bordering the Zoo also support avian, bat, and small mammal populations that likely have some interaction with habitats and wildlife within the Zoo, despite the presence of public trails (e.g., Skyline and Condor), vegetation management activities, and perimeter fencing.

The Zoo sits on formerly rough terrain that historically supported steep ridges and hillsides drained by several canyons. Development of the former Roosevelt Golf Course entailed hillside grading and associated fill of onsite canyons to create level greens and fairways. During development of the Zoo in place of the golf course in the mid-60s, the bottoms of canyons and drainages were further graded and filled to provide level areas with overall fill depths reaching up 10 to 30 feet in the central portions of the canyons (Appendix E). Soils are generally well-drained without substantial amounts of organic materials. Three ephemeral streams were placed in culverts underlain the artificial fill to carry runoff from upstream canyons through the Zoo to downstream drainage facilities and into the Los Angeles River. These generally level, filled canyons are where most of the currently developed Zoo facilities are located. The surrounding hillsides within the Zoo are mostly undeveloped and support native or mixed woodland habitats. Development in these hillside areas is limited to administrative offices, conservation programs facilities, and support facilities for Zoo programming.

About 55 percent of the Zoo area is developed with exhibit and visitor-serving space and administrative and support facilities. These developed area areas are often heavily landscaped with mature trees and shrubs, representing the “botanical garden” aspect of the Zoo. Another 22 percent is utilized to provide parking, and the remaining 24 percent is largely not utilized and undeveloped. Natural, undeveloped areas in the Zoo are commonly bordered by mixed woodlands of both planted and naturalizing non-native species (gum trees [eucalyptus], for example), and represent a blending ecotone between the developed portion of the Zoo and the more natural hillsides in the Project site and in Griffith Park.

Vegetation Communities

Vegetation communities are a collection or assemblage of plants sharing a common environment that interact with each other, other plant and animal species, and the larger ecosystem. Each community is defined by the physical conditions of the environment (e.g., elevation, steepness of slope, soils, climate), dominant species, species composition and diversity, canopy cover, and percentage of species native to the region.
Mapped native vegetation communities within the Project site are contained within the California and Africa planning areas. The California planning area contains 12.7 acres of laurel sumac shrubland, 0.4 acres of coast live oak woodland, and a 0.1 acres of coastal sage scrub community. The Africa planning area contains 6 acres of coast live oak woodland. Common to both areas is a mostly non-native mixed woodland, often with predominantly planted or naturalized eucalyptus or pine trees. The Africa planning area also contains 0.3 acres of non-native grassland. These undeveloped areas serve as a transitional zone between the developed Zoo grounds and native habitats either within the Zoo or in adjacent Griffith Park. Developed areas cover 102 acres of the Zoo, including 67.4 acres of developed park area to denote portions of the Zoo used for exhibits, conservation uses, and support and administrative facilities, and 34.6 acres of urban/developed area to denote parking lots and roadways (see Figure 3.3-1). A summary of the areas covered by each vegetation community (including most appropriate classification in the Manual of California Vegetation [MCV]) or land use type is shown in Table 3.3-2.

### Table 3.3-2. Vegetation Communities and Land Use

<table>
<thead>
<tr>
<th>Community/Type (Appropriate MCV Classification)</th>
<th>Acres*</th>
<th>Species Diversity</th>
<th>Percent Native</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coast Live Oak Woodland (Coast Live Oak Woodland and Forest)</td>
<td>6.41</td>
<td>53</td>
<td>67</td>
</tr>
<tr>
<td>Coastal Sage Scrub (Coastal Safe and Island Scrub Oak Chaparral)</td>
<td>0.11</td>
<td>19</td>
<td>79</td>
</tr>
<tr>
<td>Developed Park (Unclassified)</td>
<td>67.35</td>
<td>(33)**</td>
<td>29</td>
</tr>
<tr>
<td>Eucalyptus/Mixed Woodland (Eucalyptus – Tree of Heaven – Black Locust Grove)</td>
<td>13.53</td>
<td>44</td>
<td>32</td>
</tr>
<tr>
<td>Laurel Sumac Shrubland (Laurel Sumac Scrub)</td>
<td>12.67</td>
<td>49</td>
<td>53</td>
</tr>
<tr>
<td>Non-Native Grassland (Wild Oats and Annual Brome Grassland)</td>
<td>0.32</td>
<td>9</td>
<td>33</td>
</tr>
<tr>
<td>Urban/Developed (Unclassified)</td>
<td>34.60</td>
<td>NA</td>
<td>-</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>134.98</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Appendix E

* Acreage based on digitized GIS boundary areas and may not reflect actual site boundaries.

** Developed lands within the Zoo were only incidentally examined and were not subject to an intensive floristic inventory.

*** Community/Type represents vegetation community names which are the closest to each respective MCV classification. Community/Type is modified to represent actual community characteristics at the site and represents the dominant species and habitat present at the site. The MCV does not classify developed lands such as Developed Park and Urban/Developed.

**Coast Live Oak Woodland**

The largest area of roughly 6 acres of coast live oak woodlands is found on the western side of the Zoo on an undeveloped, northeast-facing hillside surrounded by paved access roads and a retaining wall on the east side, within the proposed Africa planning area; a roughly 0.15-acre of coast live oak woodland is located northeast of the Gottlieb Animal Health and Conservation Center. An additional 0.15-acre area of coast live oak woodland is located on the east side of the Zoo north of the Zoo entrance above an employee parking lot in the California planning area (refer to Figure 3.3-1).
Los Angeles Zoo
Vegetation Communities and Species Observations

LEGEND

Los Angeles Zoo
Proposed Planning
Area Boundary
Vegetation Communities
Urban/Developed
Developed Park
Coast Live Oak Woodland
Coastal Sage Scrub
Eucalyptus/Mixed Woodland
Laurel Sumac Shrubland
Non-Native Grassland

Note: This map depicts rare or sensitive biological resources that were observed onsite. For location of locally protected tree and shrub specimens, refer to Figures 3.6-1 and 3.6-2.
Mature coast live oaks are the dominant species providing a mostly non-continuous woodland canopy over an understory of predominantly non-native annual grass species, interspersed with native understory plant species and a variety of primarily native shrubs. A total of 120 mature coastal live oak trees exist within the three areas, with the vast majority (113) are concentrated with the 6 acres of coast live oak woodlands within the proposed Africa planning area. These oaks range from an average of 13 inches diameter at breast height (DBH) and 19 feet tall in the planned California area to 18 inches DBH and 25 feet tall in the planned Africa exhibit, with some oaks of between 20 and 30 inches DBH. Most oak trees are in good health (Appendix E). The coast live oak woodland within the Africa planning area hosts the highest observed species diversity of the native habitats of the Zoo, with 54 plant species being observed, of which 67 percent were native. The west side oak woodland in the proposed African exhibit also hosts 22 mostly small-diameter Southern California black walnut trees, a species of conservation concern (Figure 3.3-1). These areas appear largely free of recent disturbance, although ongoing vegetation management and clearing for fire protection has impacted this habitat, as exhibited by stump sprouting Southern California black walnut trees. Due to apparent past fire clearing activities, most of the latter appear to be stump sprouts and fall below the 4-inch DBH that would require protection under the Los Angeles Municipal Code (LAMC). The Africa planning area also supports non-natives grasses dominated by wild oats (Avena sp.) and brome grasses (typically ripgut [Bromus diandrus]).
Laurel Sumac Shrubland

Laurel sumac is a chaparral species. This species is dominant, due to cumulative ground cover, height and density of the shrubs. This community is found on undeveloped portions on the east side of the Zoo, the larger portion surrounding a ridgetop trail, and most probably represents a late seral stage of community development following disturbance. Laurel sumac shrublands often develop post-fire, as the species is a prolific resprouter; however, no evidence of a recent fire was noted in the Zoo.

Laurel sumac is a spreading, evergreen, leathery-leaved, multi-stemmed shrub that grows up to about 20 feet tall (though usually ranging from 10 to 15 feet). Individual shrubs are widely spaced to clumped in patches. Openings are populated by mix of bare ground and non-native annual grasses occasionally with other tree or shrub species, including gum trees (Eucalyptus spp.), oaks (live oak and scrub oak), elderberry (Sambucus nigra), lemonade berry (Rhus integrifolia), California sagebrush (Artemisia californica), big pod ceanothus (Ceanothus macrocarpa), and toyon (Heteromeles arbutifolia) among others. The federal and state listed endangered Nevin’s barberry is present below the ridgeline, within this vegetation community; a single plant with characters approaching Hubby’s phacelia (Phacelia hubyi) was also noted. This vegetation community was the second-most diverse on the site, with 49 species being observed, with just over half (53 percent) being native. However, this community has been impacted by trail and road use, wildfire fuel management activities, and erosion and the significant presence of non-native plants. Substantial portions of this habitat were cleared in July 2019 for fire suppression purposes following completion of the site reconnaissance and rare plant survey, including removal of a substantial amount of laurel sumac, and potentially including the Nevin’s barberry.
**Coastal Sage Scrub**

A small, coastal sage scrub community dominated by California sagebrush (*Artemisia californica*) persists on the lower, very steep slopes along the perimeter of an employee parking lot on in the California planning area (Figure 3.3-1). This community is different from the laurel sumac shrubland described above, although more than half the species noted here were also common in laurel sumac shrubland. Beyond supporting California sagebrush, California buckwheat (*Eriogonum fasciculatum*) and white sage (*Salvia apiana*) are also typical of coastal sage scrub. This community hosted 8 species that were not observed elsewhere, including California fuchsia (*Epilobium canum*) and California coffeeberry (*Frangula californica*). A total of 19 species were observed in this vegetation community fragment, with only a few non-native invaders; natives represent about 75 percent of the total diversity. The area is heavily impacted by erosion and features some vertical nearly bare faces that support the species of this habitat.

**Non-Native Annual Grassland**

A small non-native annual grassland is located in between coast live oak woodland and eucalyptus/mixed woodlands in the Africa planning area. Plant species present are representative of those found in the understory of the adjacent woodlands, and are dominated by wild oats and ripgut brome, with isolated shrubs. Of all vegetation communities on the Project site, grasslands are the least diverse. Except for the lack of trees, the vegetation of this community reflects the species composition of the bordering oak and mixed woodlands.

**Eucalyptus/Mixed Woodland**

Eucalyptus/mixed woodland is a community with a broad and diverse composition. Gum trees are most common with both cultivated and naturalizing individuals with other mostly non-native tree species, including various pines (*Pinus* spp.), jacaranda (*Jacaranda mimosifolia*), tree of heaven (*Ailanthus altissima*), and Brazilian and Peruvian pepper trees (*Schinus terebinthifolius* and *Schinus molle*, respectively). The understory of eucalyptus/woodland on-site varied considerably depending upon the canopy coverage and maintenance. Under canopy was often a dense litter of leaves or needles. Non-native grasses or other mostly non-native species populate openings within the woodland. 44 species were observed species, indicating good diversity on-site, however, the majority of these (68
percent) were not native. Some mowing, fire prevention, and other clearing activities were noted within this habitat as well.

**Developed Park**

Developed Parks refer to the developed portion of the Zoo, including animal exhibit areas, visitor-serving uses, pedestrian pathways, service roads, landscaped areas, storage yards, building area, and service areas. Vegetation within these areas are landscaped and cultivated, and potentially could be included in an expanded definition of mixed woodland as they feature many non-native trees and good canopy coverage. A detailed examination of biological resources in this area was beyond the scope of this analysis. However, incidental observations recorded 34 observed species with only 29 percent being native to California (though not necessarily native to the region). Observed natives include sycamores, which are protected trees under the LAMC.

**Urban/Developed**

Urban/Developed refers to paved parking or access roadways outside of the Zoo. Parking areas did support landscape plantings of various cultivated native species such as coast live oak and sycamore, but again were beyond the scope of this analysis.

**Observed Species**

Flora

Appendix E lists all vascular plant species observed during the biological resource survey, rare plant survey, and jurisdictional delineation for the Project. A total of 124 plant taxa were observed. A total of 40 native species were found representing 32 percent of the observed flora, including two sensitive species, Nevin’s barberry and Southern California black walnut. As noted above, these native plant species were concentrated in and dominate the approximately 19 acres of native oak woodland and laurel sumac shrubland habitats located on undeveloped hillsides and ridgelines within the proposed California and Africa planning areas. The roughly 81 acres of Developed Park and Eucalyptus/Mixed Woodland habitats are dominated by the roughly 80 non-native plant species, although these areas also support some native plant species such as western sycamore and coast live oaks.
3.3 Biological Resources

Fauna

Appendix E lists all wildlife species detected within the Project site. A total of 18 wildlife species were detected, including 2 invertebrates (both butterflies), 13 birds and 3 mammals (2 detected by sign only). At the time of the reconnaissance-level biological resource survey in late May 2019, black phoebes (*Sayornis nigricans*) were observed to be nesting in the Treetops Terrace within the Asia planning area in developed portions of the Zoo. A Cooper’s hawk (*Accipiter cooperii*) was heard calling during the reconnaissance survey. An occupied bat house was also observed in the Treetops Terrace; bats were not observed directly, and species determinations were not made. Relatively fresh guano was observed, indicating occupation. Bats had recently been relocated from the Treetops Terrace using other bat houses, which had been closed and relocated with sleeping bats inside to mixed woodland locations outside of the developed Zoo (Beth Schneider and Mike Maxcy, pers. comm., 2019). Coyote scat was also observed in several locations in both developed and undeveloped portions of the Zoo, indicating that medium-sized mammals can access interior portions of the Zoo. Woodrat nests (middens) were observed in the undeveloped laurel sumac shrubland on the east side of the Zoo (Figure 3.3-1) during the field surveys, but determination of species is difficult without trapping or close observation. These middens are potentially those of the San Diego woodrat (*Neotoma lepida intermedia*) (see Sensitive Wildlife Species discussion below).

Special-Status Species

Special-status species are those recognized by federal, state, or local agencies as being potentially vulnerable to impacts because of rarity, local or regional reductions in population numbers, isolation/restricted genetic flow, or other factors. Special-status plant species include those listed as threatened or endangered, proposed for listing, or candidates for listing by the USFWS and CDFW; those considered sensitive by the CDFW; those species included in the California Rare Plant Rank (CRPR) inventory, which is maintained by the CNPS; and those species considered sensitive or protected under the LAMC. Special-status wildlife species include those listed as threatened or endangered, proposed for listing, or candidates for listing by the USFWS and CDFW; or those considered sensitive by the CDFW.

While the Zoo provides habitat to several sensitive species, the developed nature of much of the Project site with exhibits, roads, buildings, pathways, parking and non-native trees and landscaping limits the Zoo’s utility to a relatively narrow range of sensitive species. As
described in the above section *Observed Species*, the distribution of historical special-status species observations in the Project vicinity was reviewed for preparation of this report. For the purposes of this analysis, those species that are either known to occur or have some potential to occur within the Project site are addressed in this section. 17 sensitive or special-status plant and wildlife species are either known to be present or have a moderate to high potential to be present. The list of potentially occurring special-status plant and animal species is provided in Table 3.3-3 below along with an assessment of their potential for occurrence on site.

**Sensitive Plant Species**

Sensitive plant taxa known to occur or to have formerly occurred within the immediate area are listed in Table 3.3-3. Of the 21 taxa listed, two species - Nevin’s barberry and Southern California black walnut – were observed during the reconnaissance of the site and the subsequent focused rare plant survey (Figure 3.3-1). Another, the Plummer’s mariposa lily (*Calochortus plummerae*) is sensitive plant species assigned a high potential to occur on site due to habitat suitability and extant populations occurring nearby; three others have a moderate potential to occur, and six have a low potential of occurrence mostly due to lack of modern observations in the region. The remainder are not expected due to a lack of suitable habitat.

