

GENERAL BIOLOGICAL RESOURCES ASSESSMENT

LA28 Equestrian Course Grading Plan

Prepared for

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1. EXECUTIVE SUMMARY

This General Biological Resources Assessment has been prepared for the proposed LA28 Equestrian Course Grading Plan at Santa Anita Park in the City of Arcadia, Los Angeles County, California. The purpose of this report is to document existing biological resources within the Project Site, evaluate potential direct, indirect, and cumulative biological effects, and identify avoidance and minimization measures appropriate for the proposed grading improvements, if required. For purposes of this report, the Project Site (PS) refers to the proposed equestrian-course grading and improvement area shown on Figures 1 and 2. Regional database review areas, including the literature review and broader critical habitat review area, are distinguished from the PS where relevant.

Santa Anita Park is a long-developed racetrack and equestrian operations complex. Most of the PS consists of developed, disturbed, manicured, ornamental, or operational land cover types, including equestrian and racetrack support areas, maintained turf, hedges, ornamental plantings, parking/service areas, circulation surfaces, compacted soils, and graded areas. The principal biological exception is the north hillside, which supports a disturbed coast live oak grove with ruderal openings. That area includes coast live oak canopy, scattered Engelmann oak, Southern California black walnut, non-native pepper trees, tree of heaven, non-native annual grasses, mustard, and patchy burr ragweed. These conditions support native tree resources and limited urban/ruderal wildlife functions, but they do not represent an intact or undisturbed oak woodland.

Southern California black walnut (*Juglans californica*) and Engelmann oak (*Quercus engelmannii*) were observed within the PS, and these taxa are of limited distribution in California. Neither is federally or state listed. The presence of individual walnut trees and Engelmann oak trees does not, by itself, establish the presence of Southern California black walnut woodland, open Engelmann oak woodland, or another sensitive natural community. The data provided herein supports classification of the north hillside as a disturbed coast live oak grove within a long-developed racetrack/equestrian operations landscape. Protected tree impacts are addressed in Appendix A, the Protected Tree Assessment and Arborist Inventory Report. Appendix A evaluates trees within the disturbance area and identifies standard protected-tree encroachments, protected-tree encroachments requiring intensive mitigation, removal-pathway trees, and protection-in-place trees (City of Arcadia. 2021). This biological resources assessment summarizes the biological relevance of those native tree resources, in the context of nesting bird habitat, native canopy structure, etc. The Project shall comply with the City of Arcadia Tree Preservation Ordinance (Development Code Section 9110.01), including all applicable tree permit requirements, conditions, and obligations.

Regional records of special-status plants, wildlife, and sensitive natural communities occur within the broader literature review area. Those regional records are important for screening but do not, by themselves, establish occurrence within the PS. In summary, special-status species evaluated for this report are expected to be absent - or have low potential to occur, because the PS lacks the intact coastal sage scrub, chaparral, alluvial fan scrub, alkaline or vernal mesic soils, marsh, vernal pool habitat, extensive riparian woodland, or open native grassland required by those species. Federally designated critical habitat occurs regionally but is not mapped within the PS either. The national wetland inventory (NWI) and surface-water mapping show Arcadia Wash, East Branch Arcadia Wash, and flowlines in the local area. However, jurisdictional aquatic resources were not observed within the PS.

With implementation of the City of Arcadia's regulatory requirements, and the applicable provisions of the California Fish and Game Code and Migratory Bird Treaty Act, and standard construction best management practices (BMPs), there would be no significant effect on biological resources from the proposal grading improvements.

2. PROJECT DESCRIPTION & LOCATION

The proposed grading improvements would support equestrian-course function, safety, circulation, drainage, transitions, access, and maintainable riding surfaces at Santa Anita Park. The Project is located in Arcadia, Los Angeles County, California, on the Mount Wilson U.S. Geological Survey 7.5-minute quadrangle. Figure 1 identifies the PS in Los Angeles County, San Bernardino Meridian, Township 1 North, Range 11 West, Sections 28 and 29. Figure 2 depicts the PS within Santa Anita Park and the surrounding local context. The surrounding setting includes Santa Anita Park racetrack and equestrian operations, parking areas, internal circulation, adjacent residential neighborhoods north of the PS, roadways including Baldwin Avenue, Colorado Place, and Huntington Drive, Arcadia Regional Park / Santa Anita Golf Course, the Los Angeles County Arboretum and Botanic Garden, and nearby drainage features. Arcadia Wash and East Branch Arcadia Wash are mapped well outside the PS and are shown on the NWI and local surface-water figures.

Santa Anita Park is a long-established racetrack and equestrian operations facility, and the land-cover data confirms that the proposed improvements shall occur in a highly disturbed, anthropogenic setting. Within the PS, more than 83% is developed, disturbed, ornamental landscaping, with an additional roughly 7% mapped as non-native grassland and ruderal herbaceous cover. Collectively, these disturbed, managed, ruderal, or non-native land-cover types comprise approximately 90% of the PS. The only native tree-associated land-cover type is disturbed coast live oak grove, which is concentrated on the north hillside. Accordingly, the PS should be understood as a developed and operational landscape with a localized native tree resource, not as an intact oak woodland or undisturbed natural habitat block. Soils mapped within the PS are urban-land complexes, that are consistent with the long-developed nature of the area, but the north hill and tree-supporting areas retain enough soil/root-zone function to support native trees and localized wildlife use.

3. METHODS

Prior to initiating field surveys, we conducted a comprehensive desktop literature review and database queries to identify biological resources known from the region. Sources reviewed included but were not limited too.

- U.S. Fish and Wildlife Service (USFWS) Resources: We consulted the USFWS online Critical Habitat Portal for any designated critical habitat in the vicinity of the PS (Figure 5). The USFWS Critical Habitat Mapper indicated no critical habitat units overlapping the PS (USFWS 2026a).
- National Wetlands Inventory (NWI¹): The USFWS NWI maps were reviewed to identify any mapped wetland or riparian features on or adjacent to the PS (USFWS 2026c). Figure 7 presents the NWI results for the PS. The NWI shows no features corresponding with the PS. In other words, there are no mapped significant wetland or riverine areas depicted on the PS. This finding is consistent with field observations.
- California Natural Diversity Database (CNDDDB): We performed a query of the CNDDDB (CDFW 2026) for reported occurrences of special-status plant and wildlife species within 5 miles of the PS. This search returned numerous records of sensitive species in the broader vicinity (Figure 4 for mapped occurrence locations). Each species identified by the CNDDDB (as well as additional species from other lists and sources) was evaluated for its potential to occur within the PS, given the Project's specific conditions and habitats (Appendix B).

¹ The NWI – which is maintained by the USFWS, was reviewed to support the identification of potential jurisdictional resources within the PS. However, this database (i.e., the NWI) is not used for regulatory jurisdictional review.

- California Native Plant Society (CNPS) Rare Plant Inventory and Calflora: We cross-referenced the CNPS Online Inventory (CNPS 2026) and the Calflora database for special-status plant species known in the general region, including information on their blooming periods and habitat preferences. The CNPS Inventory corroborated the presence of several rare plant species. However, these plants have very specific habitat requirements that are negligible or not present within the PS (Appendix B).
- USDA Web Soil Survey: We examined soil types underlying the PS using the Natural Resources Conservation Service (NRCS) Web Soil Survey (USDA-NRCS 2026). Soils can strongly influence habitat potential, especially for endemic or restricted plant species. According to the soil survey (Figure 6), the PS is mapped primarily as urban-land complexes, that are consistent with the long-developed nature of the area. Notably, no claypan or vernal-pool type soil series and no highly saline/alkaline soil series are present. The absence of such soil types suggests that certain rare plants known from Southern California are unlikely to occur.
- Aerial Imagery (Historical and Recent): We reviewed historical aerial photographs (spanning several decades) and recent high-resolution satellite imagery (Microsoft 2026) to understand past land use, land cover changes, and any remaining natural features on the PS.
- Regional Conservation Plans and Studies: We reviewed relevant planning documents and regional studies to determine whether any special designations or wildlife movement considerations apply to the PS. We also consulted broader studies such as the South Coast Wildlands Project's South Coast Missing Linkages report (South Coast Wildlands 2008) to see if any regional wildlife movement corridors were identified near the PS.

In summary, the desktop review included a CNDDDB query, CNPS rare plant review, USFWS species-list and critical habitat review, NWI, soils mapping, aerial imagery, and review of regional habitat and linkage context. These sources were used to identify species of concern, define resource targets, and shape the analysis envelope applied around the PS.

To support the analysis detailed above, pedestrian-based field surveys were also performed to assess land cover, general and dominant vegetation communities, habitat types, and species present within communities across the PS. Community descriptions were based on observed dominant vegetation composition, and derived from the criteria and definitions of widely accepted vegetation classification systems (Holland 1986 and Sawyer et al. 2009).

- Plants were identified to the lowest taxonomic level sufficient to determine whether the species observed were non-native, native, or special-status. Plants of uncertain identity were subsequently identified from taxonomic keys (Baldwin et al. 2012). Scientific and common species names were recorded according to The Jepson Manual (Baldwin et al. 2012).
- The presence of wildlife species was based on direct observation or detection of wildlife sign (e.g., tracks, burrows, nests, scat, skeletal remains or vocalization). Field data compiled for wildlife species included scientific name, and common name. Wildlife of uncertain identity were documented and subsequently identified from specialized field guides and related literature (Burt and Grossenheider 1980; Halfpenny 2000; Sibley 2000; Elbroch 2003 and Stebbins 2003).

Additionally, the PS was assessed for its potential to support special-status species based on habitat suitability comparisons with reported occupied habitats and the following potential for occurrence definitions were utilized within Appendix B.

- Absent [A] – Focused surveys for the species were negative, or the species distribution is restricted by substantive habitat requirements which do not occur – or are negligible within the PS, and no further survey or study is necessary to determine likely presence or absence of this species.
- Habitat Present [HP] – Species distribution is restricted by substantive habitat requirements which occur within the PS, and further assessment may be necessary to determine likely presence or absence of species.
- Present [P] – Species or species sign were observed within the PS, or historically has been documented within Project limits.
- Critical Habitat [CH] – The PS is located within a USFWS-designated critical habitat unit.

General pedestrian-based biological surveys and focused technical surveys were conducted to evaluate vegetation, habitat, wildlife use, aquatic resources, and potential occurrence of special-status species. Survey data was collected using a mix of standard field methods depending on survey type and personnel, including ArcGIS Field Maps / GIS-enabled field review, traditional field notebooks, photographs, binocular-assisted visual scanning, and species-specific protocol methods where applicable. All accessible areas within the PS were reviewed in the field. Where access was constrained within the larger study area by fencing, private property, active industrial use, topography, or other safety / legal limitations, observations were made from adjacent rights-of-way, roads, safe vantage points, and other lawful observation areas.

The presence or absence of wetlands, waterways, riparian and riverine resources was evaluated through literature review and repeated on-site biological fieldwork. Field review considered hydrologic indicators, topography, vegetation, soils, and the presence or absence of channels, drainages, ordinary high-water indicators, riparian canopy, or other water-associated habitat features. This evaluation was completed using additional data acquired from current and historic imagery, hydrologic and soils databases, analytic tools, and physical on the ground analyses. Historic and current aerial photography of the PS were reviewed prior to and during the field assessments. Aerial photography was informative with deference to the state and function of land resources in both the current and historic context. The U.S. Environmental Protection Agency (EPA) WATERS GeoViewer tool also provided access to spatial data sets - such as interactive Upstream/Downstream search capabilities to assist in determining the status of potential riparian, riverine and drainage signatures within the region (epa.maps.arcgis.com/apps/webappviewer). Surveyors inspected the PS for potential indicators of Waters of the United States (WOTUS), Waters of the State (WOTS), and other aquatic resources, including any well-defined Ordinary High-Water Mark (OHWM), bed-and-bank morphology, hydrophytic vegetation dominance, hydric soils, concentrated flow, and other signs of wetland or stream processes.

4. RESULTS

General pedestrian-based biological surveys and focused technical surveys were conducted in February, March, April and May of 2026. Surveys were conducted under clear skies and mild weather. Daytime temperatures ranged from approximately 60–86°F, with calm to light winds (0–10 mph) providing good detection conditions. Visibility was excellent, and the survey timing (daytime) was suitable for detecting plants and diurnal wildlife. The PS is located within Santa Anita Park, a long-developed racetrack and equestrian operations complex in Arcadia, California. Existing biological conditions reflect that operational setting. The majority of the PS consists of developed, disturbed, manicured, ornamental, or operational land cover, including equestrian and racetrack support areas, maintained turf, hedges, ornamental plantings, parking/service areas, circulation surfaces, compacted soils, and graded areas. The principal

area of native tree cover occurs on the north hillside, where coast live oak canopy, non-native trees, and disturbed ruderal openings form a mosaic. This area provides localized biological function, including native tree canopy, nesting bird substrate, raptor perch/nest potential, limited foraging habitat for common wildlife, and where the surveys documented CRPR 4.2 native tree taxa. However, the available data does not support characterizing the north hillside as intact oak woodland, Southern California black walnut woodland, Open Engelmann Oak Woodland, or another undisturbed sensitive natural community. Representative photos of the study area are provided in Appendix C.

Vegetation communities and land cover types are shown on Figure 3 and detailed below.

- Developed/Disturbed / Ornamental Landscaping occurs throughout most of the PS and includes paved or compacted operational surfaces, equestrian and racetrack support areas, internal circulation, graded margins, manicured turf, hedges, ornamental trees and shrubs, and other maintained landscape features. This land cover type does not represent a native vegetation community. Its biological function is limited primarily to localized nesting, perching, and foraging opportunities for common urban-adapted wildlife and potential nesting bird use of ornamental trees, shrubs, and structures.
- Non-Native Grassland / Ruderal Herbaceous occurs in disturbed openings and slope areas where non-native annual grasses and ruderal forbs dominate. Representative species include wild oat (*Avena fatua*), ripgut brome (*Bromus diandrus*), mustard-family species, and other disturbance-adapted herbaceous species, with patchy weakleaf bur ragweed (*Ambrosia confertiflora*) also noted in the north hillside area. This land cover type does not represent native grassland or a sensitive natural community. It may provide limited seasonal cover and foraging habitat for common wildlife and may occur as openings within or adjacent to the disturbed Coast Live Oak Grove.
- Disturbed Coast Live Oak Grove / Woodland occurs primarily on the north hillside. Coast live oak is the predominant native tree, and individual Engelmann oak (*Quercus engelmannii*) and Southern California black walnut (*Juglans californica*) trees are also present. The understory and openings are influenced by disturbance and include non-native grasses, mustard, ruderal vegetation, non-native trees, and operational disturbance. This designation is intended to disclose the native oak canopy and associated biological value while avoiding the implication that the area is intact or undisturbed oak woodland.
- Non-Native Pepper Tree–Myoporum Woodland is characterized by non-native tree canopy dominated or co-dominated by Peruvian peppertree (*Schinus molle*), Brazilian peppertree (*Schinus terebinthifolius*), and/or myoporum (*Myoporum* sp.), with variable shrub and herbaceous cover. This type provides shade, perching, and potential nesting substrate for common wildlife but is not a native woodland or sensitive natural community.

4.1. Plants and Special-Status Plants

The botanical compendium documents 66 plant taxa observed within the study area. Native taxa recorded include California live oak (*Quercus agrifolia*), Southern California black walnut (*Juglans californica*), Engelmann oak (*Quercus engelmannii*), Mexican elderberry (*Sambucus nigra* subsp. *caerulea*), laurel sumac (*Malosma laurina*), annual bur-sage (*Ambrosia acanthicarpa*), weakleaf bur ragweed (*Ambrosia confertiflora*), pitseed goosefoot (*Chenopodium berlandieri*), Cucamonga manroot (*Marah macrocarpa*), intermediate suncup (*Camissoniopsis intermedia*), long-stem wild buckwheat (*Eriogonum elongatum* var. *elongatum*), sacred thorn-apple (*Datura wrightii*), greenspot nightshade (*Solanum douglasii*), and stinging

nettle (*Urtica dioica*). Naturalized and non-native taxa were also common throughout the study area and included Peruvian peppertree (*Schinus molle*), Brazilian peppertree (*Schinus terebinthifolius*), oleander (*Nerium oleander*), English ivy (*Hedera helix*), Washington fan palm (*Washingtonia robusta*), Italian thistle (*Carduus pycnocephalus subsp. pycnocephalus*), common sowthistle (*Sonchus oleraceus*), several mustard-family taxa, prickly Russian thistle (*Salsola tragus*), tree of heaven (*Ailanthus altissima*), Hottentot fig (*Carpobrotus edulis*), and several non-native grasses. A complete list of plant species observed is provided in Appendix D.

Special-status plant taxa evaluated in Appendix B are not expected or have absent potential to occur within the PS because the species distribution is restricted by substantive habitat requirements which do not occur – or are negligible. The PS lacks intact chaparral, coastal sage scrub, alluvial fan scrub, alkaline or vernal mesic soils, marsh, vernal pool habitat, rocky/granitic/talus substrates, and extensive riparian habitat required by these regional special-status plants.

4.2. Wildlife and Special-Status Wildlife

Wildlife use of the PS is expected to be dominated by common urban and disturbance-tolerant species that use ornamental trees, maintained turf, ruderal vegetation, buildings, and equestrian/racetrack operations areas. Species detected include common birds such as American crow (*Corvus brachyrhynchos*), common raven (*Corvus corax*), house finch (*Haemorhous mexicanus*), mourning dove (*Zenaida macroura*), rock pigeon (*Columba livia*), European starling (*Sturnus vulgaris*), house sparrow (*Passer domesticus*), black phoebe (*Sayornis nigricans*), Anna's hummingbird (*Calypte anna*), and red-tailed hawk (*Buteo jamaicensis*) as an occasional forager or potential nester in mature trees. California ground squirrel (*Otospermophilus beecheyi*) and western fence lizard (*Sceloporus occidentalis*) were also observed in disturbed open areas. Appendix D provides the wildlife species list.

Existing trees, shrubs, hedges, and structures provide potential nesting habitat for common birds. Mature trees may provide raptor perching or nesting opportunities. Some mature trees or structures could provide limited bat roosting opportunities if cavities, loose bark, crevices, guano, staining, odor, or other roost indicators are present. No guano accumulations, staining, chattering, odor, or other active bat roost indicators were documented during the field work. Accordingly, bat roost potential is considered limited and precautionary rather than a confirmed resource.

Regional records of special-status wildlife occur within the broader literature review area shown in Figure 4. Those records are useful for screening but do not establish occurrence within the PS. Regional special-status wildlife species are expected to be absent because the PS lacks the required habitat. Riparian obligate species such as least Bell's vireo (*Vireo bellii pusillus*), southwestern willow flycatcher (*Empidonax traillii extimus*), western yellow-billed cuckoo (*Coccyzus americanus occidentalis*), and yellow-breasted chat (*Icteria virens*) require riparian woodland, willow scrub, or dense riparian thickets; which are not present within the PS. Coastal California gnatcatcher (*Polioptila californica californica*) requires coastal sage scrub, which is not present either. Burrowing owl (*Athene cunicularia*) requires suitable open habitat with appropriate burrow structure and low vegetation conditions; those conditions are not present at a level expected to support occupancy. Crotch's bumble bee (*Bombus crotchii*) and American bumble bee (*Bombus pensylvanicus*) warrant careful habitat-based evaluation because regional records occur and limited seasonal floral resources may be present in ruderal areas. However, the PS lacks extensive native scrub, native grassland, or high-quality native flowering plant communities typically associated with sustained occupancy.

4.3. Critical Habitat

Figure 5 depicts federally designated critical habitat in the broader region. Critical habitat for Branton's milk-vetch (*Astragalus brauntonii*), coastal California gnatcatcher (*Polioptila californica californica*), Santa Ana sucker (*Catostomus santaanae*), and southwestern willow flycatcher (*Empidonax traillii extimus*) occur regionally in the San Gabriel Valley area. However, no designated critical habitat is mapped within the PS. Therefore, no direct impact to federally designated critical habitat is expected.

4.4. Wetlands, Waters, and Riparian Resources

Figure 7 shows National Wetlands Inventory resources in the local area. Figure 6 shows soils mapped within and around the PS. Figures 8 and 9 show regional and local surface-water flowlines and hydrologic context. Arcadia Wash, East Branch Arcadia Wash, and mapped flowlines occur in the vicinity of Santa Anita Park, but jurisdictional aquatic resources were not observed within the PS during the field surveys. No wetlands, riparian habitat, federal or state jurisdictional waters, or CDFW-jurisdictional streambed/riparian resources were documented within the PS based on the available field and desktop data. This conclusion is supported by the absence of hydrophytic vegetation dominance, hydric soil indicators, sustained wetland hydrology, natural bed-and-bank morphology, and ordinary high-water mark indicators within the PS.

4.5. Protected Trees and Native Tree Resources

Appendix A provides a tree assessment and arborist inventory for the Project. The arborist report evaluates trees identified as potentially subject to disturbance as part of the equestrian course grading plan improvements. The impacts occur primarily within the rear operational/support portion of a long-developed Santa Anita Park racetrack and equestrian operations landscape. The arborist report identifies standard protected-tree encroachments, protected-tree encroachments requiring intensive mitigation, removal-pathway trees, and protection-in-place trees (City of Arcadia. 2021, City of Arcadia. 2025a, City of Arcadia. 2025b). The Project shall comply with the City of Arcadia Tree Preservation Ordinance (Development Code Section 9110.01), including all applicable tree permit requirements, conditions, and obligations.

5. IMPACT ANALYSIS AND RECOMMENDATIONS

5.1. Special-Status Plants

Special-status plant taxa are not expected or have absent potential to occur within the PS because the species distribution is restricted by substantive habitat requirements which do not occur – or are negligible (Appendix B). The PS lacks intact chaparral, coastal sage scrub, alluvial fan scrub, alkaline or vernal mesic soils, marsh, vernal pool habitat, rocky/granitic/talus substrates, and extensive riparian habitat required by these regional special-status plants.

5.2. Special-Status Wildlife

Direct impacts to special-status wildlife are not expected because suitable habitat is absent, marginal, or highly disturbed. Crotch's bumble bee and American bumble bee are addressed within Appendix B, and were not observed within the PS during 2026 field survey events. Limited seasonal floral resources may occur in ruderal areas, but the PS lacks high-quality native flowering.

5.3. Nesting Birds and Bats

Trees, shrubs, hedges, ruderal vegetation, and structures within the PS may provide nesting habitat for common birds. Mature trees may also provide nesting or perching habitat for raptors. To the extent feasible, vegetation removal, tree trimming, grading, or demolition should occur outside the nesting bird

season, generally February 1 through August 31. Since native birds, raptors, their nests, and their eggs are protected under the Migratory Bird Treaty Act and applicable provisions of the California Fish and Game Code, if vegetation removal, tree trimming, grading, demolition, or other ground disturbance occurs during the nesting season, a biologist shall confirm no active nests are present prior to disturbance. If active nests are identified, species-appropriate avoidance buffers shall be established and maintained until nesting activity has concluded, as determined by a biologist. Buffer distances may be adjusted by a biologist based on species, nest location, existing disturbance levels, line-of-sight conditions, and construction activities to maintain compliance with applicable wildlife protection laws and avoid the take of nesting birds.

