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## **BIOLOGICAL RESOURCES ASSESSMENT**

Panorama Drive Residential Development  
3300 Panorama Drive, Morro Bay, California

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*Revised July 2024*

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## EXECUTIVE SUMMARY

This Biological Resources Assessment report was prepared by Terra Verde Environmental Consulting, LLC (Terra Verde) at the request of Morro 94, LLC (applicant) for the proposed 3300 Panorama Drive Residential Development Project (project), located at 3300 Panorama Drive in the City of Morro Bay, San Luis Obispo County, California. The proposed project includes the development of 46 homes, access roads, community parklets, and utilities. The property was previously utilized as a United States Navy jet fuel storage facility, which has since been decommissioned and the site remediated.

Terra Verde staff conducted field surveys of the property on April 28, 2022. The survey area consisted of the proposed development area and a visual scan of the surrounding areas. Surveys included an inventory of botanical and wildlife species observed, vegetation community classification, an assessment of habitat, focusing on the potential for special-status species to occur, and a jurisdictional assessment. Terra Verde determined that 3 special-status botanical species and 9 special-status wildlife species, as well as nesting birds, have the potential to occur on the proposed project site.

No special-status botanical or wildlife species were observed during the field survey which was conducted during the typical blooming period for most special-status plant species with the potential to occur onsite. Monterey cypress (*Hesperocyparis macrocarpa*) and purple needlegrass (*Stipa pulchra*) were detected within the survey area. However, Monterey cypress was determined to be cultivated and ornamentally planted and therefore does not reach the threshold to be considered a California Department of Fish and Wildlife (CDFW) Sensitive Natural Community. Purple needlegrass was observed in three disjunct patches at greater than 10 percent relative cover and may be considered a California Department of Fish and Wildlife (CDFW) Sensitive Natural Community with low habitat quality. However, one ephemeral drainage feature is present along the northwestern portion of the site. The drainage is considered an Environmentally Sensitive Habitat Area per the City of Morro Bay's (City) Local Coastal Plan, and within the jurisdiction of CDFW, U.S. Army Corp of Engineers, and Regional Water Quality Control Board.

As the project is currently designed, the potential for impacts to biological resources is considered low. Impacts to special-status wildlife could result from construction-related disturbances such as trampling or crushing from equipment during the construction phase. In addition, direct and/or indirect impacts to the drainage may occur during project implementation. A series of avoidance and minimization measures have been recommended to reduce potential impacts to a less than significant level.



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**Appendix A –**

Figure 1: Project Vicinity

Figure 2: Survey Area

Figure 3a: 5-mile CNDDDB Occurrences (Botanical)

Figure 3b: 5-mile CNDDDB Occurrences (Wildlife)

Figure 4: Soils

Figure 5: Vegetation Communities and Sensitive Resources

Figure 6: Hydrological Resources

**Appendix B – Preliminary Site Plans**

**Appendix C – Regionally Occurring Special-status Species**

**Appendix D – Botanical and Wildlife Species Observed**

**Appendix E – Representative Site Photographs**

**Appendix F – Arborist Report**



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## **1.0 INTRODUCTION**

This Biological Resources Assessment (BRA) was prepared by Terra Verde Environmental Consulting, LLC (Terra Verde) at the request of Morro 94, LLC (applicant) for the proposed 3300 Panorama Drive Residential Development Project (project), located at 3300 Panorama Drive in the City of Morro Bay (City), California (Assessor’s Parcel Number: 065-038-001) (see Appendix A – Figure 1: Project Vicinity). The property was previously utilized as a United States Navy jet fuel storage facility, which has since been decommissioned and the site remediated. The proposed project consists of removing the remaining existing abandoned buildings, asphalt driveway, and auxiliary structures, removing 35 trees, and developing a 46-lot residential development. The development will include 46 single-family homes, access roads, picnic areas, a playground, and underground utilities.

### **1.1 Purpose of the Biological Resources Assessment**

The purpose of this report is to identify sensitive biological resources that occur or have potential to occur within the proposed project site and surrounding areas. A sensitive resource is defined here as one that is of management concern to local, county, state, and/or federal resource agencies. Recommended avoidance and minimization measures are included in Section 5.2, to reduce any potential impacts to sensitive biological resources to the extent feasible. As necessary, this BRA may be used to support the environmental review process and future project permitting.

### **1.2 Existing Conditions**

The proposed project is within the Morro Bay North USGS 7.5-minute topographic quadrangle. The topography of the site is generally flat, located on the base of a southwest facing slope, with elevations ranging from approximately 79 to 145 feet (24 to 44 meters). Three abandoned operations buildings, a control building, and an asphalt parking lot are present near the site entrance, adjacent to Panorama Drive. The property is highly disturbed and dominated by a mixture of non-native annual grasses and forbs. An unnamed drainage is present along the northwestern perimeter of the property and conveys flows from the upslope hillside into a culvert located north of the control building and paved parking lot, and ultimately into the Pacific Ocean.

A review of historical aerial imagery indicates that the project area has been used as a U.S. Navy jet fuel storage facility since at least 1963. In 2018 two fuel holding tanks, one water tank, associated pumps and piping, and shotcrete from the berms surrounding the holding tank areas were demolished and removed (Google Earth Pro 1994 – 2022). Land uses in the vicinity of the project area include residential development, paved roads and highways, and annual grasslands.



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## 2.0 METHODOLOGY

Prior to conducting field surveys, Terra Verde staff completed a background review of relevant literature and resources pertaining to sensitive biological resources known to occur within the survey area (see Appendix A – Figure 2: Survey Area Map) and in the project vicinity, which included the following:

- Aerial photographs (Google Earth Pro 1989 – 2022) and preliminary site plans (see Appendix B)
- USGS topographic map of the Morro Bay North 7.5-minute quadrangle (USGS 2022)
- Online Soil Survey of San Luis Obispo County, California (Natural Resources Conservation Service [NRCS] 2022)
- Consortium of California Herbaria (CCH) online database of plant collections (CCH 2022)
- California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants for the Morro Bay North 7.5-minute quadrangle and the surrounding quadrangles (Atascadero, Cayucos, Cypress Mountain, Morro Bay South, San Luis Obispo, Templeton, and York Mountain) (CNPS 2022a).
- California Department of Fish and Wildlife’s (CDFW) California Natural Diversity Database (CNDDDB) list of state and federally listed special-status species documented within the Morro Bay North 7.5-minute quadrangle and the eight surrounding quadrangles (CDFW 2022a)
- CNDDDB map of special-status species that have been documented within a 5-mile radius of the project site (CDFW 2022a) (See Appendix A – Figure 3a and 3b: 5-mile CNDDDB Occurrences)
- United States Fish and Wildlife Service (USFWS) Critical Habitat for Threatened and Endangered Species Report (USFWS 2022a) (See Appendix A – Figure 3a, Figure 3b)
- USFWS National Wetland Inventory (NWI), Wetlands Mapper (USFWS 2022b)
- Biological Assessment Letter Report for the Fuel Tank Demolition Project Located at 3300 Panorama Drive (Terra Verde 2016)

A list of regionally occurring special-status species was compiled based on records reported in the scientific database queries (see Appendix C – Regionally Occurring Special-status Species). This species list was used to inform the field survey effort, and to determine an appropriate survey period for special-status botanical species with potential to occur on site.

### 2.1 *Field Survey*

Following the review of literature and scientific databases, Terra Verde botanist Amy Golub and biologist Monica Hemenez completed a field survey of the property on April 28, 2022. The survey consisted of a habitat assessment and vegetation classification, botanical and wildlife species inventory, jurisdictional analysis, and an analysis of the potential for special-status botanical and wildlife species to occur on site. The survey area included the entire property and a visual scan



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of the surrounding habitat features. This included a focused assessment of the creek corridor bordering the northern portion of the site (see Appendix A – Figure 2).

The survey was conducted on foot to ensure complete visual coverage of the survey area. During the survey, all botanical and wildlife species observed, including those detected by indirect sign (i.e., tracks, scat, skeletal remains, dens, burrows, or vocalizations) were documented (see Appendix D - Botanical and Wildlife Species Observed).

Botanical species identifications and taxonomic nomenclature followed The Jepson Manual: Vascular Plants of California, 2nd edition (Baldwin et al. 2012), as well as taxonomic updates provided in the Jepson eFlora (Jepson Flora Project 2022). Vegetation communities and land cover types were characterized, and natural communities were classified using the second edition of *A Manual of California Vegetation* (MCV) classification system (Sawyer et al. 2009), as well as updates included in the MCV Online (CNPS 2022b). MCV vegetation community classifications were also assessed using CDFW-CNPS Protocol for the Combined Vegetation Rapid Assessment and Relevé Field Form (CDFW-CNPS Protocol) (CDFW 2022b) to compare to community descriptions for CDFW sensitive natural communities and were evaluated for their potential to meet the definition of Environmentally Sensitive Habitat Areas (ESHA) in the Coastal Zone, as described below. Further, local technical documents that specifically address the sensitive resources of Morro Bay, including the Atlas of Sensitive Species of the Morro Bay Area (Sims 2010) were reviewed.

The habitat requirements for each regionally occurring special-status species identified in the scientific database queries were analyzed and compared to the type and quality of habitats observed on site during the field survey. The potential for many species to occur within the project site was eliminated due to lack of suitable habitat, elevation, appropriate soils/substrate, and/or known distribution of the species. Special-status species for which suitable habitat was identified are discussed in-depth in the following section, and those determined to have no potential to occur based upon a lack of suitable habitat are not discussed (see Appendix C for a complete list of regionally occurring species that were evaluated).

## **2.2 Supplemental Field Survey**

A supplemental site visit was conducted by Ms. Golub and SWCA (formerly Terra Verde) botanist Kyle Suchy on July 6, 2023, to further assess presence/absence of potential ESHA habitat including single-parameter wetlands.