**Listed Plant Species**

There are rare plant taxa with known or high potential to occur on or near the site and are listed under FESA or CESA:

- **Nevin’s barberry** (*Berberis nevinii*) is both federally and state listed as Endangered and is a CNPS CRPR 1B.2 species. These plants are located on north-facing slopes adjacent to the north of the Zoo and within the laurel sumac shrubland which would be largely removed or disturbed by Project development. This species was detected during the reconnaissance survey and its distribution on site better determined during the subsequent rare plant survey which indicates its location within areas likely subject to disturbance (Figure 3.3-1).
- The **San Fernando Valley spineflower** (*Chorizanthe parry var. fernandina*) is state listed as Endangered and is a CRPR 1B.1 species. These plants could be present; however, it was not detected during reconnaissance or focused rare plant surveys.
- The **Plummer’s mariposa lily** (*Calochortus plummerae*) and **Southern California black walnut** are both CRPR 4.2 and are considered to have high potential to occur or are currently present onsite, respectively.
- **Hubby’s phacelia** (*Phacelia hubbyi*) and the **San Gabriel Mountains leather oak** (*Quercus durata var. gabrielensis*), both CRPR 4.2, have moderate potential to exist onsite.
<table>
<thead>
<tr>
<th>Scientific Name</th>
<th>Common Name</th>
<th>Status¹ (FESA/State/CRPR)</th>
<th>Habitat</th>
<th>Elev (ft)</th>
<th>Bloom Time</th>
<th>Occurrence or Potential for Occurrence</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PLANTS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Berberis nevinii</em></td>
<td>Nevin’s barberry</td>
<td>FE/CE/1B.1</td>
<td>Sandy or gravelly chaparral, cismontane woodland, coastal scrub, riparian scrub.</td>
<td>225-2705</td>
<td>(Feb) Mar-Jun</td>
<td>Present; Observed during reconnaissance survey</td>
</tr>
<tr>
<td><em>Heteromeles arbutifolia</em></td>
<td>toyon</td>
<td>-/-/-</td>
<td>Chaparral</td>
<td>45-2295</td>
<td>Jun-Aug</td>
<td>Present; Observed during reconnaissance survey</td>
</tr>
<tr>
<td><em>Juglans californica</em></td>
<td>Southern California black walnut</td>
<td>-/-/4.2</td>
<td>Alluvial chaparral, cismontane woodland, coastal scrub, riparian woodland.</td>
<td>160-2955</td>
<td>Mar-Jun</td>
<td>Present; Observed during reconnaissance survey</td>
</tr>
<tr>
<td><em>Platanus racemosa</em></td>
<td>western sycamore</td>
<td>-/-/-</td>
<td>Yellow pine forest, foothill woodland, chaparral, valley grassland, wetland-riparian</td>
<td>6-11310</td>
<td>Feb-May</td>
<td>Present; Observed during reconnaissance survey</td>
</tr>
<tr>
<td><em>Sambucus nigra spp. caerulea</em></td>
<td>blue elderberry</td>
<td>-/-/-</td>
<td>Yellow pine forest, red fir forest, lodgepole forest, subalpine forest, southern oak woodland, foothill woodland, pinyon-juniper woodland</td>
<td>0-3000</td>
<td>Mar-Jul</td>
<td>Present; Observed during reconnaissance survey</td>
</tr>
<tr>
<td><em>Quercus agrifolia</em></td>
<td>Coast live oak</td>
<td>-/-/-</td>
<td>Mixed evergreen forest, foothill woodland, southern oak woodland.</td>
<td>50-2300</td>
<td>Feb-Mar</td>
<td>Present; Observed during reconnaissance survey</td>
</tr>
<tr>
<td><em>Calochortus plummerae</em></td>
<td>Plummer’s mariposa lily</td>
<td>-/-/4.2</td>
<td>Granitic, rocky chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, valley, and foothill grassland.</td>
<td>325-5575</td>
<td>May-Jul</td>
<td>High; Suitable habitat present; known from immediate region</td>
</tr>
</tbody>
</table>
### Table 3.3-3. Potentially Occurring Special-Status Species (Continued)

<table>
<thead>
<tr>
<th>Scientific Name</th>
<th>Common Name</th>
<th>Status(^1) (FESA/State/CRPR)</th>
<th>Habitat</th>
<th>Elev (ft)</th>
<th>Bloom Time</th>
<th>Occurrence or Potential for Occurrence</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Phacelia hubbyi</em></td>
<td>Hubby’s phacelia</td>
<td>-/-/4.2</td>
<td>Gravelly, rocky, or talus in chaparral, coastal scrub, valley, and foothill grassland.</td>
<td>0-3300</td>
<td>Apr-Jun</td>
<td>Moderate; Suitable habitat present; known to occur south of Project site; often associated with black walnut</td>
</tr>
<tr>
<td><em>Quercus durata var. gabrielsonis</em></td>
<td>San Gabriel Mtns. leather oak</td>
<td>-/-/4.2</td>
<td>Chaparral, cismontane woodland.</td>
<td>1475-3280</td>
<td>Apr-May</td>
<td>Moderate; Suitable habitat present; known from recent collections in Griffith Park south of site</td>
</tr>
<tr>
<td><em>Quercus dumosa</em></td>
<td>Nuttall’s scrub oak</td>
<td>-/-/1B.1</td>
<td>Sandy, clay loam in closed-cone coniferous forest, chaparral, coastal scrub.</td>
<td>45-1310</td>
<td>Feb-Mar</td>
<td>Moderate; Suitable habitat present; known historically in region south of Project site</td>
</tr>
<tr>
<td><em>Calandrinia breweri</em></td>
<td>Brewer’s calandrinia</td>
<td>-/-/4.2</td>
<td>Sandy or loamy, disturbed sites and burns in chaparral, coastal scrub.</td>
<td>33-4026</td>
<td>Mar-Jun</td>
<td>Low; Suitable habitat present; only historical collections from area.</td>
</tr>
<tr>
<td><em>Calochortus clavatus var. gracilis</em></td>
<td>slender mariposa lily</td>
<td>-/-/1B.2</td>
<td>Chaparral, coastal scrub, valley, and foothill grassland.</td>
<td>1045-3280</td>
<td>Mar-Jun (Nov)</td>
<td>Low; Suitable habitat present; known in region south of Project site from mountains 10 km to north</td>
</tr>
<tr>
<td><em>Chorizanthe parryi var. fernandina</em></td>
<td>San Fernando Valley spineflower</td>
<td>-/CE/1B.1</td>
<td>Coastal scrub (sandy), valley and foothill grassland.</td>
<td>495-4005</td>
<td>Apr-Jun</td>
<td>Low; Suitable habitat present; historically known in region</td>
</tr>
<tr>
<td><em>Horkelia cuneata var. puberula</em></td>
<td>mesa horkelia</td>
<td>-/-/1B.1</td>
<td>Sandy or gravelly maritime chaparral, cismontane woodland, coastal scrub.</td>
<td>225-2655</td>
<td>Feb-Jul (Sep)</td>
<td>Low; Suitable habitat present; known historically in region</td>
</tr>
</tbody>
</table>
## 3.3 Biological Resources

### Table 3.3-3. Potentially Occurring Special-Status Species (Continued)

<table>
<thead>
<tr>
<th>Scientific Name</th>
<th>Common Name</th>
<th>Status¹ (FESA/ State/ CRPR)</th>
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<th>Elev (ft)</th>
<th>Bloom Time</th>
<th>Occurrence or Potential for Occurrence</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Piperia cooperi</em></td>
<td>Cooper's rein orchid</td>
<td>-/-/4.2</td>
<td>Chaparral, cismontane woodland, valley, and foothill grassland.</td>
<td>50-5230</td>
<td>Mar-Jun</td>
<td>Low Suitable habitat present; known historically in region</td>
</tr>
<tr>
<td><em>Pseudognaphalium leucocephalum</em></td>
<td>white cudweed</td>
<td>-/-/2B.2</td>
<td>Sandy, gravelly chaparral, cismontane woodland, coastal scrub, riparian woodland.</td>
<td>0-6890</td>
<td>Aug-Nov</td>
<td>Low Suitable habitat present; known historically in region</td>
</tr>
<tr>
<td><em>Atriplex parishii</em></td>
<td>Parish's brittlescale</td>
<td>-/-/1B.1</td>
<td>Alkaline or saline chenopod scrub, playas, or vernal pools.</td>
<td>30-655</td>
<td>Apr-Oct</td>
<td>Not Expected Alkaline conditions not present within the Project site.</td>
</tr>
<tr>
<td><em>California macrophylla</em></td>
<td>California filaree</td>
<td>-/-/CBR</td>
<td>Open sites, grassland, scrub, vertic clay, occasionally serpentine.</td>
<td>&lt;3940</td>
<td>Mar-May</td>
<td>Not Expected Suitable habitat not present within Project site; known in region only historically</td>
</tr>
<tr>
<td><em>Calochortus catalinae</em></td>
<td>Catalina mariposa</td>
<td>-/-/4.2</td>
<td>Chaparral, cismontane woodland, coastal scrub, valley, and foothill grassland.</td>
<td>45-2295</td>
<td>Mar-Jun</td>
<td>Not Expected Clay soils not present within Project site; historically known in region west of Project site</td>
</tr>
<tr>
<td><em>Camissoniopsis lewisii</em></td>
<td>Lewis's evening-primrose</td>
<td>-/-/3</td>
<td>Sandy or clay coastal bluff scrub, cismontane woodland, coastal dunes, coastal scrub, valley, and foothill grassland.</td>
<td>0-985</td>
<td>Mar-May</td>
<td>Not Expected Suitable soils not present; historically known in region</td>
</tr>
<tr>
<td><em>Centromadia parryi ssp. australis</em></td>
<td>southern tarplant</td>
<td>-/-/1B.1</td>
<td>Marshes and swamps (margins), vernally mesic valley and foothill grassland, vernal pools.</td>
<td>0-1575</td>
<td>May-Nov</td>
<td>Not Expected Suitable mesic conditions not present within Project site</td>
</tr>
<tr>
<td><em>Convolvulus simulans</em></td>
<td>small-flowered morning glory</td>
<td>-/-/4.2</td>
<td>Clay, serpentinite seeps in chaparral (openings), coastal</td>
<td>95-2430</td>
<td>Mar-Jul</td>
<td>Not Expected Suitable clay soils not</td>
</tr>
</tbody>
</table>
### Table 3.3-3. Potentially Occurring Special-Status Species (Continued)

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<tr>
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</tr>
</thead>
<tbody>
<tr>
<td><em>Dudleya multicaulis</em></td>
<td>many-stemmed dudleya</td>
<td>-/-/1B.2</td>
<td>Often clay in chaparral, coastal scrub, valley, and foothill grassland.</td>
<td>45-2590</td>
<td>Apr-Jul</td>
<td>Not Expected</td>
</tr>
<tr>
<td><em>Lilium humboldtii ssp. ocellatum</em></td>
<td>ocellated Humboldt lily</td>
<td>-/-/4.2</td>
<td>Openings in chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, riparian woodland.</td>
<td>95-5905</td>
<td>Mar-Jul (Aug)</td>
<td>Not Expected</td>
</tr>
<tr>
<td><em>Symphyotrichum defoliatum</em></td>
<td>San Bernardino aster</td>
<td>-/-/1B.2</td>
<td>Near ditches, streams, springs in cismontane woodland, coastal scrub, lower montane coniferous forest, meadows and seeps, marshes and swamps, valley, and foothill grassland (vernally mesic).</td>
<td>5-6695</td>
<td>Jul-Nov</td>
<td>Not Expected</td>
</tr>
</tbody>
</table>

### Invertebrates

<p>| <strong>Bombus crotchii</strong> | Crotch bumble bee | -/CCE/- | Hot and dry climates with grassland and scrub habitats. Nests underground. Nectar plants include milkweeds, lupines, phacelias, sages, medics and dustymaidens | - | - | <strong>Low</strong> | Critically endangered and extirpated throughout most of habitat and former range. Some scrub habitat on site but little foraging habitat available. Historical locations within region and recent observations close by but not within Project site. |</p>
<table>
<thead>
<tr>
<th>Scientific Name</th>
<th>Common Name</th>
<th>Status¹ (FESA/State/CRPR)</th>
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</thead>
<tbody>
<tr>
<td><strong>Reptiles</strong></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Anniella stebbinsi</td>
<td>southern California legless lizard</td>
<td>-/SSC/-</td>
<td>Open habitats with loose or sandy soil for burrowing; typically associated with oak leaf litter; dunes.</td>
<td>-</td>
<td>-</td>
<td>Moderate. Loose soils and oak leaf litter present in oak woodland portion of the Project site</td>
</tr>
<tr>
<td><strong>Birds</strong></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Accipiter cooperii</td>
<td>Cooper's hawk</td>
<td>-/WL/-</td>
<td>Found in a variety of vegetated habitats including urban, suburban, and rural. Requires large trees for nesting.</td>
<td>-</td>
<td>-</td>
<td>Present. Suitable nesting habitat present; calls heard during site reconnaissance</td>
</tr>
<tr>
<td>Vireo bellii pusillus</td>
<td>least Bell's vireo</td>
<td>FE/CE; SSC/-</td>
<td>Found in willow and other low, dense valley foothill riparian habitat. Thickets of willow and other low shrubs afford nesting and roosting cover. Usually found near water, but also inhabits thickets along dry, intermittent streams.</td>
<td>-</td>
<td>-</td>
<td>Not expected. Although they are known to have recently occurred in the vicinity, suitable riparian habitat is required for occupancy, and this habitat is not present within Project site</td>
</tr>
<tr>
<td><strong>Mammals</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eptesicus fuscus</td>
<td>big brown bat</td>
<td>-/-/-/WWBG</td>
<td>Widespread. Forages above open habitats among scattered trees and in residential areas. Mainly roosts in building and other human-made structures. Some records also show roosting in caves, mines, and trees, rarely.</td>
<td>-</td>
<td>-</td>
<td>Present. Suitable foraging and roosting habitat present; known from the Project site.</td>
</tr>
</tbody>
</table>

Table 3.3-3. Potentially Occurring Special-Status Species (Continued)
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<table>
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<tr>
<th>Scientific Name</th>
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</tr>
</thead>
<tbody>
<tr>
<td><em>Eumops perotis californicus</em></td>
<td>western mastiff</td>
<td>-/-/-/WWBG</td>
<td>Roosts in high vertical cliffs, rock quarries, fractured boulder outcrops and occasionally tall buildings</td>
<td>-</td>
<td>-</td>
<td><strong>Present</strong> Known from the Project site from acoustic surveys.</td>
</tr>
<tr>
<td><em>Lasiurus blossevillii</em></td>
<td>western red bat</td>
<td>-/-/-/WWBG</td>
<td>Occurs in wooded environments, associating primarily with riparian trees (cottonwoods, sycamores, and oaks). Found along streams and creeks.</td>
<td>-</td>
<td>-</td>
<td><strong>Present</strong> Little to no roosting habitat present, and little to no foraging habitat present. Known from the Project site from acoustic surveys.</td>
</tr>
<tr>
<td><em>Lasiurus cinereus</em></td>
<td>hoary bat</td>
<td>-/-/-/WWBG</td>
<td>Roosts in broad-leaved and coniferous trees including riparian species, and ornamentals and citrus trees. Requires water.</td>
<td>-</td>
<td>-</td>
<td><strong>Present</strong> Known from the Project site. Suitable foraging and roosting habitat present; Historical locations within region.</td>
</tr>
<tr>
<td><em>Myotis californicus</em></td>
<td>California myotis</td>
<td>-/-/-/WWBG</td>
<td>Generalist- found in a variety of habitats. Most commonly found in riparian zones, oak woodlands, pine forests, and chaparral-covered flats and hillsides.</td>
<td>-</td>
<td>-</td>
<td><strong>Present</strong> Suitable foraging and roosting habitat present; known from the Project site.</td>
</tr>
<tr>
<td><em>Myotis yumanensis</em></td>
<td>Yuma myotis</td>
<td>-/SSC/-/WWBG</td>
<td>Forages over water sources including stock tanks and ponds. Roosts in a variety of habitats.</td>
<td>-</td>
<td>-</td>
<td><strong>Present</strong> Suitable foraging and roosting habitat present; known from the Project site.</td>
</tr>
</tbody>
</table>
### Table 3.3-3. Potentially Occurring Special-Status Species (Continued)