No active bat roosts or maternity colonies were documented during the field surveys. However, mature trees and structures may provide limited roosting opportunities if cavities, loose bark, crevices, staining, guano, odor, or other roost indicators are present. To the extent feasible, removal or heavy trimming of mature trees and demolition or alteration of structures with potential bat roost features should occur outside the maternity roost season, generally March 1 through August 31. Since native bats are protected wildlife under the California Fish and Game Code, if mature trees or structures with potential roost features are proposed for removal or substantial modification from March 1 through August 31, a biologist shall confirm that no bat roost is present prior to disturbance. If an active roost is identified, appropriate avoidance measures, buffers, phased exclusion procedures, or schedule modifications shall be implemented to avoid the take of bats and maintain compliance with applicable wildlife protection requirements.

5.4. Wetlands, Waters, and Drainage Features

No jurisdictional aquatic resources were documented within the PS based on the available field and desktop review.

5.5. Protected Tree Coordination

Appendix A demonstrates compliance with the City of Arcadia Tree Preservation Ordinance (Development Code Section 9110.01), including all applicable tree permit requirements, conditions, and obligations.

5.6. Construction BMPs and WEAP

Standard construction BMPs should be implemented to reduce dust, sediment transport, spills, lighting, noise, wildlife attraction, and inadvertent encroachment outside approved disturbance limits (Table 1). A Worker Environmental Awareness Program (WEAP) shall be provided before construction to explain nesting bird restrictions, protected trees and TPZs, limits of disturbance, trash and food waste containment, wildlife encounter procedures, trench inspection requirements, erosion and spill BMPs, and stop-work authority. If wildlife is encountered during construction, personnel shall not capture, handle, harass, or relocate the animal unless directed by a biologist or appropriate agency. Work shall pause in the immediate area if protected wildlife, active nests, or active bat roosts are observed, and a biologist shall evaluate the condition before work resumes.

Table 1. Regulatory Compliance and Standard Construction Requirements

<i>Code / Basis</i>	<i>Resource / Topic</i>	<i>Requirement</i>
<i>Migratory Bird Treaty Act (MBTA); California Fish and Game Code (CFGF) §§ 3503, 3503.5, 3513</i>	Nesting Birds and Raptors	If vegetation removal, tree trimming, grading, demolition, or other ground disturbance occurs during the nesting season, generally February 1 through August 31, a biologist shall conduct a preconstruction nesting bird survey of the work area and adjacent areas that may be

<i>Code / Basis</i>	<i>Resource / Topic</i>	<i>Requirement</i>
		affected by the work no more than three days before disturbance. If active nests are identified, species-appropriate avoidance buffers shall be established and maintained until nesting activity has concluded, as determined by the biologist. Buffer distances may be adjusted based on species, nest location, existing disturbance levels, line-of-sight conditions, and construction activities to maintain compliance with applicable wildlife protection laws and avoid take of nesting birds.
<i>CFGF § 4150</i>	Native Bats	If mature trees or structures with potential roost features are proposed for removal or substantial modification during the maternity roost season, generally March 1 through August 31, a biologist shall confirm that no active bat roost is present prior to disturbance. If an active roost is identified, appropriate avoidance measures, buffers, phased exclusion procedures, or schedule modifications shall be implemented to avoid take of bats and maintain compliance with applicable wildlife protection requirements.
<i>Arcadia Development Code § 9110.01</i>	Protected Trees	The Project shall implement the City-approved tree removal and protected-tree requirements for retained trees, including fencing, signage, exclusion of staging/storage within TPZs, root-sensitive excavation, arborist monitoring, root-discovery hold points, pruning controls, replacement requirements where applicable, and compliance documentation. Biological and arborist requirements shall be coordinated where tree work occurs during the nesting bird season.
<i>Arcadia MC § 9108.11.020; approved grading plans/conditions</i>	Construction BMPs and Worker Awareness	The Project shall implement standard construction BMPs and required by applicable permit conditions, including erosion and sediment controls, dust suppression, spill prevention, contained fueling/washout areas, trash containment, and other construction controls. Construction personnel shall receive environmental compliance training covering limits of disturbance, nesting birds, raptors, bats, protected trees and TPZs, wildlife encounters, trash and food waste control, erosion and spill BMPs, and stop-work authority.

6. CONCLUSIONS

The PS is predominantly a developed, manicured, ornamental, and operational racetrack/equestrian landscape within Santa Anita Park. The principal biological exception is the north hillside, which supports a disturbed coast live oak grove with ruderal openings, non-native trees, non-native grasses, mustard, and patchy burr ragweed. Coast live oak is the predominant native tree in this area.

Appendix A evaluates protected trees and identifies standard encroachments, intensive-mitigation encroachments, removal-pathway trees, and protection-in-place trees. The Project shall comply with the City of Arcadia Tree Preservation Ordinance (Development Code Section 9110.01), including all applicable tree permit requirements, conditions, and obligations.

Regional CNDDDB and special-status species records occur within the broader literature review area; however, special-status species are not expected or have an absent potential to occur within the PS because the species distribution is restricted by substantive habitat requirements which do not occur – or are negligible. The PS lacks intact coastal sage scrub, chaparral, alluvial fan scrub, alkaline or vernal mesic habitat, marsh, vernal pool habitat, extensive riparian woodland, and open native grassland. Federally designated critical habitat occurs regionally but is not mapped within the PS. NWI and surface-water figures show Arcadia Wash, East Branch Arcadia Wash, and flowlines in the vicinity. However, jurisdictional aquatic resources were not documented within the PS.

With implementation of the City of Arcadia’s regulatory requirements, and the applicable provisions of the California Fish and Game Code and Migratory Bird Treaty Act, and standard construction best management practices (BMPs), there would be no significant effect on biological resources from the proposal grading improvements.

7. CERTIFICATION

I hereby certify that the statements furnished above and in the attached figures present the data and information required for this biological resources assessment, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief. The services performed and documented in this report have been conducted in a manner consistent with the level of care and skill ordinarily exercised by professional biological consultants under similar circumstances.

DATE: June 10, 2026

SIGNED: Lenny Malo MS, Principal Biologist & Regulatory Specialist

8. REFERENCES

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Figures

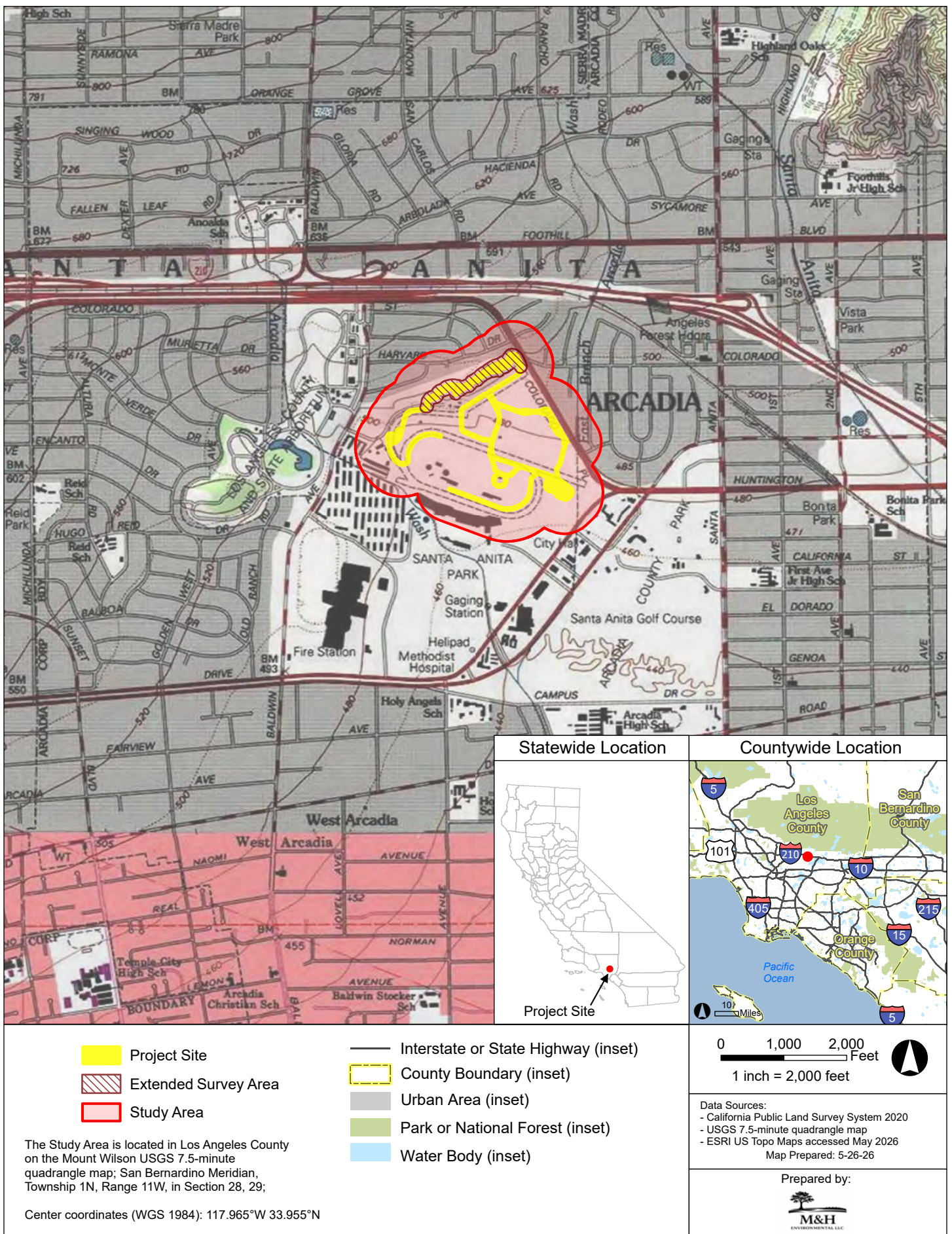


Figure 1. Regional Location



- Project Site (15.78 ac)
- Extended Survey Area (10.88 ac)
- Study Area (220.72 ac)

0 350 700 Feet
1 inch = 700 feet

Data Sources:
- ESRI World Imagery accessed May 2026

Map Prepared: 5-27-26

Prepared by:

M&H
ENVIRONMENTAL LLC

Figure 2. Site Vicinity

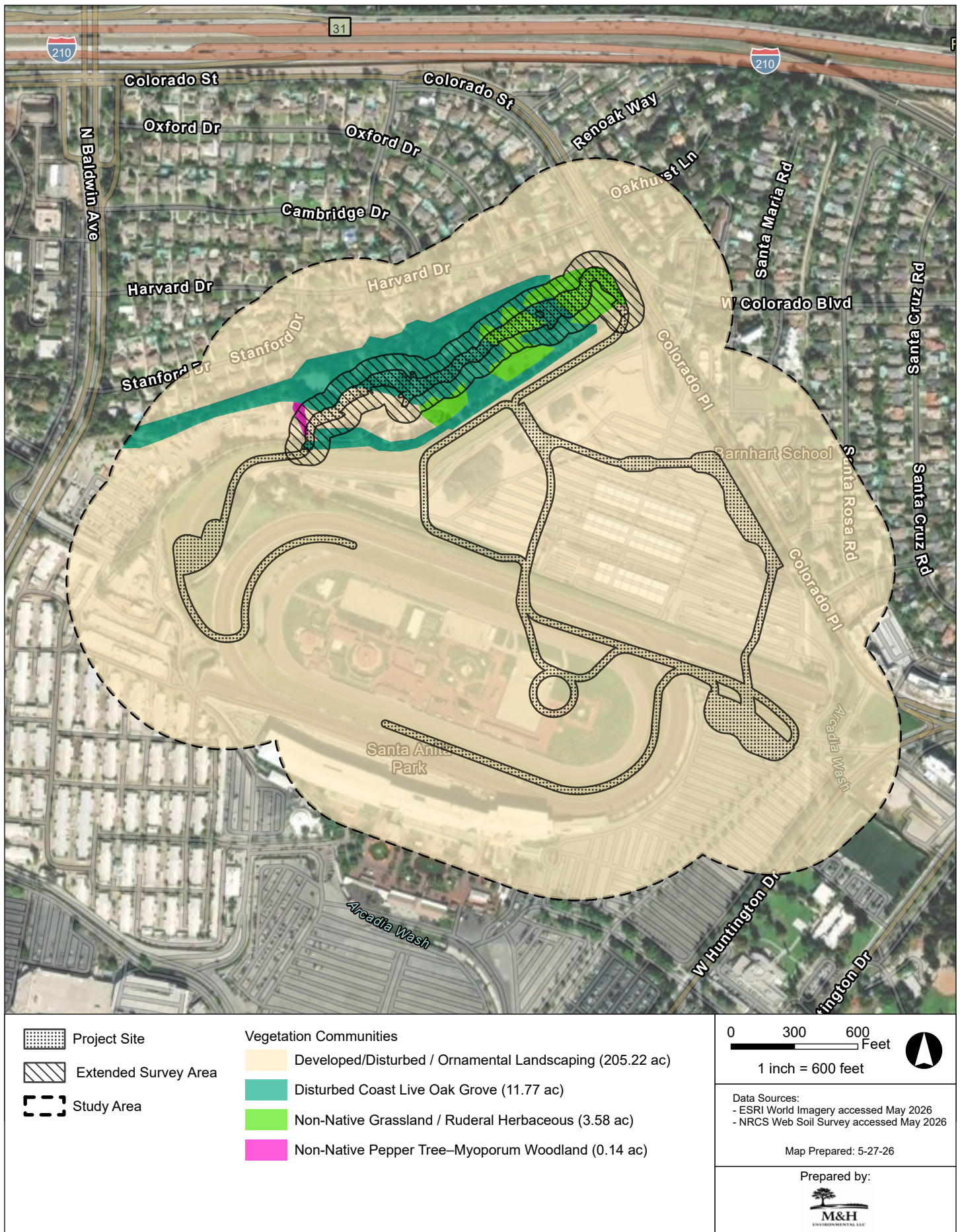
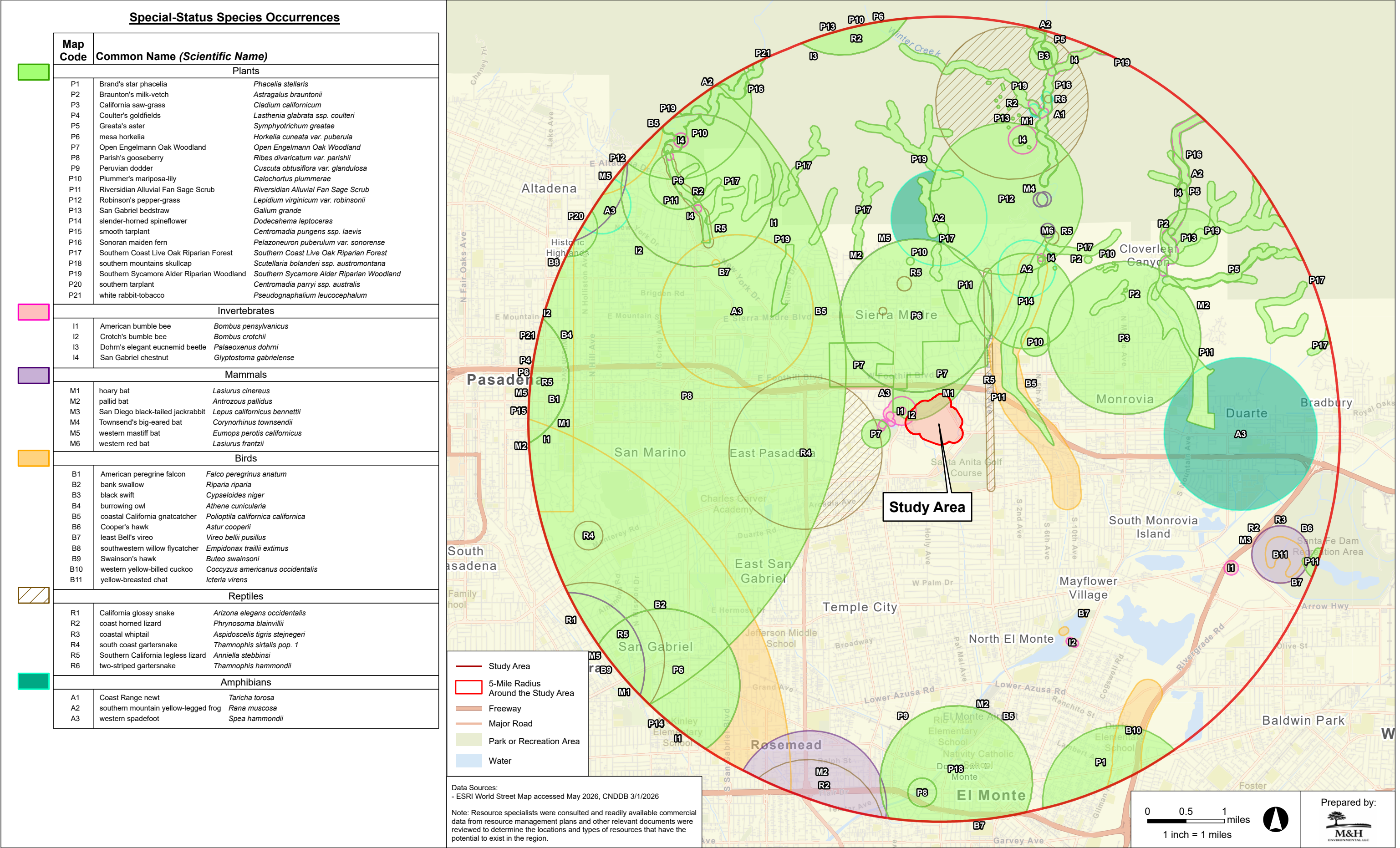