## **2.3 Methods for the Identification and Delineation of ESHA**

The entire project site is located within the California Coastal Zone and is therefore subject to review by the California Coastal Commission (CCC). As such, field surveys included a delineation of areas that meet the definition of ESHA. As defined in the City's General Plan and Local Coastal Plan (City 2021), the following definition of ESHA was used during field and desktop assessments of site conditions:



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*Areas in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments.*

*In Morro Bay's coastal zone, there are three major types of ESHA: (1) aquatic resources and wetland habitat, (2) other sensitive natural communities, and (3) breeding and overwintering sites. Each of these habitats is described in greater detail below:*

- *Aquatic Resources and Wetland Habitats: These habitats include year-round and seasonal rivers and streams, wetlands (including fresh and salt water marshes), and riparian vegetation, including willow woodland and scrub environments. Waterways where these resources are found include Chorro Creek, Morro Creek, Alva Paul Creek, and Toro Creek, in addition to several unnamed creeks. Several of these creeks and tributaries terminate in the Morro Bay estuary and drain directly into the Pacific Ocean. Riparian woodland and willow scrub areas and wetlands are generally present around these waterways. Each of these habitats is essential and provides benefits such as special habitats for endangered and rare species, improved water quality of downstream receiving waters, and groundwater recharge.*
- *Other Sensitive Natural Communities: The Coastal Act criteria for determining whether a vegetation community qualifies as an ESHA are based upon the habitat's ecological importance, including the rarity or function of the habitat. The California Department of Fish and Wildlife (CDFW) (2010) List of California Terrestrial Natural Communities provides an inventory of California's natural communities and identifies those that are considered rare because of their highly limited distribution. These rare communities may or may not contain individual species that are rare, threatened, or endangered, but would still be considered ESHA by the Commission. Sensitive natural communities include:*
  - *Sensitive natural communities as documented by the CNDDB;*
  - *Rare vegetation alliances and associations ranked State Rarity ranks S1 through S3, as listed in the CDFW List of California Terrestrial Natural Communities (2010); and*
  - *Other unique, sensitive, or fragile habitats, including shallow bay and eelgrass beds, rookeries, monarch aggregation sites, and special status raptor nest sites.*
- *Breeding and Overwintering Sites: These habitats are located in small pockets throughout the coastal zone and include areas known as roosts, nests, and rookeries. They are important breeding and overwintering sites for such species as herons, egrets, cormorants, and peregrine falcons. The areas also include documented monarch butterfly overwintering roosts in groves throughout the coastal zone. These habitats must be preserved due to their importance to these rare species*

According to this definition, some terrestrial habitats and vegetation communities, as well as all drainages and wetlands identified within the Coastal Zone are considered ESHA. Therefore, ESHA



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delineation surveys were completed during mapping and delineation of the extent of agency jurisdiction for CCC within the subject drainage on site.

Since the limits of CCC jurisdiction within the drainage coincides with the limits of waters of the state (i.e., jurisdiction for CDFW and Regional Water Quality Control Board [RWQCB]), delineation methods were consistent with guidance provided in Section 1602 of the California Fish and Game Code for the definition of waters of the state. Waters of the U.S. are also considered ESHA and are encompassed within the limits of waters of the state.

## **2.4 Sufficiency of Biological Data**

The field surveys were conducted with sufficient detail by Terra Verde staff with relevant biological expertise and were appropriately timed to identify potentially occurring special-status plant species. Specifically, the April 2022 survey was timed to coincide with the typical peak blooming and/or fruiting period for a majority of regionally occurring special-status botanical species for which suitable habitat exists on site. Although the regional area experienced below average rainfall in the 2021-2022 rain season, site conditions were determined to be normal and the botanical surveys valid. In addition, the background research was thorough and properly supplemented the on-the-ground surveys.

During the surveys, visibility and conditions were suitable for the detection of wildlife species and their sign. However, migratory and transient wildlife species, such as birds and large mammals, may only be seasonally present within the survey area. Further, some species are highly transient, nocturnal, scarce, or otherwise cryptic, and therefore may not have been detected during the survey effort. As such, recommendations are provided for the avoidance of special-status species deemed to have potential to occur, based on an assessment of habitat on site.

## **3.0 RESULTS**

This section provides a summary and analysis of the results of the background research and field surveys. The discussion includes a description of soils, terrestrial and aquatic habitat types, direct and indirect observations of wildlife and botanical species, and a discussion of the potential for special-status species to occur. Any anticipated impacts to existing wildlife corridors and habitat connectivity are also considered.

### **3.1 Habitats and Resources Observed**

The survey area supports a mix of natural habitats and highly disturbed, anthropogenic areas (see Appendix E – Representative Site Photographs). Three soil units, four natural vegetation communities/land cover types, and an ephemeral drainage were documented within the survey area. Although suitable habitat for various common and special-status plants and wildlife exists within the habitat types observed, the proposed project footprint and surrounding areas have been subjected to regular anthropogenic disturbances (e.g., rural/semi-urban development, agriculture, landscaping/vegetation maintenance, etc.). Historical and current land management



practices have greatly reduced the potential for sensitive biological resources within the bounds of the project site.

### 3.1.1 Soils

The NRCS online soil report revealed three soil units within the survey area (see Appendix A – Figure 4: Soils). The primary characteristics of these soil units are described below.

#### ***Soil Unit 128: Cropley clay, 2 to 9 percent slopes***

The parent material of this soil type is alluvium derived from calcareous shale. The drainage class is moderately well drained, and it is primarily composed of clay. This soil type occurs on alluvial fans and terraces at elevations below 2,340 feet (713 meters). This soil type is considered prime farmland, if irrigated.

#### ***Soil Unit 130: Diablo and Cibo clays, 9 to 15 percent slopes***

The parent material of this soil type is residuum weathered from mudstone, sandstone, and/or shale. The drainage class of this unit is well drained, and it is composed mostly of clay. This soil type tends to occur on hills and mountains on back slopes and summits at elevations ranging from 200 to 600 ft (60 to 182 meters). This soil type is considered farmland of statewide importance.

#### ***Soil Unit 165: Los Osos-Diablo complex, 30 to 50 percent slopes***

The parent material of this soil type is residuum weathered from mudstone, sandstone and shale. The drainage class of this unit is well drained, and it is composed mostly of loam and clay. This soil type tends to occur on hills and mountains on back slopes and summits at elevations ranging from 200 to 3,000 ft (60 to 915 meters). This soil type is not considered prime farmland.

### 3.1.2 Vegetation Communities

Vegetation communities and land cover types were assessed, classified, and mapped based on vegetation composition, structure, and density, with consideration of known land management practices (see Appendix A – Figure 5: Vegetation Communities and Sensitive Resources). The project area mostly consists of disturbed annual grassland, ornamental Monterey cypress trees, and a riparian corridor surrounding the northernmost portion of the drainage on site.

A total of 50 vascular plant species were identified in the survey area, of which 38 (76 percent) were non-native. The natural vegetation communities and land cover types are described below.

#### **Annual Brome Grasslands (7.8 acres)**

Most of the survey area consists of annual grassland habitat, which occurs at the previous site of the fuel tanks and the surrounding slopes (see Appendix E – Representative Site Photographs). This community is dominated by slender wild oat (*Avena barbata*), purple false brome (*Brachypodium distachyon*), and rippgut brome (*Bromus diandrus*) with wall barley (*Hordeum murinum*) and broadleaf filaree (*Erodium botrys*), scattered throughout.



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This species composition was used to determine the community classification, which most closely corresponds with the *Bromus* spp. Semi Natural Herbaceous Alliance (annual brome grasslands) in the MCV classification system. This community is widespread and may occur in any topographic setting in foothills, waste places, rangelands, and openings in woodlands at elevations below 7,200 feet (2,200 meters). This community provides habitat for nesting birds, burrowing mammals and their predators, herbivores, and other wildlife.

### **Monterey Cypress Stands (1.3 acre)**

A linear row of planted Monterey cypress (*Hesperocyparis macrocarpa*) is present along the top of the drainage bank. Limited vegetation was present within the understory of the Monterey cypress trees or within the drainage feature at this location. There are additional Monterey cypress and ornamental vegetation patches on the eastern portion of the survey areas as well as near the existing buildings.

Although native stands of Monterey cypress are considered a special-status resource, they have been cultivated as far north as Humboldt County and south into Santa Barbara County. Though this community is ornamentally planted, it most closely corresponds with the *Hesperocyparis macrocarpa* Forest and Woodland Semi-Natural Alliance (Monterey Cypress Stands); Ruderal Association in the MCV classification system. Ornamental vegetation cover provides marginal habitat for common migratory birds and raptors though more notably may also provide suitable overwintering habitat for Monarch butterfly. If providing such habitat, this community may be considered ESHA.

### **Arroyo Willow Thickets (0.2 acres)**

This community occurs in small patches along or adjacent to the northernmost portion of the drainage. This community is comprised of arroyo willow (*Salix lasiolepis*) with and understory dominated by California rose (*Rosa californica*), poison oak (*Toxicodendron diversilobum*), and California blackberry (*Rubus ursinus*).

This species composition was used to determine the community classification, which most closely corresponds with the *Salix lasiolepis* Shrubland Alliance (arroyo willow thickets) in the MCV classification system. This community occurs in streambanks and benches, slope seeps, and stringers along drainages at elevations below 7,120 feet (2,170 meters). This community provides habitat for nesting birds, small mammals, and other wildlife.

### **Ruderal/Developed (0.6 acres)**

The remaining survey area is characterized as ruderal/developed land. Developed land is not a natural vegetation community, but rather, is defined by areas that have been constructed upon or otherwise physically altered to an extent that native vegetation is no longer supported. Developed land is characterized by permanent or semi-permanent structures, and pavement or hardscape. Areas where no natural land is evident due to a large amount of debris or other materials being placed upon it may also be considered ruderal or developed (i.e., roads, pullout areas, etc.). Developed portions of the site include the three abandoned operations building, control building, and the asphalt parking lot near the site entrance, adjacent to Panorama Drive. This area has low habitat value for wildlife.



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### **3.1.3 Wildlife**

The habitats observed within and adjacent to the survey area provide suitable habitat for a variety of common and special-status wildlife species. The ephemeral drainage onsite provides suitable habitat and refugia for a variety of birds, small mammals, invertebrates, and some amphibian and reptile species. Ornamental shrubs, Monterey cypress trees, and building structures within the project site provide suitable nesting habitat for a variety of raptor and passerine species. Mature trees and abandoned structures onsite may provide habitat for roosting bats. Grassland may provide suitable habitat for ground-nesting birds, transient, foraging wildlife, and burrowing mammals.

No special-status wildlife species were observed during the field survey. However, numerous avian species, as well as other terrestrial wildlife, were observed throughout the survey area. A comprehensive list of all wildlife species observed during the surveys is included in Appendix D – Botanical and Wildlife Species Observed.