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<tr>
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<th>Occurrence or Potential for Occurrence</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Parastrellus hesperus</em></td>
<td>canyon bat (western pipistrelle)</td>
<td>-/-/-/WWBG</td>
<td>Rock crevices, rarely buildings. Also roosts in mines and caves. Prefers rocky canyons and cliffs, as it forages over water in canyons and along cliff faces.</td>
<td>-</td>
<td>-</td>
<td><strong>Present</strong> No suitable foraging or roosting habitat present Known in the Project site from acoustic surveys</td>
</tr>
<tr>
<td><em>Puma concolor</em></td>
<td>cougar, mountain lion</td>
<td>-/CCE/-</td>
<td>Forested or brushy areas; habitat generalist</td>
<td>-</td>
<td>-</td>
<td><strong>Present</strong> Known from adjacent lands and documented rarely on Zoo grounds. Limited woodland and scrub habitat are present. Native forage species limited, with Zoo livestock protected. Access to site limited by wildlife exclusion fencing.</td>
</tr>
<tr>
<td><em>Tadarida brasiliensis</em></td>
<td>Mexican (Brazilian) free-tailed bat</td>
<td>-/-/-/WWBG</td>
<td>Generalist- found in a variety of habitats including caves, barns, bridges, mine tunnels, crevices, or buildings for roosting.</td>
<td>-</td>
<td>-</td>
<td><strong>Present</strong> Suitable foraging and roosting habitat present; known in the Project site from acoustic surveys</td>
</tr>
<tr>
<td><em>Antrozous pallidus</em></td>
<td>pallid bat</td>
<td>-/SSC/-/WWBG</td>
<td>Widespread. Roosts in a variety of habitats but prefers crevices and cave-like conditions.</td>
<td>-</td>
<td>-</td>
<td><strong>High</strong> Suitable foraging and roosting habitat present; known from the Project site.</td>
</tr>
<tr>
<td><em>Neotoma lepida intermedia</em></td>
<td>San Diego desert woodrat</td>
<td>-/SSC/-</td>
<td>Occurs in high desert areas, chaparral, sagebrush flats, coastal sage scrub with dense undergrowth, woodlands, pinyon-juniper pine, and are primarily</td>
<td>-</td>
<td>-</td>
<td><strong>High</strong> Middens observed within Project site. Suitable midden locations present within woodland or shrub habitats in Project site.</td>
</tr>
</tbody>
</table>
3.3 Biological Resources

Table 3.3-3. Potentially Occurring Special-Status Species (Continued)

<table>
<thead>
<tr>
<th>Scientific Name</th>
<th>Common Name</th>
<th>Status¹ (FESA/State/CRPR)</th>
<th>Habitat</th>
<th>Elev (ft)</th>
<th>Bloom Time</th>
<th>Occurrence or Potential for Occurrence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lasiurus xanthinus</td>
<td>western yellow bat</td>
<td>-/SSC/-/WWBG</td>
<td>associated with rock outcroppings, boulders and cacti.</td>
<td></td>
<td>-</td>
<td>Low</td>
</tr>
</tbody>
</table>

Observed middens potentially of San Diego subspecies.

- No foraging habitat present and no water sources available within Project site. Suitable roosting habitat present, but patchy and small. Historical locations within region.

Source: Appendix E

¹ Status: Federal/State/CNPS California Rare Plant Ranking/Western Working Bat Group Sensitive. Federal: FT = Federally Threatened, FE = Federally Endangered. State: CE = State Endangered, CT = State Threatened, CCE = State Candidate Endangered, SSC = California Species of Special Concern, WL = CDFW Watch List. Western Working Bat Group (WWBG) Sensitive. California Native Plant Society (CNPS) California Rare Plant Rank (CRPR): 1B.1 = plants rare, threatened, or endangered in California and elsewhere, seriously threatened in California; 1B.2 = rare, threatened or endangered, moderately threatened in California 2B.1 = plants rare, threatened or endangered in California, but more common elsewhere, seriously threatened in California; 2B.2 = plants rare, threatened or endangered in California, but more common elsewhere, fairly threatened in California; 4.2 = plants of limited distribution, fairly threatened in California.

* Protected or proposed for protection under the City's Protected Tree Protection Ordinance of the LAMC.
In addition, coast live oak, western sycamore, toyon, and elderberry, which are protected or proposed for protection under the City’s Protected Tree Protection Ordinance, are present onsite. The 15 other special-status plant taxa shown in Table 3.3-3 were not detected and have a low potential to occur. They are also not listed under federal or state endangered species laws but are considered rare and ranked by CNPS; CRPRs are discussed in the footnote to Table 3.3-3. It is required to consider impacts to individuals or their habitat for plant species listed under FESA or CESA and those of rank 1A, 1B, 2A or 2B under CEQA Guidelines §15125 (c) and/or §15380 and recommended for rank 3 and 4 species. However, these species have been considered and are unlikely to occur.

Life history and population descriptions are provided below for the sensitive plant species identified in Table 3.3-3.

**Nevin’s barberry (Berberis nevinii):** Nevin’s barberry is a rounded, erect evergreen shrub in the barberry family growing from 3 to 14 feet high (Munz 1974; USFWS 2009; Williams 2012). Wood and inner bark are yellow. The once-pinnately compound gray-green leaves are arranged alternately along stems or on short branchlets and can be 1 to 5 inches long. The 3 to 5 flat, thick, stiff leaflets have toothed margins with 8 to 10 spine-like teeth per side and a terminal spine-like acute or acuminate tip. The terminal leaflet ranges from 1 to 1.5 inches in length and about half as wide. This shrub blooms from March through May, in loose clusters of 3 to 5 yellow flowers that develop into juicy, yellowish-red rounded berries about a quarter inch in diameter, containing a few small brownish seeds (Munz 1974). It occurs in a variety of habitats, including nearly flat sandy washes, terraces, and canyon floors to gravelly wash margins, steep-sloped drainage banks, and steep rocky ridges, slopes, or mountain summits in chaparral, coastal sage scrub, oak woodland, riparian scrub/woodland, and alluvial scrub vegetation communities (CNPS 2019; USFWS 2009). It is scattered discontinuously in Los Angeles County, the San Bernardino/Riverside County border, and southwestern Riverside County (USFWS 2009; Calflora 2019; CNPS 2019; CDFW 2019). It is known from several scattered locations in Griffith Park (Cooper 2012), where it is assumed to have been introduced, though it occurs in similar circumstances to other known populations and is within its historical range (USFWS 2009; Cooper 2012).
Nevin’s barberry is a federally and state-listed Endangered shrub and is a CRPR 1B.1 species (CNPS 2019). Threats to the species include altered fire regimes, fire suppression or prevention activities, road maintenance, and development (CNPS 2019; USFWS 2009). Individuals detected during surveys of the site were found near a ridgetop in a laurel sumac shrubland on sandy soils (Figure 3.3-1).

**Southern California black walnut (Juglans californica):** Southern California black walnut is a deciduous tree that produces a small hard nut enclosed by a spheroid, thick leathery husk (Whittemore 2012). Trees can reach 40 feet tall and spreading. The bark is smooth to furrowed with age, gray or gray brown. Leaves are alternate and pinnately compound with 11-15 narrowly elliptical leaflets, falling in the autumn. Flowers are in catkins that appear in March to May. It occurs on north-facing, alluvial slopes in chaparral, woodlands, coastal sage scrub, and in riparian woodlands (CNPS 2019). It is distributed throughout southern California (Calflora 2019; CNPS 2019).

Southern California black walnut is not listed under CESA or FESA and is a CRPR 4.2 plant (CNPS 2019). Within its range, it is often common, but is recognized as a highly fragmented, declining community, being threatened by urbanization, grazing, invasion by non-native plants, and possible hybridization with cultivated walnut varieties (CNPS 2019). On site, it is present in oak woodland on the western boundary of the Zoo, mostly appearing as root sprouts around older cut trees.

**Parish’s brittlescale (Atriplex parishii):** Parish’s brittlescale is a form of saltbush that occurs on alkaline or saline substrates, most commonly found in alkaline flats on the edges of vernally mesic salt pans (CNPS 2019). It is a small-leaved, low, clump-forming annual that grows to about a foot tall, with branches almost horizontal to ascending and appearing gray to white (Zacharias 2012). Leaves are small, at most to about a half-inch long and slightly narrower than long and usually gray to white. The nondescript flowers can appear from April to October depending on rainfall, appearing in a terminal spike with the terminal staminate flowers above the fertile flowers, the latter producing a tiny dark brown to black seed. It occurs in isolated stands from Los Angeles to Baja California, Mexico (Calflora 2019; CNPS 2019; CDFW 2019).
It is a CRPR 1B.2 species, with the primary threats being agricultural and urban development and grazing (CNPS 2019). It may be extirpated in much its historically known range, with most modern collections being from Riverside or San Diego counties (Calflora 2019; CNPS 2019). It is not expected as suitable alkaline conditions are not present.

**Brewer’s calandrinia (Calandrinia breweri):** Brewer’s calandrinia (or Brewer’s redmaids) in the Minner’s Lettuce family, and is an annual with thick, hairless fleshy stems that grow prostrate along the ground or are ascending to lengths of nearly a foot, though often less (Munz 1974; Guilliams and Miller, 2012). The fleshy leaves are egg to spoon shaped, alternating along the stem. Flowers appear in February to May in a terminal raceme, each flower branching off the stem on a pedicel up to nearly an inch long, with 2 sepals and 5 bright red or pink petals with 3 to 6 yellow stamens. The fruit is a capsule with 10 to 15 seeds. Distinguishing characters are the capsule, which extends well beyond the enclosing sepals, and the bumpy surface of the seeds under magnification. It is known as fire-follower in disturbed or burned habitats of chaparral, coastal scrub and coastal sage scrub on sandy to loamy soils and is distributed in widely scattered mostly coastal populations from northern California to Baja California, Mexico (CNPS 2019).

It is a CRPR 4.2 species, with threats being fire suppression, road maintenance, and development (CNPS 2019). Though suitable habitat is present on site, it is known in the region only from historical collections and has a low potential to occur on site. It was not detected during focused rare plant surveys of the site.

**California, or Round-leaved, filaree (California macrophylla):** California filaree is a member of the geranium family and is a small hairy annual to biennial, only to about 2 inches tall (Alarcón et al. 2012). Leaves arise from a basal whoral, arising on long petioles, and variably (egg, to kidney or heart) shaped with rounded teeth on the edges. Some leaves are cauline, with leaves arranged opposite. Flowers appear in mostly few flowered umbels in March to May. The 5 white petals are longer than sepals. The fruit is a distinctive five-parted elongated beak structure, with the one-seeded parts separating from a central column by coiling upward as the fruit matures and dries. It occurs on crumbly clay soils (occasionally on serpentine in open grassland or scrub habitats and is distributed in foothill regions of California and Baja California (CNPS 2019).

California filaree is not federally or state listed and was considered but rejected for listing by the CNPS Rare Plant Inventory as being too common, especially in northern California (CNPS 2019). It is still tracked by the CNDDB, and small local populations under threat should be treated as a species of local concern (CNPS 2019). In the region, it is only known from a historical collection near Hollywood (Calflora 2019). The prime threats to the species are urban development and agriculture (CNPS 2019). Suitable habitat is not present onsite, and it is not expected to be present. It was not detected during focused rare surveys of the site.

**Mariposa lilies (Calochortus sp.):** Three species of mariposa lily (the genus Calochortus) have some potential to occur on site. These are showy perennial herbs that grow
ephemeraly from a bulb, flower and set fruit and then die back, often leaving little persistent trace of their presence (Munz 1974; Fiedler 2012). Flowering occurs in March to July (CNPS 2019). A linear basal leaf usually precedes the stem, but often withers by flowering. Stems are hairless and sparsely branching above the base. Stem leaves are few and widely spaced, and often linear in shape. Flowers are terminal, appearing solitary or in branching groups of 2 or 3. Each flower has 3 lance-shaped sepals and 3 showy petals forming a cup, and produces a three-sided, many-seeded capsule. No mariposa lilies of any species were observed during focused rare plant surveys of the site.

Catalina mariposa lily (*C. catalinae*) has white petals often tinged with lilac with a purple or red-brown spot at the base of the petals and oblong nectaries covered with branching hairs (Fiedler 2012). The capsule is narrowly oblong and not strongly angled. It occurs on heavy clay soils in a variety of foothill habitats. It is distributed in coastal and foothill southern California from San Luis Obispo to Orange counties, the Channel Islands, and was recently documented in northernmost San Diego County (Calflora 2019; CNPS 2019). It is not federally listed or state listed and is a CRPR 4.2 species. Threats to the species are largely due to urban development (CNPS 2019). Due to the lack of clay soils on the site (Cooper 2012), it is not expected to occur.

Slender mariposa lily (*C. clavatus* var. *gracilis*) has sparsely hairy yellow petals with a thin red-brown line above the nectaries, which themselves are encircled by club-shaped hairs (Fiedler 2012). It is known only from Ventura and Los Angeles counties, where it occurs in shaded foothill canyons in chaparral, grasslands, or scrub habitat. It is not federally listed or state listed and is a CRPR 1B.2 species (CNPS 2019). Threats to the species are largely due to urban or industrial development and associated foot or vehicle traffic, and invasion of habitat by non-native plants. Suitable habitat exists on site, and is primarily known from mountains to the north in the region; however, a single population consisting of less than 10 plants on the north side of Mount Chapel was documented in 2008 (Cooper, D. S. 2010). It therefore may have a low probability to occur on site.

Plummer’s mariposa lily (*C. plummerae*) has pink petals featuring a wide band of yellow hairs mixed more sparsely with darker red-brown hairs, the basal nectary is hairless (Fiedler 2012). The petals are more broadly spreading than forming a cup. Its distribution is limited mostly to the transverse ranges in Ventura, Los Angeles, Orange, Riverside and San Bernardino counties where it is found in dry, granitic chaparral, scrub, or lower montane weedlands and grasslands. It is not federally or state listed and is a CRPR 4.2 species (CNPS 2019). It was discovered to be more common than previously known and its status downgraded from 1B.2. It is threatened by urban or industrial development and associated foot or vehicle traffic, invasion of habitat by non-native plants, utility construction, recreational activities, and fire suppression (CNPS 2019). It is known from the immediate area of the Zoo (Cooper 2012) and suitable habitat is present, making it highly probable that it could occur on site. Although it was not detected during focused rare plant surveys of the site.
Lewis’ evening-primrose (*Camissoniopsis lewisii*): Lewis’ evening-primrose is a rare annual in the evening primrose family that grows in very sandy soils such as on coastal beaches and dunes, or on clay soils in interior woodlands or grasslands (CNPS 2019). It grows from a basal rosette of lance-shaped leaves with spreading, glandular hairs (Wagner 2012). Stems can be simple and erect or low and spreading. Stem leaves are arranged alternately along the stem and are narrowly lance-shaped with minute teeth. The flowers sit on top of the inferior ovary, with 4 sepals and 4 bright yellow petals with 1 or 2 spots at the base. Flowering time is March to June. The fruit is a 4-sided capsule. It is known only from Los Angeles, Orange, and San Diego counties and Baja California, Mexico (Calflora 2019; CNPS 2019). It is not federally listed or state listed, and is a CRPR 3 species, but more information is required to assess more fully its distribution, rarity, and threats (CNPS 2019). Urban development, erosion and recreational activities are the threats to the species (CNPS 2019). It is known only historically from the region, and suitable habitat and soils are not present, thus it is not expected to occur on the site.