Figure 3. Vegetation Communities and Land Cover Types



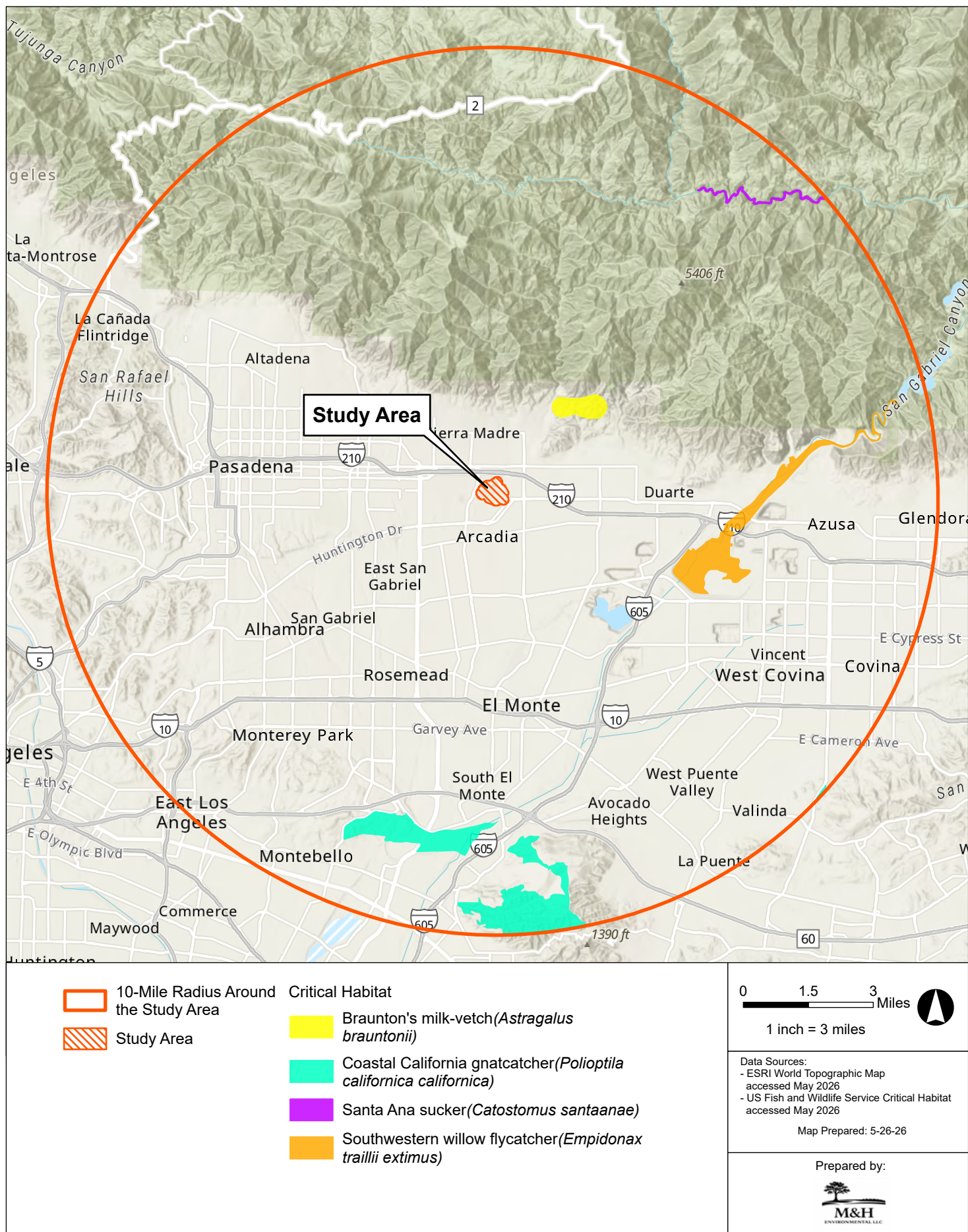


Figure 5. USFWS Critical Habitat

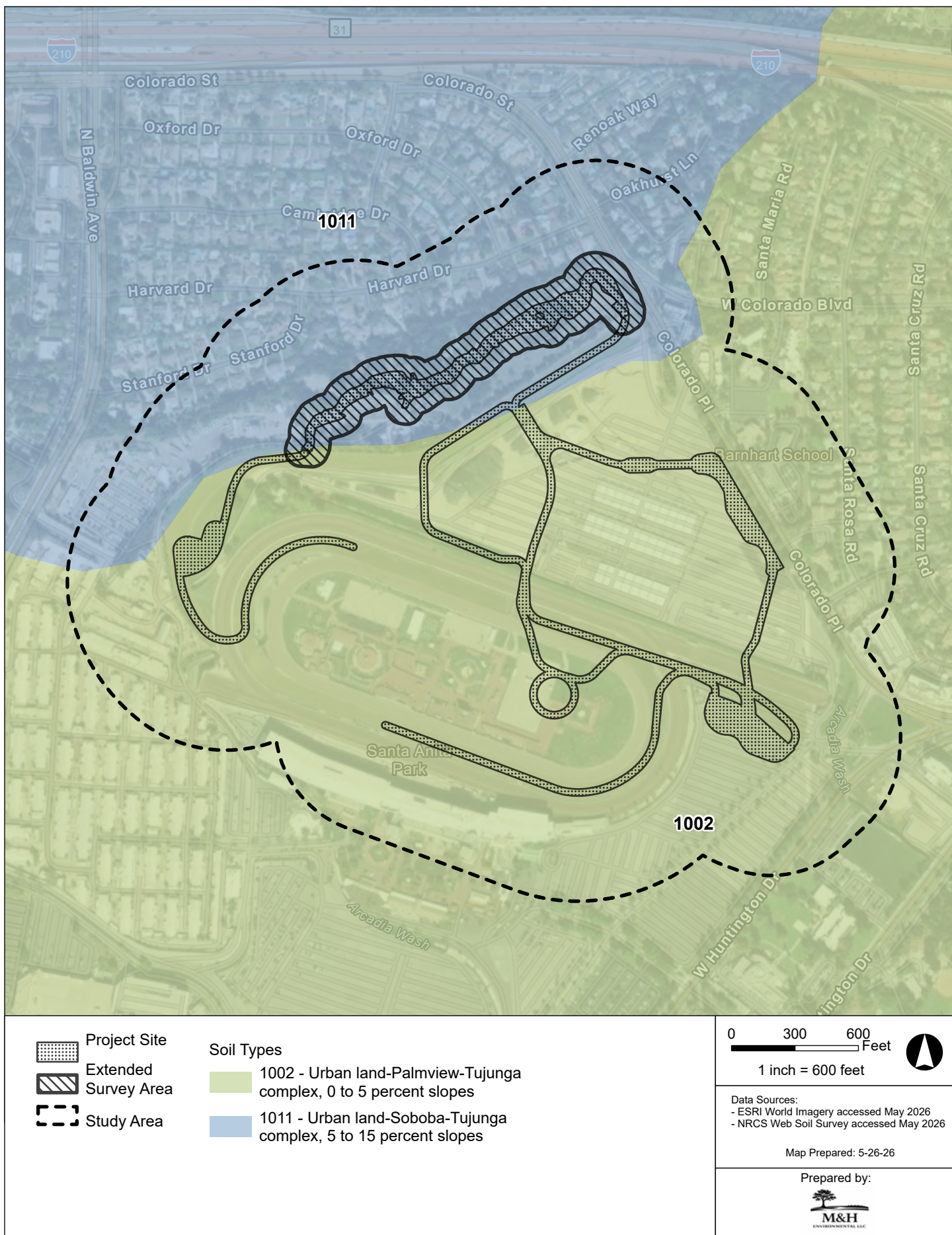


Figure 6. Soils Map

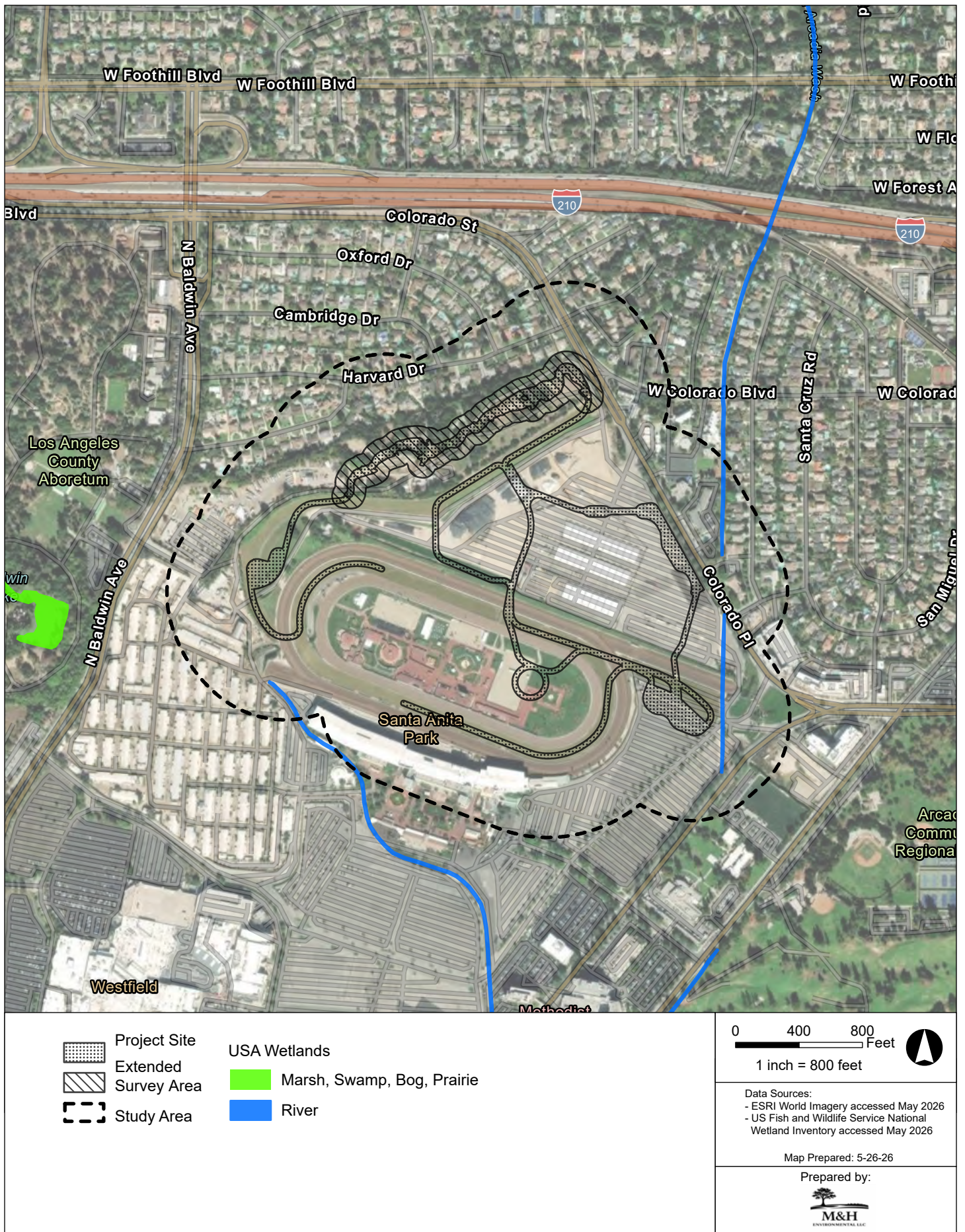


Figure 7. National Wetland Inventory

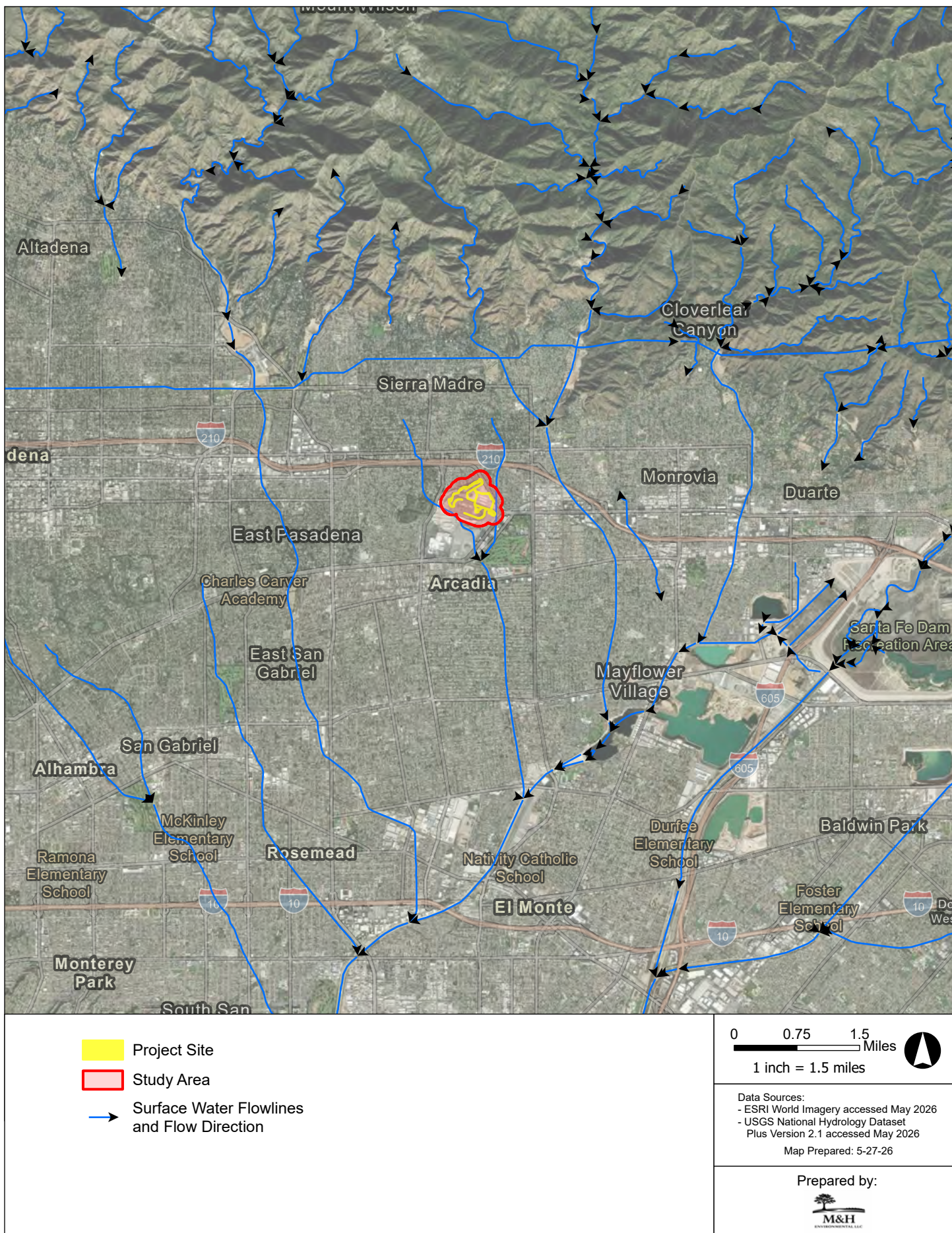


Figure 8. Surface Water Map (Regional Area)

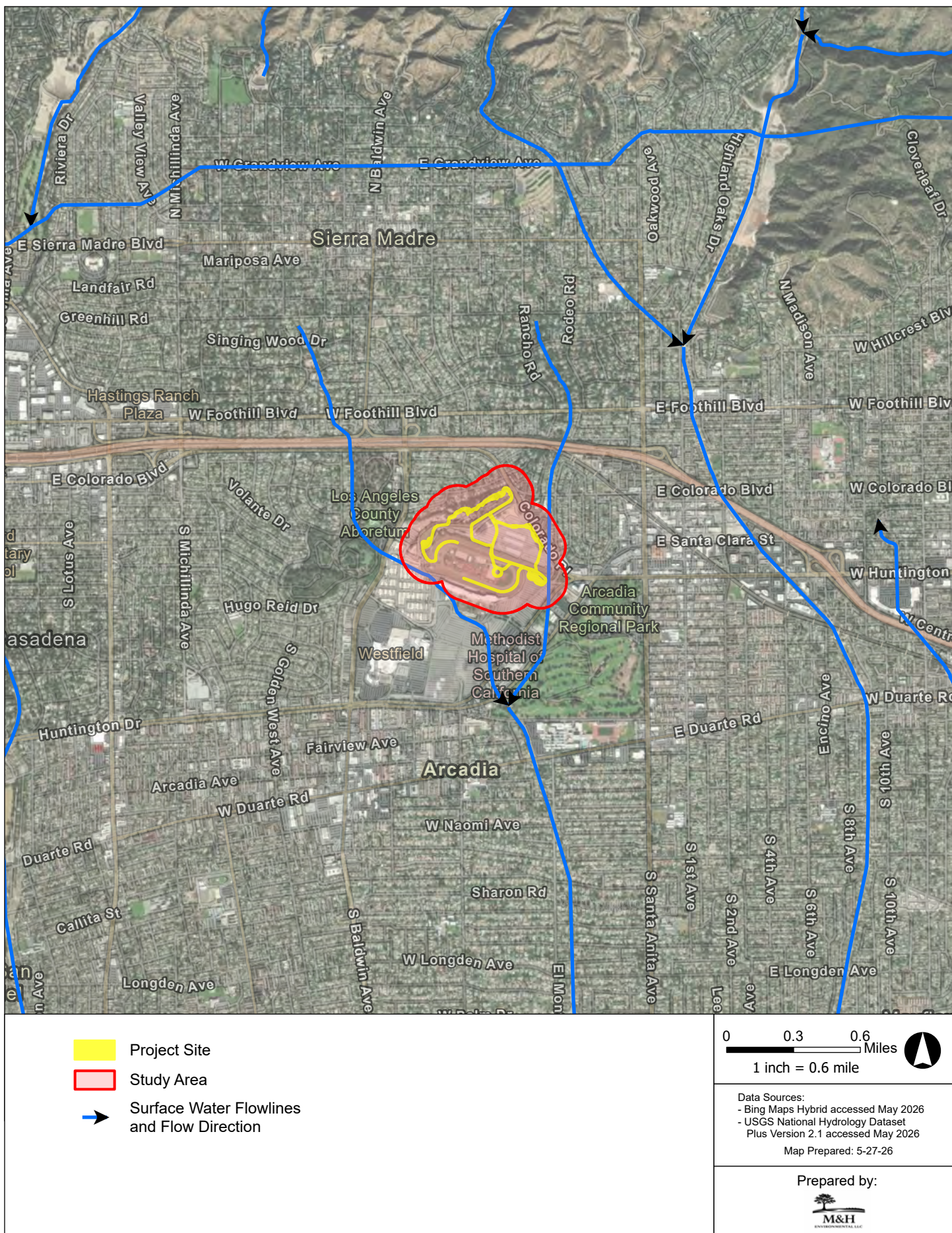


Figure 9. Surface Water Map (Local Area)

Appendix A – Protected Tree Inventory Report

Protected Tree Assessment and Arborist Inventory Report LA28 Equestrian Course Grading Plan

Prepared for

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Date

June 2026

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APPENDICES

- Appendix A – Protected Tree Inventory and Permit Matrix
- Appendix B – Mitigation Table
- Appendix C – Photo Log

1. EXECUTIVE SUMMARY

This report evaluates 92 protected trees identified as potentially subject to disturbance as part of the proposed LA28 equestrian course grading plan improvements at Santa Anita Park in Arcadia, California (Figures 1 and 2). The report relies on a February and April 2026 inventory of trees within the limits of the proposed equestrian course grading plan improvements. The protected tree impacts predominately occur within the rear operational/support portion of a long-developed Santa Anita Park racetrack and equestrian operations complex, rather than within undisturbed oak woodland. Santa Anita Park has operated at this location since 1934 and public records document stables, receiving and saddling barns, service areas, internal circulation, equine medical facilities, parking areas, drainage modifications, imported track materials, and repeated operational facility modifications over several decades (LA Conservancy 2025; Santa Anita Park 2025; City of Arcadia 2018). This anthropogenic setting does not eliminate the need for protected-tree review. Rather, it provides the appropriate context for evaluating incremental project effects to the actual existing trees, and the functions they continue to provide. The impacted oaks remain locally important and protected by Arcadia ordinance. Therefore, the report evaluates tree-specific condition, grading plan dripline and tree protection zone (TPZ) disturbances, retention feasibility, protection measures, and replacement mitigation relative to current conditions (California Code of Regulations 2026; City of Arcadia 2021; Costello, MacDonald, and Jacobs 1991).

- The current disposition of the evaluated trees is as follows (Figure 3); 25 standard protected tree encroachments, 20 protected tree encroachments requiring intensive mitigation, 34 removal-pathway trees, and 13 protection-in place (i.e., avoid / prune-as-needed) trees. This structure should be understood as the residual impact condition after substantial avoidance and minimization.
- The project began with a broader inventory of approximately 347 trees at Santa Anita Park in February 2026, followed by multiple site visits, arborist coordination, track-alignment revisions, and grading-plan modifications. Through this iterative process, the team preserved many trees, prioritized higher-value and more viable protected trees where feasible, and reduced protected-tree impacts by modifying course geometry and grading limits before preparing the present analysis.

The impacted trees consist of Coast Live Oak (*Quercus agrifolia*) and Engelmann Oak / Mesa Oak (*Quercus engelmannii*). Each tree identified in this document appears to satisfy Arcadia protected-oak criteria based on inventory diameter values (Appendix A). Arcadia requires a tree permit for protected-tree removal and for encroachment into the canopy or protected zone of a protected tree; pruning or trimming may avoid a tree permit only where it is performed according to International Society of Arboriculture (ISA) / American National Standards Institute (ANSI) standards and with a Certified Arborist recommendation.

For protected-tree mitigation accounting, this report treats all 34 removal-pathway trees as protected. The Applicant requests that the City approve a 1:1 replacement ratio, resulting in 34 proposed replacement trees. The requested ratio is presented as a grading plan-specific mitigation approach, not as a statement of the City default replacement standard. The request is supported by the project's avoidance and minimization record, including review of an approximately 347-tree population, refinement of alignment and grading inputs, retention or avoidance of 56 active protected trees within the current report scope, and a replacement strategy focused on durable public or community benefit. Final replacement ratio, species, size, and planting locations remain subject to City review and Director approval. This report also expands the tree protection and monitoring measures into a complete Tree Protection Plan. Retained trees are not treated as passive non-impact items; they require fencing, contractor controls, arborist monitoring, root-sensitive excavation, pruning controls, root-discovery hold points, and final compliance documentation.

Table 1. Protected Status and Permit Category Summary

Recommendation Category	Count	Tree Numbers	Basis
<i>Protected Tree Encroachment Permit (TRE)¹</i>	25	6, 27, 32, 68, 110, 115, 116, 118, 136, 200, 202, 206, 208, 218, 290, 292, 315, 316, 327, 332, 334, 336, 337, 340, 344	Retained protected trees with manageable TPZ encroachment under standard protection and monitoring controls.
<i>Protected Tree Encroachment Permit with Intensive Mitigation (TRE with Intensive Mitigation)²</i>	20	13, 14, 21, 33, 37, 38, 40, 70, 80, 85, 117, 119, 135, 203, 205, 207, 331, 333, 341, 347	Retained protected trees where encroachment remains feasible only with enhanced arborist monitoring, root-sensitive methods, and hold points.
<i>Healthy Protected Tree Removal Permit (TRH)³ / Dead, Diseased, or Hazardous Tree Evaluation / Permit Pathway (TRD)⁴</i>	34	16, 18, 19, 20, 24, 25, 42, 44, 66, 78, 79, 87, 89, 109, 122, 123, 124, 126, 127, 128, 129, 130, 143, 144, 149, 150, 256, 263, 318, 320, 323, 342, 343, 345	Removal-pathway protected trees where residual grading, TPZ impact, or condition reduces retention feasibility.
<i>Protection-in Place (Avoid / Prune as Needed / No Permit</i>	13	26, 81, 82, 83, 197, 199, 209, 219, 220, 314, 335, 338, 346	Trees to be protected and avoided; no permit as no protected-zone encroachment or removal.

Notes:

¹ Protected Tree Encroachment Permit (TRE) — City of Arcadia permit required for proposed construction-related encroachment, grading, excavation, paving, trenching, pruning, or other disturbance within the protected zone or canopy/dripline area of a protected tree.

² Protected Tree Encroachment Permit with Intensive Mitigation (TRE with Intensive Mitigation) — Project-specific designation used in this report for trees proposed for retention where impacts are substantial enough to require enhanced protection measures, such as arborist monitoring, hand or pneumatic excavation, root-protection fencing, irrigation management, construction hold points, and additional impact minimization measures beyond standard TRE conditions.

³ Healthy Protected Tree Removal Permit (TRH) — City of Arcadia permit required for the removal of a protected tree that is considered living, structurally viable, or not otherwise classified as dead, diseased, dying, or hazardous.

⁴ Dead, Diseased, or Hazardous Tree Evaluation / Permit Pathway (TRD) — City of Arcadia review and permit pathway applicable where a protected tree may qualify for removal based on documented dead, diseased, dying, hazardous, or structurally compromised condition, as confirmed by a Certified Arborist and subject to City review and approval.

2. PROJECT DESCRIPTION & ENVIRONMENTAL SETTING

This report has been prepared as a technical arborist and protected-tree permit support document for proposed LA28 equestrian course grading plan improvements within Santa Anita Park in the City of Arcadia (Figures 1 and 2). The report evaluates trees subject to proposed work within or near the dripline/tree protection zone, identifies appropriate Arcadia permit pathways, recommends retention and removal dispositions, and presents tree protection, monitoring, and replacement mitigation measures for the residual impact footprint. The proposed grading plan is intended to support equestrian-course function, safety, circulation, transitions, drainage, access, and maintainable riding surfaces. These functional requirements create geometric and topographic constraints that must be balanced against tree preservation, TPZ avoidance, and root-zone protection. Grading impacts are therefore evaluated in relation to tree-specific condition, TPZ disturbance, retention feasibility, construction methods, and long-term viability.

The analysis should be understood as a residual condition after avoidance and minimization. The project team refined the alignment and grading assumptions through field review and coordination, and the current 92-tree active dataset represents the resulting disposition framework rather than the full initial universe of 347 trees evaluated. Where removal remains recommended, the recommendation is based on residual construction conflict, TPZ impact magnitude, tree condition, and long-term viability, not

convenience alone. The affected area lies within a long-developed Santa Anita Park operational landscape that includes equestrian and racetrack support functions, internal circulation, drainage modifications, service areas, prior grading, existing fill, and managed surfaces. Field observations also indicate that many trees subject to prior fill, grading, or excavation do not presently exhibit significant decline solely from those prior conditions, although potential exceptions may occur for individual tree-specific cases. Accordingly, this report does not assume prior fill equals failure; it evaluates current vigor, crown density, defects, TPZ impact, and construction feasibility tree by tree.

The proposed limits of grading improvements are located predominately within the rear operational support portions of Santa Anita Park, a long-established thoroughbred racing and equestrian facility in Arcadia. Publicly available historic and operational records document that the property has functioned as a racetrack complex since 1934 and has long contained stables, receiving and saddling barns, service areas, parking areas, internal circulation, equine medical facilities, and other operational infrastructure (LA Conservancy 2025; Santa Anita Park 2025). The rear operations area is therefore best characterized as a developed racetrack-support landscape containing protected oaks within an anthropogenically altered matrix. This landscape is influenced by prior grading, surface compaction, operational circulation, impervious or semi-impervious cover, managed drainage, irrigation associated with turf and racetrack uses, and repeated facility modifications. This context is materially different from an intact oak woodland reference condition. This setting distinction matters arboriculturally. Mature oaks can be sensitive to root-crown disturbance, trenching, fill, paving, compaction, poor soil aeration, altered drainage, and inappropriate summer irrigation. In an operational landscape, rooting patterns, soil oxygen, infiltration, and pre-existing stress conditions may differ substantially from those in undisturbed native stands (Costello, MacDonald, and Jacobs 1991; Costello, Hagen, and Jones 2011; University of California Agriculture and Natural Resources 2020). This approach recognizes both the long-developed operational conditions and the continuing regulatory and arboricultural value of the protected oaks (Costello, MacDonald, and Jacobs 1991; Day et al. 2010).