### **3.1.4 Waters and Wetlands Assessment**

An unnamed drainage is present along the northwestern perimeter of the property (see Appendix A – Figure 6: Hydrological Resources). The drainage conveys flows from the upslope hillside into a culvert located north of the control building and paved parking lot, and ultimately into the Pacific Ocean. The drainage is mapped as a blue line stream according to the USGS topographic maps and is ephemeral in nature. The feature exhibits an incised channel and slow-moving water with occasional areas of ponding. At the northernmost portion of the property, the associated habitat is characterized as riparian scrub, dominated by Arroyo willow with an understory of herbaceous vegetation including California rose, poison oak, and California blackberry. Further south of the riparian scrub, conditions surrounding the drainage are highly disturbed. A linear row of Monterey cypress trees is present along the top of the drainage bank, interspersed with ornamental vegetation along the westernmost bank. Limited vegetation was present within the understory of Monterey cypress trees or within the drainage feature within this reach.

As a part of the waters and wetland assessment, areas outside of the USGS blue line drainage were assessed for the presence of wetland indicators including hydrology, hydrophytic vegetation, and/or hydric soils for the purposes of identifying potential single-parameter wetlands that would be considered ESHA. Hydrophytic vegetation and/or flow patterns are typically the most obvious indicators of potential wetland conditions. No areas outside of the USGS blue line drainage exhibited a dominance of hydrophytic vegetation or evidence of flow. As such, no areas outside of the USGS blue line drainage were identified as wetlands.

## **3.2 Sensitive Resources**

The results of the desktop research of the area surrounding the proposed project site indicated that 9 sensitive natural communities, 69 special-status botanical species, and 36 special-status wildlife species occur regionally. A review of the habitat requirements for each of these species



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in comparison with site conditions narrowed the list to 3 special-status plant species and 7 special-status wildlife species that have potential to occur within the overall survey area. Further, based on an assessment following CDFW-CNPS Protocol, it was determined that the purple needlegrass patches may qualify as a CDFW sensitive natural community if cumulatively combined and assessed as one singular community. These resources and their habitat requirements are discussed in further detail below.

### 3.2.1 Special-status Plant Species

Based on a review of the relevant literature and an assessment of site conditions, Terra Verde determined that there is suitable habitat on site for 3 special-status botanical species. In addition to species listed on the federal and California Endangered Species Acts, special-status plant species include those that are assigned a California Rare Plant Rank (CRPR) by the California Native Plant Society. Species are assigned a listing status based on the degree of rarity (Lists 1A through 4) and threat level (0.1, 0.2, and 0.3) (CNPS 2022a).

The following paragraphs provide a description of the special-status plant species that have the potential to occur on site.

**Miles' Milkvetch (*Astragalus didymocarpus* var. *milesianus*), CRPR 1B.2**

Miles' milkvetch is an annual herb that is endemic to the central and southern coast of California. Its known range is concentrated along the outer South Coast Ranges of San Luis Obispo and Santa Barbara Counties. This species typically occurs in clay soils in association with grassy areas and scrub near the coast at elevations below 1,312 feet (400 meters). The typical blooming period is from March to May (Jepson Flora 2022). Documented threats to this species include development (CNPS 2022a).

According to CNDDDB records (CDFW 2022a), the nearest documented occurrence of this species is 1.8 miles south of the project site. Although marginally suitable habitat for this species is present within grassland habitat on site, it was not observed during appropriately timed surveys in May 2016 (Terra Verde 2016) and April 2022. As such, this species is not expected to occur on site.

**Cambria morning-glory (*Calystegia subacaulis* subsp. *episcopalis*), CRPR 4.2**

Cambria morning-glory is a perennial herb that is endemic to central California. Its known range is concentrated along the coastal ridges and foothills of the Outer South Coast Ranges of San Luis Obispo County. This species typically occurs in clay soils in association with various vegetation communities including grassland, chaparral, and woodland. It has been documented at elevations up to 500 meters and is known to tolerate disturbance. The typical blooming period is from April to June (Jepson Flora Project 2022). Documented threats to this species include development, alteration of fire regimes, and competition from non-native species (CNPS 2022a).

According to CNDDDB records (CDFW 2022a), the nearest documented occurrence of this species is approximately 3.2 miles south of the site. Suitable habitat for this species is present



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in the grassland habitat on site. This species was not observed during appropriately timed botanical surveys in May 2016 (Terra Verde 2016) and April 2022. As such, this species is not expected to occur on site.

#### **San Luis Obispo Owl's-clover (*Castilleja densiflora* subsp. *obispoensis*), CRPR 1B.2**

San Luis Obispo owl's-clover is an annual herb that is known to occur in coastal areas along the outer South Coast Ranges from just south of Ragged Point to Avila Beach, with several populations occurring in the Irish Hills. This species typically occurs in coastal grasslands at elevations below 1,312 feet (400 meters). The typical blooming period is from March to June (Jepson Flora 2022). Documented threats to this species include development and grazing (CNPS 2022a).

According to CNDDDB records (CDFW 2022a), the nearest occurrence of this species is approximately 0.5 mile south of the site. Although marginally suitable habitat for this species is present within grassland habitat on site, this species was not observed during appropriately timed botanical surveys in May 2016 (Terra Verde 2016) and April 2022. As such, this species is not expected to occur on site.

### **3.2.2 Special-status Wildlife Species**

Based on a review of the relevant literature and an assessment of site conditions, it was determined that suitable habitat for 9 special-status wildlife species occurs within the survey area, in addition to nesting habitat for migratory bird species. The following paragraphs provide a description for all the special-status wildlife species for which suitable habitat was identified on site, and recommendations for the avoidance and minimization of impacts to these species are included in Section 5.2.

#### ***Sensitive Amphibian Species***

##### **California Red-legged Frog (CRLF; *Rana draytonii*), FT / SSC**

CRLF is endemic to California and northern Baja California, historically ranging from Mendocino County south along the coast to Baja and east from the Northern Sacramento Valley to the foothills of the Sierra Nevada at elevations up to 5,000 feet. This species requires permanent or semi-permanent bodies of water, such as lakes, streams, and ponds with emergent vegetation. They use lowland and grassland areas to hunt and forage for food. Adult frogs consume invertebrates, mice, fish, frogs, and larvae of other amphibians. Tadpoles are thought to consume algae floating on the water's surface or growing on rocks and plants. Breeding typically occurs over a one-to-two-week period between late November and early April (depending on local environmental conditions) and females lay egg masses in the water which the male externally fertilizes. The egg masses are often attached to aquatic vegetation and tadpoles hatch approximately four weeks later. Most tadpoles metamorphose in four to seven months, but some will do so the next summer. Current threats to extant populations of red-legged frogs include nonnative predators, such as bullfrogs and centrarchid fishes, urban and agricultural development, and pesticide pollution (Nafis 2022).



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According to the CNDDDB (CDFW 2022a), eight occurrences of CRLF have been documented within a 1.5-mile radius of the project site. The closest CRLF occurrence is at the confluence of the drainage and a second unnamed drainage at the northern extent of the property (based on coordinates within the CNDDDB). According to the CNDDDB record, CRLF were observed on May 10, 2000, at this location. The lower portion of the drainage is highly disturbed and does not support pools or emergent vegetation required for CRLF breeding. The upper portion of the drainage is surrounded by dense riparian scrub and may support breeding pool habitat. There is low potential for CRLF to occur within the drainage onsite and disperse throughout the project area.

### ***Sensitive Mammal Species***

#### **Pallid bat (*Antrozous pallidus*), State Species of Special Concern (SSC)**

Pallid bats range throughout the North American west, from southern British Columbia to central Mexico. They are common throughout California, except for high elevations, and are found in a variety of habitats, such as grasslands, shrublands, woodlands, and mixed conifer forests but are most commonly found in dry habitats with rocky outcrops (Verts and Carraway 1998). Colonies often consist of 20 to several hundred individual bats. Pallid bats will use a variety of roosts, like caves, rock crevices, mines, trees, and buildings. They are yearlong residents in their home range and hibernate during the winter (Vaughan and O'Shea 1967). These bats undergo daily torpor and are most active a couple of hours after sunset and shortly before sunrise. Pallid bats display the unique characteristic of foraging for invertebrates, and sometimes lizards and small mammals, on the ground, fulfilling a niche but also making them vulnerable to terrestrial predators. Mating occurs in the fall (October and November) and, after delayed fertilization, young are gestated for 53—71 days and 1—3 are born between April and July. Young are weaned at 7 weeks but stay with the female for a year-long learning period (Bassett 1984). Pallid bats are sensitive to disturbance and will readily abandon roosting sites.

According to CNDDDB records (CDFW 2022a), the nearest documented occurrence of this species is approximately 1.7 miles south of the site. Suitable roosting habitat is present in the cavities of mature trees and the abandoned buildings on site.

#### **Townsend's big-eared bat (*Corynorhinus townsendii*), SSC**

Townsend's big-eared bats range throughout western North America from British Columbia to central Mexico, with isolated populations as far east as the Ozarks and Appalachia. In California, it has been found in numerous habitats except for subalpine and alpine regions. They require forage and drinking sites in close proximity to their roosts. Mating occurs mainly in early fall but is possible through winter and, after hibernation when delayed fertilization takes place, one young is born in early spring. This species only roosts in the open, hanging from walls and ceilings, where it is relatively easily detected and particularly vulnerable to disturbance (Gruver and Keinath 2006, Pierson and Rainey 1998). The primary cause for population declines is human disturbance of roosting sites (Pierson and Rainey 1998).



According to CNDDDB records (CDFW 2022a), the nearest documented occurrence of this species is approximately 4.8 miles southeast of the project site. Mature trees and riparian habitat on site may provide suitable habitat for this species and the abandoned buildings may provide suitable roosting habitat.

**American Badger (*Taxidea taxus*), SSC**

The range of American badger covers most of North America. They range throughout California except the North Coast region (Del Norte, Humboldt, Mendocino, Sonoma, and Marin counties). They prefer open and arid habitats such as grasslands, meadows, savannahs, open-canopy desert scrub, and open chaparral. They are predators of fossorial rodents and are adept at excavating deep burrows to access their prey. As such, where badgers are present, the landscape is dotted with large soil tailings, which are normally half-moon shaped. American badger shelter in burrows they have excavated and, while they are known to traverse a relatively small home range (up to 2.5 acres), they move among burrows frequently. They can be active at all times of day but are primarily nocturnal. This species occurs at elevations up to 12,000 feet (3,650 meters). Mating typically occurs from May through September but, because of delayed implantation, cubs are not born until early spring. Habitat conversion is a threat to this species (Zeiner et al. 1988 – 1990a).