Southern tarplant (*Centromadia parryi ssp. australis*): Southern tarplant is a sticky and prickly annual of the sunflower family. Stems may be prostrate to erect, with basal leaves often withering before flowering (Baldwin 2012). The sticky glandular and hairy stem leaves are alternately arranged and vary in shape, with the lower being lobed and toothed and the upper simple and spine tipped. Flowering can occur from late May to early November. Flowering heads are in congested clusters, with each head supported by a short stem rising from a leaf-like spine-tipped bract. The involucre surrounding the flowers is urn-shaped, with the 5 to 75 involucral bracts enclosing the ovary of each ray floret. Ray florets are a bright yellow and terminating in 2 shallow lobes. The disk florets are also yellow but with red to dark purple anthers; each disk floret has a bract attached to the receptacle below it. It ranges from southern Santa Barbara County south to Baja California, Mexico (Calflora 2019; CNPS 2019). It inhabits the margins of marshes and swamps, vernaly mesic grasslands, and vernal pools (CNPS 2019).

Southern tarplant is not federally or state listed and is a CRPR 1B.1 species (CNPS 2019). It is known from the region only historically (Calflora 2019; CDFW 2019). Threats to the species include population fragmentation, urban and industrial development, recreational activities, vehicle and foot traffic, grazing, habitat disturbance, and invasion by non-native species (CNPS 2019). No suitably mesic habitat is present on the site, and thus it is not expected to be occur.

San Fernando Valley spineflower (*Chorizanthe parryi var. fernandina*): San Fernando Valley spineflower is a small spreading annual herb growing only 1 to 5 inches tall (Munz 1974; Reveal and Rosatti 2012). Leaves of the basal rosette are often spoon-shaped, sometimes narrowly so. The tiny flowers are clustered in dense heads. Each flower is surrounded by a series of spiny bracts tipped by sharp straight awns. Flower lobes are white surrounding a green tube. It was known primarily from Los Angeles County and was at one
time thought to be extinct until rediscovered in 1999 from very southeastern Ventura County and in Los Angeles County between Santa Susana and the San Gabriel Mountains in 2000 (Calflora 2019; CNPS 2019; CDFW 2019). There is also a single historical record from Orange County. It prefers sandy coastal or foothill scrub or grassland habitats (CNPS 2019).

San Fernando Valley spineflower is state listed as Endangered but has no federal status. It is a CRPR 1B.1 species and is seriously threatened by development and invasion by non-native species (CNPS 2019). Marginally suitable habitat is present on site, but it is known from the region only from historical records from areas that have been heavily urbanized (Calflora 2019; CNPS 2019; CDFW 2019), and thus has a low probability to occur. It was not detected during focused rare plant surveys of the site.

**Small-flowered morning glory (Convolvulus simulans):** The small-flowered morning glory is a small annual that grows to less than a foot tall (Preston 2012). Multiple, diffusely branched stems rise from a single taproot. The simple, oblanceolate leaves are arranged alternately along the stem. The sepals are fused into a tube with 5 lobes. The pink-to-blue petals also fused and five lobed, bell-shaped. The fruit is a small spherical capsule with 4 seeds, the supporting stem nodding in fruit. Flowering time is March to July. It inhabits seeps or mesic hillsides on heavy clay or serpentine substrates in grassy openings in chaparral, coastal sage scrub, or grasslands (CNPS 2019). It is distributed from Contra Costa County south to Baja California, Mexico (Calflora 2019; CNPS 2019).

It is not federally listed or state listed and is a CRPR 4.2 species. It is threatened by development (CNPS 2019). It is not expected to occur on site due to a lack of suitable clay soils.

**Many-stemmed dudleya (Dudleya multicaulis):** Many-stemmed dudleya is a succulent perennial herb (McCabe 2012). Basal rosettes of 6 to 15 fleshy finger-like leaves are evergreen, with flowering stems growing from 2 to 15 inches tall. Stem leaves resemble the basal leaves but become progressively smaller up the stem. The inflorescence is a cyme terminating the main stem with lateral flowering branches. Flowers are yellow often flecked with red and appear between April to July. The fruit is a set of 5 spreading follicles. It inhabits rocky slopes in openings in chaparral, coastal sage scrub, or grasslands with heavy clay soils (McCabe 2012; CNPS 2019). It is endemic to southern California ranging from Los Angeles County south to the San Onofre Mountains of San Diego County (Calflora 2019; CNPS 2019; CDFW 2019).

The many-stemmed dudleya is not listed under the FESA or CESA. It is a CRPR 1B.2 species with a moderate level of threat from urban and industrial development, military maneuvers and training, road construction and maintenance, recreation activities, grazing, fire suppression, and invasion by non-native plants (CNPS 2019). It is known from the region only historically (Calflora 2019), but as suitable clay soils are not present on site, it is not expected to occur.
Mesa horkelia (*Horkelia cuneata* var. *puberula*): Mesa horkelia is a perennial resinous herb of the rose family rising from a branched caudex (Ertter 2012). Leaves are mostly basal, standing erect from 4 to 12 inches long, and are pinnately compound with 10 to 24 toothed leaflets. The inflorescence terminates the main stem with flowering branches. Flowers are white, appearing from February to July. It is endemic to California, ranging from Santa Barbara County south to San Diego County and west to San Bernardino and Riverside counties (Calflora 2019; CNPS 2019).

Mesa horkelia is not federally or state listed and is a CRPR 1B.1 species (CNPS 2019). While scattered populations persist, it has been extirpated by urbanization through much of its historical range, and in areas of contact appears to hybridize with other subspecies (CNPS 2019). It is known only historically from the region around the Zoo (Calflora 2019), and though suitable habitat is present, it has a low probability of occurring there. It was not detected during focused rare plant surveys of the site.

Ocellated Humboldt lily (*Lilium humboldtii* ssp. *ocellatum*): The ocellated Humboldt lily is a southern California endemic perennial herb that rises from a bulb-like scaly rhizome (Skinner 2012). Stems rise vertically with 2 to 8 whorls of wavy-margined oblanceolate leaves. Flowers are showy, pendant with 1 to 33 appearing on the plant. Flowers are bell-shaped with the sepals resembling the yellow to light orange red-spotted petals, both sepals and petals being reflexed, with large showy stamens greatly exceeding them. Bloom time is from March to May. The fruit is a capsule. The lily is found in mesic openings in chaparral, shady oak woodlands or lower montane pine forest, and riparian woodlands in southern California from Santa Barbara County south to San Diego (CNPS 2019).

The ocellated Humboldt lily is not listed under CESA or FESA and is a CRPR 4.2 plant. It is threatened by development and horticultural collecting. In the area it is known locally from Griffith Park (Cooper 2012), where it occurs in mesic canyons in oak woodlands. This habitat is not present within the site, so it is not expected to occur.

Hubby’s phacelia (*Phacelia hubbyi*): Hubby’s phacelia is an annual herb with stiff hairs and sticky glandular hairs that can grow up to 2 feet tall (Walden *et al.* 2012). Stems are ascending to erect. Leaves are arranged alternately along the stem and are deeply lobed and toothed. Flowers appear in April to July in coiled, one-sided inflorescences terminating the stem. Individual flowers have 5 shaggy sepals fused at the base and lavender petals also fused at the base in a bell-shaped structure. The fruit is a spherical capsule with 2 to 4 seeds. It occurs on gravelly to rocky slopes in chaparral, coastal scrub, grasslands, or woodlands (CNPS 2019). It is known from Santa Barbara, Ventura, Los Angeles, and Kern counties (Calflora 2019; CNPS 2019).

Hubby’s phacelia is not listed under FESA or CESA and is a CRPR 4.2 species. It is very similar to caterpillar phacelia (*P. cicutaria*) from which it differs largely by having straight versus curved sepals enclosing the fruit (Walden *et al.* 2012); the latter species is common on the site. Hubby’s phacelia is known from Griffith Park south of the Zoo (Cooper 2012), and in the
area is often associated with black walnut. A possible single individual was noted in the same hilltop area where Nevin’s barberry is found but was in poor condition. Additionally, caterpillar phacelia was widely observed making a species determination uncertain. Suitable habitat is present onsite and is rated as a moderate probability of occurrence.

**Cooper’s rein orchid (Piperia cooperi):** Cooper’s rein orchid (or chaparral rein orchid) is a perennial herb that grows from a small tuber (Ackerman and Lauri 2012). Leaves are only basal, though not in a rosette, and are linear to oblanceolate and up to 8 inches long. Flowering stems are cylindrical and can grow to up to almost 2 feet tall, with individual flowers arising from the axils of somewhat spirally arranged bracts. The flowers are often nocturnally fragrant, honey-like. Flowers are small and non-descript, green in color, producing a small capsule with many seeds. It occurs on dry sites in scrub, chaparral, woodlands, and foothill grasslands. It is distributed from Ventura County west along the Transverse Ranges and south to Baja California, Mexico (Calflora 2019; CNPS 2019).

Cooper’s rein orchid is not listed under FESA or CESA and is a CRPR 4.2 species. It is threatened by urbanization and horticultural collecting, possibly by road maintenance and herbivory (CNPS 2019). Suitable habitat is present on site, but it is only known historically from the region (Cooper 2012; Calflora 2019), and thus is rated a low potential to occur on site. It was not detected during focused rare plant surveys of the site.

**White cudweed (Pseudognaphalium leucocephalum):** White cudweed (or white rabbit-tobacco) is a biennial or short-lived perennial herb in the sunflower family. There may be one to several densely white hairy stems rising to over 2 feet from the base, with stalked glandular rising through the felt-like long hairs (Nesom 2012). Leaves are usually crowded on short internodes alternately along the stem. These are typically linear-lanceolate in shape, with revolute margins, densely white hairy below but green-gray and densely glandular above. Flowering heads are grouped in rounded or flat-topped clusters. Involucres are bell-shaped with white bracts in 5 to 7 series surrounding the yellow florets. The highly reduced florets are disciform, with outer 66 to 85 being pistillate and the inner 6 to 14 disk florets being bisexual. Bloom time is August to November. It occurs in sandy or gravelly slopes, stream bottoms and arroyos in oak or pine woodlands, riparian woodlands, coastal scrub, or chaparral (CNPS 2019). It ranges from Ventura County south to San Diego and Baja California and west to New Mexico and Sonora, Mexico (Calflora 2019; CNPS 2019).

White cudweed is not federally or state listed and is a CRPR 2B.2 plant. It is threatened by development, hydrological alterations, and recreational activities (CNPS 2019). It is only known from the region historically (Calflora 2019), and though suitable habitat is present on the Zoo, it is rated a low probability to occur. It was not observed during focused rare plant surveys.

**Nuttall’s scrub oak (Quercus dumosa):** Nuttall’s scrub oak (occasionally referred to as coastal sage scrub oak) is an evergreen shrub growing to about 15 feet tall (Munz 1974; Rosatti and Tucker 2012a). It is distinguished from other scrub oaks in the region by having relatively
flat leaves that are shiny green on the upper side and hairy with distinctive 2 to 6 rayed ascending hairs on the underside particularly along the veins. The bark is smooth but becoming scaly with age, the twigs reddish becoming gray in age. It occurs on sandy or clay loams in coniferous forest, chaparral, or coastal scrub from Santa Barbara County south to Baja California (CNPS 2019; Calflora 2019).

Nuttall’s scrub oak has no federal or state listing status and is a CRPR 1B.1 species. It is threatened by development, fire suppression activities, and possibly by hybridization with other oaks (CNPS 2019). California scrub (*Quercus berberidifolia*) occurs on the site but differs in having appressed stellate hairs with 4 to 10 rays on the underside of the leaf. Nuttall’s scrub oak is known historically from the region south of the site (Calflora 2019), and suitable habitat is present, thus giving a moderate probability of occurring on site. It was not observed during field studies.

**San Gabriel Mountains leather oak (*Quercus durata* var. *gabrielensis*):** Leather oak is an evergreen shrub growing to about 15 feet tall. It is distinguished from other scrub oaks in the region by having concave leaves that are a puberulent dull green above and (at least when young) densely short hairy and pale green below (Rosatti and Tucker 2012b). Leaf margins may be rolled under or not. It occurs in chaparral or montane woodlands on the south-facing slopes of the San Gabriel Mountains in Los Angeles County (CNPS 2019).

San Gabriel Mountains leather oak is not federally listed or state listed and is a CRPR 4.2 species. Threats to the species include urbanization and utility construction (CNPS 2019). Suitable habitat is present in the Zoo, and it is known from recent collections in Griffith Park to the south (Cooper 2012) and may have a high probability of occurring on site. Although it was not observed during focused rare plant surveys, moderately suitable habitat exists.

**San Bernardino aster (*Symphyotrichum defoliatum*):** San Bernardino aster is an endemic perennial herb that rises from short rhizomes (Allen 2012). One to several stems rise from the base and short haired throughout. Basal leaves are often withering by flowering time in late July to November. Stem leaves are gray green, narrowly oblong to lanceolate, and may have smaller leaves clustered in the axils. Flowering heads appear in narrow cluster. The involucre of the heads may somewhat cylindric to spherical, with equal bracts in 3 to 6 series with papery margins. Heads feature both white to lavender ray florets and yellow disc florets, both with whitish to brownish bristles on top of the ovary. It occurs in wetlands (ditches, streams, seeps, springs, marshes, swamps) in a variety of habitats in the Transverse and Peninsular ranges from Santa Barbara County west to southwestern San Bernardino County and south to San Diego County (Calflora 2019; CNPS 2019; CDFW 2019).

San Bernardino aster is not listed under FESA or CESA and is a CRPR 1B.2 species. It is threatened by grazing and invasion by non-native plants and is believed to be hybridizing with other species in the northwestern part of its range (CNPS 2019). Suitable habitat is not present on site, and thus it is not expected to occur. It was not observed during focused rare plant surveys.
Sensitive Wildlife Species

These sensitive wildlife observations are described in further detail below, as well as others occurring in the vicinity and the evaluation of their potential to occur on site.