3. REGULATORY FRAMEWORK

Arcadia Division 10 Tree Preservation establishes the local protected-tree framework. The City regulates protected trees on public and private property and requires permits for protected-tree removal and for encroachment into the protected zone. Arcadia protects Coast live oak and Engelmann oak where trunk diameter exceeds 4 inches at approximately 4.5 feet above the root crown, or where applicable multi-trunk criteria are met. Other oaks, sycamores, and mature trees are regulated under their respective code thresholds and location requirements. For healthy protected-tree removals, the City requires an independent Certified Arborist report that evaluates the condition/health of the protected tree, explains why removal is necessary, explains why removal is more desirable than alternative project designs, and identifies mitigation and replacement recommendations. For encroachment into a protected zone, the City similarly requires detailed explanation of why encroachment is necessary, why encroachment is preferable to alternative design, and what measures will prevent the encroachment from resulting in eventual loss of the protected tree.

The City has separate permit pathways for healthy removals (TRH), encroachments (TRE), and removal of dead, diseased, and/or hazardous protected trees (TRD). This report therefore uses TRH as the default removal pathway. Arcadia's replacement framework is subject to Director decision to modify, waive, increase, or reduce the requirements. Arcadia pruning provisions are distinct from construction encroachment. Pruning or trimming of a protected tree may not require a tree permit if performed in accordance with ISA or ANSI industry standards, in consultation with a Certified Arborist, and with a written arborist recommendation. This does not eliminate the need for a TRE where grading improvement-related disturbance enters the protected zone or canopy (Tree Care Industry Association

2019). The Arcadia permit trigger is local and tree-specific: a protected-tree removal or encroachment into the protected zone requires City approval. For this report, the long-developed Santa Anita operations setting informs the current environmental conditions and proportionality of impact discussion. Tree-specific condition, TPZ impact percentage, root-zone sensitivity, and mitigation feasibility remain the basis for the TRE and TRH recommendations.

4. METHODS

The following methods are provided to make the inventory and conclusions repeatable. The procedures used are consistent with common arboricultural inventory practice, ISA/ANSI pruning and construction-preservation guidance, and the City's requirement (Tree Care Industry Association 2019; International Society of Arboriculture 2026). Each listed tree was located in the field, matched to a map number, checked against the site survey or GIS layer, and photographed. Species identification was based on observable bark, foliage, acorn/cup characteristics where present, branching habit, and site context. For oaks and all other species, the scientific name was recorded because Arcadia uses species-specific protected-tree thresholds (e.g., Coast Live Oak and Engelmann Oak).

Diameter (DSH)

Diameter at standard height (DSH/DBH) was measured at approximately 4.5 feet above grade or above the root crown using a diameter tape. The tape was held level and snug to the stem without including loose bark plates, vines, or attached debris. For trees with swelling, buttressing, forks, wounds, or branching at the standard measurement height, the measurement point was adjusted to the nearest representative section of stem above the irregularity. For multi-trunk trees, individual stem diameters were recorded where feasible. Where physical access to the trunk was constrained by fencing, debris, steep grade, dense understory, or safety concerns, the measurement was estimated.

Height (Ht)

Tree height values were collected using either a clinometer, laser rangefinder, or visual estimation calibrated against nearby measured objects, or proportional field estimation. Height was rounded to a practical increment appropriate to the inventory scale (e.g., 1 foot). Where canopy overlaps, terrain, or restricted access limited a clear sightline to the tree top, the height was estimated.

Crown Spread and Canopy

Crown spread was measured or estimated as the average canopy diameter, using cardinal-direction measurements from the trunk to the dripline and summing opposite directions. Where crowns were irregular or one-sided because of pruning, utility clearance, road clearance, competition, or prior limb failure, the asymmetry was noted. Dripline mapping is important in Arcadia because the legal protected zone follows the dripline and is never less than 15 feet from the trunk.

Table 2. Vigor Assessment Category Summary

<i>Vigor Class</i>	<i>Indicators</i>
<i>Excellent</i>	Dense species-typical foliage, strong shoot extension, minimal dieback, good wound response, no significant stress symptoms.
<i>Good / High</i>	Full or near-full crown, normal leaf size/color, minor manageable pests or deadwood, adequate response growth.
<i>Fair / Normal</i>	Functional crown with some stress indicators, moderate pest symptoms, limited dieback, or structural constraints that do not by themselves preclude retention.
<i>Poor / Low</i>	Sparse or thinning crown, weak shoot extension, substantial dieback, chlorosis, heavy pest/pathogen symptoms, poor wound response, or reduced adaptive growth.
<i>Dead / Dying</i>	Dead crown, fallen stem, severe decline, advanced decay or structural failure indicators; may support TRD or hazard evaluation if confirmed by the signing arborist.

Vigor ratings were used because trees with low vigor, sparse crowns, prior severe pruning, or compromised condition generally have less capacity to compartmentalize wounds, replace lost absorbing roots, tolerate soil disturbance, or recover from grading improvement stress. This does not mean low-vigor trees automatically require removal, but it lowers confidence in retention where disturbance is moderate to extreme (Day et al. 2010; International Society of Arboriculture 2026).

Crown Density

Crown density was interpreted as a visual estimate of relative foliar occupancy and live canopy density compared with species-typical expectations. Normal density indicates a crown with generally expected opacity and live foliage distribution. Sparse density indicates elevated crown transparency, reduced foliar occupancy, or visible thinning beyond typical seasonal variation. Crown density was considered together with vigor, deadwood, pest evidence, and structural defects because crown thinning may indicate root stress, drought stress, pest pressure, or prior disturbance (Day et al. 2010).

Structural Defect and Pest/Disease Assessment

Structural assessment consisted of visual review of observable trunk, scaffold, crown, root-flare, and site indicators. Concerns include codominant or multi-stem structure, included bark, trunk damage, cambium damage, lean, canopy imbalance, dead stems, deadwood, prior topping or severe pruning, root-zone constraints, and stem location or debris areas. These conditions were not treated as a comprehensive tree risk assessment; instead, they were used to evaluate grading improvement tolerance and the likelihood that proposed disturbance would predispose a tree to decline or failure (International Society of Arboriculture 2026). Pest and disease observations include scale insects, galls, boring insect evidence, insect leaf damage, and stress symptoms. The presence of minor insect symptoms alone does not mandate removal. However, pest evidence combined with low vigor, sparse crown density, damaged stems, severe pruning history, or high TPZ disturbance supports a lower retention confidence rating because the tree may have reduced physiological reserve to respond to grading improvements impacts (Day and Bassuk 1994; Day et al. 2010).

Tree Protection Zone / Dripline

The protected zone for this report is defined as a dripline-based area with a minimum 15-foot radius from the trunk and expansion where known root structure extends beyond an irregular crown. This report distinguishes six related concepts. The dripline is the canopy perimeter. Arcadia's legal protected zone is the dripline-based area, never less than 15 feet from the trunk. The arboricultural TPZ is the area intended to protect roots and soil conditions needed for survival and stability. The critical root zone is the broader functional root environment supporting water and nutrient uptake. The high-risk root zone is the inner root/stability zone, treated here as the more protective of 10 feet from the trunk or 3x DBH. The project

disturbance envelope is the mapped footprint of grading, excavation, utilities, paving, access, staging, or other construction-related work.

Root systems do not precisely mirror the canopy perimeter. Absorbing roots commonly occupy soil beyond the dripline where oxygen, water, and soil structure permit, while structural roots and buttress roots near the trunk contribute substantially to stability. Consequently, a percent-TPZ disturbance value should not be interpreted as a perfect percent-root-loss value. It is a practical, repeatable metric that is interpreted with distance from trunk, excavation depth, root diameters, soil compaction, grade change, and tree condition (Smiley 2008; Day et al. 2010; Benson, Koeser, and Morgenroth 2019). The percent TPZ impact values provided for this report are assumed to represent the portion of the dripline/TPZ affected by proposed work. At Santa Anita, mapped TPZ impacts should also be interpreted in light of existing surface conditions. Where roots are already constrained by v-ditches, compacted service routes, fencing, debris piles, paving, or altered irrigation/drainage, the proposed improvements incrementally may interact with pre-existing stressors. Impact severity was assigned by interpreting TPZ percentage and affected area in relation to tree condition to support retention feasibility, mitigation intensity, and removal rationale.

5. EXISTING TREE CONDITIONS

The current active tree dataset consists of 92 protected trees carried forward for permit purposes. The trees are located in an operational racetrack/equestrian support environment with prior fill, grading, surface compaction, ditches, debris-constrained areas, fencing, access routes, and managed drainage/irrigation conditions. Those conditions are relevant because mature oaks and other trees respond to root-zone aeration, soil moisture, compaction, grade changes, and excavation depth. The presence of prior fill or historic disturbance does not automatically mean a tree cannot be retained; current vigor, crown density, defects, and proposed incremental TPZ disturbance govern the tree-specific recommendation. Several trees have low vigor, sparse crown density, insect damage, stem damage, multi-stem form, lean, ditch/debris constraints, or prior pruning impacts. These factors are not treated as automatic removal triggers. However, they lower the confidence in retention where TPZ impacts are moderate, severe, or extreme.

Table 3. Existing Tree Conditions Summary

<i>Tree</i>	<i>Common Name</i>	<i>Scientific Name</i>	<i>DSH (Inches)</i>	<i>Ht (Feet)</i>	<i>Vigor</i>	<i>Crown (Feet)</i>	<i>Density</i>	<i>Condition Factors / Notes</i>
6	Coast Live Oak	<i>Quercus agrifolia</i>	19	25	Normal	14	Normal	Hedged; Multistem tree, growing up against fence
13	Coast Live Oak	<i>Quercus agrifolia</i>	15	35	High	15	Normal	Scale insect on leaves, galls, evidence of boring insect on stem. Likely on all trees in cluster; 50% browning on leaves
14	Coast Live Oak	<i>Quercus agrifolia</i>	10	15	Normal	12	Normal	Scale insect on leaves, galls; Notes: Multistem lean south west
16	Coast Live Oak	<i>Quercus agrifolia</i>	42	50	Normal	36	Normal	Scale insect, leaf galls; Deadwood removal, large. Trunk damage large lateral with included bark
18	Coast Live Oak	<i>Quercus agrifolia</i>	54	45	Normal	39	Normal	Scale insects, galls; Vigor and density normal, but tending towards low and sparse. Broken portion top

Table 3. Existing Tree Conditions Summary

Tree	Common Name	Scientific Name	DSH (Inches)	Ht (Feet)	Vigor	Crown (Feet)	Density	Condition Factors / Notes
19	Engelmann Oak (Mesa Oak)	<i>Quercus engelmannii</i>	28	40	Normal	39	Normal	Scale insect, leaf galls; It appears that the central leader of tree has broken out at some point; Vigor and density normal, but tending towards low and sparse
20	Coast Live Oak	<i>Quercus agrifolia</i>	17	23	Normal	16	Normal	Scale insect, leaf galls
21	Coast Live Oak	<i>Quercus agrifolia</i>	45	40	Normal	34	Normal	Scale insect, leaf galls; Multistem tree
24	Coast Live Oak	<i>Quercus agrifolia</i>	5	20	High	10	Normal	Scale insect, leaf galls
25	Coast Live Oak	<i>Quercus agrifolia</i>	6	20	Normal	10	Normal	Scale insect, leaf galls; Lean west for sunlight
26	Coast Live Oak	<i>Quercus agrifolia</i>	14	20	Normal	22	Normal	Scale insect, leaf galls, boring; Leans east phototropism, included mark in crotch
27	Coast Live Oak	<i>Quercus agrifolia</i>	7	18	Normal	12	Normal	Scale insect, leaf galls
32	Coast Live Oak	<i>Quercus agrifolia</i>	24	47	Normal	28	Normal	Leaf damage and boring insect
33	Coast Live Oak	<i>Quercus agrifolia</i>	16	25	Normal	32	Normal	Leaf damage and boring insect; Tree leans SW. all canopy on SW side
37	Coast Live Oak	<i>Quercus agrifolia</i>	12	18	Normal	17	Normal	Leaf damage and boring insect; Lean S, all canopy S
38	Engelmann Oak (Mesa Oak)	<i>Quercus engelmannii</i>	29	30	Normal	18	Sparse	Some flagging directional pruning from road
40	Engelmann Oak (Mesa Oak)	<i>Quercus engelmannii</i>	30	40	Low	33	Sparse	Insect damage leaf and boring; Trunk damage; Some flagging directional pruning from road
42	Coast Live Oak	<i>Quercus agrifolia</i>	27	23	Low	15	Normal	Insect damage leaf and boring; Massive damage to the trunk and main crotch but this tree is borderline hazardous laterals
44	Coast Live Oak	<i>Quercus agrifolia</i>	30	25	Low	22	Sparse	Insect damage leaf and boring; Multi stem tree center stem is dead
66	Coast Live Oak	<i>Quercus agrifolia</i>	25	30	Normal	25	Normal	Insect leaf damage; Multistem tree
68	Coast Live Oak	<i>Quercus agrifolia</i>	20	20	Normal	22	Normal	Insect leaf damage; Multistem tree, lean SE all canopy E
70	Coast Live Oak	<i>Quercus agrifolia</i>	46	30	Low	30	Sparse	Insect leaf damage, boring, trunk damage affecting 30% of cambium , potential hazard
78	Coast Live Oak	<i>Quercus agrifolia</i>	26	38	Normal	30	Normal	Insect leaf damage, boring; Flagging

Table 3. Existing Tree Conditions Summary

Tree	Common Name	Scientific Name	DSH (Inches)	Ht (Feet)	Vigor	Crown (Feet)	Density	Condition Factors / Notes
79	Coast Live Oak	<i>Quercus agrifolia</i>	27	30	Normal	33	Normal	Insect leaf damage, boring; Lean S and canopy mostly S
80	Engelmann Oak (Mesa Oak)	<i>Quercus engelmannii</i>	26	40	Low	25	Sparse	Insect leaf damage, boring; Cavity repair on trunk, canopy SE of trunk; Looks sickly
81	Engelmann Oak (Mesa Oak)	<i>Quercus engelmannii</i>	15	40	Low	25	Sparse	Insect leaf damage, boring; Multistem, crowding
82	Coast Live Oak	<i>Quercus agrifolia</i>	20	40	Normal	30	Normal	Insect leaf damage
83	Coast Live Oak	<i>Quercus agrifolia</i>	7	20	Normal	22	Normal	Insect leaf damage
85	Coast Live Oak	<i>Quercus agrifolia</i>	42	50	Normal	40	Normal	Insect leaf damage
87	Coast Live Oak	<i>Quercus agrifolia</i>	6	15	Normal	11	Normal	Insect leaf damage; Lean SE
89	Coast Live Oak	<i>Quercus agrifolia</i>	8	20	Normal	12	Normal	Insect leaf damage
109	Coast Live Oak	<i>Quercus agrifolia</i>	8	30	Normal	10	Normal	Insect leaf damage; Lean SE
110	Coast Live Oak	<i>Quercus agrifolia</i>	17	25	Normal	25	Normal	Insect leaf damage, boring; Significant lean SW, trunk damage
115	Coast Live Oak	<i>Quercus agrifolia</i>	30	40	Normal	40	Normal	Insect leaf damage, boring; Dead laterals
116	Coast Live Oak	<i>Quercus agrifolia</i>	42	40	Normal	30	Normal	Insect leaf damage; Multistem, lean W canopy W,
117	Coast Live Oak	<i>Quercus agrifolia</i>	13	16	Normal	20	Normal	Insect leaf damage; Notes: Significant Lean W, Multistem,
118	Coast Live Oak	<i>Quercus agrifolia</i>	19	30	Normal	30	Normal	Insect leaf damage, boring; Canopy W, stem damage
119	Coast Live Oak	<i>Quercus agrifolia</i>	19	50	Normal	30	Normal	Insect leaf damage
122	Coast Live Oak	<i>Quercus agrifolia</i>	10	15	Normal	12	Sparse	Insect leaf damage, boring; Multistem,
123	Coast Live Oak	<i>Quercus agrifolia</i>	28	45	Normal	30	Normal	Insect leaf damage
124	Coast Live Oak	<i>Quercus agrifolia</i>	57	48	Normal	40	Normal	Insect leaf damage; DBH measure at base below crotch
126	Coast Live Oak	<i>Quercus agrifolia</i>	4	17	Normal	10	Normal	Insect leaf damage; Lean S;
127	Coast Live Oak	<i>Quercus agrifolia</i>	11	30	Normal	18	Normal	Insect leaf damage, boring
128	Coast Live Oak	<i>Quercus agrifolia</i>	8	23	Normal	12	Normal	Insect leaf damage; Lean N heavy
129	Coast Live Oak	<i>Quercus agrifolia</i>	17	20	Normal	15	Normal	Insect leaf damage; Included bark; Growth NW
130	Coast Live Oak	<i>Quercus agrifolia</i>	6	15	Normal	9	Normal	Insect leaf damage
135	Coast Live Oak	<i>Quercus agrifolia</i>	13	17	Normal	30	Normal	Insect leaf damage; Included bark

Table 3. Existing Tree Conditions Summary

Tree	Common Name	Scientific Name	DSH (Inches)	Ht (Feet)	Vigor	Crown (Feet)	Density	Condition Factors / Notes
136	Coast Live Oak	<i>Quercus agrifolia</i>	20	28	Normal	15	Normal	Insect leaf damage; Bark inclusion; Multistem
143	Coast Live Oak	<i>Quercus agrifolia</i>	10	20	Normal	15	Normal	Insect leaf damage; Lean N
144	Coast Live Oak	<i>Quercus agrifolia</i>	25	40	Normal	34	Normal	Insect leaf damage; Measure below crotch
149	Coast Live Oak	<i>Quercus agrifolia</i>	24	35	Normal	22	Normal	Insect leaf damage; Multistem
150	Coast Live Oak	<i>Quercus agrifolia</i>	10	30	Normal	15	Normal	Insect leaf damage; Growing against fence
197	Coast Live Oak	<i>Quercus agrifolia</i>	11	20	Normal	20	Normal	Leaf damage insects; Crowding
199	Coast Live Oak	<i>Quercus agrifolia</i>	9	20	Low	20	Normal	Insect damage leaf; Lean and growth W
200	Coast Live Oak	<i>Quercus agrifolia</i>	58	45	Normal	30	Normal	Insect damage leaf; Multistem
202	Coast Live Oak	<i>Quercus agrifolia</i>	10	20	Normal	27	Normal	Insect damage leaf; Significant lean N
203	Coast Live Oak	<i>Quercus agrifolia</i>	27	38	Normal	28	Normal	Insect damage leaf; lean NE
205	Coast Live Oak	<i>Quercus agrifolia</i>	35	35	Normal	25	Normal	Insect damage leaf; Multistem
206	Coast Live Oak	<i>Quercus agrifolia</i>	19	15	Low	10	Sparse	Compromised and dying
207	Coast Live Oak	<i>Quercus agrifolia</i>	10	15	Low	20	Normal	Compromised leaning SW
208	Coast Live Oak	<i>Quercus agrifolia</i>	16	15	Low	15	Sparse	Fallen on ground
209	Coast Live Oak	<i>Quercus agrifolia</i>	16	25	Normal	15	Normal	Insect damage leaf; Multistem one stem on ground S
218	Coast Live Oak	<i>Quercus agrifolia</i>	15	23	Normal	15	Normal	Insect damage leaf; Lean W, Multistem
219	Coast Live Oak	<i>Quercus agrifolia</i>	35	30	Normal	20	Normal	Insect damage leaf; Multistem flagging
220	Coast Live Oak	<i>Quercus agrifolia</i>	8	12	Normal	7	Normal	Insect damage leaf; Topped
256	Coast Live Oak	<i>Quercus agrifolia</i>	15	18	Low	4	Sparse	Severely pruned, topped, Multistem
263	Coast Live Oak	<i>Quercus agrifolia</i>	10	28	Normal	10	Normal	Insect damage leaf
290	Coast Live Oak	<i>Quercus agrifolia</i>	16	25	Normal	18	Normal	Insect damage leaf and boring, light
292	Coast Live Oak	<i>Quercus agrifolia</i>	22	30	Low	27	Normal	Insect damage leaf and bore; Possible cambium damage; Lean E
314	Coast Live Oak	<i>Quercus agrifolia</i>	11	25	Low	15	Normal	Insect damage leaves and boring; Cambium damage, flagging
315	Coast Live Oak	<i>Quercus agrifolia</i>	6	18	Normal	8	Normal	Insect damage leaves; Multistem
316	Coast Live Oak	<i>Quercus agrifolia</i>	6	18	Normal	8	Normal	Insect damage leaves; Multistem
318	Coast Live Oak	<i>Quercus agrifolia</i>	5	12	Normal	8	Normal	Insect damage leaves; Cambium damage

Table 3. Existing Tree Conditions Summary

Tree	Common Name	Scientific Name	DSH (Inches)	Ht (Feet)	Vigor	Crown (Feet)	Density	Condition Factors / Notes
320	Coast Live Oak	<i>Quercus agrifolia</i>	38	48	Normal	36	Dense	Insect damage leaves
323	Coast Live Oak	<i>Quercus agrifolia</i>	18	6	Normal	14	Normal	Insect damage leaves; Multistem
327	Coast Live Oak	<i>Quercus agrifolia</i>	4	14	Low	5	Sparse	Insect damage leaves; On very edge of crumbling cliff;
331	Coast Live Oak	<i>Quercus agrifolia</i>	6	18	Normal	10	Normal	Insect damage leaves
332	Coast Live Oak	<i>Quercus agrifolia</i>	7	18	Normal	12	Normal	Insect damage leaves
333	Coast Live Oak	<i>Quercus agrifolia</i>	26	25	Low	20	Normal	Insect damage leaves and boring; Notes: Multistem. Tree in n v ditch with dirt debris pile on either side
334	Coast Live Oak	<i>Quercus agrifolia</i>	7	30	Low	15	Normal	Insect damage leaves and boring; Tree in V ditch with dirt debris piled on either side
335	Coast Live Oak	<i>Quercus agrifolia</i>	5	20	Low	12	Sparse	Insect damage leaves; Tree in V ditch with dirt debris piled on either side
336	Coast Live Oak	<i>Quercus agrifolia</i>	30	40	Normal	12	Normal	Insect damage leaves; Multistem 8Tree in V ditch with dirt debris piled on either side
337	Coast Live Oak	<i>Quercus agrifolia</i>	18	30	Normal	15	Normal	Insect damage leaves; Multistem Tree in V ditch with dirt debris piled on either side
338	Coast Live Oak	<i>Quercus agrifolia</i>	5	12	Low	12	Sparse	Insect damage leaves; Notes: Heavy lean N. Tree in V ditch with dirt debris piled on either side
340	Coast Live Oak	<i>Quercus agrifolia</i>	4	25	Low	12	Sparse	Insect damage leaves; Tree in V ditch with dirt debris piled on either side;
341	Coast Live Oak	<i>Quercus agrifolia</i>	5	25	Low	12	Sparse	Insect damage leaves; Tree in V ditch with dirt debris piled on either side
342	Coast Live Oak	<i>Quercus agrifolia</i>	6	27	Low	18	Normal	Insect damage leaves; Tree in V ditch with dirt debris piled on either side
343	Coast Live Oak	<i>Quercus agrifolia</i>	27	28	Normal	20	Normal	Insect damage leaves; Multistem
344	Coast Live Oak	<i>Quercus agrifolia</i>	10	28	Normal	15	Normal	Insect damage leaves; Multistem
345	Coast Live Oak	<i>Quercus agrifolia</i>	31	30	Normal	20	Normal	Insect damage leaves; Multistem
346	Coast Live Oak	<i>Quercus agrifolia</i>	9	20	Normal	12	Normal	Insect damage leaves; Multistem
347	Coast Live Oak	<i>Quercus agrifolia</i>	16	28	Normal	18	Normal	Insect damage leaves; Multistem

6. IMPACT SEVERITY

Arcadia does not publish a numeric minor/moderate/severe/extreme percent-disturbance matrix for protected-tree encroachments. The matrix below is therefore a professional decision tool intended to make tree-specific recommendations consistent and repeatable. Any actual encroachment into a protected zone remains permit-triggering if the tree is protected, even where an impact is minor and retention is feasible. The matrix below should not be applied mechanically to a single number. A tree with 15 percent TPZ disturbance, low vigor, sparse crown, stem damage, and compaction risk may be less retainable than a tree with 25 percent outer-TPZ disturbance, normal vigor, no structural defects, and no expected structural-root cutting. The permit recommendation therefore considers percent impact, impact location, root-cutting potential, grade change, soil compaction, tree condition, and cumulative stress.