According to CNDDDB records (CDFW 2022a), the nearest observation of American badger is a record from 2008, 8.2 miles southwest of the project site. No sign of badgers, such as characteristic claw marks on the interior sides of den entrances, horizontally oriented elliptical den openings, and frequent prey excavations, were observed during the field survey. However, the grassland within and adjacent to the project site provides marginally suitable habitat for American badger, including a small mammal prey base. There is low potential to encounter this species on site.

**Sensitive Reptile Species**

**Coast Horned Lizard (*Phrynosoma blainvillii*), SSC**

Coast horned lizards occur in semi-arid mountains of western and southern California at elevations up to 8,000 feet. This species inhabits grasslands, coniferous forests, woodlands, and chaparral, with open areas and patches of loose, sandy soil. It is frequently found near native ant hills, which are its preferred food source. This species may also forage on beetles, wasps, grasshoppers, flies, and caterpillars. The breeding season is from May to September, and nests are constructed in loose soil (Zeiner, et al. 1988-1990b). Habitat conversion to housing and agriculture and the spread of nonnative ants (e.g. Argentine ants) have caused this species to decline. Historically, this lizard was extensively exploited by the pet trade (Nafis 2022).

According to CNDDDB records (CDFW 2022a), the nearest observation of this species was in 2001, approximately 1.5 miles south of the project site. The loose sandy soils may provide suitable habitat for this species.

**Northern California legless lizard (*Anniella pulchra*), SSC**



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Northern California legless lizard ranges from the northern San Joaquin Valley south through the inner and outer South Coast Ranges, with populations in the southern Sierra Nevada and Tehachapi Mountains, at elevations up to 5,900 feet (Nafis 2022). This species requires moist, sandy or loose loamy soils within coastal dune scrub, coastal sage scrub, chaparral, woodland, riparian, or forest habitats. It shelters in leaf litter and under bushes, rocks, or detritus like logs and driftwood. Relatively little is known about the specific behavior and ecology of this species, but it is thought to be a diurnal species that breeds between the months of March and July. It gives birth to live young in the early fall. Population declines have been attributed to agricultural development, sand mining, use of off-road recreational vehicles, and habitat loss through spread of invasive, non-native vegetation such as iceplant (Zeiner et al. 1988-1990c).

According to CNDDDB records (CDFW 2022a), the nearest documented occurrence of this species is approximately 2.0 miles south of the project site. Leaf litter and sandy soils on site may provide suitable habitat for this species.

#### ***Sensitive Avian Species and Migratory Nesting Birds***

##### **Burrowing Owl (*Athene cunicularia*), SSC**

Burrowing owls generally inhabit open grasslands, prairies, and fields with short-stature vegetation, but may also occupy agricultural and developed areas (Shuford et al. 2008). This species typically uses the burrows of ground squirrels and other small mammals for shelter, protection from predators, and nesting. Burrowing owls are typically nocturnal, but they can be seen roosting outside of burrow entrances during the day. Courtship and mating may begin as early as late December in California and continue into early spring. Incubation lasts 28–30 days and young disperse to nearby burrows by early fall. The primary threats to burrowing owls are the elimination of burrowing mammals through control programs and habitat loss caused by development (Klute et al. 2003). Breeding and wintering populations of burrowing owls are known to occur in the project region, but they more commonly inhabit coastal areas during the non-breeding season. The ruderal, herbaceous portion of the site supports underground cover and a prey base for this species.

According to CNDDDB (CDFW 2022a) records, burrowing owls have been observed approximately 8.3 miles southwest of the project site. Additionally, local biological knowledge supports the species is present within three miles of the project. The quality of habitat at the site is substantially degraded as a result of historical land uses, but some suitable habitat is present for this species in the grassland onsite.

##### **Loggerhead Shrike (*Lanius ludovicianus*), SSC**

Loggerhead shrike is a common resident of lowlands and foothills throughout California, occupying open habitats with scattered shrubs, trees, fence posts, and poles for perching opportunities. This species typically forages on insects but may also hunt for small reptiles, amphibians, and mammals, sometimes impaling them on sharp objects like barbed wire. Loggerhead shrikes build nests on stable branches in well-concealed dense shrubs or trees



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(Zeiner et al., 1988-1990d). This species has declined by as much as 76% since 1966, according to the North American Breeding Bird Survey. The decline coincides with the introduction and increased use of chemical pesticides between the 1940s and the 1970s that may have resulted in indirect poisoning from prey. Conversion of habitat for anthropogenic uses is another likely threat, as it reduces or eliminates potential nesting habitat as well as prey base. Therefore, the loggerhead shrike is a California Species of Special Concern.

According to CNDDDB records (2022a), the nearest documented occurrence of this species is greater than 15 miles southeast of the project site, however local biological knowledge indicates this species has been observed within 0.5 miles of the project site. Cypress trees may provide marginally suitable nesting habitat for this species and the grassland on site may provide suitable foraging habitat.

**White-tailed kite (*Elanus leucurus*), State Fully Protected**

The white-tailed kite is a resident to coastal valleys and lowlands of California where it inhabits herbaceous and open stands of various habitats near agricultural operations. Nest sites are typically placed on the top of a tall tree near or within riparian areas, with adjacent grasslands for foraging. Typical prey items include voles and other small diurnal mammals, but it will occasionally feed on birds, insects, reptiles, and amphibians (Zeiner et al. 1988-1990e). Nesting occurs within thick, upper canopies of oaks, willows, or other tree stands in close proximity to open foraging area.

According to CNDDDB records (2022a), the nearest documented occurrence of this species is 8.6 miles southeast of the project site. Cypress trees may provide marginally suitable nesting for this species and the grassland on site may provide suitable foraging habitat.

**Migratory Nesting Birds**

In addition to those species protected by the state or federal government, all native avian species are protected by state and federal legislature, most notably the Migratory Bird Treaty Act and the CDFW Fish and Game code. Collectively, these and other international regulations make it unlawful to collect, sell, pursue, hunt, or kill native migratory birds, their eggs, nests, or any parts thereof. The laws were adopted to eliminate the commercial market for migratory bird feathers and parts, especially those of larger raptors and other birds of prey.

Avian species can be expected to occur within the project area during all seasons and throughout construction of the proposed project. The potential to encounter and disrupt avian species is highest during their nesting season (generally February 01 through August 31) when nests are likely to be active, and eggs and young are present. Willow thicket and other short-statured vegetation types provide particularly suitable habitat for common passerines, while woodland habitat provide suitable nesting habitat for raptors. Raptors are particularly drawn to large trees and structures, and they are generally less tolerant of disturbances than other species. Recommended avoidance and minimization measures for the protection of migratory nesting birds are provided in section 5.2 below.



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### **3.2.3 Sensitive Habitats**

#### ***CDFW Sensitive Natural Communities / ESHA***

Three small patches of purple needlegrass (*Stipa pulchra*) totaling 0.03 acre were observed on the eastern edge of the survey area. Stands of composition and structural integrity of vegetation are typically mapped at minimum mapping unit of 0.25 acre; however, certain alliances and associations may be mapped at a smaller scale as warranted including special herbaceous communities such as vernal pools (CDFW 2022b). Purple needlegrass grassland classifies as an herbaceous community with a recommended minimum plot size for sampling vegetation of 100 m<sup>2</sup>. Due to the disjunct distribution of these patches on site, no single patch would be large enough to meet the minimum plot size or if the plot size enlarged to include all patches, would lack structural and/or compositional integrity to be considered a homogenous stand for sampling.

Where present and mapped, purple needlegrass was observed at 20 percent relative cover. It is important to note that with the historical land use, disjunct distribution on site, and small acreage, the patches observed may not be considered hold a high enough conservation value to be identified as a mapped CDFW Sensitive Natural Community. If classified as a sensitive natural community, the three patches would be considered ESHA.

Currently, no monarch overwintering sites have been documented in Morro Bay (Pelton et al. 2016). However, the dense canopy and location of the Monterey cypress grove that borders the USGS blue line may provide an adequate microclimate that protects from wind and cold. No monarch butterflies were observed utilizing the Monterey cypress; however, surveys were not conducted during the typical overwintering period between mid-November through late-January. If surveys are completed during the appropriate time and Monarch butterfly are observed roosting, this Monterey cypress grove would be considered ESHA. It should be noted that the Monterey cypress grouping in the northeastern portion of the site does not provide suitable habitat characteristics for Monarch butterfly roosting due to the open canopy cover and lack of protection from the elements.

#### ***Federal and State Waters / Wetlands, and ESHA***

As described above, the drainage is a USGS blue line. Slow-moving water was present in the northern portion of the drainage at the time of survey. Banks of the unnamed drainage and associated riparian vegetation are within the jurisdiction of CDFW and RWQCB, while the bed, below the ordinary high water mark, is within the jurisdiction of the Corps. Additionally, in accordance with the City's Local Coastal Plan, those communities identified on site as coastal streams/riparian habitats and suitable habitat for rare and endangered species (i.e., the unnamed ephemeral drainage) are considered ESHA (City 2021). Any impacts to the drainage that fall under the jurisdiction of the CDFW, RWQCB, and/or Corps will require appropriate regulatory agency permits and mitigation, per their requirements. Further, recommendations are provided for the avoidance and minimization of impacts to the drainage during construction in Section 5.2 below.



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No areas outside of the USGS blue line drainage supported any one hydrologic indicator that may consider the area a single-parameter wetland.

#### ***USFWS-designated Critical Habitat***

No USFWS-designated critical habitat for any species occurs within the survey area.

### **3.3 *Habitat Connectivity***

Maintaining connectivity between areas of suitable habitat is critical for the survival and reproduction of plants and wildlife. Intact habitats benefit plants by ensuring proper dispersal of pollen and seeds, which sustains or grows the population and contributes to the genetic health of the species. Wildlife need contiguous habitats to attain sufficient food resources for their energetic demands; to locate proper resting, burrowing, and/or nesting sites; to facilitate long-distance travel or migration to seek out mates or resources; and for the safe and successful dispersal of young. The project site is located near the City limits and is highly disturbed from the historic use as a U.S. Navy jet fuel storage facility. Although contiguous grassland habitat occurs north and west of the project site, dense residential developments are located south and west of the project site limiting the movement of wildlife in those areas. As such, existing habitat and movement corridors in the vicinity of the project are somewhat fragmented. The proposed project as planned may reduce the quality of natural habitat on site but is not expected to substantially increase the current level of habitat fragmentation in the region, nor is it expected to create a significant barrier to wildlife movement.