Invertebrates

Crotch bumble bee (*Bombus crotchii*): The Crotch bumble bee is a Candidate for listing as endangered under the CESA. It has a limited distribution in southwestern North America, occurring primarily in California from the Central Valley to the edges of the deserts, and the Pacific coast to southwestern California and Baja California. Crotch bumble bees are not known to occur within the mountainous areas of California, and observations show this species has declined by an estimated 58 percent (Williams et al. 2014 and Hatfield et al. 2018). It has also been documented in southwestern Nevada near the California border. Extensive urbanization and agricultural intensification have extirpated this species from almost all its historic range (Hatfield et al. 2018). Crotch bumble bee inhabits open grassland and scrub habitats in hot and dry climates but has been known to occur in wetter climates. Nectar plants for this species include *Salvia* sp. (sage), *Phacelia* sp., *Lupinus* sp. (lupines), *Medicago* sp. (burclover), and *Chaenactis* sp. (dustymaidens). Nests are located underground, often in abandoned rodent nests or other burrows and holes (Williams et al. 2014). Males are abundant between mid-April and the end of September. Queens are abundant from March through May and workers are usually observed from mid-April through the end of August (U.S. Forest Service 2012). Crotch bumble bees are short-tongued and have a fuzzy body with blackish-brown and yellow stripes, with blackish-brown wings. Native grassland habitat is not available within the Zoo, and coastal sage scrub habitat is extremely limited (0.11 acre). One observation known from the region was recorded as a specimen collection in 1945 near Glendale. However, the citizen science platform iNaturalist (iNaturalist 2020) has recently (April and June 2020) logged two “Research-Grade” observations in the area. One appears to be on the south end of the Wilson and Harding Golf Courses south of the Zoo, and the other along the Los Angeles River in Glendale near North Atwater Park. These observations were documented with photographs that are consistent with a determination of Crotch bumble bee as supported by community curation. Its presence in the area suggests it could occur within the Project site, though the limited amount of coastal sage scrub and a lack of other suitable foraging habitat indicate a low potential.

Reptiles

Southern California legless lizard (*Anniella stebbinsi*): Southern California legless lizard is a California Species of Special Concern (SSC) that ranges from south of the Transverse Ranges into northern Baja California, Mexico. It is found in a broader range of habitats than any other species in the *Aniellidae* family. Often found to be locally abundant, this species can be found in coastal sand dunes, sandy washes, oak woodlands, and alluvial fans. Southern California legless lizards require loose soil for burrowing (sand, loam, or leaf mold), moisture, warmth, and plant cover. This species is found in habitats with sparse
vegetation, such as coastal dunes, chaparral, pine-oak woodland, and stream sides with sycamores, cottonwoods, or oaks (Nafis 2019). Southern California legless lizards have a smooth-scaled and polished appearance. They are a small, slender lizard with no legs, eyelids and have a shovel-shaped snout with a blunt tail. Coloration on top is olive-brown and moderate yellow below with thin black lines the length of the body that separate the olive-brown and yellow dorsum and ventral sides (Stebbins 2003). The southern California legless lizard is a relatively recently separated species from the California legless lizard (*Anniella pulchra*) (Papenfuss and Parham 2013). The coast live oak woodland habitat within the Zoo is characterized by friable soils and abundant leaf litter. There are multiple historic records of the species within one to two miles of the Zoo boundary, one of which is from as recently as 2011 within oak woodland habitat. Given that this species has been documented in the vicinity and suitable habitat is present within the oak woodlands, there is a moderate potential for this species to occur on site.

**Birds**

**Least Bell's vireo** (*Vireo bellii pusillus*): Least Bell’s vireo is one of four subspecies of the Bell’s vireo species, and the only one federally listed as endangered. It is also state listed endangered and an SSC. They are small birds about 4.5 to 5 inches in length, and mostly gray above and pale below. Least Bell’s vireos have a faint white eye ring and very distinctive musically chatty call. Some males have as many as fifteen songs they sing. This species feeds on insects and spiders, foraging among dense shrubs and trees along rivers and streams. Least Bell’s vireo is restricted to riparian woodland and is most frequent in areas that combine an understory of dense young willows or mule fat with a canopy of tall willows (USFWS 2017). Historically, least Bell’s vireo was a common summer visitor to riparian habitat throughout much of California. Currently, this subspecies is found only in riparian woodlands in southern California, with most breeding pairs in San Diego, Santa Barbara, and Riverside counties—with some in Los Angeles and Ventura Counties. Least Bell's vireo arrives in breeding grounds in late March and early April and returns to its wintering ground in September. Least Bell’s vireos build their nests in dense shrubbery 3 to 4 feet above the ground (Salata 1984), they require young successional riparian habitat or older habitat with a dense understory. Riparian plant succession is an important factor maintaining vireo habitat. Nests are also often placed along internal or external edges of riparian thickets (USFWS 1986). Adults usually lay between 3 and 5 eggs, and while the female does most of the incubating over 14 days, males will also incubate. Fledglings leave the nest approximately 10 to 12 days after hatching (USFWS 1986). Least Bell’s vireo has occurred historically within the Los Angeles River corridor within one mile of the Project site. However, these observations are from nearly 100 years ago and the species is likely extirpated from this portion of the Los Angeles River. The species was most recently documented within the Project vicinity (i.e., within 5 miles) near the Taylor Yard in 2013. Although a more recent sighting is confirmed in the vicinity, this species requires the presence of suitable riparian habitat to occupy a site. No riparian habitat
exists at all within the Project site and, therefore, least Bell’s vireos are not expected to be present.

Other Nesting Birds

The Project site provides suitable nesting habitat for a variety of avian species across the habitat types present. Nesting birds are protected by the Migratory Bird Treaty Act and similar provisions of the California Fish and Game Code. Mature trees throughout the Project site provide nesting opportunities for passerines and raptors such as red-tailed hawk (*Buteo jamaicensis*) and Cooper’s hawk which were observed and/or heard on site during the site reconnaissance. Shrub, scrub, and grassland habitats are likely to be utilized by nesting passerine and non-passerine land bird species such as California towhee (*Pipilo crissalis*) and mourning doves (*Zenaida macroura*). Structures within the developed portions of the zoo also provide nesting opportunities for species such as house finches (*Carpodacus mexicanus*) and swallows, among others. Black phoebes were observed nesting on the Tree Tops Pavilion structure during the site reconnaissance conducted in May 2019. There is potential for raptors and other early nesting species such as hummingbirds to initiate nests as early as January. However, in general, the peak nesting season is February – August.

Mammals

**San Diego woodrat** (*Neotoma lepida intermedia*): San Diego woodrat is an SSC. This subspecies of desert woodrat occurs in coastal southern California south of San Luis Obispo to northern Baja California (Hall 1981). The primary threat to this species is urbanization and habitat loss and degradation. Like other woodrats, it constructs middens, or nests, usually comprised of small twigs, cactus pads and other plant material. Middens are often constructed under patches of prickly pear or cholla (*Opuntia* spp.), or in rock outcrops, dense shrubbery or under low trees. Although the middens are often easily detectable, trapping is usually necessary to distinguish between the middens of other woodrat species and those of the desert woodrat. Woodrat middens were found in the laurel sumac shrubland of the Project during the field surveys, but a species determination based on these is not readily made. The composition and grouping of midden sites are suggestive that the site is not occupied by San Diego woodrat but is not diagnostic by itself. The Project site is within the species range of San Diego woodrat and either the dusky-footed woodrat (*N. fuscipes*) or big-eared woodrat (*N. macrotis*) depending on taxonomic interpretations of the distribution of these two species. The presence of woodrat middens indicates that suitable woodrat habitat is present in the scrub communities of the Project site. Thus, the potential for occurrence of the San Diego woodrat is high.

**Cougar** (*Puma concolor*): Cougar is a Candidate species for listing as Threatened under the CESA in southern California, where subpopulations ranging from Santa Cruz south to Mexico are threatened by increased habitat fragmentation, habitat loss, and human contacts. It has been recognized as a specially protected mammal statewide under the California Wildlife Protection Act since 1990. It is found in forested or brushy areas throughout the state
but is a habitat generalist. Though the species is an opportunistic hunter, the distribution generally follows that of their principal prey species, the mule deer, and thus they are found in various habitats associated with foothills and mountains, but generally not valleys and deserts. Principal threats to the species are continued urban growth and development that result in habitat loss and fragmentation, isolation of breeding subpopulations and inbreeding due to loss of habitat linkages and increased adverse human contacts due to human encroachment. Cougar have been documented within the Santa Monica Mountains and within Griffith Park, and the radio-tracked male P-22 has been rarely documented within the Zoo grounds, most famously being potentially associated with the depredation of a koala in 2016. The Zoo is fenced with wildlife exclusion fencing, which is specifically intended to limit access by predators. The fencing may limit but does not completely eliminate potential access by cougar. Woodland and scrub habitats that might serve as home range are present but limited in extent. Native forage species are limited within the Project area, and Zoo livestock are protected.

**Bats:** California bats and bats in general are threatened by habitat loss or alteration, especially since a wide variety of habitats are often needed for different behaviors (roosting, foraging, drinking, hibernating, etc.). After analysis of available resources within and around the Project site, a literature review, and discussions with Zoo staff and other knowledgeable persons, 8 bat species have either been documented within the Project site or Griffith Park and 2 more may have potential to occur (Table 3.3-3). Remington and Cooper (2009, 2014) in a 2008 study in Griffith Park determined 7 species to be present within the Park, and 6 of these were present in near the old Griffith Park Zoo grounds (a.k.a., Old Zoo or former location of the Zoo) south of the modern Zoo. All 7 species found by Remington and Cooper plus the western mastiff bat (*Eumops perotis californicus*) were documented within the Zoo during acoustic surveys conducted between 2012 and 2015 by the U.S. Forest Service (Miguel Ordeñana, pers. comm., 2019). Of the 10 bat species known or potentially occurring at the Zoo, 4 are California SSC and all are considered sensitive by the Western Working Bat Group (WWBG) (Table 3.3-3).

Many bats species roost in groups and use mature trees, palm trees, snags, crevices, and man-made structures for roosting, either for winter roosting (hibernacula) or for forming summer
nursery colonies. Since some bats will roost in man-made structures such as the undersides of bridges and roofs/buildings, they are particularly vulnerable to roost disturbance or destruction by humans (Currie 2000). Protecting established roost sites and already-placed bat boxes is of importance to the conservation of bats, and management of these sites is receiving increasing attention from wildlife agencies (i.e., CDFW). Previous studies at the Zoo made no effort to identify roosting sites, but roosting bats of undetermined species identity have been recently relocated from the Tree Tops Terrace (Beth Schneider and Mike Maxcy, pers. comm., 2019). Table 3.3-4 describes roost and forage habitat requirements for bat species known to or potentially occurring at the Zoo. There is a high potential for roost sites within the Zoo for most bat species known to occur there, particularly for those that are known to utilize structures (e.g., pallid bats [Antrozous pallidus], big brown bats [Eptesicus fuscus], Yuma & California myotis [Myotis californicus, M. yumanensis], and Mexican free-tailed bats [Tadarida brasiliensis]). Exceptions to this are the western red bat (Lasiurus blossevillii), which prefers roost sites in deciduous riparian woodlands (particularly sycamore woodlands in southern California) and typically forages in adjacent open areas; the hoary bat (L. cinereus), which prefers riparian or open woodlands; the western yellow bat (L. xanthinus) which utilizes almost exclusively palm trees for roosting; and the canyon bat (Parastrellus hesperus), which within Griffith Park roosts typically in rock crevices. Suitable roosting habitats for the latter species are limited within the confines of the Zoo but may be present in nearby areas. The consistent detection and utilization of habitats within the Zoo by multiple species implies that roosts are likely to be within the Zoo grounds (Miguel Ordeñana, pers. comm., 2019).

The pallid bat occurs primarily at low elevations but has been found as high as 1950 meters in southern California. Pallid bats are typically found inhabiting a variety of habitats including sparsely vegetated grasslands, to attics with shutters or crevices, to arid regions with rocky outcroppings. Chosen roost sites usually have water available nearby, but not always. They will roost in a variety of cavity and crevice-like situations, including rock and sandstone, under bark, and in rodent burrows or dried mud crevices on the ground. Pallid bats utilize three different types of settings for each roost: day roosts are warm horizontal openings; hibernation roosts are in buildings, caves, or rock cracks; and night roosts are in open areas with foliage nearby (Tremor et. al 2017). The pallid bat was reported from the Zoo in 2009, but upon investigation proved to be the big brown bat. Pallid bats have not been documented within the Project site, but both suitable roosting and foraging habitat is present (Remington and Cooper 2014), and thus it has a high potential to occur.
### Table 3.3-4. Bat Roost and Forage Habitat

<table>
<thead>
<tr>
<th>Taxon</th>
<th>Roost Habitat</th>
<th>Forage Habitat/Food</th>
<th>Roost Potential Onsite</th>
</tr>
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<tbody>
<tr>
<td><strong>Vespertilionidae - Mouse-eared bats</strong></td>
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</table>
| *Antrozous pallidus*  
*pallid bat* | cliffs, crevices, abandoned buildings, bird boxes, bridges; may form small nursery colonies | open areas; ground foraging, flightless arthropods | High |
| *Eptesicus fuscus*  
*big brown bat* | urban-adapted; buildings, caves, under loose bark and in small cavities of trees; forms nursery colonies | beetles, flies | High |
| *Myotis californicus*  
*California myotis* | under loose bark, tree crevices, rock crevices, buildings, bridges, caves | oak woodlands, pinyon-juniper, desert scrub; flying insects | High |
| *Myotis yumanensis*  
*Yuma myotis* | urban-adapted; caves, old buildings; colonial | wooded canyon bottoms, predominantly over water; flying insects, moths, beetles, midges | High |
| *Lasiurus cinereus*  
*hoary bat* | tree trunks, woodland, and riparian; changes roost location day to day | moths, beetles | Moderate |
| *Lasiurus blossevillii*  
*western red bat* | deciduous trees, esp. cottonwood, sycamore riparian vegetation; changes roost location day to day; solitary | woodland edges, streetlights; moths, terrestrial insects | Low |
| *Lasiurus xanthurus*  
*western yellow bat* | almost exclusively in skirts of palm trees | open areas, often over or near water; beetles | Low |
| *Parastrellus hesperus*  
*canyon bat*  
*(western pipistrelle)* | cliffs, rock features, caves; small colonies | moths, beetles, dipterans | Low |
| **Molossidae - Free-tailed bats** |
| *Eumops perotis californicus*  
*western mastiff bat* | crevices, rock slabs, cliffs, caves, buildings; small colonies | strong-flying insects: dragonflies, moths, beetles, etc. | High |
| *Tadarida brasiliensis*  
*Mexican free-tailed bat* | urban-adapted; caves, buildings, bridges; large nursery colonies | small moths; opportunistic | High |

Big brown bats are widely distributed through North America and usually occur in forested areas. Commonly found in crevice or cave-like conditions, and often in man-made structures. Diurnal natural roosts include rock and sandstone crevices and cavities, dead pine snags, palm frond skirts, cliff swallow nests and hollows in oaks and sycamores. Man-made roosts include barns, houses, sheds, buildings, warehouses, bridges, barracks/bunkers, porches, mines, wooden signs, and storm sewers. They also make use of artificial bat houses. Big brown bats are considered an arboreal species and are most commonly associated with wooded habitats (Tremor et al. 2017). This species is known to occur within the Project site.

Western mastiff bats prefer to roost in high vertical cliffs, rock quarries, fractured boulder outcrops and occasionally tall buildings. Rarely found in palm trees, and these are considered temporary roosts. Always found roosting in high places as it requires 3m to fall before taking flight. Vegetation associated with roosting areas include riparian zones, oak woodlands, montane pine forests and coastal and desert scrub. It had been thought to have been extirpated from the Los Angeles Basin, before it was documented at the Zoo (Miguel Ordeñana, pers. comm., 2019) Potential roosting habitat exists within the Project site.

The western red bat occurs in wooded environments, associating primarily with riparian trees (cottonwoods, sycamores, and oaks) but can also be found in non-native vegetation including chinaberry, mulberry, eucalyptus, bougainvillea, and African hemp. Western red bats also occur in orchard trees (i.e., fig, pear, almond), and planting of such trees has allowed this species to be recorded in places previously unoccupied. It typically forages along river and stream courses but can be found in urban parks and neighborhoods (Tremor et. al. 2017). This species has been documented as utilizing habitats within the Zoo, and some potentially suitable foraging and roosting habitat is available.