Table 4. Impact Severity Framework

Severity	Threshold	Interpretation
<i>None</i>	0%-2.5% TPZ impact and negligible square footage impacted	No permit, no meaningful protected-zone encroachment or removal; protect in place.
<i>Minor</i>	>0-10% TPZ disturbance; shallow work outside high-risk core; de minimis affected area	Compatible with retention if fencing, mulch, and monitoring are implemented.
<i>Moderate</i>	>5-20% TPZ disturbance	Retention is feasible but requires root-sensitive methods, irrigation, and monitoring.
<i>Severe</i>	>10-35% TPZ disturbance	Retention confidence declines. intensive mitigation (demonstrated avoidance of structural roots, hand/air excavation) irrigation, require arborist hold points and monitoring.
<i>Extreme</i>	>35% TPZ disturbance, high-risk-core work, structural-root impacts, substantial cut/fill, paving, or cumulative severe factors	Retention is generally not reliable unless disturbance is shallow/outer-TPZ and no structural roots or high-risk-core conditions are affected. Removal is typically supported.

Percent TPZ disturbance is important because it approximates the proportion of the root-protection environment exposed to excavation, compaction, grade change, root severance, or hydrologic alteration. Disturbance above 35 percent is treated as extreme in this framework because, at that level, the grading improvements are no longer making a narrow edge incursion; they are altering a substantial portion of the tree's protected rooting environment. Live-oak root-severance research indicates that stress responses can be avoided when linear root cuts are kept farther from the trunk, whereas substantial root loss or cuts closer to the stem increase risk (Benson, Koeser, and Morgenroth 2019). A 20-35 percent TPZ disturbance range generally requires intensive mitigation because it suggests substantial spatial overlap between grading improvements and the tree's functional rooting area. Retention may still be possible where disturbance is shallow, temporary, located in the outer TPZ, and completed under arborist supervision without significant structural-root cuts. A >35 percent TPZ disturbance range may support removal recommendations if avoidance is infeasible because such a disturbance envelope can affect almost half or more of the tree's protected rooting area. Even if the exact root-loss percentage is lower than the footprint percentage, the cumulative effects of excavation, compaction, grade change, paving, reduced soil oxygen, altered water availability, and pruning can predispose a protected oak to delayed decline or instability (Day and Bassuk 1994; Day et al. 2010; Miesbauer, Koeser, and Kane 2025).

Root Severance, Excavation, and Trenching

Root cutting is most consequential where cuts occur near the trunk, within the buttress/root-flare zone, or across large-diameter structural roots. Smiley's root-pruning research showed measurable stability effects as root cutting approached the trunk, while subsequent work on buttress-root pruning and trenching reinforces that root loss can materially affect anchorage and stability (Smiley 2008; Smiley, Holmes, and Fraedrich 2014; Miesbauer, Koeser, and Kane 2025). Therefore, this report treats any work within the high-risk root zone, roots greater than 2 inches in the TPZ, and roots greater than 4 inches anywhere in the disturbance envelope as severe or extreme. Open trenching is generally more damaging than directional boring or bridging because trenching can sever many roots along a linear alignment. Watson's trenching and crown-pruning study illustrates that trenching injury can influence growth and that crown pruning should not be used casually as a simple offset for root loss (Watson 1998). As a result, utilities or drainage lines should be routed outside protected zones where feasible; where crossing is unavoidable, boring below major roots or using hand/air excavation at known root crossings is preferred (International Society of Arboriculture 2026).

Soil Compaction, Grade Changes, and Impervious Surfaces

Soil compaction reduces pore space, oxygen diffusion, infiltration, and root growth. Day and Bassuk found that compaction and remediation practices materially affect landscape tree root environments, and later work on urban tree root ecology emphasizes that healthy roots depend on adequate soil volume, aeration, and moisture dynamics (Day and Bassuk 1994; Day et al. 2010). Because Arcadia separately prohibits construction-related activities, material storage, grade changes, and impervious paving within the protected zone, this document treats unmitigated compaction and grade change as potentially severe.

Canopy Pruning and Structural Loading

Pruning may be necessary to provide clearance for horses, equipment or to remove limbs likely to be injured. However, heavy live-crown reduction can reduce photosynthetic capacity, alter load distribution, stimulate weakly attached epicormic growth, and impair long-term structure. Gilman's pruning severity research supports the view that heavier pruning is a different arboricultural intervention than routine maintenance pruning, and Arcadia requires pruning of protected trees to be performed according to ISA/ANSI standards and with Certified Arborist involvement (Gilman 2015; Tree Care Industry Association 2019).

7. TREE SPECIFIC IMPACT ANALYSIS AND PERMIT RECOMMENDATIONS

The table below summarizes the tree-specific impact and permit recommendations. The permit recommendation reflects Arcadia permit triggers, protected-status screening, TPZ impact percentage, TPZ area impacted, existing tree condition, and retention feasibility (Figure 3). Encroachment into a protected tree's protected zone triggers City review. The severity framework then determines whether retention is defensible, whether encroachment requires standard or intensive mitigation, or whether removal and replacement is the more defensible outcome. Trees recommended for removal are not recommended for removal solely for convenience; they are recommended because the current disturbance footprint, coupled with tree condition where applicable, makes long-term retention unreliable without substantial redesign. The recommended removal-pathway trees are the remaining trees for which residual grading or course-alignment impacts remain high after avoidance and minimization, or for which existing condition makes retention less reliable.

Table 5. Tree-Specific Impact Analysis and Permit Recommendations

<i>Tree</i>	<i>Species</i>	<i>DSH (Inches)</i>	<i>Vigor</i>	<i>Density</i>	<i>TPZ %</i>	<i>TPZ Diameter (Feet)</i>	<i>Severity</i>	<i>Permit Recommendation</i>
6	Coast Live Oak	19	Normal	Normal	5	15	Minor	TRE
13	Coast Live Oak	15	High	Normal	37	15	Extreme	TRE with intensive mitigation
14	Coast Live Oak	10	Normal	Normal	35	15	Severe	TRE with intensive mitigation
16	Coast Live Oak	42	Normal	Normal	60	36	Extreme	TRH; evaluate TRD
18	Coast Live Oak	54	Normal	Normal	43	39	Extreme	TRH; evaluate TRD
19	Engelmann Oak	28	Normal	Normal	71	39	Extreme	TRH; evaluate TRD
20	Coast Live Oak	17	Normal	Normal	100	16	Extreme	TRH
21	Coast Live Oak	45	Normal	Normal	77	34	Extreme	TRE with intensive mitigation

Table 5. Tree-Specific Impact Analysis and Permit Recommendations

<i>Tree</i>	<i>Species</i>	<i>DSH (Inches)</i>	<i>Vigor</i>	<i>Density</i>	<i>TPZ %</i>	<i>TPZ Diameter (Feet)</i>	<i>Severity</i>	<i>Permit Recommendation</i>
24	Coast Live Oak	5	High	Normal	62	15	Extreme	TRH
25	Coast Live Oak	6	Normal	Normal	55	15	Extreme	TRH
26	Coast Live Oak	14	Normal	Normal	0	22	None	Protect in place / avoid / prune as needed
27	Coast Live Oak	7	Normal	Normal	1	15	Minor	TRE
32	Coast Live Oak	24	Normal	Normal	10	28	Minor	TRE
33	Coast Live Oak	16	Normal	Normal	18	32	Moderate	TRE with intensive mitigation
37	Coast Live Oak	12	Normal	Normal	31	17	Severe	TRE with intensive mitigation
38	Engelmann Oak	29	Normal	Sparse	23	18	Severe	TRE with intensive mitigation
40	Engelmann Oak	30	Low	Sparse	21	33	Severe	TRE with intensive mitigation
42	Coast Live Oak	27	Low	Normal	87	15	Extreme	TRH; evaluate TRD
44	Coast Live Oak	30	Low	Sparse	42	22	Extreme	TRH; evaluate TRD
66	Coast Live Oak	25	Normal	Normal	39	25	Extreme	TRH
68	Coast Live Oak	20	Normal	Normal	15	22	Moderate	TRE
70	Coast Live Oak	46	Low	Sparse	18	30	Moderate	TRE with intensive mitigation
78	Coast Live Oak	26	Normal	Normal	47	30	Extreme	TRH
79	Coast Live Oak	27	Normal	Normal	77	33	Extreme	TRH
80	Engelmann Oak	26	Low	Sparse	30	25	Severe	TRE with intensive mitigation
81	Engelmann Oak	15	Low	Sparse	0	25	None	Protect in place / avoid / prune as needed
82	Coast Live Oak	20	Normal	Normal	0	30	Minor	Protect in place / avoid / prune as needed
83	Coast Live Oak	7	Normal	Normal	0	22	None	Protect in place / avoid / prune as needed
85	Coast Live Oak	42	Normal	Normal	22	40	Severe	TRE with intensive mitigation
87	Coast Live Oak	6	Normal	Normal	74	15	Extreme	TRH
89	Coast Live Oak	8	Normal	Normal	100	15	Extreme	TRH
109	Coast Live Oak	8	Normal	Normal	48	15	Extreme	TRH

Table 5. Tree-Specific Impact Analysis and Permit Recommendations

<i>Tree</i>	<i>Species</i>	<i>DSH (Inches)</i>	<i>Vigor</i>	<i>Density</i>	<i>TPZ %</i>	<i>TPZ Diameter (Feet)</i>	<i>Severity</i>	<i>Permit Recommendation</i>
110	Coast Live Oak	17	Normal	Normal	7	25	Minor	TRE
115	Coast Live Oak	30	Normal	Normal	5	40	Minor	TRE
116	Coast Live Oak	42	Normal	Normal	9	30	Minor	TRE
117	Coast Live Oak	13	Normal	Normal	31	20	Severe	TRE with intensive mitigation
118	Coast Live Oak	19	Normal	Normal	49	30	Extreme	TRE
119	Coast Live Oak	19	Normal	Normal	33	30	Severe	TRE with intensive mitigation
122	Coast Live Oak	10	Normal	Sparse	91	15	Extreme	TRH; evaluate TRD
123	Coast Live Oak	28	Normal	Normal	88	30	Extreme	TRH
124	Coast Live Oak	57	Normal	Normal	99	40	Extreme	TRH; evaluate TRD
126	Coast Live Oak	4	Normal	Normal	100	15	Extreme	TRH
127	Coast Live Oak	11	Normal	Normal	100	18	Extreme	TRH
128	Coast Live Oak	8	Normal	Normal	100	15	Extreme	TRH
129	Coast Live Oak	17	Normal	Normal	100	15	Extreme	TRH
130	Coast Live Oak	6	Normal	Normal	76	15	Extreme	TRH
135	Coast Live Oak	13	Normal	Normal	34	30	Severe	TRE with intensive mitigation
136	Coast Live Oak	20	Normal	Normal	3	15	Minor	TRE
143	Coast Live Oak	10	Normal	Normal	99	15	Extreme	TRH
144	Coast Live Oak	25	Normal	Normal	80	34	Extreme	TRH; evaluate TRD
149	Coast Live Oak	24	Normal	Normal	39	22	Extreme	TRH
150	Coast Live Oak	10	Normal	Normal	31	15	Severe	TRH
197	Coast Live Oak	11	Normal	Normal	0	20	None	Protect in place / avoid / prune as needed
199	Coast Live Oak	9	Low	Normal	0	20	None	Protect in place / avoid / prune as needed
200	Coast Live Oak	58	Normal	Normal	4	30	Minor	TRE
202	Coast Live Oak	10	Normal	Normal	8	27	Minor	TRE

Table 5. Tree-Specific Impact Analysis and Permit Recommendations

<i>Tree</i>	<i>Species</i>	<i>DSH (Inches)</i>	<i>Vigor</i>	<i>Density</i>	<i>TPZ %</i>	<i>TPZ Diameter (Feet)</i>	<i>Severity</i>	<i>Permit Recommendation</i>
203	Coast Live Oak	27	Normal	Normal	21	28	Severe	TRE with intensive mitigation
205	Coast Live Oak	35	Normal	Normal	33	25	Severe	TRE with intensive mitigation
206	Coast Live Oak	19	Low	Sparse	6	15	Minor	TRE
207	Coast Live Oak	10	Low	Normal	17	20	Moderate	TRE with intensive mitigation
208	Coast Live Oak	16	Low	Sparse	5	15	Minor	TRE
209	Coast Live Oak	16	Normal	Normal	0	15	None	Protect in place / avoid / prune as needed
218	Coast Live Oak	15	Normal	Normal	4	15	Minor	TRE
219	Coast Live Oak	35	Normal	Normal	0	20	None	Protect in place / avoid / prune as needed
220	Coast Live Oak	8	Normal	Normal	0	15	None	Protect in place / avoid / prune as needed
256	Coast Live Oak	15	Low	Sparse	55	15	Extreme	TRH; evaluate TRD
263	Coast Live Oak	10	Normal	Normal	90	15	Extreme	TRH removal permit recommended
290	Coast Live Oak	16	Normal	Normal	12	18	Moderate	TRE
292	Coast Live Oak	22	Low	Normal	2	27	Minor	TRE
314	Coast Live Oak	11	Low	Normal	0	15	None	Protect in place / avoid / prune as needed
315	Coast Live Oak	6	Normal	Normal	8	15	Minor	TRE
316	Coast Live Oak	6	Normal	Normal	1	15	Minor	TRE
318	Coast Live Oak	5	Normal	Normal	92	15	Extreme	TRH
320	Coast Live Oak	38	Normal	Dense	43	36	Extreme	TRH
323	Coast Live Oak	18	Normal	Normal	94	15	Extreme	TRH
327	Coast Live Oak	4	Low	Sparse	9	15	Minor	TRE
331	Coast Live Oak	6	Normal	Normal	22	15	Severe	TRE with intensive mitigation
332	Coast Live Oak	7	Normal	Normal	4	15	Minor	TRE
333	Coast Live Oak	26	Low	Normal	20	20	Moderate	TRE with intensive mitigation
334	Coast Live Oak	7	Low	Normal	1	15	Minor	TRE encroachment permit recommended

Table 5. Tree-Specific Impact Analysis and Permit Recommendations

<i>Tree</i>	<i>Species</i>	<i>DSH (Inches)</i>	<i>Vigor</i>	<i>Density</i>	<i>TPZ %</i>	<i>TPZ Diameter (Feet)</i>	<i>Severity</i>	<i>Permit Recommendation</i>
335	Coast Live Oak	5	Low	Sparse	0	15	None	Protect in place / avoid / prune as needed
336	Coast Live Oak	30	Normal	Normal	10	15	Minor	TRE
337	Coast Live Oak	18	Normal	Normal	4	15	Minor	TRE
338	Coast Live Oak	5	Low	Sparse	0	15	None	Protect in place / avoid / prune as needed
340	Coast Live Oak	4	Low	Sparse	14	15	Moderate	TRE
341	Coast Live Oak	5	Low	Sparse	16	15	Moderate	TRE with intensive mitigation
342	Coast Live Oak	6	Low	Normal	35	18	Severe	TRH; evaluate TRD
343	Coast Live Oak	27	Normal	Normal	39	20	Extreme	TRH
344	Coast Live Oak	10	Normal	Normal	11	15	Moderate	TRE
345	Coast Live Oak	31	Normal	Normal	31	20	Severe	TRH
346	Coast Live Oak	9	Normal	Normal	0	15	None	Protect in place / avoid / prune as needed
347	Coast Live Oak	16	Normal	Normal	23	18	Severe	TRE with intensive mitigation

Retention and Encroachment Rationale

Standard TRE trees are retained because the analysis indicates comparatively limited TPZ encroachment. These trees require avoidance of high-risk root zones, fencing before work, controlled access, prohibition on staging/storage within TPZs, root-sensitive excavation, and arborist monitoring where work approaches protected zones.

TRE with intensive mitigation is recommended where retention appears feasible only with enhanced construction controls. These trees require stricter conditions, including arborist hold points, hand or pneumatic excavation, root exposure documentation, clean root pruning only under arborist direction, soil moisture management, and reclassification to removal if final construction requires structural-root cuts, high-risk-core excavation, material grade change, or repeated equipment traffic within the TPZ.

Protection-only / avoid / prune-as-needed trees have no meaningful reported impact within the TPZ. They should be fenced, protected, and avoided. Pruning, if needed, should be limited to clearance or safety pruning under arborist direction.

Removal-pathway trees are recommended for TRH processing or TRD evaluation where there is high TPZ disturbance, complete or near-complete overlap, compromised tree condition, or reduced confidence in long-term retention. TRD should only be pursued for trees whose condition is confirmed by the signing arborist and accepted by the City as dead, diseased, hazardous, or otherwise eligible.

Table 6. Retention, Encroachment, and Protection Rationale Groups

Group	Tree Numbers	Rationale
<i>TRE</i>	6, 27, 32, 68, 110, 115, 116, 118, 136, 200, 202, 206, 208, 218, 290, 292, 315, 316, 327, 332, 334, 336, 337, 340, 344	Retained, TPZ encroachment appears manageable with standard fencing, exclusion controls and arborist monitoring.
<i>TRE with intensive mitigation</i>	13, 14, 21, 33, 37, 38, 40, 70, 80, 85, 117, 119, 135, 203, 205, 207, 331, 333, 341, 347	Retained with enhanced protection such as arborist hold points, hand or pneumatic excavation, root-sensitive work methods, soil moisture controls, and reclassification triggers if final work exceeds assumptions.
<i>Protection / avoid / prune as needed</i>	26, 81, 82, 83, 197, 199, 209, 219, 220, 314, 335, 338, 346	Protected and avoided in the field; no permit expected. Pruning, if needed, should be arborist-directed.
<i>TRH Removal pathway</i>	16, 18, 19, 20, 24, 25, 42, 44, 66, 78, 79, 87, 89, 109, 122, 123, 124, 126, 127, 128, 129, 130, 143, 144, 149, 150, 256, 263, 318, 320, 323, 342, 343, 345	Removal recommended where residual grading/course alignment conflict, high TPZ impact, or condition constraints reduce reliable retention under current assumptions.

Arcadia TRH Removal Narrative - Why removal is necessary.

The removal-pathway trees conflict with the residual grading/course alignment where the TPZ impact analysis indicates high or complete TPZ overlap, impaired retention feasibility, or tree condition constraints that reduce construction tolerance. Equestrian-course grading must support safe riding surfaces, drainage, transitions, circulation, emergency services and maintenance access. Where a tree's TPZ is substantially occupied by the residual improvement footprint, retaining the tree would likely require root-zone disturbance, grade change, compaction, or structural-root risk inconsistent with reliable long-term viability.

Arcadia TRH Removal Narrative - Why removal is more desirable than an alternative project design.

The current removal package is presented after avoidance and minimization. Alignment and grading inputs have been refined to reduce impacts where feasible, and the current dataset distinguishes trees that can be retained under TRE, retained with intensive mitigation, avoided entirely, or processed for removal. Further redesign is not feasible where it would compromise course function, safety, drainage, circulation, or construction feasibility, or where retention would leave a tree in a compromised condition that is likely to decline after construction.

Arcadia TRH Removal Narrative - Mitigation for loss.

Mitigation includes a project-requested 1:1 replacement program for the 34 protected removal-pathway trees, continued protection and monitoring of retained active protected trees, placement of replacement trees either on-site, in public-facing or otherwise City-approved public-benefit locations where feasible, irrigation establishment and maintenance, five-year or City-required monitoring, failure replacement, and arborist documentation. Mitigation is applied after avoidance and minimization, not as a substitute for feasible preservation.

Arcadia TRE Encroachment Narrative - Why encroachment is necessary.

Encroachment is necessary where the final grading envelope, drainage, access, or course geometry cannot fully avoid the protected zone while maintaining functional equestrian-course design. The TRE categories identify trees where the encroachment can be managed without removal if protection measures are implemented and final work remains within the assumptions used in the impact analysis.

Arcadia TRE Encroachment Narrative - Why encroachment is more desirable than alternative design.

For retained trees, managed encroachment is preferable to removal and is also preferable to redesign that would materially impair course function, safety or shift impacts to other protected trees. TRE processing allows the course design to retain trees while applying measurable protection controls, monitoring, and construction limitations.

Arcadia TRE Encroachment Narrative - Mitigation to avoid eventual loss.

Mitigation for encroachment includes fencing, signage, exclusion of storage and equipment, hand/air excavation, arborist hold points, root-pruning limits, mulch and soil moisture management, pruning standards, monitoring, and stop-work triggers if roots or conditions exceed assumptions.

8. ALTERNATIVES, AVOIDANCE, AND MINIMIZATION

The course design has used an avoid-minimize-mitigate sequence. The data presented herein is understood as a residual condition following field verification, alignment review, grading-plan coordination, and screening of which trees can be retained, avoided, or removed. This report therefore distinguishes protected trees with manageable encroachment from trees where residual impacts remain too substantial for reliable retention. Avoidance and minimization measures include shifting or narrowing grading limits where feasible, retaining trees with low or moderate impacts, separating zero-impact trees into protection-only/avoidance treatment, protecting trees through fencing and monitoring, and using intensive tree-protection measures for trees where encroachment can be managed without removal. This effort began with review of an approximately 347-tree population and resulted in a current active package where 56 protected trees are retained, protected, or avoided. The requested 1:1 replacement ratio should be evaluated in that broader preservation context: the project has prioritized saving existing trees first, then proposes replacement for the limited residual removals in locations that can provide lasting public or community benefit.