## **4.0 REGULATORY OVERVIEW**

### **4.1 *Federal Policies and Regulations***

#### **4.1.1 National environmental Policy Act (NEPA)**

NEPA directs “a systematic, interdisciplinary approach” to planning and decision-making and requires environmental statements for “major federal actions significantly affecting the quality of the human environment.” Implementing regulations by the Council on Environmental Quality (Code of Federal Regulations [CFR] Title 40, Parts 1500–1508) requires federal agencies to identify and assess reasonable alternatives to proposed actions that will restore and enhance the quality of the human environment and avoid or minimize adverse environmental impacts. Federal agencies are directed to emphasize significant environmental issues in project planning and to integrate impact studies required by other environmental laws and Executive Orders into the NEPA process. The NEPA process is considered to be an overall framework for the environmental evaluation of federal actions.

This project is not a federal project requiring compliance with NEPA.



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#### **4.1.2 Federal Endangered Species Act of 1973**

The FESA provides legislation to protect federally listed plant and animal species. Impacts to listed species resulting from the implementation of a project would require the responsible agency or individual to formally consult with the USFWS or National Oceanic and Atmospheric Administration National Marine Fisheries Service (NMFS) to determine the extent of impact to a particular species. If the USFWS or NMFS determines that impacts to a federally listed species would likely occur, alternatives and measures to avoid or reduce impacts must be identified. The USFWS and NMFS Fisheries also regulate activities conducted in federal critical habitat, which are geographic units designated as areas that support primary habitat constituent elements for listed species. FESA directs all Federal agencies to work to conserve endangered and threatened species and to use their authorities to further the purposes of the Act. Section 7 of the Act, called "Interagency Cooperation," is the mechanism by which Federal agencies ensure the actions they take, including those they fund or authorize, do not jeopardize the existence of any listed species. Section 10 of the FESA allows for the development of Habitat Conservation Plans (HCPs), which result in Incidental Take Permits that give exceptions to the prohibition against "take" of a listed species.

No FESA-listed species were observed within the survey area. Due to the low potential for federally listed CRLF to occur within the project site, consultation with the USFWS may be conducted prior to project implementation if significant impacts to the species are anticipated.

#### **4.1.3 Migratory Bird Treaty Act of 1918**

The MBTA protects all migratory birds, including their eggs, nests, and feathers. The MBTA was originally drafted to put an end to the commercial trade in bird feathers, popular in the latter part of the 1800s. The MBTA is enforced by the USFWS, and potential impacts to species protected under the MBTA are evaluated by the USFWS in consultation with other federal agencies.

Vacant nests were observed within the survey area, the survey area supports suitable nesting habitat, and the proposed project must comply with the MBTA.

#### **4.1.4 Clean Water Act of 1977**

##### *Section 404*

The USACE regulates discharges of dredged or fill material into waters of the United States. These waters include wetland and non-wetland waterbodies that meet specific criteria. USACE regulatory jurisdiction, pursuant to Section 10 of the Rivers and Harbors Act of 1899 (33 United States Code [USC] Section 403), regulates almost all work in, over, and under waters listed as "navigable waters of the United States" that results in a discharge of dredged or fill material



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within USACE regulatory jurisdiction, pursuant to Section 404 of the Clean Water Act (CWA). Under Section 404, the USACE regulates the following waters of the United States features:

- Traditional Navigable Waters (a)(1): Large rivers and lakes that could be used in interstate or foreign commerce, as well as waterbodies affected by tides.
- Territorial Seas (a)(1): Territorial seas that extend 3 miles out to sea from the coast.
- Interstate Waters(a)(1): Includes waters like streams, lakes, or wetlands that cross or form part of state boundaries.
- Impoundments (a)(2): Impounded waterbodies created in or from “waters of the United States,” like reservoirs and beaver ponds.
- Tributaries(a)(3): Includes natural, man-altered, or man-made waterbodies that flow directly into (a)(1) waters or (a)(2) impoundments.
- Adjacent Wetlands (a)(4): These wetlands can be next to, abutting, or near other jurisdictional waters or behind certain natural or constructed features. They are most often within a few hundred feet of jurisdictional waters. Adjacent wetlands are jurisdictional if they meet either the relatively permanent standard or the significant nexus standard, or where the wetland is adjacent to a traditional navigable water, the territorial seas, or an interstate water.
- Additional Waters (a)(5): These lakes, ponds, streams, or wetlands do not fit into the above categories. They are jurisdictional if they meet either the relatively permanent standard or the significant nexus standard.

The USGS blue line drainage within the survey area has indicators of waters of the United States. If impacts to this feature are anticipated, a Section 404 permit would likely be required.

#### *Section 401*

Section 401 of the CWA and its provisions ensure that federally permitted activities comply with the CWA and state water quality laws. Section 401 is implemented through a review process that is conducted by the RWQCB and triggered by the Section 404 permitting process (see above). The RWQCB certifies through the Section 401 process that a proposed project complies with applicable effluent limitations, water quality standards, and other conditions of California law. Evaluating the effects of the proposed project on both water quality and quantity (runoff) falls under the jurisdiction of the RWQCB.

The USGS blue line drainage within the survey area has indicators of waters of the United States. If impacts to this feature are anticipated, a Section 401 permit would likely be required.



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## **4.2 State Policies and Regulations**

### **4.2.1 California Endangered Species Act of 1973**

The CESA ensures legal protection for plants listed as rare or endangered, and wildlife species formally listed as endangered or threatened. The state also maintains a list of California SSC. SSC status is assigned to species that have limited distribution, declining populations, diminishing habitat, or unusual scientific, recreational, or educational value. Under state law, the CDFW is empowered to review projects for their potential to impact special-status species and their habitats. Under the CESA, the CDFW reserves the right to request the replacement of lost habitat that is considered important to the continued existence of CESA-protected species.

No CESA-listed species or SSC were observed within the BSA during surveys.

### **4.2.2 California Fish and Game Code**

California Fish and Game Code Section 3511 includes provisions to protect Fully Protected species, such as: (1) prohibiting take or possession “at any time” of the species listed in the statute, with few exceptions; (2) stating that no provision of this code or any other law shall be construed to authorize the issuance of permits or licenses to “take” the species; and (3) stating that no previously issued permits or licenses for take of the species “shall have any force or effect” for authorizing take or possession. The CDFW is unable to authorize incidental take of “fully protected” species when activities are proposed in areas inhabited by those species. Sections 3503 and 3503.5 of the California Fish and Game Code state that it is unlawful to take, possess, or destroy the nest or eggs of any bird, with occasional exceptions. In addition, Section 3513 states that it is unlawful to take or possess any migratory bird as designated in the MBTA or any part of such migratory birds except as provided by rules and regulations under provisions of the MBTA.

No nesting migratory birds or vacant nests were observed during surveys of the BSA. However, the proposed project must comply with the California Fish and Game Code.

#### *Sections 1600 through 1602*

Pursuant to Division 2, Chapter 6, Sections 1600 through 1602 of the California Fish and Game Code, the CDFW regulates all diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake that supports fish or wildlife. The CDFW defines a “stream” (including creeks and rivers) as “a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having surface or subsurface flow that supports or has supported riparian vegetation.” The CDFW’s definition of “lake” includes “natural lakes or man-made reservoirs.” CDFW jurisdiction within altered or artificial waterways is based on the value of those waterways to fish and wildlife.



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If the CDFW determines that a project may adversely affect existing fish and wildlife resources, a Lake and Streambed Alteration Agreement (LSAA) is required. An LSAA lists the CDFW conditions of approval relative to the proposed project and serves as an agreement between an applicant and the CDFW for a term of not more than 5 years for the performance of activities subject to this section.

Based on indicators including the presence of a well-defined bed and bank and presence of riparian vegetation, the USGS blue line drainage within the survey area is likely considered waters of the State. If impacts to this feature are anticipated that may adversely affect existing fish and wildlife resources (e.g., potential trimming of small-diameter branches of Arroyo willow to facilitate fence removal), a LSAA permit would likely be required.

### **4.2.3 State Water Resources Control Board and Regional Water Quality Control Boards**

The State Water Resources Control Board (SWRCB) and nine RWQCBs regulate discharge of fill and dredged material in California, under Section 401 of the CWA and the Porter-Cologne Water Quality Control Act (Porter-Cologne Act), through the State Water Quality Certification Program. State Water Quality Certification is necessary for all projects that require a USACE permit, or fall under other federal jurisdiction, and have the potential to impact waters of the state. Waters of the state are defined by the Porter-Cologne Act as “any surface water or groundwater, including saline waters, within the boundaries of the state.”

In order for a Section 404 permit to be valid, Section 401 of the CWA requires a Water Quality Certification or waiver to be obtained. The Water Quality Certification (or waiver) determines that the permitted activities will not violate water quality standards individually or cumulatively over the term of the action. Water quality certification must be consistent with the requirements of the CWA, CEQA, CESA, and Porter-Cologne Act.

On April 2, 2019, the SWRCB adopted the *State Wetland Definition and Procedures for the Discharge of Dredged or Fill Material to Waters of the State*. Those activities that will result in the discharge of dredged or fill material are required to comply with the procedures unless an exclusion applies, or the discharge qualifies for coverage under a General Order.

Based on indicators, the USGS blue line drainage within the survey area is likely considered waters of the State. If impacts to this feature are anticipated, Section 401 permit would likely be required.

### **4.2.4 California Coastal Act**

The California Coastal Act was enacted in 1976 to provide long-term protection of California’s coastal resources. The act’s coastal resources management policies are based on recommendations contained in the California Coastal Plan. One such policy includes:



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Protection, enhancement and restoration of environmentally sensitive habitats, including intertidal and nearshore waters, wetlands, bays and estuaries, riparian habitat, certain wood and grasslands, streams, lakes, and habitat for rare or endangered plants or animals.

Development within the coastal zone generally may not commence until a coastal development permit has been issued by either the Commission or a local government. The Coastal Act defines development broadly (with a few narrow exceptions), to include not only typical land development activities such as construction of buildings, but also changes in the intensity of use of land or water, even where no construction is involved.

Based on the project location within the coastal zone, a coastal development permit would likely be required.