The hoary bat is usually found roosting in broad-leafed and coniferous trees including riparian species, and ornamentals and citrus trees. This species requires a shelter of foliage and is not characteristic of dense forests, but rather patches adjacent to openings. Open water is important for this species as it is often captured in research in such locations (Tremor et. al. 2017). This species has been documented in acoustic studies at the Zoo, though there are relatively few broad-leafed or coniferous trees with generous openings within the Project site and no open water providing forage space.

The western yellow bat roosts primarily in skirts of both native and non-native fan palms and is known to “frequent” ornamental palm trees in the region (Remington and Cooper 2014) and other exotic trees in suburban- landscaped settings (Tremor et. al. 2017). It is strongly associated with native groves of California fan palms where there is spring-fed open water, but also known to roost in cottonwood and yuccas. This species has low potential to occur within the Project site and has not been documented at the Zoo or Griffith Park. Although historical observations have been made approximately 2 miles from the Project site, few palm trees are available, and there is also no open water within the Project site.
California myotis appears to be a generalist- and is found in a variety of habitats. Most commonly found in riparian zones, oak woodlands, pine forests, and chaparral-covered flats and hillsides. Roosts in crevice-like areas in rocks and the bark of trees, and occasionally rodent burrows buildings, mines, and bridges. Sometimes uses artificial structures for day roosts and bat boxes (Tremor et. al. 2017). This species is known to occur within the Project site.

The Yuma myotis is highly colonial and usually roosts in groups of hundreds to 1000 individuals. It occurs in diverse vegetation and habitat types but is typically closely associated with rivers, creeks, ponds, and reservoirs where it predominantly likes to feed (Tremor et. al. 2017). It is urban adapted and can utilize structures, and bridges for roosting. This species is known to occur within the Project site.

This species is a desert-dwelling species that rarely roosts in human-made structures, preferring to roost in open and densely vegetated areas using rock crevices in boulders, small cliff faces and the underside of rocky slabs. They live in dry shrublands and arid canyons usually near water. They do not use the same roost repeatedly, but rather roost in the same general area, with separate day and night roosts. Rarely found in mines or caves (Tremor et. al. 2017). Canyon bats have been documented in acoustic surveys at the Zoo, though suitable roosting habitat seems very limited within the immediate area.

Mexican free-tailed bats appear to be generalists for both roosting and foraging habitats. Crevice- and cavity-dwelling, this species makes use of a multitude of locations including cavities, rock crevices, caves, barns, culverts, bridges, and buildings. Typically, they are found in joints and seams under bridges and in cave-like features of buildings, dams, and barns. It does not appear to prefer a vegetation community for foraging and can be found in a wide variety of habitats including open meadows, grasslands, ponds, wetlands, oak woodlands, coniferous forests, reservoirs, agricultural areas and areas with artificial lighting (Tremor et. al. 2017). This species is known to occur within the Project site.

**Wildlife Movement Corridors and Habitat Fragmentation**

Wildlife corridors include both local movement routes and regional corridors and linkages. Local movement routes often connect resources on a localized level, often on a daily or nightly basis, such as water sources, foraging areas, and den/cover sites. Regional movement corridors or linkages connect larger patches of open space and are important to wildlife for seasonal movements, and for the long-term genetic flow between subpopulations. For large mammals, regional corridors are often required to provide a network of large-scale foraging or hunting areas. Corridors can be continuous habitat features, or “stepping stones” such as rest areas along a bird migration route. Corridors often follow linear topographical, water, or vegetation features.

The Zoo is located on the northeast side of Griffith Park, which provides a mosaic of wild native vegetation and habitat, along with maintained park trails on the west and south sides of the Zoo. More developed areas (e.g., golf course) lie to the east and south. Griffith Park
3.3 Biological Resources

maintains some connectivity to the Los Angeles River and across I-5, located on the east side of the Zoo, and SR-134, located to the north. It also has some limited connectivity through urbanized corridors to the western Santa Monica Mountains. Plans for Los Angeles River restoration also include goals to improve connectivity between the river and surrounding habitats such as those within Griffith Park.

The Zoo is bordered by perimeter wildlife exclusion fencing intended to limit wildlife entry into the Zoo. Zoo personnel inspect this fencing and perform maintenance (e.g., tree trimming) to limit wildlife entry, particularly predators. While this fencing inhibits the movement of larger mammals (e.g., deer, cougars), smaller to medium terrestrial wildlife such as squirrels, mice, gophers, woodrats, and weasels are likely to be able to move through the fence between habitats within Griffith Park and the natural habitats of the Zoo (e.g., coast live oak woodlands, chaparral) to utilize these Zoo habitats for wildlife movement, cover and foraging. Fenced exhibits, structures, and other facilities within the developed part of the Zoo may also restrict movement of terrestrial species, though urban-adapted wildlife (e.g., coyotes) are present and apparently may be able to move through the Zoo. For example, coyotes are known to frequent the Zoo, waiting after-hours opportunities to forage. Further, although not a typical occurrence, it is suspected that the cougar P-22 gained access over the Zoo fence to predate a koala (Darryl Pon, pers. comm.). Avian and other tree-dwelling species can also utilize the trees for local or regional migration and roosting, nesting, or foraging since Zoo tree canopies are generally unrestricted by fencing or netting.

Existing habitats within the Zoo are fragmented by buildings, fencing, and facilities and provides low to moderate value as continuation of surrounding local wildlife corridors within Griffith Park. The native oak woodlands and chaparral habitat on the upper slopes and ridgelines of the Zoo, for example, are separated from open lands in Griffith Park by fencing. However, while not wholly intact or pristine, these habitat areas are of relatively higher value due to their proximity to adjacent open lands.

Both the coast live woodlands and laurel sumac can be considered high value biological resources as they provide habitat for roosting, nesting, and forage, and are occupied by species of conservation concern described above. These communities also provide linkages to
species that are not excluded by the perimeter fencing of the Zoo. The eucalyptus/mixed woodlands also provide value in this sense, but as they consist largely of non-native species, their biological value is considered moderate. The non-native grassland community is low in diversity, and its small size limits its utility for forage and nesting habitat, giving it a biological value of low. The isolated fragment of California sagebrush coastal sage scrub provides some additional diversity to the site, but its isolation and small size suggest a low biological value.

**Jurisdictional Features**

A 16-inch concrete outfall pipe, part of the Zoo’s stormwater system, carries runoff from the canyons and hillsides north of the Zoo and within the Zoo interior to the Zoo’s water treatment facility immediately east of the parking lot (Refer to Figure 5 in Appendix E). The pipe is covered with grass and filled with soil and plant litter, which does not and is not anticipated to support regular or significant drainage flows (Appendix E, Photo 1). The pipe does not support hydrophytic vegetation or contain hydric soil or exhibit wetland hydrology indicators. No other indications of potentially jurisdictional waters, such as presence of ordinary high-water mark (OHWM), defined bed and bank, or riparian vegetation were observed on the Project site, therefore no jurisdictional or potentially jurisdictional waters occur within the Project site.

**Pest Management and Rodenticides**

Rodenticides are a chemical pest control, which typically come in the form of poison baits and are designed to target specific nuisance rodents, such as moles, gophers, rats, mice, and squirrels. Rodenticides come in one of three categories: acute toxicants, first-generation anticoagulants, and second-generation anticoagulants. Within the state, the type and application of rodenticides are regulated by the California Department of Pesticide Regulation.

Both second-generation and first-generation anticoagulants work by preventing blood clotting. Animals that eat these rodenticides die from internal bleeding within a few days. While all anticoagulants work in a similar way, second-generation anticoagulant products are more toxic and persistent in the bodies of rodents than first-generation ones and therefore pose a greater threat to non-target wildlife and pets. Some acute toxicants kill rodents after

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1 Anticoagulants are substances that prevent or reduce the coagulation or clotting of blood.
one feeding, often within a few hours, while others require multiple feedings to kill rodents. Acute toxicants are formulated as baits, and are highly toxic to people, pets, and wildlife.

All rodenticides are toxic to wildlife, but second-generation anti-coagulants are unique in that rodents frequently eat more than a single dose of them, and the effects of that dose are often delayed for a few days. Meanwhile, the rodents may continue to eat more poison, resulting in a super-lethal dose that builds up in their tissues. When predators eat these weakened or dead rodents, the dose may also be deadly to the predators. Incident reports collected by California Department of Pesticide Regulation conclude that second-generation anticoagulant products pose significant risks to non-target wildlife and that these risks are greater than those posed by other rodenticide active ingredients. Non-target species include predator species, such as owls, hawks, eagles, raccoons, bobcats, mountain lions, foxes, skunks, coyotes, and bears.

The Zoo has not used rodenticides as part of its pest management practices for at least the past three years, ahead of the City Mayor’s decree that rodenticides were no longer to be used in the City. Because rodenticides that do not cause secondary poisoning (first-generation anticoagulants) are very high risk to resident Zoo animals, the Zoo implements environmentally sensitive approaches to pest management that minimize the use of pesticides, incorporate comprehensive information on the life cycles of pests, and focus on the prevention of pests as a first line of control. In most areas, the Zoo uses a combination of other products and mechanical traps that are not as harmful to resident Zoo animals or wildlife.

3.3.2 Impact Assessment Methodology

Significance Thresholds

The following significance criteria are based on Appendix G of the CEQA Guidelines and City of Los Angeles CEQA Thresholds Guide. Impacts are considered significant if the proposed Project would result in any of the following:

a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.

b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.

c. Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marshes, vernal pools, coastal wetlands, etc.) through direct removal, filling, hydrological interruption, or other means.

d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites.
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

f. Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan.

Non-applicable threshold(s):

- **Threshold (b) (Loss of riparian or sensitive natural community):** No riparian habitat or other sensitive communities are noted on the site, and no other sensitive species associated with a unique, special, or sensitive habitat were identified or considered to have potential to exist onsite. While the Los Angeles River is located approximately 900 feet from the Project site, this portion of the river is concrete-lined and provides no riparian habitat or other sensitive communities.

- **Threshold (c) (Effects on wetlands):** There are no waters of the U.S. or State of California or associated wetlands onsite. Implementation of the Project would have no impact on state or federally protected wetlands (Appendix E).

- **Threshold (f) (Conflict with Habitat Conservation Plan/Natural Community Conservation Plan):** There are no existing adopted habitat conservation plans, natural community conservation plan, or other approved local, regional, or state habitat conservation plan which apply to the Zoo.

**Methodology**

The biological resources described in this section are based primarily upon review of existing literature and several site reconnaissance surveys conducted by Wood Environment & Infrastructure Solutions, Inc. (Wood) in 2019. The following documents address biological resources in Griffith Park and were reviewed as part of the existing conditions characterization:

- Griffith Park Wildlife Management Plan (Cooper Ecological Monitoring, Inc. 2009)
- Griffith Park Wildlife Connectivity Study (Cooper Ecological Monitoring, Inc. and USGS 2012)
- A Preliminary Large Mammal and Herptile Survey for Griffith Park, Los Angeles, California (Matthewson, P., Spehar, S., and Cooper Ecological Monitoring, Inc. 2007)
- Rare Plants of Griffith Park, Los Angeles (Cooper, D. S. 2010)
- Griffith Park Reptiles and Amphibians (Cooper Ecological Monitoring, Inc. 2010)
- Bat Survey of Griffith Park (Remington, S. and Cooper Ecological Monitoring, Inc. 2009)
- Rare Plant Survey and Assessment for Forest Lawn Memorial Park (City of Los Angeles and Forest Lawn Memorial-Park Association 2010)
- Wildlife of Old Zoo, Griffith Park (Friends of Griffith Park 2014)
3.3 Biological Resources

The results of the literature review and site reconnaissance, as well as technical analysis of the Project’s impacts on biological resources, is provided in the Biological Resources Technical Report contained in Appendix E of this Environmental Impact Report (EIR). Assessment of biological resources were determined through review of existing maps, literature, regulations, databases, and other biological studies conducted in the area. In addition, as part of the Biological Resources Technical Report, baseline conditions were assessed through a reconnaissance-level survey, including a jurisdictional delineation investigation into potential waters of the United States of the developed and undeveloped portions of the Zoo, with special focus on presently undeveloped areas. The site survey was conducted on May 31, 2019 by Wood biologists. Subsequently, Wood biologists conducted an additional focused rare plant survey on June 27 and June 28, 2019. The rare plant survey consisted of walking spaced transects through the undeveloped “focus areas” of the Zoo. Survey methods followed standard professional practices. The technical methodology, field data, and GPS mapping of resources surveyed are provided in the Biological Resources Technical Report provided in Appendix E.

Wood also conducted a tree inventory and urban forestry resources assessment of the Zoo and proposed Project, the results of which are provided in the Urban Forestry Resources Report (Appendix I) and analyzed in Section 3.6, Urban Forestry Resources. Relevant discussion of locally protected trees and shrubs as they relate to biological resources is pulled forward and/or referenced in this section of the EIR.

3.3.3 Environmental Impacts Analysis

Project construction would potentially result in the removal and direct disturbance of more than 19 acres of native vegetation communities and hundreds of trees throughout the developed and undeveloped areas of the Zoo. Due to the programmatic nature of the Vision Plan and lack of specific construction or grading details, the exact acreage and precise extent of native habitats to be removed or number and species of trees proposed for removal is unknown. However, based upon review of proposed improvements in each phase and discussions with Zoo staff and Vision Plan designers, it appears likely that the majority of onsite native vegetation would either be directly removed or substantially disturbed, along with hundreds or potentially thousands of primarily non-native ornamental trees over a 20-year period.

The Zoo has indicated the intent to remove large numbers of eucalyptus (gum) trees under the Project, as eucalyptus trees are an invasive non-native species, pose a safety risk to Zoo residents, employees, and visitors from falling branches, impose toxic or detrimental effects on surrounding plants, and contribute to increased fire hazards. Native oak and southern California black walnut trees are protected species under the LAMC and potentially support special-status native wildlife species. Even with these regulations, it appears the Project would require removal, relocation, or replacement of large numbers of native trees and non-native trees. While the Vision Plan proposes major new landscaping and tree planting, along
with planting of iconic California species to reflect the theme of the exhibits and improvements, precise details of the ratio and species of replacement habitats and trees to those removed are not available. Therefore, this analysis employs a conservative approach in assuming potential for substantial net loss of native habitats and associated effects on special-status species.

**BIO-1:** Would the Project result in the loss of individuals, or the reduction of existing habitat, of a state or federal listed endangered, threatened, rare, protected, or candidate species, or a Species of Special Concern or federally listed critical habitat?

Project development would impact known or potentially suitable habitat for several special-status plant and wildlife species, through direct removal, construction of new exhibits and facilities, or vegetation management for fire protection, particularly in the undeveloped areas of the proposed California and Africa planning areas. Disturbance, alteration, or removal of these habitats would result in the loss or damage (take) of sensitive wildlife and plant species that may reside, forage, or rest within the Project site. Removal of hundreds or potentially thousands of non-native trees throughout developed areas of the Zoo could impact special-status native wildlife species, particularly bats and potentially avian species that use these trees for roosting, nesting, or foraging. These more mobile avian or bat species could be forced abandon habitats that are disturbed or removed during Project construction. Such species may accidentally be harmed during construction or forced move into adjacent areas in the vicinity (e.g., Griffith Park), increasing competition for available resources in those areas. This could result in indirect impacts to and the loss of additional special-status wildlife species outside of the Project site, including sensitive species that may not be able to survive with increased competition, and diminished habitat value.