Multiple field visits and plan reviews then allowed the team to test how the equestrian course alignment and grading limits could be adjusted to reduce tree conflicts. Design refinements included shifting alignment, reducing course widths where feasible, narrowing disturbance limits, refining grading transitions, and preserving trees that were higher in vigor, structurally superior, or more likely to remain viable. These changes materially reduced the number and severity of protected-tree impacts compared with early conceptual assumptions. This history supports the City permit requirements because it demonstrates that avoidance and minimization occurred before the report relied on removal permits or replacement mitigation. Not all trees could be preserved because the equestrian course requires safe, continuous, and functional grading geometry. However, tree preservation influenced engineering decisions by encouraging alignment shifts, reduced encroachment footprints, adjusted slope transitions, and avoidance of high-risk root zones where feasible.

The following hierarchy was applied to retained protected trees and to any final plan refinement around removal-pathway trees:

1. Avoid protected-zone encroachment where feasible by shifting improvements outside the dripline and 15-foot minimum protected zone.
2. Reduce the encroachment footprint by narrowing paving, walls, grading, utilities, or construction access within the TPZ.
3. Shift improvements outside the high-risk root zone, defined here as the more protective of 10 feet from the trunk or 3x DBH.
4. Use permeable design where appropriate to reduce excavation and compaction, to the greatest extent practical.
5. Use directional boring instead of open trenching for utilities where feasible.

6. Use hand tools or pneumatic excavation within the TPZ and stop work for arborist review when roots 1 inch or larger are encountered.
7. Use arborist monitoring and hold points for demolition, excavation, grading, trenching, paving, and irrigation work near retained trees.
8. Apply compensatory replacement after avoidance and minimization have been addressed, not as a substitute for feasible preservation.

This hierarchy is consistent with Arcadia's protective measures, which prohibit construction-related activities in the protected zone, direct trenching outside the dripline/protected zone, call for hand work in the root protection zone, and require root cutting to be avoided. It also aligns with ISA construction-preservation guidance emphasizing early planning, protection zones, root-sensitive methods, and monitoring (International Society of Arboriculture 2026).

9. TREE PROTECTION AND MONITORING MEASURES

This section functions as a project-level Tree Protection Plan for retained trees. The measures apply to TRE trees, TRE with intensive mitigation trees, and protection-only trees unless a narrower tree-specific condition is approved by the City and project arborist. The measures are intended to be enforceable construction specifications rather than general recommendations.

Table 7. Tree Protection and Monitoring Measures

<i>Measure</i>	<i>Specification</i>	<i>Purpose / Rationale</i>
<i>Pre-construction meeting</i>	Hold a meeting with contractor, grading lead, civil team, project arborist, and biological/environmental team before work near trees.	Align limits of disturbance, responsibilities, stop-work triggers, and tree protection requirements.
<i>Tree protection fencing</i>	Install City-approved fencing at the dripline/approved TPZ limit before demolition, grading, staging, or access.	Prevents accidental encroachment, equipment access, storage, and root-zone compaction.
<i>Signage</i>	Install signs stating Tree Protection Zone - No Entry, No Storage, No Equipment, No Grade Change without arborist authorization.	Communicates enforceable restrictions to field crews.
<i>Prohibited activities in TPZ</i>	No parking, storage, mixing, fueling, washing, dumping, spoil placement, trenching, grade change, or equipment access inside TPZ unless approved.	Prevents compaction, contamination, oxygen loss, and root damage.
<i>Access and staging restrictions</i>	Locate staging, haul routes, and temporary access outside retained TPZs. Where access is unavoidable, use approved ground protection and arborist monitoring.	Avoids additional stress in areas already subject to operational use.
<i>Mulch and soil moisture</i>	Install 4-6 inches of coarse arborist wood-chip mulch within approved protection areas where appropriate; irrigate as needed to prevent drought stress.	Moderates soil temperature, supports moisture, and reduces compaction stress.

Table 7. Tree Protection and Monitoring Measures

<i>Measure</i>	<i>Specification</i>	<i>Purpose / Rationale</i>
<i>Hand / pneumatic excavation</i>	Use hand tools or pneumatic excavation within TPZs. Stop work when roots 1 inch or larger are encountered unless arborist authorizes continuation.	Allows root exposure and protection before damage occurs.
<i>Root pruning protocol</i>	Only project arborist or arborist-supervised personnel may cut roots. Clean cuts only; avoid intentional cutting of roots >2 inches and any high-risk structural roots unless specifically authorized.	Minimizes decay, tearing, and stability impacts.
<i>Root discovery hold points</i>	Stop work and notify arborist if roots >1 inch, structural roots, unexpected soil saturation, trunk flare disturbance, or grade conflict is encountered.	Provides real-time decision point to avoid irreversible damage.
<i>Pruning standards</i>	Prune only where necessary for clearance, safety, or construction protection; perform to ISA/ANSI standards under arborist direction.	Avoids excessive live-crown loss and weak regrowth.
<i>Utility crossings</i>	Route utilities outside TPZs where practical; use boring, bridging, or hand-excavated crossings when unavoidable.	Reduces continuous trenching and root severance.
<i>Grade-change limits</i>	Avoid grade changes inside TPZs unless specifically approved. Where limited fill/removal is unavoidable, protect root collar and maintain drainage away from trunks.	Protects root aeration, root crown health, and stability.
<i>Drainage and irrigation controls</i>	Avoid chronic saturation at oak root crowns; avoid concentrating runoff to trunks; transition irrigation gradually after construction.	Reduces disease and moisture-regime stress around mature oaks.
<i>Dust and soil protection</i>	Control dust and prevent cement washout, chemicals, or sediment from entering TPZs.	Prevents foliar and soil contamination.
<i>Monitoring frequency</i>	Arborist to inspect after fencing, before work near TPZs, during excavation/grading/root exposure, after final grade, and at closeout; more frequently for intensive TRE trees.	Creates compliance record and allows field adjustments.
<i>Stop-work triggers</i>	Stop work for unauthorized TPZ entry, root damage, structural roots, unapproved grade changes, broken branches, trunk wounds, or fencing displacement.	Allows corrective action before impacts worsen.
<i>Documentation</i>	Maintain inspection documentation, root exposure notes, approved root cuts, photo documentation, fence verification, deviations, and final compliance summary.	Supports City compliance and follow-up reporting.

Table 7. Tree Protection and Monitoring Measures

<i>Measure</i>	<i>Specification</i>	<i>Purpose / Rationale</i>
<i>Replacement monitoring</i>	Monitor replacement trees for survival, vigor, irrigation, mulch, structure, pest/disease issues, and establishment for five years or City-required period.	Ensures mitigation success, not just installation.

Arborist monitoring shall occur before grading improvements to verify fencing and limits of disturbance; during demolition or excavation within 25 feet of retained trees; during any hand or pneumatic excavation in the TPZ; at root pruning decision points; during grading or paving adjacent to retained TPZs; after final grading; and at closeout. A final arborist report should document deviations, exposed roots, approved root cuts, irrigation adjustments, and compliance with the tree protection plan.

Because the grading improvement footprint already functions as a racetrack operations landscape, tree protection must prevent improvements from intensifying existing stressors. Access, staging, equipment circulation, and stockpiling should be routed away from retained TPZs even where the surrounding area already appears compacted or operationally disturbed. Existing disturbance is not a reason to allow additional unprotected use of the TPZ (Day and Bassuk 1994). Grading improvement documentation should identify existing and proposed drainage, irrigation, and surface-treatment conditions near retained oaks. Mature oaks should be protected from new chronic saturation at the root crown, new concentrated runoff toward trunks, and irrigation changes that increase disease susceptibility or destabilize moisture regimes (Costello, MacDonald, and Jacobs 1991; University of California Agriculture and Natural Resources 2020; Costello, Hagen, and Jones 2011).

10. TREE MITIGATION AND REPLACEMENT

Replacement mitigation is presented as the final step in the avoid-minimize-mitigate sequence. It offsets residual protected-tree losses that remain after design refinement, tree-retention analysis, and construction-feasibility review. The replacement program is not intended to justify avoidable impacts; rather, it complements the substantial preservation already achieved by retaining, protecting, or avoiding 56 active protected trees within the current grading improvements. Arcadia's replacement framework establishes a default replacement context but also allows the Director to modify, waive, increase, or reduce the replacement requirement. For this project, the applicant requests approval of a 1:1 replacement ratio for the 34 protected removal-pathway trees, resulting in 34 proposed replacement trees. The request is based on the anthropogenic Santa Anita Park operations setting, the reduction of impacts through alignment and grading coordination, the retention of 56 active protected trees, and the intent to place replacement trees where they will provide durable public or community benefit.

Table 8. Proposed 1:1 Replacement Framework

<i>Mitigation Component</i>	<i>Proposed Requirement</i>	<i>Rationale</i>
<i>Protected tree removals</i>	One replacement tree per approved protected tree removal	Reflects a project-specific request based on the reduced residual impact package and Director approval.
<i>Replacement quantity</i>	34 replacement trees	Equal to the 34 protected removal-pathway trees carried in the current report.

Table 8. Proposed 1:1 Replacement Framework

<i>Mitigation Component</i>	<i>Proposed Requirement</i>	<i>Rationale</i>
<i>Replacement tree size</i>	Minimum 24-inch box, or City-approved equivalent	Maintains consistency with City replacement-stock expectations while allowing City direction.
<i>Replacement species</i>	Coast live oak and Engelmann oak preferred where feasible; City-approved native, drought-tolerant, non-invasive species where site constraints warrant	Supports native canopy replacement, climate resilience, and long-term establishment.
<i>Replacement location priority</i>	Public-facing, onsite or offsite, visible, or City-approved public-benefit locations	Provides public or community benefit and avoids overplanting constrained operational areas.
<i>Monitoring</i>	Five-year or City-required establishment monitoring, failure replacement, and annual documentation	Ensures mitigation success and survival rather than installation-only compliance.
<i>Retained-tree preservation</i>	56 active protected trees retained under TRE, TRE with intensive mitigation, or protection-only treatment	Preservation of existing canopy is part of the overall mitigation and public-benefit strategy.

11. CONCLUSIONS

The report details 92 protected trees that require evaluation under Arcadia's tree preservation framework. The report recommends 25 standard TRE trees, 20 TRE with intensive mitigation trees, 34 removal-pathway trees, and 13 protection / avoid / prune-as-needed trees. The protection-only trees should remain protected in the field but should not require a permit. The removal-pathway group includes 34 protected trees. The Applicant requests that the City approve a 1:1 replacement ratio, resulting in 34 proposed replacement trees. This request is supported by the anthropogenic site context, the approximately 347-tree review and avoidance/minimization process, the retention or avoidance of 56 active protected trees, public-benefit replacement planting, and replacement monitoring commitments. Final approval of the ratio, species, size, and planting locations remains subject to City review and Director approval.

The services performed and documented in this report have been conducted in a manner consistent with the level of care and skill ordinarily exercised by other professional consultants under similar circumstances. No other representations are expressed or implied, and no warranty or guarantee is included or intended in this report. I hereby certify that the statements furnished above and in the attached exhibits present the data and information required for this evaluation, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief.

DATE: June 10, 2026

SIGNED: Erik Claus BS, Consulting Arborist, ISA Certification No. WE-3214AU

SIGNED: Lenny Malo MS, Principal Biologist & Regulatory Specialist

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Figures

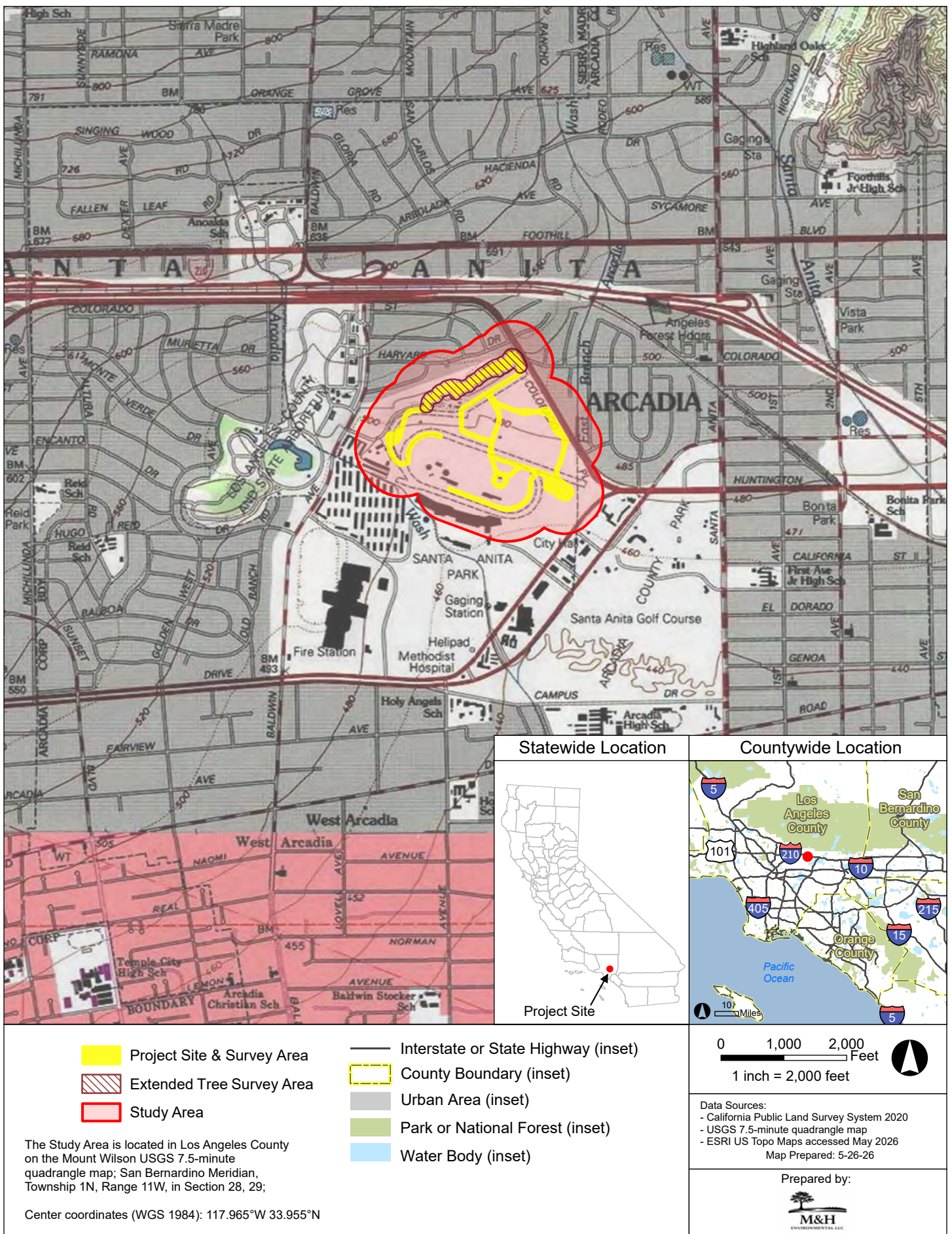


Figure 1. Regional Location



Figure 2. Project Vicinity Map



Figure 3. Existing Tree Inventory Exhibit - Overview



Figure 3-1. Existing Tree Inventory Exhibit



Figure 3-2. Existing Tree Inventory Exhibit



Figure 3-4. Existing Tree Inventory Exhibit

Appendix A – Protected Tree Inventory and Permit Matrix

Appendix A – Protected Tree Inventory and Permit Matrix

Tree	Common	Scientific	DSH (Inches)	Ht (Feet)	Vigor	Crown (Feet)	Density	TPZ %	TPZ Diameter	Severity	Retention Feasibility	Permit Recommendation
6	Coast Live Oak	<i>Quercus agrifolia</i>	19	25	Normal	14	Normal	5	15	Minor	Feasible with standard protection and monitoring	TRE encroachment permit recommended
13	Coast Live Oak	<i>Quercus agrifolia</i>	15	35	High	15	Normal	37	15	Extreme	Feasible only with intensive mitigation and arborist hold points	TRE encroachment permit with intensive mitigation recommended
14	Coast Live Oak	<i>Quercus agrifolia</i>	10	15	Normal	12	Normal	35	15	Severe	Feasible only with intensive mitigation and arborist hold points	TRE encroachment permit with intensive mitigation recommended
16	Coast Live Oak	<i>Quercus agrifolia</i>	42	50	Normal	36	Normal	60	36	Extreme	Removal recommended; TRD/hazard pathway may be evaluated if confirmed by signing arborist and City	TRH removal recommended; evaluate TRD if condition/hazard status confirmed
18	Coast Live Oak	<i>Quercus agrifolia</i>	54	45	Normal	39	Normal	43	39	Extreme	Removal recommended; TRD/hazard pathway may be evaluated if confirmed by signing arborist and City	TRH removal recommended; evaluate TRD if condition/hazard status confirmed

Tree	Common	Scientific	DSH (Inches)	Ht (Feet)	Vigor	Crown (Feet)	Density	TPZ %	TPZ Diameter	Severity	Retention Feasibility	Permit Recommendation
19	Engelmann Oak (Mesa Oak)	<i>Quercus engelmannii</i>	28	40	Normal	39	Normal	71	39	Extreme	Removal recommended; TRD/hazard pathway may be evaluated if confirmed by signing arborist and City	TRH removal recommended; evaluate TRD if condition/hazard status confirmed
20	Coast Live Oak	<i>Quercus agrifolia</i>	17	23	Normal	16	Normal	100	16	Extreme	Removal recommended under current impact estimate	TRH removal permit recommended
21	Coast Live Oak	<i>Quercus agrifolia</i>	45	40	Normal	34	Normal	77	34	Extreme	Feasible only with intensive mitigation and arborist hold points	TRE encroachment permit with intensive mitigation recommended
24	Coast Live Oak	<i>Quercus agrifolia</i>	5	20	High	10	Normal	62	15	Extreme	Removal recommended under current impact estimate	TRH removal permit recommended
25	Coast Live Oak	<i>Quercus agrifolia</i>	6	20	Normal	10	Normal	55	15	Extreme	Removal recommended under current impact estimate	TRH removal permit recommended
26	Coast Live Oak	<i>Quercus agrifolia</i>	14	20	Normal	22	Normal	0	22	None	Feasible - protect/avoid in place; no reported TPZ area impact	Protect in place / avoid / prune as needed; no permit if final plans confirm no protected-zone encroachment
27	Coast Live Oak	<i>Quercus agrifolia</i>	7	18	Normal	12	Normal	1	15	Minor	Feasible with standard protection and monitoring	TRE encroachment permit recommended

Tree	Common	Scientific	DSH (Inches)	Ht (Feet)	Vigor	Crown (Feet)	Density	TPZ %	TPZ Diameter	Severity	Retention Feasibility	Permit Recommendation
32	Coast Live Oak	<i>Quercus agrifolia</i>	24	47	Normal	28	Normal	10	28	Minor	Feasible with standard protection and monitoring	TRE encroachment permit recommended
33	Coast Live Oak	<i>Quercus agrifolia</i>	16	25	Normal	32	Normal	18	32	Moderate	Feasible only with intensive mitigation and arborist hold points	TRE encroachment permit with intensive mitigation recommended
37	Coast Live Oak	<i>Quercus agrifolia</i>	12	18	Normal	17	Normal	31	17	Severe	Feasible only with intensive mitigation and arborist hold points	TRE encroachment permit with intensive mitigation recommended
38	Engelmann Oak (Mesa Oak)	<i>Quercus engelmannii</i>	29	30	Normal	18	Sparse	23	18	Severe	Feasible only with intensive mitigation and arborist hold points	TRE encroachment permit with intensive mitigation recommended
40	Engelmann Oak (Mesa Oak)	<i>Quercus engelmannii</i>	30	40	Low	33	Sparse	21	33	Severe	Feasible only with intensive mitigation and arborist hold points	TRE encroachment permit with intensive mitigation recommended
42	Coast Live Oak	<i>Quercus agrifolia</i>	27	23	Low	15	Normal	87	15	Extreme	Removal recommended; TRD/hazard pathway may be evaluated if confirmed by signing arborist and City	TRH removal recommended; evaluate TRD if condition/hazard status confirmed

Tree	Common	Scientific	DSH (Inches)	Ht (Feet)	Vigor	Crown (Feet)	Density	TPZ %	TPZ Diameter	Severity	Retention Feasibility	Permit Recommendation
44	Coast Live Oak	<i>Quercus agrifolia</i>	30	25	Low	22	Sparse	42	22	Extreme	Removal recommended; TRD/hazard pathway may be evaluated if confirmed by signing arborist and City	TRH removal recommended; evaluate TRD if condition/hazard status confirmed
66	Coast Live Oak	<i>Quercus agrifolia</i>	25	30	Normal	25	Normal	39	25	Extreme	Removal recommended under current impact estimate	TRH removal permit recommended
68	Coast Live Oak	<i>Quercus agrifolia</i>	20	20	Normal	22	Normal	15	22	Moderate	Feasible with standard protection and monitoring	TRE encroachment permit recommended
70	Coast Live Oak	<i>Quercus agrifolia</i>	46	30	Low	30	Sparse	18	30	Moderate	Feasible only with intensive mitigation and arborist hold points	TRE encroachment permit with intensive mitigation recommended
78	Coast Live Oak	<i>Quercus agrifolia</i>	26	38	Normal	30	Normal	47	30	Extreme	Removal recommended under current impact estimate	TRH removal permit recommended
79	Coast Live Oak	<i>Quercus agrifolia</i>	27	30	Normal	33	Normal	77	33	Extreme	Removal recommended under current impact estimate	TRH removal permit recommended
80	Engelmann Oak (Mesa Oak)	<i>Quercus engelmannii</i>	26	40	Low	25	Sparse	30	25	Severe	Feasible only with intensive mitigation and arborist hold points	TRE encroachment permit with intensive mitigation recommended