### **4.3 Local Policies**

#### **4.3.1 City of Morro Bay Implementation for Major Vegetation Removal**

The Coastal Act requires a Coastal Development Permit for the removal of major vegetation. A permit may be required for the removal of any tree with a trunk that is a minimum of six (6) inches in diameter (i.e., 18.8" in circumference) at four and one half feet (4.5) vertically above the ground, or, any tree with multiple trunks that includes at least one trunk with a minimum diameter of six (6) inches in diameter at four and one half feet (4.5) vertically above the ground or with trunks that have an aggregate diameter of at least twenty (20) inches at four and one half feet (4.5) vertically above the ground. In addition, Planning Staff will assist in determining if there is major vegetation removal proposed by evaluating if natural riparian vegetation, a creek, threatened or endangered species or significant habitat or other significant factors exist on the site where the vegetation is to be removed.

The project proposes to remove 35 trees, of which are not located within sensitive habitat areas and are not considered ESHA. If trees meet the minimum requirements as defined by the Coastal Act, a Coastal Development Permit may be required.

## **5.0 IMPACT ASSESSMENT**

### **5.1 Summary of Potential Impacts**

The proposed project has the potential to directly and/or indirectly impact trees, sensitive habitats, special-status wildlife, and migratory nesting birds. Direct impacts to wildlife could result from injury or death via construction-related disturbances such as vehicle strikes or crushing of underground refugia from equipment or other construction activities such as grading, vegetation trimming or removal, and excavation. Long-term direct impacts to wildlife could result from operational activities. Indirect impacts could result from construction noise, harassment, dust emissions, or other disruptions during construction.

An assessment of anticipated impacts to sensitive biological resources caused by the proposed project are below.



### 5.1.1 Impacts to Habitat Types

The project will result in temporary and permanent impacts to habitat types as a result of grading and permanent development. Temporary impacts habitat types include those areas that will be graded, but not have an impermeable surface. Permanent impacts to habitat types include all areas that will be replaced with impervious surfaces. No impacts to ESHA are proposed.

**Table 1. Summary of Impacts to Habitat Types**

Habitat Type	Temporary (acre)	Permanent (acre)
Annual Brome Grassland	1.61	4.58
Arroyo Willow Thicket (ESHA)	0.00	0.00
Monterey Cypress Ruderal	0.08	0.48
Ruderal/Developed	0.00	0.63

### 5.1.2 Impacts to Trees

The project proposes to remove 35 trees. Sixteen of the trees proposed for removal were planted as required mitigation trees associated with the 2018 demolition of the DFSP facility. Two of these trees are dead, and two are in declining health. It should be noted that none of these trees meet the minimum size threshold of a protected tree per the City’s 2007 Major Vegetation Removal Guidelines. No trees within the ESHA boundary are proposed for removal. See Appendix F – Arborist Report for details on tree impacts.

### 5.1.3 Impacts to Special-status Wildlife

#### ***Special-status Amphibians***

CRLF may utilize the drainage and associated riparian habitat areas as dispersal corridors on the northern edge of the project site. In addition, due to the long-range dispersal capability of this species, CRLF may also occur in upland areas of the site. If individuals are present during construction, they could be crushed or trampled by vehicles and equipment. Increased anthropogenic activities on site have the potential to result in water quality impacts and introduction of increased light pollution along the drainage and associated riparian habitat areas.

#### ***Special-status Mammals***

Impacts to pallid bat and Townsend’s big-eared bat may occur when existing buildings are demolished and if mature trees with roosting cavities are impacted during project implementation. The short-term construction activities in the vicinity of roosts may temporarily deter use of the area by bats.

American badger may be impacted directly or indirectly during construction. Construction poses several direct risks, such as vehicle strikes, and destruction of resources (e.g., burrows or dens). Further, construction may impact or deter use of valuable habitat (e.g., burrows or dens), yielding it unsuitable for American badger. Increased short- and long-term anthropogenic activity in the vicinity of viable populations has potential to indirectly impact this species as a result of



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permanent habitat conversion, increased light pollution, and primary and secondary exposure to residential-use chemicals including rodenticides.

### ***Special-status Reptiles***

The proposed project site provides marginally suitable habitat for northern California legless lizard and coast horned lizard. Construction activities pose risks for direct and indirect impacts to special-status reptiles. For example, reptiles basking on roadways will be especially vulnerable to vehicle strikes. Reptiles can be slow-moving, both because of behavioral adaptations to be camouflaged from predators and because of their ectothermic nature. This trait presents crushing hazards in the presence of relatively fast-moving equipment or even foot traffic. All special-status reptiles presumed to be on the project site rely heavily on burrows or emergent vegetation for shelter from the elements, protection from predators, and/or reproduction. Heavy equipment and ground disturbing activities may collapse burrow systems or completely remove them, resulting in injury or death of the inhabitants or exclusion by the removal of a vital resource. Vegetation may also be removed as a result of construction activities. Ectotherms rely on vegetative cover for temperature regulation and, further, vegetation provides critical habitat for prey species of reptiles.

### ***Sensitive and Nesting Birds/Raptors***

Direct impacts to bird and raptor species including sensitive species are most likely to occur if construction activities take place during the typical avian nesting season, generally February 1 through August 31. Additionally, western burrowing owls may utilize burrows onsite in the wintering season (September 1 – January 31). Indirect impacts may occur due to habitat loss (e.g., removal of suitable nesting trees) or construction-related disturbances that may deter nesting or cause nests to fail.

## **5.1.4 Impacts to CDFW Sensitive Natural Communities / ESHA**

If the three disjunct patches are cumulatively considered a CDFW Sensitive Natural Community / ESHA, direct impacts could result from removal of plants during construction and initial grading. It is important to note that due to historical anthropogenic disturbances on site coupled with its disjunct distribution and small acreage, the stand is likely a low-quality occurrence of the given community and lack the most exemplary qualities of natural vegetation. Modification of this stand would likely not constitute a significant impact or threat to the existence of this community.

## **5.1.5 Impacts to Federal and State Waters/Wetlands, and ESHA**

No direct impacts to Federal and State waters also classified as ESHA are anticipated to occur under the current project scope. Indirect impacts to the drainage could result from erosion, sedimentation, and/or discharges of hazardous materials, such as fuel, from construction equipment and fugitive dust during earthmoving.

Permanent impacts within the 50-foot avoidance buffer from ESHA include installation of a gravel based walking path. Installation of the walking path is not expected to result in major recontouring or vegetation removal. Temporary impacts within the 50-foot avoidance buffer include construction of the vegetated detention basin, tree removal, fence removal, and removal



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of existing facilities. Installation of the vegetated detention basin is not expected to result in long-term effects to the 50-foot ESHA buffer. No Arroyo willows or riparian vegetation are expected to be removed as a part of the project or within the 50-foot buffer from ESHA. Minor temporary impacts to arroyo willow such as trimming of small-diameter branches may occur during fence removal.

## **5.2 Recommended Avoidance and Minimization Measures**

### **5.2.1 General Avoidance and Minimization Measures**

#### ***Measure 1: Environmental Awareness Training***

An environmental awareness training shall be presented to all construction personnel by a qualified biologist prior to the start of any project activities. The training shall include color photographs and a description of the ecology of all special-status species known or with potential to occur, as well as other sensitive resources requiring avoidance during construction. The training shall also include a description of protection measures required by discretionary permits, an overview of the Federal and State Endangered Species Acts, and implications of noncompliance with these regulations. This will include an overview of the required avoidance, minimization, and mitigation measures. A sign-in sheet with the name and signature of the qualified biologist who presented the training, and the names and signatures of the environmental awareness trainees will be kept. A fact sheet conveying the information provided in the environmental awareness training will be provided to all project personnel.

#### ***Measure 2: Site Maintenance and General Operations***

The following general measures are recommended to minimize impacts during active construction:

- The use of heavy equipment and vehicles shall be limited to the proposed project limits and defined staging areas/access points. The boundaries of each work area shall be clearly defined and marked with high visibility fencing. No work shall occur outside these limits.
- Project plans, drawings, and specifications shall show the boundaries of all sensitive resource areas and the location of erosion and sediment controls, delineation of construction limits, and other pertinent measures to ensure the protection of sensitive habitats and resources.
- Staging of equipment and materials shall occur in designated areas with appropriate demarcation and perimeter controls. No staging areas shall be located within 100 feet of sensitive habitat or aquatic resources.
- Secondary containment, such as drip pans, shall be used to prevent leaks and spills of potential contaminants.
- Washing of concrete, paint, or equipment, and refueling and maintenance of equipment shall occur only in designated staging areas. These activities will occur at a minimum of 100 feet from sensitive habitat or aquatic resources, including drainages. Sandbags and/or absorbent pads and spill control kits shall always be available on site to clean up and contain fuel spills and other contaminants.



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- Construction equipment shall be inspected by the operator daily to ensure that equipment is in good working order and no fuel or lubricant leaks are present.
- Plastic monofilament netting (erosion control matting) or similar material will not be used on site due to the potential to entangle special-status wildlife. Acceptable substitutes are coconut coir matting, biodegradable fiber rolls, or tackified hydroseeding compounds.
- The use of pesticides (including rodenticides) and herbicides on the property shall be in compliance with all local, state, and federal regulations to avoid primary and secondary poisoning of sensitive species that may be using the site.
- After completion of the project's construction, all protective fencing/flagging used to delineate sensitive biological resources shall be removed from the project area and disposed of in appropriate waste receptacles or reused.

***Measure 3: Lighting***

Any permanent lighting introduced for new developments shall be positioned and/or shielded to avoid direct lighting of off-site natural habitat features suitable for special-status species with emphasis on the drainage bordering the northern boundary of the site and associated riparian habitat areas.

## **5.2.2 Avoidance and Minimization Measures for Impacts to Trees**

***Measure 4: Tree protection***

The following measures are recommended to minimize impacts to remaining trees during construction. See Appendix F – Arborist Report for complete list of avoidance and minimization measures.

- All existing trees shall be fenced off along the extent of the drip line of the tree, as feasible. Alternatively, where this is not feasible, the trunk shall be wrapped with a straw waddle and orange snow fencing. Tree protection fencing should be a minimum of four feet high, made of pig wire with steel stakes or any material superior in quality, such as cyclone fencing. A tree protection zone sign shall be affixed to the fencing at appropriate intervals as determined by the arborist on site.
- All grading plans that specify grading within the drip line of any tree, or within the distance from the trunk as outlined in the site preparation section above when said distance is outside the drip line, shall first be reviewed by a certified arborist. Provisions for aeration, drainage, pruning, tunneling beneath roots, root pruning or other necessary actions to protect the trees shall be outlined by an arborist. If trenching is necessary within the area as described above, said trenching shall be undertaken by hand labor and dug directly beneath the trunk of the tree. All roots 2 inches or larger shall be tunneled under and other roots shall be cut smoothly to the trunk side of the trench. The trunk side should be draped immediately with two layers of untreated burlap to a depth of 3 feet from the surface. The burlap shall be soaked nightly and left in place until the trench is back filled



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to the original level. An arborist shall examine the trench prior to back filling to ascertain the number and size of roots cut, to suggest the necessary remedial repairs.