**Native Vegetation Communities**

Impacts to onsite native vegetation communities and associated special-status species would be primarily related to development within the proposed California and Africa planning areas. Conceptual designs for the California planning areas depict new development within mapped native habitats, including the laurel sumac shrubland, coast live oak woodlands, and adjacent eucalyptus/mixed woodlands, which support some special-status species. Although plans are conceptual, both communities would likely be eliminated or substantially altered by this plan to incorporate new visitor centers, access pathways, roads utilities and exhibits. Conceptual plans also appear to depict removal or alteration of the small coast live oak woodland and California sage coastal sage scrub habitats within the planned California exhibit, with potential for impacts to special-status species.

**Special-Status Plants**

The undeveloped areas of the Zoo support small populations of special-status plant species. The small population of federal and state listed endangered Nevin’s barberry present on the
undeveloped hillsides supporting the laurel sumac shrubland within the California planning area would likely be eliminated by development of exhibits, landscaping, and access pathways. Two small Southern California black walnut trees in the mixed eucalyptus woodland adjacent to existing facilities within the California planning area could also be impacted by proposed development. Additionally, approximately 22 Southern California black walnut trees in the Africa planning area would also be potentially removed or impacted by planned development. These trees are considered by the CNPS as plants of limited distribution, fairly threatened in California, and thus are considered sensitive. As discussed under Impact BIO-2 below, trees of this species above a certain size class are also protected under LAMC statutes. In addition, although not observed during field surveys, the Plummer’s mariposa lily, a plant identified by the CNPS as of limited distribution, fairly threatened in California, has a high probability of occurring and could be removed through development within the California and Africa planning areas. Other special-status plant species such as the Hubby’s phacelia and San Gabriel Mountains leather oak have a moderate or low probability of occurring onsite and could also be impacted depending on the ultimate design of each Project phase and the timing of construction. Proposed development of the California and Africa planning areas under the Vision Plan has the potential to directly displace or result in the loss of these special-status species and their existing habitat.

During operation, the Zoo would continue to maintain landscaping and vegetation onsite, including cultivating new plants installed though Project implementation and preserving existing resources wherever feasible. Maintenance would include trimming, limbing, weeding, and debris clearance similar to current practices. As described in Section 3.17, *Wildfire*, vegetation management to minimize fuels would continue to pose a potential adverse impact to sensitive species and habitats. For example, field observations of these areas indicate that past vegetation management activities included cutting back Southern California black walnut trees that now present as stump sprouts. Vegetation within portions of the undeveloped hillsides are currently managed through clearing, mowing, or trimming by the Zoo and Los Angeles Fire Department (LAFD) as fuel breaks between the Zoo and surrounding Griffith Park. The installation and maintenance of new or expanded fuel breaks would require mowing, substantial trimming, or complete removal of almost all vegetation within up to a 100-foot buffer area around the Zoo perimeter. See Section 3.17, *Wildfire* for complete analysis of this wildfire impact.

Implementation of **MM BIO-1** through **MM BIO-34**, would reduce Project impacts to special-status plant species (see Section 3.3.4, *Mitigation Measures*). These measures would require protection or restoration of native plant communities and special-status species to the maximum extent feasible through pre-construction surveys, protective barrier fencing, capture, relocation, and replanting protocols. Further, with implementation of **MM BIO-2** and **MM WF-1**, adverse impacts to biological resources as a result of installation and maintenance of vegetation clearance from fuel breaks would be reduced through maximum avoidance of native vegetation and appropriate restoration offsite (see Section 3.17, *Wildfire*).
for analysis of wildfire impacts). Implementation of these measures would ensure impacts associated with loss of sensitive species and habitats are less than significant with mitigation.

**BIO-2:** Would the proposed Project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

Project development would lead to removal of a substantial amount of both native and non-native vegetation for the construction of buildings, animal enclosures, and other Zoo facilities, which would reduce the ability for potential wildlife movement within the Zoo. Loss of large native and non-native trees and more than 19 acres of moderate to relatively high-quality native habitats would reduce roosting and foraging movement areas for migrating birds, roosting bats, and other resident wildlife. Construction noise and lighting has potential to disrupt and discourage wildlife on the lands in the immediate vicinity of the Project site. While planned new landscaping and tree replacement may reduce impacts, ongoing construction over 20 years would potentially interfere with resident and migratory feeding, resting, or reproductive activities.

Project development also has potential to impede, block, or disrupt local wildlife movement within the Zoo and adjacent natural habitats in Griffith Park and the Los Angeles River. Undeveloped coast live oak woodland, laurel sumac shrubland, coastal sage scrub, and eucalyptus/mixed woodlands support resident wildlife that could be disrupted or displaced by both construction and long-term habitat loss as new facilities replace existing native habitats. The loss of coast live woodlands and laurel sumac, both high value biological resources that provide habitat for roosting, nesting, and foraging, and are occupied by sensitive plant and animal species, would be of concern. This could affect wildlife access to local resources on a daily or nightly basis, such as water sources, foraging areas, and den/cover sites, including the movement of small mammals, birds, reptiles, and bats between habitats within the Zoo. Although the Zoo is bordered by perimeter wildlife exclusion fencing which inhibits the movement of larger mammals (e.g., deer, cougars), common species such as coyotes, squirrels, raccoons, and skunks would continue to frequent these habitats, as well as known special-status species such as the San Diego desert woodrat, western mastiff bat,
and Cooper’s hawk. Potential unusual use by predators such as cougar P-22 would likely remain similar to existing conditions, as such predators may still on rare occasions gain entrance to the Zoo. Overall, the loss of up to 19 acres of native vegetation would incrementally reduce native habitats that support wildlife use and movement within the northeast side of Griffith Park.

Regional wildlife movement is unlikely to be substantially affected by Project development. Although Griffith Park maintains some connectivity to the Los Angeles River and limited connectivity through urbanized mountain corridors to the western Santa Monica Mountains, due to its location and surrounding fencing, Project development is unlikely to affect such regional movement of wildlife. Although loss of native habitats could incrementally reduce Griffith Park’s utility to support wildlife, the Project site does not appear to support such regional movement corridors or linkages that connect to larger patches of open pace. Additionally, the Vision Plan does not propose changes to the existing pest control measures implemented at the Zoo, and the Zoo would continue to employ the safe and sustainable practices it employs for pest management. Thus, Project development is unlikely to substantially to reduce ongoing or seasonal regional movements that are important for the long-term genetic flow between subpopulations.

Implementation of MM BIO-1, MM BIO-2, MM BIO-4, and MM BIO-5 would reduce Project impacts to special-status bird species. These measures would require the implementation of construction best management practices (BMPs) and a Worker Environmental Awareness Program (WEAP) to reduce construction-related impacts to the maximum extent feasible. These measures would delineate vegetation communities and area of disturbance associated with proposed development plans by Project phase and preserve or replace affected vegetation communities and sensitive species at appropriate ratios. Implementation of MM UF-1, requiring preservation, relocation, or replacement of native tree species onsite or at an appropriate offsite location within Griffith Park, and MM UF-2, requiring the Zoo implement a tree and urban canopy restoration plan, would also serve to reduce impacts associated with the loss of roosting habitat by ensuring suitable roosting habitat is retained onsite or created or improved offsite through planting of native trees. Impacts would be less than significant with mitigation.

BIO-3: Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

Project development would require removal of protected trees and shrubs as part of land clearance needed for construction of new exhibits and facilities, or vegetation management for fire protection. Protected trees are expected to be removed in all phases of Project development, but impacts would be concentrated within the undeveloped areas of the proposed California and Africa planning areas, but would also include the Zoo entry, parking lots, and along the proposed route for realignment of Western Heritage Way. Disturbance, alteration, or removal of trees within these areas and habitats would result in the loss or
damage of locally protected plant species. Conceptual designs for the California and Africa planning areas depict new development or redevelopment of current facilities within native habitats, including the laurel sumac shrubland, coast live oak woodlands and adjacent eucalyptus/mixed woodlands, which are known to support some native tree and shrub species that are locally designated for protection under the LAMC. Although plans are conceptual, both the coast live oak woodland and laurel sumac shrubland communities would likely be eliminated or substantially altered by the Project to incorporate new visitor centers, access pathways, roads, utilities, and exhibits.

Impacted locally designated plant species could include two small Southern California black walnut trees in the mixed eucalyptus woodland adjacent to existing facilities within the California planning area. In addition, 7 coast live oak trees and 4 toyon and 15 elderberries could be impacted (refer to Table 3.6-2, Section 3.6, Urban Forestry Resources). Within the Africa planning area, up to 113 coast live oak trees, along with 15 toyon shrubs, and 21 elderberry trees would also be potentially removed or impacted by planned development (refer to Table 3.6-3, Section 3.6, Urban Forestry Resources). These trees and shrubs are protected and regulated under the existing City Tree Preservation Ordinance and Protected Tree Code Amendment. In addition, within the Africa planning area, approximately 22 Southern California black walnut trees would also be potentially removed or impacted by planned development. While the species is protected under LAMC statutes, due to past clearing, most of the specimens within this area fall below regulated size limits and seem to be root or stump sprouts from substantially older trees that were cut, likely for fire protection purposes. Nevertheless, these specimens may be considered protected under LAMC statutes.

Several small coast live oak and larger western sycamores, planted as landscape trees within Zoo parking lots, Zoo entry, and along Western Heritage Way, may be impacted by parking lot and Western Heritage Way realignment and design, and Zoo entry redevelopment. These trees have not been counted or mapped, but many appear to be of a size to be protected under the LAMC. In addition, realignment of Western Heritage Way would also result in the potential loss of trees along its alignment behind the Magnet School and Zoo storage areas. Trees within this area consist largely of eucalyptus, though some small specimen oaks and sycamores may be present and could be affected by my proposed improvements.

Implementation of MM UF-1, requiring preservation, relocation, or replacement of protected native tree and shrub species onsite or at an appropriate offsite location within Griffith Park, and MM UF-2, requiring the Zoo implement a tree and urban canopy restoration plan, would also serve to reduce impacts associated with the loss of protected native trees and shrubs. Implementation of these measures would ensure impacts to native trees and shrubs would less than significant with mitigation.

### 3.3.4 Mitigation Measures

MM UF-1 and MM UF-2 shall apply.
**MM WF-1** shall apply.

**MM BIO-1 Biological Resources Mitigation and Monitoring Program**

The Zoo shall prepare and implement a Biological Resources Mitigation and Monitoring Plan (BRMMP) to mitigate loss of native vegetation communities, habitat, and special-status species from each Project phase. The BRMMP shall be prepared after completion of 30 percent design plans for each phase and shall specify timing and implementation of required biological resource restoration, enhancement, or creation measures. The BRMMP shall be prepared by a City-approved biologist as part of planning, engineering, and site design for each Project phase under the direction of and approval by the City Bureau of Engineering and Zoo planning staff. The BRMMP shall be prepared in consultation with appropriate City departments and resource agencies such as the Los Angeles Fire Department, Recreation and Parks Department, and the CDFW. The BRMMP shall be updated prior to final designs and development plans for each phase. The Zoo shall be responsible for ensuring all BRMMP requirements are reflected in Project design/architectural, engineering, and grading plans. All plans for each Project phase shall be reviewed by the City to ensure compliance with the BRMMP.

The BRMMP shall require measures to avoid and mitigate impacts to biological resources onsite, including, but not limited to, the following:

1. At the 30 percent design plan stage for each Project phase, biological resource surveys shall be completed for areas of potential effect in that phase by a City-approved biologist, subject to the following requirements:

   a) The surveys shall refine the disturbance footprint of impacted habitats plus a buffer if recommended by the City-approved biologist.

   b) The survey shall delineate native vegetation communities such as coast live oak woodland, laurel sumac shrubland, and coastal sage scrub, including maps of the extent and type.

   c) The survey shall identify all special-status plant and animal species present or potentially present within the subject phase of Project development.

   d) A summary of the results of the pre-construction survey shall be submitted to the City immediately upon completion of the survey. A survey report describing and delineating the extent and quality of native vegetation communities and the presence or potential presence of special-status plant or animal species shall be submitted to the City for review and approval prior to completion of 60 percent design plans for the subject Project phase; if no native vegetation communities or special-status species are present or potentially present, the survey report shall describe such findings based on evidence from the surveys.
e) The survey report shall map and describe the location and extent of native vegetation communities and observed special-status plant or animal species that would be impacted within the areas of potential effect for each Project phase, and require the following avoidance, minimization, and mitigation measures:

i) To the maximum extent feasible, onsite native vegetation communities and special-status plant species shall be protected and preserved in place, and design plans shall be amended to avoid disturbance or loss of these biological resources. The City-approved biologist shall work with Project designers during final design for each phase, as required, to incorporate existing native vegetation and special-status plant species, such as Nevin’s barberry, and mature native trees, such as coast live oaks, into the Zoo landscaping and facilities (e.g., exhibits, visitor-serving spaces, service areas) in a manner that would ensure the livelihood and biological value of the natural community and/or individual plant. Construction techniques for Project development to avoid and protect special-status species shall be identified as part of a required construction mitigation plan (see MM BIO-2).

ii) If avoidance or preservation in place cannot be achieved while meeting Project Objectives, the area of disturbed native vegetation communities and the total lost special-status plant species shall be mitigated onsite at a ratio of 2:1, as feasible given space limitation within the Zoo. To the extent feasible, native vegetation communities and special-status plant species shall be relocated or reestablished within disturbed, altered, and/or lost areas of coast live oak woodland, laurel sumac shrubland, and coastal sage scrub within the Project site. The BRMMP shall provide a description of the location and boundaries of the mitigation site and description of existing site conditions. The mitigation area shall be incorporated into the final development plans for each phase of Project development.

iii) If native vegetation communities and/or special-status plant species cannot be protected and/or restored onsite, the Zoo and City shall work with RAP to identify an appropriate site(s) for restoration within Griffith Park to serve as a mitigation site. Offsite restoration of affected native vegetation communities and special-status plant species shall occur at a minimum ratio of 3:1. Ratios for the restoration of native vegetation communities and/or special-status species shall be based upon the vegetation composition, plant rarity, local demographics, and location of the mitigation site. The BRMMP shall provide a description of the location and boundaries of the offsite mitigation site. The City and City-approved biologist shall consult with CDFW to determine additional measures for protection and restoration of habitats occupied by special-status species, including nesting birds.
iv) If onsite or offsite restoration is required, the BRMMP shall specify restoration plans and techniques, as recommended by a City-approved biologist, including, but not limited to:

1. Identification of a suitable habitat compensation area of comparable size to be preserved and managed for lost habitat or species

2. Site preparation

3. Seed collection and/or plant salvage, designation, or establishment of offsite plant nursery facilities.

4. Planting, hydroseeding, replanting or seeding activities.

5. Success criteria

6. Maintenance and monitoring program, for the short-term plant establishment period (i.e., 1-3 years), and over the long term (i.e., 5 years)

7. Reporting Requirements

v) If onsite or offsite restoration is required, a binding long-term agreement with the Zoo to implement and maintain protected and restored habitats/communities shall be implemented with the City. The BRMMP shall identify typical performance and success criteria deemed acceptable by the City based on measurable goals and objectives. Minimum criteria for restored habitats shall be at least 70 percent survival of container plants and 70 percent relative vegetative cover by vegetation type. BRMMP mitigation elements that do not meet performance or final success criteria within 5 years shall be completed through an extension of the BRMMP for an additional 2 years or at the discretion of the City with the goal of completing all mitigation requirements. Monitoring of the mitigation and maintenance areas shall occur for the period established in the BRMMP, or until success criteria are met. If success criteria cannot be met through the BRMMP, the City shall specify appropriate commensurate measures (e.g., additional onsite or offsite restoration).

vi) If special-status animal species are present or potentially present based on the survey, including bat, woodrats, Crotch’s bumble bee, or legless lizard species, and migratory or nesting birds, the BRMMP shall include avoidance and minimization measures to avoid or relocate as part of a construction mitigation plan (see MM BIO-2) and management plans for migratory and nesting birds (see MM BIO-4) and bat colonies (MM BIO-5).