Tree	Common	Scientific	DSH (Inches)	Ht (Feet)	Vigor	Crown (Feet)	Density	TPZ %	TPZ Diameter	Severity	Retention Feasibility	Permit Recommendation
81	Engelmann Oak (Mesa Oak)	<i>Quercus engelmannii</i>	15	40	Low	25	Sparse	0	25	None	Feasible - protect/avoid in place; no reported TPZ area impact	Protect in place / avoid / prune as needed; no permit if final plans confirm no protected-zone encroachment
82	Coast Live Oak	<i>Quercus agrifolia</i>	20	40	Normal	30	Normal	0	30	Minor	Feasible - protect/avoid in place; no reported TPZ area impact	Protect in place / avoid / prune as needed; no permit if final plans confirm no protected-zone encroachment
83	Coast Live Oak	<i>Quercus agrifolia</i>	7	20	Normal	22	Normal	0	22	None	Feasible - protect/avoid in place; no reported TPZ area impact	Protect in place / avoid / prune as needed; no permit if final plans confirm no protected-zone encroachment
85	Coast Live Oak	<i>Quercus agrifolia</i>	42	50	Normal	40	Normal	22	40	Severe	Feasible only with intensive mitigation and arborist hold points	TRE encroachment permit with intensive mitigation recommended
87	Coast Live Oak	<i>Quercus agrifolia</i>	6	15	Normal	11	Normal	74	15	Extreme	Removal recommended under current impact estimate	TRH removal permit recommended
89	Coast Live Oak	<i>Quercus agrifolia</i>	8	20	Normal	12	Normal	100	15	Extreme	Removal recommended under current impact estimate	TRH removal permit recommended
109	Coast Live Oak	<i>Quercus agrifolia</i>	8	30	Normal	10	Normal	48	15	Extreme	Removal recommended under current impact estimate	TRH removal permit recommended

Tree	Common	Scientific	DSH (Inches)	Ht (Feet)	Vigor	Crown (Feet)	Density	TPZ %	TPZ Diameter	Severity	Retention Feasibility	Permit Recommendation
110	Coast Live Oak	<i>Quercus agrifolia</i>	17	25	Normal	25	Normal	7	25	Minor	Feasible with standard protection and monitoring	TRE encroachment permit recommended
115	Coast Live Oak	<i>Quercus agrifolia</i>	30	40	Normal	40	Normal	5	40	Minor	Feasible with standard protection and monitoring	TRE encroachment permit recommended
116	Coast Live Oak	<i>Quercus agrifolia</i>	42	40	Normal	30	Normal	9	30	Minor	Feasible with standard protection and monitoring	TRE encroachment permit recommended
117	Coast Live Oak	<i>Quercus agrifolia</i>	13	16	Normal	20	Normal	31	20	Severe	Feasible only with intensive mitigation and arborist hold points	TRE encroachment permit with intensive mitigation recommended
118	Coast Live Oak	<i>Quercus agrifolia</i>	19	30	Normal	30	Normal	49	30	Extreme	Feasible with standard protection and monitoring	TRE encroachment permit recommended
119	Coast Live Oak	<i>Quercus agrifolia</i>	19	50	Normal	30	Normal	33	30	Severe	Feasible only with intensive mitigation and arborist hold points	TRE encroachment permit with intensive mitigation recommended
122	Coast Live Oak	<i>Quercus agrifolia</i>	10	15	Normal	12	Sparse	91	15	Extreme	Removal recommended; TRD/hazard pathway may be evaluated if confirmed by signing arborist and City	TRH removal recommended; evaluate TRD if condition/hazard status confirmed
123	Coast Live Oak	<i>Quercus agrifolia</i>	28	45	Normal	30	Normal	88	30	Extreme	Removal recommended under current impact estimate	TRH removal permit recommended

Tree	Common	Scientific	DSH (Inches)	Ht (Feet)	Vigor	Crown (Feet)	Density	TPZ %	TPZ Diameter	Severity	Retention Feasibility	Permit Recommendation
124	Coast Live Oak	<i>Quercus agrifolia</i>	57	48	Normal	40	Normal	99	40	Extreme	Removal recommended; TRD/hazard pathway may be evaluated if confirmed by signing arborist and City	TRH removal recommended; evaluate TRD if condition/hazard status confirmed
126	Coast Live Oak	<i>Quercus agrifolia</i>	4	17	Normal	10	Normal	100	15	Extreme	Removal recommended under current impact estimate	TRH removal permit recommended
127	Coast Live Oak	<i>Quercus agrifolia</i>	11	30	Normal	18	Normal	100	18	Extreme	Removal recommended under current impact estimate	TRH removal permit recommended
128	Coast Live Oak	<i>Quercus agrifolia</i>	8	23	Normal	12	Normal	100	15	Extreme	Removal recommended under current impact estimate	TRH removal permit recommended
129	Coast Live Oak	<i>Quercus agrifolia</i>	17	20	Normal	15	Normal	100	15	Extreme	Removal recommended under current impact estimate	TRH removal permit recommended
130	Coast Live Oak	<i>Quercus agrifolia</i>	6	15	Normal	9	Normal	76	15	Extreme	Removal recommended under current impact estimate	TRH removal permit recommended
135	Coast Live Oak	<i>Quercus agrifolia</i>	13	17	Normal	30	Normal	34	30	Severe	Feasible only with intensive mitigation and arborist hold points	TRE encroachment permit with intensive mitigation recommended
136	Coast Live Oak	<i>Quercus agrifolia</i>	20	28	Normal	15	Normal	3	15	Minor	Feasible with standard protection and monitoring	TRE encroachment permit recommended

Tree	Common	Scientific	DSH (Inches)	Ht (Feet)	Vigor	Crown (Feet)	Density	TPZ %	TPZ Diameter	Severity	Retention Feasibility	Permit Recommendation
143	Coast Live Oak	<i>Quercus agrifolia</i>	10	20	Normal	15	Normal	99	15	Extreme	Removal recommended under current impact estimate	TRH removal permit recommended
144	Coast Live Oak	<i>Quercus agrifolia</i>	25	40	Normal	34	Normal	80	34	Extreme	Removal recommended; TRD/hazard pathway may be evaluated if confirmed by signing arborist and City	TRH removal recommended; evaluate TRD if condition/hazard status confirmed
149	Coast Live Oak	<i>Quercus agrifolia</i>	24	35	Normal	22	Normal	39	22	Extreme	Removal recommended under current impact estimate	TRH removal permit recommended
150	Coast Live Oak	<i>Quercus agrifolia</i>	10	30	Normal	15	Normal	31	15	Severe	Removal recommended under current impact estimate	TRH removal permit recommended
197	Coast Live Oak	<i>Quercus agrifolia</i>	11	20	Normal	20	Normal	0	20	None	Feasible - protect/avoid in place; no reported TPZ area impact	Protect in place / avoid / prune as needed; no permit if final plans confirm no protected-zone encroachment
199	Coast Live Oak	<i>Quercus agrifolia</i>	9	20	Low	20	Normal	0	20	None	Feasible - protect/avoid in place; no reported TPZ area impact	Protect in place / avoid / prune as needed; no permit if final plans confirm no protected-zone encroachment
200	Coast Live Oak	<i>Quercus agrifolia</i>	58	45	Normal	30	Normal	4	30	Minor	Feasible with standard protection and monitoring	TRE encroachment permit recommended

Tree	Common	Scientific	DSH (Inches)	Ht (Feet)	Vigor	Crown (Feet)	Density	TPZ %	TPZ Diameter	Severity	Retention Feasibility	Permit Recommendation
202	Coast Live Oak	<i>Quercus agrifolia</i>	10	20	Normal	27	Normal	8	27	Minor	Feasible with standard protection and monitoring	TRE encroachment permit recommended
203	Coast Live Oak	<i>Quercus agrifolia</i>	27	38	Normal	28	Normal	21	28	Severe	Feasible only with intensive mitigation and arborist hold points	TRE encroachment permit with intensive mitigation recommended
205	Coast Live Oak	<i>Quercus agrifolia</i>	35	35	Normal	25	Normal	33	25	Severe	Feasible only with intensive mitigation and arborist hold points	TRE encroachment permit with intensive mitigation recommended
206	Coast Live Oak	<i>Quercus agrifolia</i>	19	15	Low	10	Sparse	6	15	Minor	Feasible with standard protection and monitoring	TRE encroachment permit recommended
207	Coast Live Oak	<i>Quercus agrifolia</i>	10	15	Low	20	Normal	17	20	Moderate	Feasible only with intensive mitigation and arborist hold points	TRE encroachment permit with intensive mitigation recommended
208	Coast Live Oak	<i>Quercus agrifolia</i>	16	15	Low	15	Sparse	5	15	Minor	Feasible with standard protection and monitoring	TRE encroachment permit recommended
209	Coast Live Oak	<i>Quercus agrifolia</i>	16	25	Normal	15	Normal	0	15	None	Feasible - protect/avoid in place; no reported TPZ area impact	Protect in place / avoid / prune as needed; no permit if final plans confirm no protected-zone encroachment
218	Coast Live Oak	<i>Quercus agrifolia</i>	15	23	Normal	15	Normal	4	15	Minor	Feasible with standard protection and monitoring	TRE encroachment permit recommended

Tree	Common	Scientific	DSH (Inches)	Ht (Feet)	Vigor	Crown (Feet)	Density	TPZ %	TPZ Diameter	Severity	Retention Feasibility	Permit Recommendation
219	Coast Live Oak	<i>Quercus agrifolia</i>	35	30	Normal	20	Normal	0	20	None	Feasible - protect/avoid in place; no reported TPZ area impact	Protect in place / avoid / prune as needed; no permit if final plans confirm no protected-zone encroachment
220	Coast Live Oak	<i>Quercus agrifolia</i>	8	12	Normal	7	Normal	0	15	None	Feasible - protect/avoid in place; no reported TPZ area impact	Protect in place / avoid / prune as needed; no permit if final plans confirm no protected-zone encroachment
256	Coast Live Oak	<i>Quercus agrifolia</i>	15	18	Low	4	Sparse	55	15	Extreme	Removal recommended; TRD/hazard pathway may be evaluated if confirmed by signing arborist and City	TRH removal recommended; evaluate TRD if condition/hazard status confirmed
263	Coast Live Oak	<i>Quercus agrifolia</i>	10	28	Normal	10	Normal	90	15	Extreme	Removal recommended under current impact estimate	TRH removal permit recommended
290	Coast Live Oak	<i>Quercus agrifolia</i>	16	25	Normal	18	Normal	12	18	Moderate	Feasible with standard protection and monitoring	TRE encroachment permit recommended
292	Coast Live Oak	<i>Quercus agrifolia</i>	22	30	Low	27	Normal	2	27	Minor	Feasible with standard protection and monitoring	TRE encroachment permit recommended

Tree	Common	Scientific	DSH (Inches)	Ht (Feet)	Vigor	Crown (Feet)	Density	TPZ %	TPZ Diameter	Severity	Retention Feasibility	Permit Recommendation
314	Coast Live Oak	<i>Quercus agrifolia</i>	11	25	Low	15	Normal	0	15	None	Feasible - protect/avoid in place; no reported TPZ area impact	Protect in place / avoid / prune as needed; no permit if final plans confirm no protected-zone encroachment
315	Coast Live Oak	<i>Quercus agrifolia</i>	6	18	Normal	8	Normal	8	15	Minor	Feasible with standard protection and monitoring	TRE encroachment permit recommended
316	Coast Live Oak	<i>Quercus agrifolia</i>	6	18	Normal	8	Normal	1	15	Minor	Feasible with standard protection and monitoring	TRE encroachment permit recommended
318	Coast Live Oak	<i>Quercus agrifolia</i>	5	12	Normal	8	Normal	92	15	Extreme	Removal recommended under current impact estimate	TRH removal permit recommended
320	Coast Live Oak	<i>Quercus agrifolia</i>	38	48	Normal	36	Dense	43	36	Extreme	Removal recommended under current impact estimate	TRH removal permit recommended
323	Coast Live Oak	<i>Quercus agrifolia</i>	18	6	Normal	14	Normal	94	15	Extreme	Removal recommended under current impact estimate	TRH removal permit recommended
327	Coast Live Oak	<i>Quercus agrifolia</i>	4	14	Low	5	Sparse	9	15	Minor	Feasible with standard protection and monitoring	TRE encroachment permit recommended
331	Coast Live Oak	<i>Quercus agrifolia</i>	6	18	Normal	10	Normal	22	15	Severe	Feasible only with intensive mitigation and arborist hold points	TRE encroachment permit with intensive mitigation recommended

Tree	Common	Scientific	DSH (Inches)	Ht (Feet)	Vigor	Crown (Feet)	Density	TPZ %	TPZ Diameter	Severity	Retention Feasibility	Permit Recommendation
332	Coast Live Oak	<i>Quercus agrifolia</i>	7	18	Normal	12	Normal	4	15	Minor	Feasible with standard protection and monitoring	TRE encroachment permit recommended
333	Coast Live Oak	<i>Quercus agrifolia</i>	26	25	Low	20	Normal	20	20	Moderate	Feasible only with intensive mitigation and arborist hold points	TRE encroachment permit with intensive mitigation recommended
334	Coast Live Oak	<i>Quercus agrifolia</i>	7	30	Low	15	Normal	1	15	Minor	Feasible with standard protection and monitoring	TRE encroachment permit recommended
335	Coast Live Oak	<i>Quercus agrifolia</i>	5	20	Low	12	Sparse	0	15	None	Feasible - protect/avoid in place; no reported TPZ area impact	Protect in place / avoid / prune as needed; no permit if final plans confirm no protected-zone encroachment
336	Coast Live Oak	<i>Quercus agrifolia</i>	30	40	Normal	12	Normal	10	15	Minor	Feasible with standard protection and monitoring	TRE encroachment permit recommended
337	Coast Live Oak	<i>Quercus agrifolia</i>	18	30	Normal	15	Normal	4	15	Minor	Feasible with standard protection and monitoring	TRE encroachment permit recommended
338	Coast Live Oak	<i>Quercus agrifolia</i>	5	12	Low	12	Sparse	0	15	None	Feasible - protect/avoid in place; no reported TPZ area impact	Protect in place / avoid / prune as needed; no permit if final plans confirm no protected-zone encroachment

Tree	Common	Scientific	DSH (Inches)	Ht (Feet)	Vigor	Crown (Feet)	Density	TPZ %	TPZ Diameter	Severity	Retention Feasibility	Permit Recommendation
340	Coast Live Oak	<i>Quercus agrifolia</i>	4	25	Low	12	Sparse	14	15	Moderate	Feasible with standard protection and monitoring	TRE encroachment permit recommended
341	Coast Live Oak	<i>Quercus agrifolia</i>	5	25	Low	12	Sparse	16	15	Moderate	Feasible only with intensive mitigation and arborist hold points	TRE encroachment permit with intensive mitigation recommended
342	Coast Live Oak	<i>Quercus agrifolia</i>	6	27	Low	18	Normal	35	18	Severe	Removal recommended; TRD/hazard pathway may be evaluated if confirmed by signing arborist and City	TRH removal permit recommended; evaluate TRD if condition/hazard status confirmed
343	Coast Live Oak	<i>Quercus agrifolia</i>	27	28	Normal	20	Normal	39	20	Extreme	Removal recommended under current impact estimate	TRH removal permit recommended
344	Coast Live Oak	<i>Quercus agrifolia</i>	10	28	Normal	15	Normal	11	15	Moderate	Feasible with standard protection and monitoring	TRE encroachment permit recommended
345	Coast Live Oak	<i>Quercus agrifolia</i>	31	30	Normal	20	Normal	31	20	Severe	Removal recommended under current impact estimate	TRH removal permit recommended
346	Coast Live Oak	<i>Quercus agrifolia</i>	9	20	Normal	12	Normal	0	15	None	Feasible - protect/avoid in place; no reported TPZ area impact	Protect in place / avoid / prune as needed; no permit if final plans confirm no protected-zone encroachment

<i>Tree</i>	<i>Common</i>	<i>Scientific</i>	<i>DSH (Inches)</i>	<i>Ht (Feet)</i>	<i>Vigor</i>	<i>Crown (Feet)</i>	<i>Density</i>	<i>TPZ %</i>	<i>TPZ Diameter</i>	<i>Severity</i>	<i>Retention Feasibility</i>	<i>Permit Recommendation</i>
347	Coast Live Oak	<i>Quercus agrifolia</i>	16	28	Normal	18	Normal	23	18	Severe	Feasible only with intensive mitigation and arborist hold points	TRE encroachment permit with intensive mitigation recommended

Appendix B – Mitigation Table

Appendix B – Mitigation Table¹

Tree	Common Name	Scientific Name	Permit Pathway	Replacement Ratio	Qty	Preferred Species	Preferred Location
16	Coast Live Oak	<i>Quercus agrifolia</i>	TRH; evaluate TRD if confirmed	1:1	1	Coast live oak preferred; City-approved alternative if needed.	On-site or off-site/City-approved if constrained.
18	Coast Live Oak	<i>Quercus agrifolia</i>	TRH; evaluate TRD if confirmed	1:1	1	Coast live oak preferred; City-approved alternative if needed.	On-site or off-site/City-approved if constrained.
19	Engelmann Oak (Mesa Oak)	<i>Quercus engelmannii</i>	TRH; evaluate TRD if confirmed	1:1	1	Engelmann oak or Coast live oak, City-approved.	On-site or off-site/City-approved if constrained.
20	Coast Live Oak	<i>Quercus agrifolia</i>	TRH removal permit recommended	1:1	1	Coast live oak preferred; City-approved alternative if needed.	On-site or off-site/City-approved if constrained.
24	Coast Live Oak	<i>Quercus agrifolia</i>	TRH removal permit recommended	1:1	1	Coast live oak preferred; City-approved alternative if needed.	On-site or off-site/City-approved if constrained.
25	Coast Live Oak	<i>Quercus agrifolia</i>	TRH removal permit recommended	1:1	1	Coast live oak preferred; City-approved alternative if needed.	On-site or off-site/City-approved if constrained.
42	Coast Live Oak	<i>Quercus agrifolia</i>	TRH; evaluate TRD if confirmed	1:1	1	Coast live oak preferred; City-approved alternative if needed.	On-site or off-site/City-approved if constrained.
44	Coast Live Oak	<i>Quercus agrifolia</i>	TRH; evaluate TRD if confirmed	1:1	1	Coast live oak preferred; City-approved alternative if needed.	On-site or off-site/City-approved if constrained.
66	Coast Live Oak	<i>Quercus agrifolia</i>	TRH removal permit recommended	1:1	1	Coast live oak preferred; City-approved alternative if needed.	On-site or off-site/City-approved if constrained.
78	Coast Live Oak	<i>Quercus agrifolia</i>	TRH removal permit recommended	1:1	1	Coast live oak preferred; City-approved alternative if needed.	On-site or off-site/City-approved if constrained.
79	Coast Live Oak	<i>Quercus agrifolia</i>	TRH removal permit recommended	1:1	1	Coast live oak preferred; City-approved alternative if needed.	On-site or off-site/City-approved if constrained.
87	Coast Live Oak	<i>Quercus agrifolia</i>	TRH removal permit recommended	1:1	1	Coast live oak preferred; City-approved alternative if needed.	On-site or off-site/City-approved if constrained.
89	Coast Live Oak	<i>Quercus agrifolia</i>	TRH removal permit recommended	1:1	1	Coast live oak preferred; City-approved alternative if needed.	On-site or off-site/City-approved if constrained.
109	Coast Live Oak	<i>Quercus agrifolia</i>	TRH removal permit recommended	1:1	1	Coast live oak preferred; City-approved alternative if needed.	On-site or off-site/City-approved if constrained.
122	Coast Live Oak	<i>Quercus agrifolia</i>	TRH; evaluate TRD if confirmed	1:1	1	Coast live oak preferred; City-approved alternative if needed.	On-site or off-site/City-approved if constrained.
123	Coast Live Oak	<i>Quercus agrifolia</i>	TRH removal permit recommended	1:1	1	Coast live oak preferred; City-approved alternative if needed.	On-site or off-site/City-approved if constrained.

¹ Final planting details subject to City approval.

Tree	Common Name	Scientific Name	Permit Pathway	Replacement Ratio	Qty	Preferred Species	Preferred Location
124	Coast Live Oak	<i>Quercus agrifolia</i>	TRH; evaluate TRD if confirmed	1:1	1	Coast live oak preferred; City-approved alternative if needed.	On-site or off-site/City-approved if constrained.
126	Coast Live Oak	<i>Quercus agrifolia</i>	TRH removal permit recommended	1:1	1	Coast live oak preferred; City-approved alternative if needed.	On-site or off-site/City-approved if constrained.
127	Coast Live Oak	<i>Quercus agrifolia</i>	TRH removal permit recommended	1:1	1	Coast live oak preferred; City-approved alternative if needed.	On-site or off-site/City-approved if constrained.
128	Coast Live Oak	<i>Quercus agrifolia</i>	TRH removal permit recommended	1:1	1	Coast live oak preferred; City-approved alternative if needed.	On-site or off-site/City-approved if constrained.
129	Coast Live Oak	<i>Quercus agrifolia</i>	TRH removal permit recommended	1:1	1	Coast live oak preferred; City-approved alternative if needed.	On-site or off-site/City-approved if constrained.
130	Coast Live Oak	<i>Quercus agrifolia</i>	TRH removal permit recommended	1:1	1	Coast live oak preferred; City-approved alternative if needed.	On-site or off-site/City-approved if constrained.
143	Coast Live Oak	<i>Quercus agrifolia</i>	TRH removal permit recommended	1:1	1	Coast live oak preferred; City-approved alternative if needed.	On-site or off-site/City-approved if constrained.
144	Coast Live Oak	<i>Quercus agrifolia</i>	TRH; evaluate TRD if confirmed	1:1	1	Coast live oak preferred; City-approved alternative if needed.	On-site or off-site/City-approved if constrained.
149	Coast Live Oak	<i>Quercus agrifolia</i>	TRH removal permit recommended	1:1	1	Coast live oak preferred; City-approved alternative if needed.	On-site or off-site/City-approved if constrained.
150	Coast Live Oak	<i>Quercus agrifolia</i>	TRH removal permit recommended	1:1	1	Coast live oak preferred; City-approved alternative if needed.	On-site or off-site/City-approved if constrained.
256	Coast Live Oak	<i>Quercus agrifolia</i>	TRH; evaluate TRD if confirmed	1:1	1	Coast live oak preferred; City-approved alternative if needed.	On-site or off-site/City-approved if constrained.
263	Coast Live Oak	<i>Quercus agrifolia</i>	TRH removal permit recommended	1:1	1	Coast live oak preferred; City-approved alternative if needed.	On-site or off-site/City-approved if constrained.
318	Coast Live Oak	<i>Quercus agrifolia</i>	TRH removal permit recommended	1:1	1	Coast live oak preferred; City-approved alternative if needed.	On-site or off-site/City-approved if constrained.
320	Coast Live Oak	<i>Quercus agrifolia</i>	TRH removal permit recommended	1:1	1	Coast live oak preferred; City-approved alternative if needed.	On-site or off-site/City-approved if constrained.
323	Coast Live Oak	<i>Quercus agrifolia</i>	TRH removal permit recommended	1:1	1	Coast live oak preferred; City-approved alternative if needed.	On-site or off-site/City-approved if constrained.
342	Coast Live Oak	<i>Quercus agrifolia</i>	TRH; evaluate TRD if confirmed	1:1	1	Coast live oak preferred; City-approved alternative if needed.	On-site or off-site/City-approved if constrained.
343	Coast Live Oak	<i>Quercus agrifolia</i>	TRH removal permit recommended	1:1	1	Coast live oak preferred; City-approved alternative if needed.	On-site or off-site/City-approved if constrained.
345	Coast Live Oak	<i>Quercus agrifolia</i>	TRH removal permit recommended	1:1	345	Coast live oak preferred; City-approved alternative if needed.	On-site or off-site/City-approved if constrained.