Exercise caution when removing or replacing fencing along the northern property boundary to avoid damaging the arroyo willows in this area.

### **5.2.3 Avoidance and Minimization Measures for Impacts to Special-status Wildlife**

#### ***Measure 5: Prepare Project-Specific California Red-Legged Frog Habitat Assessment***

Prior to project implementation, the proposed project with emphasis on those portions that would result in land disturbance within 1.6 kilometers of the drainage feature on site shall be subject to project-specific California Red-legged Frog Habitat Assessment. The assessment shall be prepared in coordination with, and submitted for review by, the USFWS. The California Red-Legged Frog Habitat Assessment shall be prepared and processed in accordance with the USFWS Revised Guidance on Site Assessments and Field Surveys for the California Red-Legged Frog (USFWS 2005), or the most recent applicable guidance. The assessment shall specifically evaluate the drainage feature and the upland areas that may be disturbed by project activities and be submitted to USFWS for review/approval to determine the need for further consultation.

#### ***Measure 6: Conduct California Red-Legged Frog Consultation***

If it is determined from Mitigation Measure 5 that the proposed project would affect CRLF, the applicant shall consult directly with the USFWS pursuant to Section 10 of the ESA. If USFWS determines that the project may affect or result in take of California red-legged frog, it may ask the applicant to implement additional CRLF protection measures and/or to prepare a Habitat Conservation Plan (HCP) and obtain an Incidental Take Permit (ITP). Protection measures may include compensatory mitigation for permanent and/or temporary loss of habitat, construction monitoring, salvaging of CRLF, and installation of exclusion fencing between the project site and adjacent habitats.

#### ***Measure 7: CRLF Protection Measure***

To avoid the potential for take of CRLF that may disperse during construction, all initial vegetation removal and grading activities associated with the proposed project will be completed in the dry season (between June 1 and September 31). Initial grading will not be allowed after the first fall rains and before May of any year. All vehicles, equipment, and materials staged on site overnight shall be inspected by a designated member of the construction crew. If special-status wildlife is found within the work area, it shall be allowed to leave on its own volition and, as appropriate, the resource agencies shall be contacted.

#### ***Measure 8: Surveys and Monitoring for Special-status Wildlife***

A qualified biologist shall conduct surveys prior to the start of initial project activities to ensure special-status wildlife species are not present within proposed work areas. In the event that special-status wildlife species are found, they shall be allowed to leave the area on their own volition or relocated (as permitted) to suitable habitat areas located outside the work area(s). If



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necessary, resource agencies will be contacted for further guidance. Pre-activity surveys shall be conducted as follows:

***Measure 8a: Pre-construction Surveys for Special-status bats***

All suitable roosting habitat for special-status bats (e.g., mature trees, abandoned buildings) within 100 feet of work areas shall be surveyed by a qualified biologist within 30 days prior to the start of initial project activities to determine if bats are roosting in these areas. If bats are detected and impacts are deemed unavoidable, a bat exclusion plan shall be developed and submitted to CDFW for approval prior to implementing any exclusion methods. If no bats are detected, no further action is required.

***Measure 8b: Pre-construction Survey for American Badger***

A qualified biologist shall conduct a pre-construction survey within 30 days prior to the start of initial project activities to ensure American badger are not present within proposed work areas. If potential dens are discovered, they shall be monitored with a remote camera or tracking medium for at least three days to determine if they are occupied. If the qualified biologist determines that a den may be active, a no-entry exclusion buffer shall be established within 50 feet of the den and the appropriate resource agencies shall be contacted for further guidance. If active dens are found during the breeding and rearing season, no activity shall occur within 200 feet of the den without agency guidance and approval. Exclusion buffers shall be prominently flagged and encircle the den. If an exclusion buffer is not feasible, the applicant will contact the City for further guidance prior to initial project activities. The results of the survey shall be provided to the City prior to initial project activities. If construction lapses beyond 30 days from the survey, an additional survey will be required.

***Measure 8c: Surveys and Monitoring for CRLF***

A qualified biologist shall survey the project site no more than 48-hours before the start of work activities. If CRLF are detected within the drainage and out of harm's way, a biological monitor shall monitor all initial disturbance activities within 50 feet of suitable habitat. If CRLF is found within any of the areas planned for disturbance, the USFWS shall be contacted for guidance on how to proceed. No work shall occur until receipt of authorization to proceed from the USFWS.

***Measure 8d: Surveys and Monitoring for Northern California Legless Lizard and Coast Horned Lizard***

A qualified biologist shall conduct a pre-activity survey immediately prior to the start of initial ground disturbance within 50 feet of suitable habitat for Northern California legless lizard and coast horned lizard. Surveys will be conducted by gently disturbing scrub understory and upper layers of duff. Construction monitoring shall also be conducted by a qualified biologist during all initial ground disturbing and vegetation removal activities (e.g., grading, grubbing, vegetation trimming, vegetation removal including tree removal, etc.) within suitable habitat. If either species is discovered during surveys and monitoring,



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the species will be allowed to leave the area on their own volition, or hand captured and relocated to suitable habitat outside the area of impact.

***Measure 8e: Pre-construction Survey and Avoidance Measures for Western Burrowing Owl***

No more than 30 days before the start of ground disturbing activities, a qualified biologist shall conduct focused, pre-construction, take-avoidance surveys for burrowing owls within all areas proposed for ground disturbance that contain suitable owl habitat (CDFW 2012). Preconstruction surveys shall be consistent with CDFW-recommended methods described in the Staff Report on Burrowing Owl Mitigation (CDFW 2012) and be conducted on foot such that 100% of the survey area is visible, and shall cover the entire limits of disturbances plus a 500-foot buffer. If no suitable burrows are found, a final take avoidance survey shall be completed within 48 hours prior to initiation of ground disturbing activities. If suitable burrows for burrowing owls are found during preconstruction surveys on the project site; burrowing owl occupancy shall be determined through up to three additional focused surveys on potential burrows during the morning and/or evening survey windows as defined in the Staff Report on Burrowing Owl Mitigation (CDFW 2012). If burrows are determined to be occupied by western burrowing owl, a qualified biologist shall establish the appropriate buffers and follow the procedures in the Staff Report on Burrowing Owl Mitigation (CDFW 2012).

***Measure 8f: Pre-construction Survey for Sensitive and Nesting Birds/Raptors***

If work is planned to occur between February 1 and August 31, a qualified biologist shall survey the area for nesting birds within one week prior to activity beginning on site. If nesting birds are located on or near the proposed project site, they shall be avoided until they have successfully fledged, or the nest is no longer deemed active. A non-disturbance buffer of 50 feet will be placed around non-listed, passerine species, and a 250-foot buffer will be implemented for all raptor species. All activity will remain outside of the buffer until a qualified biologist has determined that the nest is no longer active (e.g., young have fledged, nest failed, etc.) or that proposed construction activities would not cause adverse impacts to the nest, adults, eggs, or young. If special-status avian species are identified and nesting within the work area, no work will begin until an appropriate buffer is determined in consultation with CDFW, and/or the USFWS.

#### **5.2.4 Avoidance and Minimization Measures for Impacts to Sensitive Habitats**

***Measure 9: Avoidance of Federal and State Waters/Wetlands and ESHA***

Except where specifically approved, all new development shall be located a minimum of 50 feet from the edge of the drainage and 50 feet from all other jurisdictional aquatic resources, including riparian vegetation. The limits of jurisdictional aquatic features shall be clearly shown on all site plans as ESHA. Further, the 50-foot avoidance buffer should be maximized wherever feasible and adhered to for all temporary construction activities including access routes, staging areas, and stockpile areas, etc.



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Further, the following measure shall be implemented to ensure long-term protection of all ESHA features on site:

- Limits of ESHA shall be clearly delineated using brightly colored construction fencing prior to implementation of any demolition activity. ESHA fencing shall be maintained in good order for the duration of the project.
- No equipment access, excavation, or other land disturbing activities will occur within the limits of ESHA.
- If disturbance to ESHA cannot be avoided, appropriate permits (i.e., CDFW Lake and Streambed Alteration Agreement) will be obtained prior to work.
- Appropriate erosion and sediment control measures will be installed and maintained for soil disturbances which could lead to sedimentation impacts to the drainage. Upon completion of construction activities, all disturbed areas adjacent to ESHA will be appropriately stabilized (i.e., erosion control hydroseed, biodegradable wattles, mulch, etc.).
- Erosion control materials shall not contain monofilament materials as these materials are known to entangle wildlife.
- Any equipment or vehicles operated adjacent to ESHA shall be checked and maintained daily, to prevent leaks that could be harmful to wildlife.
- Emergency spill kits shall be present at the site and personnel shall be trained in proper use of the spill kit during all demolition and removal activities.
- Appropriate amounts of water will be used to suppress fugitive dust during demolition and earth disturbing work.
- Following the completion of construction, interpretative signage shall be installed in appropriate, visible locations around ESHA that abuts the newly developed areas for educational purposes and to provide long-term protection and prevent unintended pedestrian or recreational access. This shall include an informative brochure providing an overview of the sensitive resources occurring within the drainage and surrounding areas and general avoidance and protection measures.
- If agency permits are required for project related activities, all applicable agency permits with jurisdiction over the project area (i.e., Corps, CDFW, and RWQCB) shall be obtained prior to project implementation. All additional mitigation measures required by these agencies would be implemented as necessary during and following the project construction phase.

## **6.0 CONCLUSION**

As currently designed, the project has potential for direct and indirect impacts to jurisdictional waters, ESHA, trees, special-status species, and nesting birds. The site is highly disturbed as a result of historic use as a U.S. Navy jet fuel storage facility and provides only marginal habitat for special-status species. Habitat connectivity is not expected to be significantly degraded. No special-status species were observed directly within the project area; however, it was



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determined that there is potential for 9 special-status wildlife species, as well as nesting birds, to be present within the project site. Implementation of the recommended avoidance and minimization, and mitigation measures (if required) will avoid and/or reduce impacts to sensitive resources to a less than significant level.