**MM BIO-2 Construction Mitigation Plan for Biological Resources**

The Zoo shall prepare and implement a Construction Mitigation Plan (CMP) that identifies avoidance, reduction, and mitigation measures for construction-related impacts to biological
resources, including special-status species. The CMP shall be prepared by a City-approved and qualified biologist prior to initiation of construction activities for Phase 1 of the Project and updated prior to construction activities for each subsequent phase. The CMP shall be approved by the City Bureau of Engineering and Zoo planning staff. The Zoo shall be responsible for ensuring all CMP requirements are included in construction plans and implemented as part of construction. All construction activities shall be monitored by a City-approved biologist to ensure compliance with the CMP. The Zoo would coordinate with CDFW Region 5 prior to the start of any construction activities.

The CMP shall require:

1. Per **MM BIO-1**, the CMP shall incorporate and address data from biological resource surveys for each Project phase to avoid and protect special-status plant and animal species to the maximum extent feasible, as follows:

   a) Within six months prior to the start of construction of each Project phase, biological resource surveys shall be completed for areas affected in that phase by City-approved biologist, consistent with **MM BIO-1**.

   b) If the phase-specific survey identifies presence or potential presence of special-status species, within 14 days of the start of construction (including mobilization and staging), pre-construction clearance surveys shall be completed by a City-approved biologist to either confirm or update the BRMMP related to the location and extent of special-status species. A report of the pre-construction survey shall be submitted to the City Bureau of Engineering for review and approval prior to the start of construction.

2. Based on the BRMMP and the results of the pre-construction surveys, the CMP shall require measures to avoid or mitigate impacts to special-status species present or potentially present within the Project phase; if no sensitive species are present or potentially present, the CMP shall identify findings from the surveys. If required based on the BRMMP’s determination of biological resource sensitivity within each phase, the CMP shall include avoidance and minimization measures, including biological monitoring during construction, if needed. If determined appropriate based on the results of the BRMMP, a species-specific list (or plan) of proper handling and relocation protocols and a map of suitable and safe relocation areas shall be prepared by the City-approved biologist. The list or plan shall be submitted to the City for review and approval prior to implementing any Project-related ground-disturbing activities and vegetation removal. CMP avoidance and minimization measures shall be subject to review and approval by a City-approved biologist, including, but not limited to, the following:

   a) If present, special-status animal species, such as woodrat, legless lizard, and bat species (see also **MM BIO-5**), shall be relocated from the Project site either through direct capture or through passive exclusion prior to construction
3.3 Biological Resources

activities. Pursuant to the California Code of Regulations, Title 14, Section 650, the City-approved biologist must obtain appropriate handling permits to capture, temporarily process, and relocate wildlife to avoid harm or mortality in connection with Project construction and activities. With cooperation and authorization from CDFW, trapping may be employed to identify woodrat species that are inhabiting the site. If determined appropriate, woodrat middens should also be relocated by qualified biologists outside of construction areas.

b) If present, special-status plant species, such as Nevin’s barberry, shall be avoided to the extent feasible through use of high visibility exclusion fencing and signage to protect vegetation and root systems from disturbance or compaction, consistent with the BRMMP. Lost special-status plant species shall be replaced consistent with the BRMMP.

b)c) If any SSC are harmed during relocation or a dead or injured animal is found, work in the immediate area shall stop immediately. The City-approved biologist shall be notified, and dead or injured wildlife documented. A formal report shall be sent to the City and CDFW within three (3) calendar days of the incident or finding. Work in the immediate area may only resume once the proper notifications have been made and additional mitigation measures have been identified to prevent injury or death.

3. The CMP shall include BMPs to avoid or minimize impacts to biological resources during construction, including, but not limited to, the following:

a) Construction equipment and vehicles shall be stored within existing disturbed or developed areas within the Zoo to the maximum extent feasible to avoid impacts to natural areas. All construction vehicle maintenance shall be performed in a designated offsite vehicle storage and maintenance area approved by the City. All construction access roads and staging areas shall be located to avoid known/mapped native vegetation and special-status species.

b) All construction materials (e.g., fuels, chemicals, building materials) shall be stored at designated construction staging areas, which shall be located outside of designated sensitive areas in the BRMMP and CMP. Should spills occur, materials and/or contaminants shall be cleaned immediately and recycled or disposed of to the satisfaction of the RWQCB.

c) All trash and construction debris shall be properly disposed at the end of each day. Dumpsters shall be covered either with locking lids or with plastic sheeting at the end of each workday and during storm events. All sheeting shall be carefully secured to withstand weather conditions.

d) Construction-related erosion shall be minimized to retain sediment within the area of potential effect, including installation of silt fencing, straw waddles, or other
acceptable construction erosion control devices. Such measures shall be installed along the perimeter of disturbed areas.

e) Concrete truck and tool washout shall occur in a designated construction staging areas or other offsite location such that no runoff would flow to natural areas within the Zoo or to the Zoo’s stormwater collection system.

f) All open trenches shall be constructed with appropriate exit ramps to allow species that incidentally fall into a trench to escape. All open trenches shall be inspected at the beginning of each workday to ensure that no wildlife species are present. Any wildlife species found during inspections shall be gently encouraged to leave the Project site by a qualified biologist or otherwise trained and City-approved personnel. Trenches shall remain open for the shortest period necessary to complete required work.

g) Construction shall be limited to daylight hours (7:00 AM to 7:00 PM or sunset, whichever is sooner).

**MM BIO-3 Worker Environmental Awareness Program**

The Zoo shall retain a qualified, City-approved biologist to prepare a Worker Environmental Awareness Program (WEAP) that shall be implemented during all phases of construction. WEAP training shall be provided to all personnel working on the site by a qualified, City-approved biologist. The training should review the construction-related requirements of the BRMMP and the CMP, including all special-status species that occur or have potential to occur. Training should explain all mitigation and protection measures, responsibilities of each worker, and a reporting framework. The City-approved biologist shall communicate to all workers that upon encounter with an SCC (e.g., during construction or equipment inspections), work must stop, a qualified biologist must be notified, and work may only resume once a qualified biologist has determined that it is safe to do so. The WEAP shall be prepared and approved by the City Bureau of Engineering and Zoo planning staff prior to construction activities of Phase 1.

**MM BIO-4 Migratory and Nesting Bird Management**

Removal of trees and other vegetation shall be conducted outside of the breeding season (generally January 15 to August 31 for raptors, March 1 to August 31 for other bird species) to the extent feasible. If Project construction activities must be conducted during these period, pre-construction nesting bird surveys by a City-approved biologist shall take place within one week prior to ground disturbance and tree removal or trimming associated with each Project phase. If no active nests or nesting activity is found within or immediately adjacent to the phase work area, construction activities may proceed. If active nests are located during these surveys, the following measures shall be implemented:
1. A summary of the results of the pre-construction survey shall be submitted to the City immediately upon completion of the survey. Consistent with **MM BIO-1** and **MM BIO-2**, the qualified biologist shall prepare a final report of the pre-construction survey to be submitted to the City Bureau of Engineering for review and approval prior to the start of construction. The report shall detail appropriate fencing or flagging of the buffer zone and make recommendations on additional monitoring requirements. A map of the area of potential effect and nest and roost locations shall be included with the report. If any special-status species are observed during pre-construction surveys, the Project biologist shall report the findings and coordinate with appropriate regulatory agencies to determine appropriate procedures for handling or avoidance of the specimen.

2. If the pre-construction surveys indicate presence of nesting or roosting birds, the construction activity shall be evaluated, and avoidance methods implemented as necessary at the discretion of the qualified biologist. Methods would vary based on bird species, site conditions, and type of work to be conducted, but could consist of limited or reduced construction access; reduced vehicle speeds; and/or noise attenuation.

3. At the discretion of the qualified biologist, construction activities within 300 feet of an active nest of passerine birds shall be restricted until chicks have fledged, unless the nest belongs to a raptor, in which case a 500-foot activity restriction buffer shall be observed to avoid noise, light, and direct disturbance (see Section 3.12, *Noise and Vibration*). The Project biologist conducting the survey shall have the authority to reduce or increase the recommended buffer depending upon site conditions and the species involved. If during Project construction and ground disturbance activities an active nest is discovered, the City-approved biologist shall halt work immediately within the work area, activity restriction buffers shall be established, and avoidance methods shall be employed as necessary.

4. A report of findings and recommendations for bird protection shall be submitted to the City prior to vegetation removal.

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**MM BIO-5 Bat Colony Management**

Removal of trees and older structures should be conducted outside of the maternity roost season (typically March 1 to August 31). Prior to removal of any trees over 20 inches diameter-at-breast-height (DBH) or demolition/relocation of existing onsite structures, a pre-construction acoustic and day/night roost survey shall be conducted by a qualified biologist to determine if any tree or structure proposed for removal, trimming, demolition, or relocation harbors sensitive bat species or maternal bat colonies. If present, maternal bat colonies shall not be disturbed and grading and construction activities shall avoid the bat breeding season to the extent feasible. If disturbance of structures must occur during the bat breeding season, buildings and trees must be inspected and deemed clear of bat.
colonies/roosts within 7 days of demolition and an appropriately trained and approved biologist must conduct a daily site-clearance during demolition. If bats are roosting in a structure or tree in the Project site during the daytime but are not part of an active maternity colony, then exclusion measures shall be utilized and must include one-way valves that allow bats to leave but are designed so that the bats may not re-enter the structure. For each occupied roost removed, one bat box shall be installed in similar habitat as determined by the Project biologist and shall have similar cavities or crevices to those which are removed, including access, ventilation, dimensions, height above ground, and thermal conditions. If a bat colony would be eliminated from the Project site, appropriate alternate bat habitat shall be installed within the Project site. To the extent practicable, alternate bat house installation shall occur near onsite drainages.

3.3.5 Impacts Summary

With implementation of mitigation measures identified above, biological resources affected by Project implementation would be appropriately mitigated through avoidance, relocation, or restoration of lost or adversely affected biological resources within the Zoo. MM BIO-1 through MM BIO-3 would work together to refine the precise location and range of resources that may be adversely affected by Project construction and select appropriate programs to mitigate loss or damage, including protection and restoration measures and construction controls. MM WF-1 would mitigate operational impacts of vegetation management onsite and within wildfire fuel breaks. MM BIO-5 would protect bat colonies that are known to exist within the Zoo. MM BIO-14 and MM UF-1 include mitigation for native vegetation communities as well as tree and shrub species protected under the City’s Protected Tree Preservation Ordinance, and City policies, through a tiered approach, first prioritizing preservation in place and ultimately restoration of affected resources at an appropriate offsite location if all else is infeasible. Preservation of vegetation communities and individual protected trees or shrubs or the restoration of affected resources elsewhere onsite may require amendments to the Vision Plan to incorporate these resources into the design in a manner that assures their survival and biological value. This would reduce the total amount or area of development within the Zoo and reduce associated construction activities. Alternatively, if preservation in place or restoration onsite is not feasible given space constraints within the Zoo, offsite restoration within Griffith Park would be required within known degraded areas throughout the park. Offsite restoration would require coordination with RAP to identify an appropriate site(s) for restoration and has the potential to result in restoration of areas of Griffith Park that have become susceptible to non-native or invasive species and possibly even result in the enhancement of existing degraded habitat. Thus, compared to preservation in place or restoration within the Zoo property, offsite restoration within Griffith Park may have a slight beneficial effect on the health or quality of regional biological resources. In addition, since the Project would involve phased development over 20 years, the loss and subsequent regrowth of landscaping would regenerate biological resources over time and would ensure a potentially richer and more valuable urban forest at the Zoo. Therefore, significant
unavoidable adverse impacts to biological resources would not occur and, with mitigation, impacts to biological resources would be less than significant.

### 3.3.6 Potential Effects on Zoo Animals

Zoo animals are protected under the AWA and are exempt from FESA and CESA. Therefore, under CEQA and City thresholds, resident Zoo animals are not considered biological resources. However, for information disclosure and planning purposes, this report describes the potential Project effects on sensitive Zoo resident animals.

The Zoo is home to at least 37 Critically Endangered and Endangered species from across the world. These species, though endangered, are captive residents of the Zoo and are not considered equal in terms of protection under the FESA, CESA, or any other animal protection or conservation regulations applicable to their more natural or wild members of their species (refer to Regulatory Setting in Section 3.3.1). Given the unique status of these captive specimens, resident animals of the Zoo are not considered biological resources under the City or CEQA regulations and thresholds. However, two exceptions to this exist for the Critically Endangered California condors (*Gymnogyps californianus*) and Endangered southern mountain yellow-legged frog (*Rana muscosa*).

The Zoo is an active participant in the California Condor Recovery Program and the Southern Mountain Yellow-Legged Frog Recovery Program. Under these programs, the Zoo engages in the breeding, monitoring, and rehabilitation of these species onsite, with condors housed in either the Condor West facility located near the Gottlieb Animal Health Center or the Condor East facility located in the proposed California planning area. The Zoo’s mountain yellow-legged frogs are housed at in a facility near the South American exhibit within the Asia planning area.

Over the course of the 20 years of Project implementation, the Project would increase Zoo exhibit space by transforming underutilized and underdeveloped areas of the Zoo and maximize the animal habitat area within each exhibit. These construction activities have potential to affect Zoo animals through generation of excessive noise or vibration, some animals of which may be particularly sensitive to, such as the Asian elephant. Construction is likely to occur near or within animal exhibits. For instance, the Project would involve the expansion of the existing Elephants of Asia exhibit, while construction of the Condor Canyon may involve extensive grading, hillside blasting, and construction work as close as 150 feet from the Condor East facility.

Though many of the species present at the Zoo do not fall under the category of sensitive biological resources, the Zoo is dedicated to the health and wellbeing of all its animals – endangered or not. Zookeepers and animal caretakers are trained in the monitoring of the Zoo’s animals and implement measures appropriate for each individual species to ensure their safety and wellbeing in accordance with the AWA and the American Zoological Association, which governs the care, handling, and transport of zoo animals. As the Zoo has
done in the past during construction of prior improvements, measures to protect these animals may include their temporary relocation away from construction activities, closure of exhibits, or even the transfer of animals to other zoos.

Similarly, under the Project, the Zoo would react appropriately for each individual animal to construction or operational activities that may have may detriment animal health or wellbeing. For example, during construction of the California planning area and grading of Condor Canyon near the Condor East facility, condor conservation staff are likely to relocation condors to temporary close the Condor East facility, relocate condors to the Condor West facility or other conservation facility, and/or temporarily reduce the number of condors handled under the program during construction. With continued management of each species of animal exhibited or rehabilitated at the Zoo and required compliance with the AWA, there would be no adverse effects on Zoo animals from implementation of the Vision Plan.

In addition, the Vision Plan would advance conservation and animal care efforts by developing additional specialized facilities that support endangered species propagation and preservation. Also, most proposed improvements are intended to increase space dedicated solely to the animals by over 200 percent. One example of this the proposed expansion of the Elephants of Asia exhibit, which will nearly double the area of usable space for the animals, while other existing exhibits would be revitalized to create safer, healthier exhibits for the animals. Thus, the Project is likely to directly result in improved wellbeing of Zoo animals or improve the ability for the Zoo to manage and care for its exhibit and conservation animals.