Appendix C – Photo Log

Appendix C – Photo Log

	Photograph: 1. TREE #6 Species: Coast Live Oak Category: Protect in place, Avoid
	Photograph: 2. TREE #13 Species: Coast Live Oak Category: TRE with Intensive Mitigation



Photograph: 3. TREE #14
Species: Coast Live Oak
Category: TRE with Intensive Mitigation



Photograph: 4. TREE #16
Species: Coast Live Oak
Category: TRH



Photograph: 5. TREE #18
Species: Coast Live Oak
Category: TRH



Photograph: 6. TREE #19
Species: Engelmann Oak
Category: TRH



Photograph: 7. TREE #20
Species: Coast Live Oak
Category: TRH



Photograph: 8. TREE #21
Species: Coast Live Oak
Category: TRE with Intensive Mitigation



Photograph: 9. TREE #24
Species: Coast Live Oak
Category: TRH



Photograph: 10. TREE #25
Species: Coast Live Oak
Category: TRH



Photograph: 11. TREE #26
Species: Coast Live Oak
Category: Protect in place, Avoid



Photograph: 12. TREE #27
Species: Coast Live Oak
Category: TRE



Photograph: 13. TREE #32
Species: Coast Live Oak
Category: TRE



Photograph: 14. TREE #33
Species: Coast Live Oak
Category: TRE with Intensive Mitigation



Photograph: 15. TREE #37
Species: Coast Live Oak
Category: TRE with Intensive Mitigation



Photograph: 16. TREE #38
Species: Engelmann Oak
Category: TRE with Intensive Mitigation



Photograph: 17. TREE #40
Species: Engelmann Oak
Category: TRE with Intensive Mitigation



Photograph: 18. TREE #42
Species: Coast Live Oak
Category: TRH



Photograph: 19. TREE # 44
Species: Coast Live Oak
Category: TRH



Photograph: 20. TREE #66
Species: Coast Live Oak
Category: TRH



Photograph: 21. TREE #68
Species: Coast Live Oak
Category: TRE



Photograph: 22. TREE # 70
Species: Coast Live Oak
Category: TRE with Intensive Mitigation



Photograph: 23. TREE #78
Species: Coast Live Oak
Category: TRH



Photograph: 24. TREE #79
Species: Coast Live Oak
Category: TRH



Photograph: 25. TREE #80
Species: Engelmann Oak
Category: TRE with Intensive Mitigation



Photograph: 26. TREE #81
Species: Engelmann Oak
Category: Protect in place, Avoid



Photograph: 27. TREE #82
Species: Coast Live Oak
Category: Protect in place, Avoid



Photograph: 28. TREE #83
Species: Coast Live Oak
Category: Protect in place, Avoid



Photograph: 29. TREE #85
Species: Coast Live Oak
Category: TRE with Intensive Mitigation



Photograph: 30. TREE #87
Species: Coast Live Oak
Category: TRH



Photograph: 31. TREE #89
Species: Coast Live Oak
Category: TRH



Photograph: 32. TREE # 109
Species: Coast Live Oak
Category: TRH



Photograph: 33. TREE #110
Species: Coast Live Oak
Category: TRE



Photograph: 34. TREE #115
Species: Coast Live Oak
Category: TRE



Photograph: 35. TREE #116
Species: Coast Live Oak
Category: TRE



Photograph: 36. TREE # 117
Species: Coast Live Oak
Category: TRE with Intensive Mitigation



Photograph: 37. TREE #118
Species: Coast Live Oak
Category: TRE



Photograph: 38. TREE #119
Species: Coast Live Oak
Category: TRE with Intensive Mitigation



Photograph: 39. TREE # 122
Species: Coast Live Oak
Category: TRH



Photograph: 40. TREE #123
Species: Coast Live Oak
Category: TRH



Photograph: 41. TREE # 124
Species: Coast Live Oak
Category: TRH



Photograph: 42. TREE #126
Species: Coast Live Oak
Category: TRH



Photograph: 43. TREE #127
Species: Coast Live Oak
Category: TRH



Photograph: 44. TREE #128
Species: Coast Live Oak
Category: TRH



Photograph: 45. TREE #129
Species: Coast Live Oak
Category: TRH



Photograph: 46. TREE # 130
Species: Coast Live Oak
Category: TRH



Photograph: 47. TREE #135
Species: Coast Live Oak
Category: TRE with Intensive Mitigation



Photograph: 48. TREE #136
Species: Coast Live Oak
Category: TRE



Photograph: 49. TREE #143
Species: Coast Live Oak
Category: TRH



Photograph: 50. TREE #144
Species: Coast Live Oak
Category: TRH



Photograph: 51. TREE #149
Species: Coast Live Oak
Category: TRH



Photograph: 52. TREE #150
Species: Coast Live Oak
Category: TRH



Photograph: 53. TREE #197
Species: Coast Live Oak
Category: Protect in place, Avoid



Photograph: 54. TREE #199
Species: Coast Live Oak
Category: Protect in place, Avoid



Photograph: 55. TREE #200
Species: Coast Live Oak
Category: TRE



Photograph: 56. TREE #202
Species: Coast Live Oak
Category: TRE



Photograph: 57. TREE #203
Species: Coast Live Oak
Category: TRE with Intensive Mitigation



Photograph: 58. TREE #205
Species: Coast Live Oak
Category: TRE with Intensive Mitigation



Photograph: 59. TREE 206
Species: Coast Live Oak
Category: TRE



Photograph: 60. TREE #207
Species: Coast Live Oak
Category: TRE with Intensive Mitigation



Photograph: 61. TREE #208
Species: Coast Live Oak
Category: TRE



Photograph: 62. TREE #209
Species: Coast Live Oak
Category: Protect in place, Avoid



Photograph: 63. TREE #218
Species: Coast Live Oak
Category: TRE



Photograph: 64. TREE #219
Species: Coast Live Oak
Category: Protect in place, Avoid



Photograph: 65. TREE #220
Species: Coast Live Oak
Category: Protect in place, Avoid



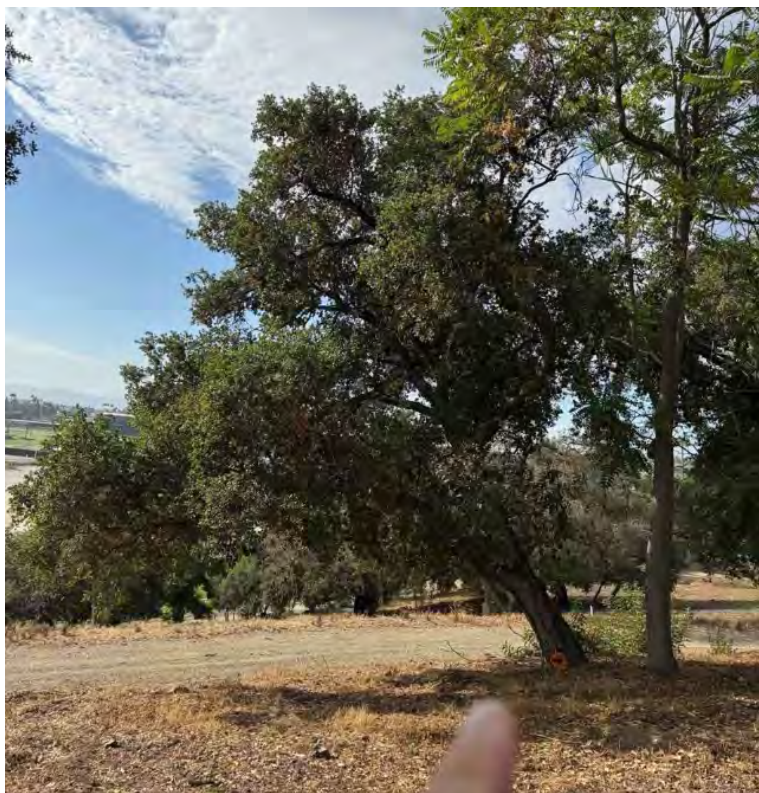
Photograph: 66. TREE #256
Species: Coast Live Oak
Category: TRH



Photograph: 67. TREE #263
Species: Coast Live Oak
Category: TRH



Photograph: 68. TREE #290
Species: Coast Live Oak
Category: TRE



Photograph: 69. TREE #292
Species: Coast Live Oak
Category: TRE



Photograph: 70. TREE #314
Species: Coast Live Oak
Category: Protect in place, Avoid



Photograph: 71. TREE #315
Species: Coast Live Oak
Category: TRE



Photograph: 72. TREE #316
Species: Coast Live Oak
Category: TRE



Photograph: 73. TREE #318
Species: Coast Live Oak
Category: TRH



Photograph: 74. TREE #320
Species: Coast Live Oak
Category: TRH



Photograph: 75. TREE #323
Species: Coast Live Oak
Category: TRE



Photograph: 76. TREE #327
Species: Coast Live Oak
Category: TRH



Photograph: 77. TREE #331
Species: Coast Live Oak
Category: TRE with Intensive Mitigation



Photograph: 78. TREE #332
Species: Coast Live Oak
Category: TRH



Photograph: 79. TREE #333
Species: Coast Live Oak
Category: TRE with Intensive Mitigation



Photograph: 80. TREE #334
Species: Coast Live Oak
Category: TRE



Photograph: 81. TREE #335
Species: Coast Live Oak
Category: Protect in place, Avoid



Photograph: 82. TREE #336
Species: Coast Live Oak
Category: TRE



Photograph: 83. TREE #337
Species: Coast Live Oak
Category: TRE



Photograph: 84. TREE #338
Species: Coast Live Oak
Category: Protect in place, Avoid



Photograph: 85. TREE 340
Species: Coast Live Oak
Category: TRE



Photograph: 86. TREE 341
Species: Coast Live Oak
Category: TRE with Intensive Mitigation



Photograph: 87. TREE #342
Species: Coast Live Oak
Category: TRH



Photograph: 88. TREE #343
Species: Coast Live Oak
Category: TRH



Photograph: 89. TREE #344
Species: Coast Live Oak
Category: TRE



Photograph: 90. TREE #345
Species: Coast Live Oak
Category: TRE with Intensive Mitigation



Photograph: 91. TREE #346
Species: Coast Live Oak
Category: Protect in place, Avoid



Photograph: 92. TREE #347
Species: Coast Live Oak
Category: TRE with Intensive Mitigation

Appendix B – Potential for Occurrence within the Project Site

Appendix B

Potential for occurrence	Common name (Scientific name)	Federal listing status	State listing status	CNPS list	Number of records within 5 miles	Year(s) sighted
A	American bumble bee (<i>Bombus pensylvanicus</i>)	None	None	-	5	1917-2020
A	Western spadefoot (<i>Spea hammondi</i>)	Proposed Threatened	None	-	4	1913-1931
A	Crotch's bumble bee (<i>Bombus crotchii</i>)	None	Candidate Endangered	-	4	1933-2020
A	Mesa horkelia (<i>Horkelia cuneata</i> var. <i>puberula</i>)	None	None	1B.1	5	1903
HP	Hoary bat (<i>Lasiurus cinereus</i>)	None	None	-	4	1922-1948
HP	Pallid bat (<i>Antrozous pallidus</i>)	None	None	-	5	1910-1932
A	Western mastiff bat (<i>Eumops perotis californicus</i>)	None	None	-	4	1913-1958
A	Coastal California gnatcatcher (<i>Polioptila californica californica</i>)	Threatened	None	-	4	1903-1928
A	Southwestern willow flycatcher (<i>Empidonax traillii extimus</i>)	Endangered	Endangered	-	1	1906
A	Southern California legless lizard (<i>Anniella stebbinsi</i>)	None	None	-	7	1923-2018
A	South coast gartersnake (<i>Thamnophis sirtalis</i>)	None	None	-	2	1907-1911
A	Southern mountain yellow-legged frog (<i>Rana muscosa</i>)	Endangered	Endangered	-	5	1908-2001
A	Riversidian Alluvial Fan Sage Scrub	None	None	-	5	1978-1985
A	Parish's gooseberry (<i>Ribes divaricatum</i> var. <i>parishii</i>)	None	None	1A	2	1893-1951
A	Least Bell's vireo (<i>Vireo bellii pusillus</i>)	Endangered	Endangered	-	5	1923-2015
A	Bank swallow (<i>Riparia riparia</i>)	None	Threatened	-	1	1894
A	Slender-horned spineflower (<i>Dodecahema leptoceras</i>)	Endangered	Endangered	1B.1	2	1979
A	Swainson's hawk (<i>Buteo swainsoni</i>)	None	Threatened	-	1	1880
A	Plummer's mariposa-lily (<i>Calochortus plummerae</i>)	None	None	4.2	6	1918-2010
A	Coast Range newt (<i>Taricha torosa</i>)	None	None	-	1	2013
A	Western yellow-billed cuckoo (<i>Coccyzus americanus occidentalis</i>)	Threatened	Endangered	-	1	2011
HP	Cooper's hawk (<i>Astur cooperii</i>)	None	None	-	1	2001
A	Yellow-breasted chat (<i>Icteria virens</i>)	None	None	-	1	2001
A	American peregrine falcon (<i>Falco peregrinus anatum</i>)	Delisted	Delisted	-	1	2005
A	Black swift (<i>Cypseloides niger</i>)	None	None	-	1	1986
A	Burrowing owl (<i>Athene cunicularia</i>)	None	Candidate Endangered	-	1	1895
A	California saw-grass (<i>Cladium californicum</i>)	None	None	2B.2	1	1861
A	Southern Coast Live Oak Riparian Forest	None	None	-	12	1978
A	Robinson's pepper-grass (<i>Lepidium virginicum</i> var. <i>robinsonii</i>)	None	None	4.3	2	1928-1994
A	Southern Sycamore Alder Riparian Woodland	None	None	-	5	1978
A	San Gabriel chestnut (<i>Glyptostoma gabrielense</i>)	None	None	-	8	1946-2020
A	Braunton's milk-vetch (<i>Astragalus brauntonii</i>)	Endangered	None	1B.1	4	1986-2019
A	Western red bat (<i>Lasiurus frantzii</i>)	None	None	-	1	2015

Potential for occurrence	Common name (Scientific name)	Federal listing status	State listing status	CNPS list	Number of records within 5 miles	Year(s) sighted
A	Townsend's big-eared bat (<i>Corynorhinus townsendii</i>)	None	None	-	1	2015
A	Coast horned lizard (<i>Phrynosoma blainvillii</i>)	None	None	-	5	1913-2001
A	Sonoran maiden fern (<i>Pelazoneuron puberulum</i> var. <i>sonorense</i>)	None	None	2B.2	3	1907-2016
A	San Gabriel bedstraw (<i>Galium grande</i>)	None	None	1B.2	4	1979-2003
A	Greata's aster (<i>Symphyotrichum greatae</i>)	None	None	1B.3	3	1915-2009
A	Peruvian dodder (<i>Cuscuta obtusiflora</i> var. <i>glandulosa</i>)	None	None	2B.2	1	1989
A	Southern mountains skullcap (<i>Scutellaria bolanderi</i> ssp. <i>austromontana</i>)	None	None	1B.2	1	1974
A	Two-striped gartersnake (<i>Thamnophis hammondi</i>)	None	None	-	1	2013
A	Coastal whiptail (<i>Aspidoscelis tigris stejnegeri</i>)	None	None	-	1	2001
A	San Diego black-tailed jackrabbit (<i>Lepus californicus bennettii</i>)	None	None	-	1	2001
A	Brand's star phacelia (<i>Phacelia stellaris</i>)	None	None	1B.1	1	1935
A	Coulter's goldfields (<i>Lasthenia glabrata</i> ssp. <i>coulteri</i>)	None	None	1B.1	1	1882
A	Smooth tarplant (<i>Centromadia pungens</i> ssp. <i>laevis</i>)	None	None	1B.1	1	1901
A	White rabbit-tobacco (<i>Pseudognaphalium leucocephalum</i>)	None	None	2B.2	2	1908-1929
A	California glossy snake (<i>Arizona elegans occidentalis</i>)	None	None	-	1	1889
A	Dohrn's elegant eucnemid beetle (<i>Palaeoxenus dohrni</i>)	None	None	-	1	1903
A	Southern tarplant (<i>Centromadia parryi</i> ssp. <i>australis</i>)	None	None	1B.1	1	1997

Appendix C – Photo Log



Representative Photograph 1.



Representative Photograph 2.



Representative Photograph 3.



Representative Photograph 4.



Representative Photograph 5.



Representative Photograph 6.

Appendix D – Wildlife and Plant Species List

Plant Species List

Family	Scientific Name	Common Name
Adoxaceae	<i>Sambucus nigra</i> subsp. <i>caerulea</i>	Mexican elderberry
Aizoaceae	<i>Carpobrotus edulis</i>	Hottentot fig
Anacardiaceae	<i>Malosma laurina</i>	Laurel sumac
Anacardiaceae	<i>Schinus molle</i>	Peruvian peppertree
Anacardiaceae	<i>Schinus terebinthifolius</i>	Brazilian peppertree
Apocynaceae	<i>Nerium oleander</i>	Oleander
Araliaceae	<i>Hedera helix</i>	English ivy
Arecaceae	<i>Washingtonia robusta</i>	Washington fan palm
Arecaceae	<i>Phoenix</i> sp.	Date palm
Asteraceae	<i>Ambrosia acanthicarpa</i>	Annual bur-sage
Asteraceae	<i>Ambrosia confertiflora</i>	Weakleaf bur ragweed
Asteraceae	<i>Carduus pycnocephalus</i> subsp. <i>pycnocephalus</i>	Italian thistle
Asteraceae	<i>Cotula australis</i>	Australian waterbuttons
Asteraceae	<i>Hypochaeris glabra</i>	Smooth cat's ear
Asteraceae	<i>Pseudognaphalium californicum</i>	Ladies' tobacco
Asteraceae	<i>Pseudognaphalium luteoalbum</i>	Jersey cudweed
Asteraceae	<i>Sonchus oleraceus</i>	Common sowthistle
Asteraceae	<i>Taraxacum officinale</i>	Common dandelion
Brassicaceae	<i>Brassica tournefortii</i>	Saharan mustard
Brassicaceae	<i>Hirschfeldia incana</i>	Shortpod mustard
Brassicaceae	<i>Lepidium didymum</i>	Lesser swinecress
Brassicaceae	<i>Raphanus sativus</i>	Cultivated radish
Brassicaceae	<i>Sisymbrium irio</i>	London rocket
Brassicaceae	<i>Sisymbrium orientale</i>	Indian hedgemustard
Caryophyllaceae	<i>Stellaria media</i>	Common chickweed
Chenopodiaceae	<i>Chenopodium berlandieri</i>	Pitseed goosefoot
Chenopodiaceae	<i>Chenopodium murale</i>	Nettleleaf goosefoot
Chenopodiaceae	<i>Salsola tragus</i>	Prickly Russian thistle
Commelinaceae	<i>Commelina</i>	Dayflower
Crassulaceae	<i>Crassula tillaea</i>	Moss pygmyweed
Cucurbitaceae	<i>Marah macrocarpa</i>	Cucamonga manroot
Euphorbiaceae	<i>Chamaesyce maculata</i>	Spotted sandmat
Euphorbiaceae	<i>Euphorbia peplus</i>	Petty spurge
Euphorbiaceae	<i>Ricinus communis</i>	Castorbean
Fabaceae	<i>Acacia baileyana</i>	Cootamundra wattle
Fabaceae	<i>Melilotus indicus</i>	Sourclover
Fagaceae	<i>Quercus agrifolia</i>	California live oak
Fagaceae	<i>Quercus engelmannii</i>	Engelmann oak
Geraniaceae	<i>Erodium cicutarium</i>	Redstem stork's bill
Geraniaceae	<i>Erodium moschatum</i>	Musky stork's bill
Juglandaceae	<i>Juglans californica</i>	Southern california black walnut
Malvaceae	<i>Malva parviflora</i>	Cheeseweed mallow
Moraceae	<i>Ficus carica</i>	Edible fig
Myrsinaceae	<i>Anagallis arvensis</i>	Scarlet pimpernel
Oleaceae	<i>Olea europaea</i>	Olive
Oleaceae	<i>Fraxinus</i>	Ash
Onagraceae	<i>Camissoniopsis intermedia</i>	Intermediate suncup
Plantaginaceae	<i>Plantago major</i>	Common plantain
Poaceae	<i>Avena fatua</i>	Wild oat
Poaceae	<i>Bromus diandrus</i>	Ripgut brome
Poaceae	<i>Cynodon dactylon</i>	Bermudagrass
Poaceae	<i>Ehrharta erecta</i>	Panic veldtgrass
Poaceae	<i>Festuca myuros</i>	Rat-tail fescue
Poaceae	<i>Hordeum murinum</i>	Mouse barley
Poaceae	<i>Poa annua</i>	Annual bluegrass

Family	Scientific Name	Common Name
Polygonaceae	<i>Eriogonum elongatum</i> var. <i>elongatum</i>	Long-stem wild buckwheat
Polygonaceae	<i>Polygonum aviculare</i>	Prostrate knotweed
Portulacaceae	<i>Portulaca oleracea</i>	Little hogweed
Rubiaceae	<i>Galium parisiense</i>	Wall bedstraw
Scrophulariaceae	<i>Verbascum virgatum</i>	Wand mullein
Simaroubaceae	<i>Ailanthus altissima</i>	Tree of heaven
Solanaceae	<i>Datura wrightii</i>	Sacred thorn-apple
Solanaceae	<i>Nicotiana glauca</i>	Tree tobacco
Solanaceae	<i>Solanum douglasii</i>	Greenspot nightshade
Solanaceae	<i>Solanum nigrum</i>	Black nightshade
Urticaceae	<i>Urtica dioica</i>	Stinging nettle
Verbenaceae	<i>Lantana sp.</i>	Lantana

Wildlife Species List

Group	Common Name	Scientific Name
Birds	American crow	<i>Corvus brachyrhynchos</i>
Birds	Common raven	<i>Corvus corax</i>
Birds	House finch	<i>Haemorhous mexicanus</i>
Birds	Lesser goldfinch	<i>Spinus psaltria</i>
Birds	Song sparrow	<i>Melospiza melodia</i>
Birds	Anna's hummingbird	<i>Calypte anna</i>
Birds	Black phoebe	<i>Sayornis nigricans</i>
Birds	Mourning dove	<i>Zenaida macroura</i>
Birds	Rock pigeon	<i>Columba livia</i>
Birds	House sparrow	<i>Passer domesticus</i>
Birds	European starling	<i>Sturnus vulgaris</i>
Birds	Red-tailed hawk	<i>Buteo jamaicensis</i>
Mammals	California ground squirrel	<i>Otospermophilus beecheyi</i>
Mammals	Raccoon	<i>Procyon lotor</i>
Mammals	Virginia opossum	<i>Didelphis virginiana</i>
Reptiles	Western fence lizard	<i>Sceloporus occidentalis</i>