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## **Appendix A – Figures**

**Figure 1:** Project Vicinity

**Figure 2:** Survey Area

**Figure 3a:** 5-mile CNDDDB Occurrences (Botanical)

**Figure 3b:** 5-mile CNDDDB Occurrences (Wildlife)

**Figure 4:** Soils Map

**Figure 5:** Vegetation Communities and Sensitive Resources

**Figure 6:** Hydrological Resources



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17 May 2022



**3300 Panorama Drive Development Project  
Biological Resources Assessment  
Figure 1. Project Vicinity**

- ★ Project Location
- ▭ Survey Area
- ▭ California Coastal Zone
- USGS Blue Line
- State Highway
- Road

0 500 1,000  
US Feet



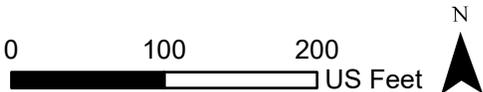
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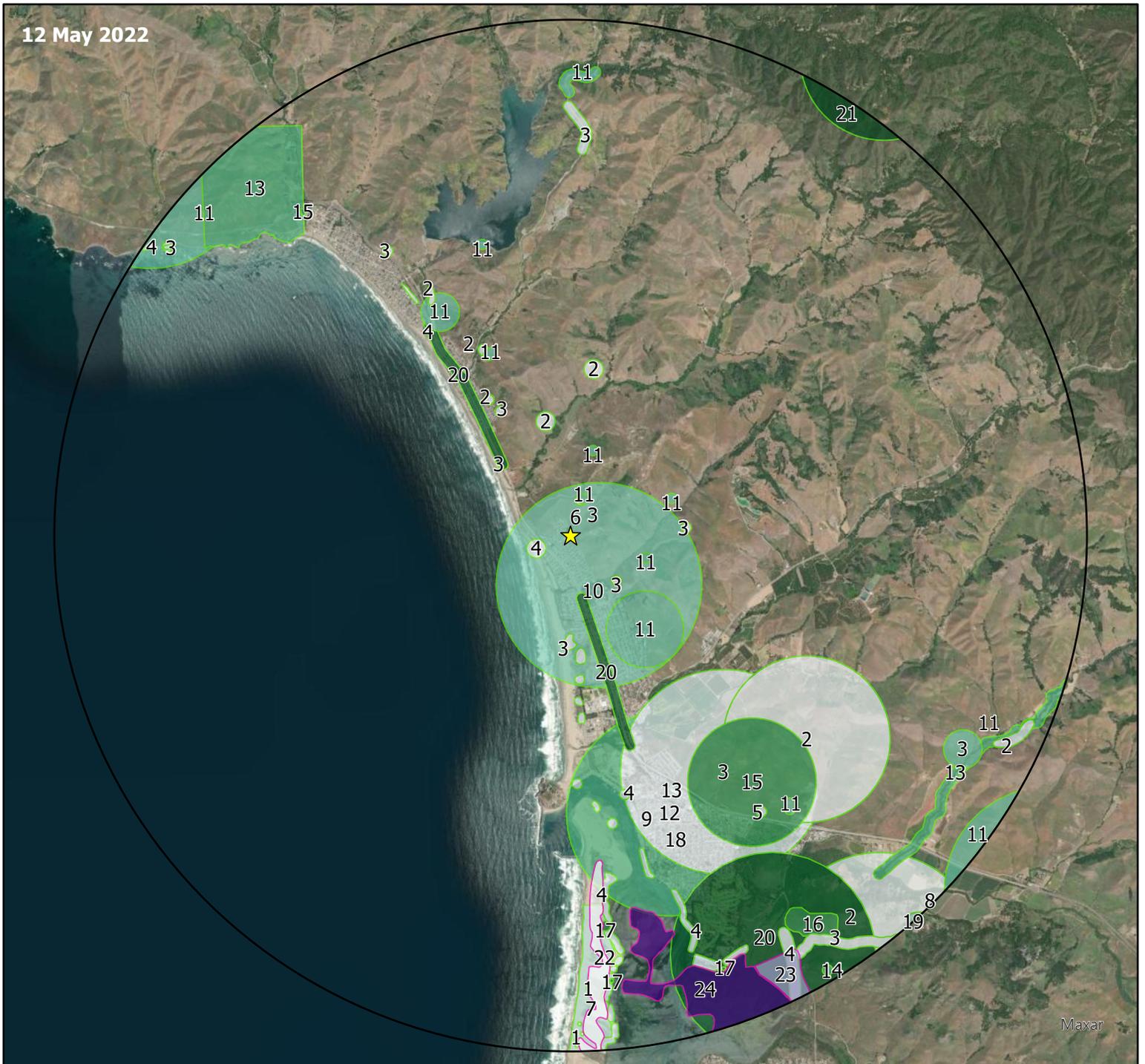
County of San Luis Obispo, Maxar, Microsoft

**3300 Panorama Drive Development Project  
Biological Resources Assessment  
Figure 2. Survey Area**

-  Survey Area (9.97 acres)
-  USGS Blue Line
-  Road



12 May 2022



**3300 Panorama Drive Development Project  
Biological Resources Assessment  
Figure 3a. 5-mile CNDDDB Occurrences (Botanical)**

★ Project Location

□ 5-mile Buffer

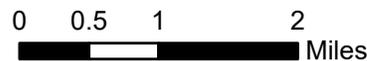
**CNDDDB Occurrences (Botanical)**

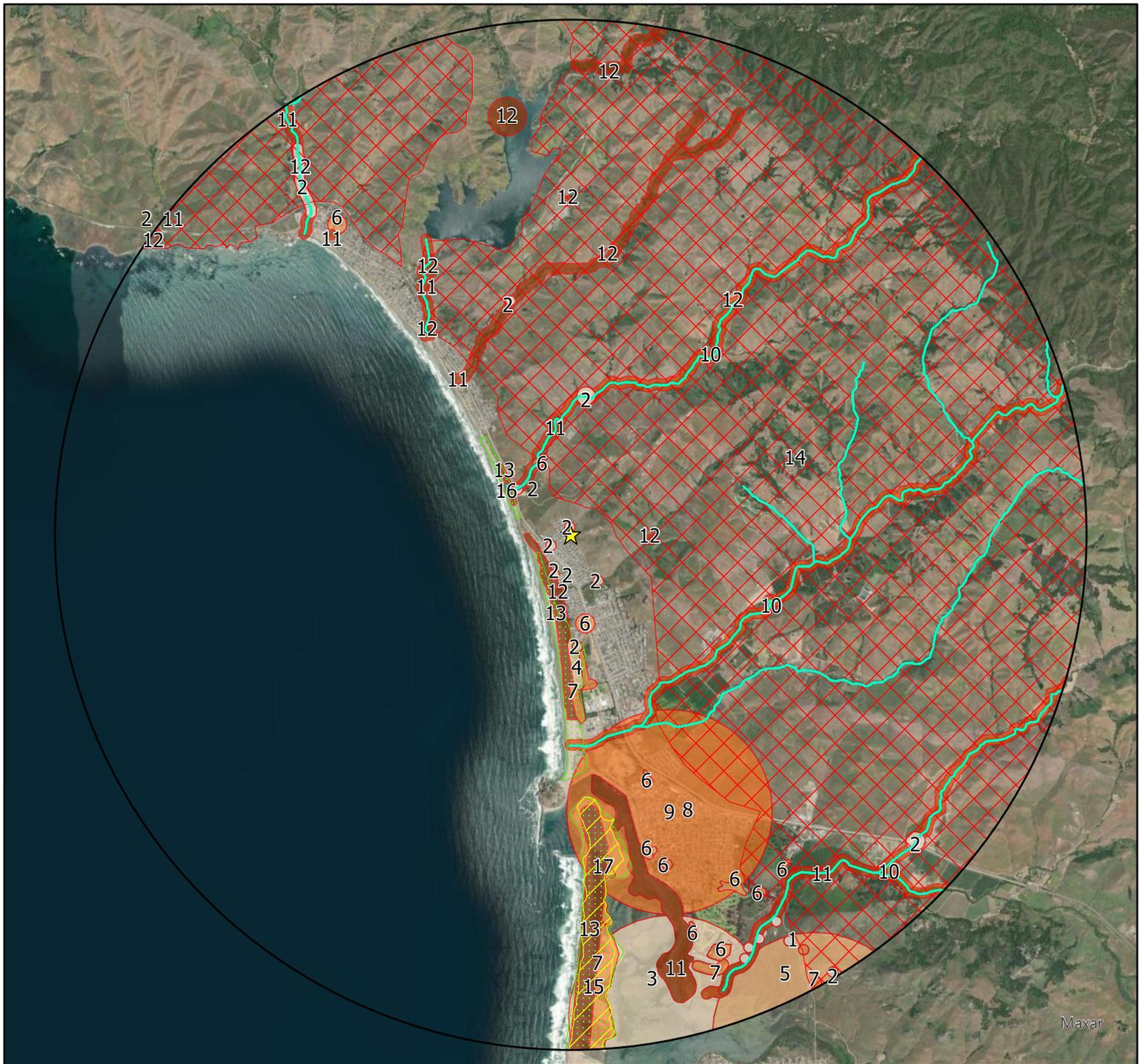
- 1 - beach spectaclepod
- 2 - Betty's dudleya
- 3 - Blochman's dudleya
- 4 - California seablite
- 5 - Cambria morning-glory
- 6 - chaparral ragwort
- 7 - coast woolly-heads
- 8 - dacite manzanita
- 9 - dune larkspur
- 10 - Eastwood's larkspur
- 11 - Jones' layia
- 12 - Kellogg's horkelia

- 13 - Miles' milk-vetch
- 14 - Morro manzanita
- 15 - mouse-gray dudleya
- 16 - Oso manzanita
- 17 - Point Reyes salty bird's-beak
- 18 - San Joaquin spearscale
- 19 - San Luis Obispo ceanothus
- 20 - San Luis Obispo owl's-clover
- 21 - umbrella larkspur

**CDFW Sensitive Natural Communities**

- 22 - Central Dune Scrub
- 23 - Coastal Brackish Marsh
- 24 - Northern Coastal Salt Marsh





**3300 Panorama Drive Development Project  
Biological Resources Assessment  
Figure 3b. 5-mile CNDDDB Occurrence (Wildlife)**

★ Project Location

□ 5-mile Buffer

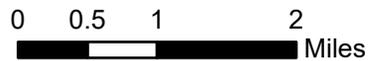
**CNDDDB Occurrences (Wildlife)**

- 1 - California black rail
- 2 - California red-legged frog
- 3 - California Ridgway's rail
- 4 - coast horned lizard
- 5 - Cooper's hawk
- 6 - monarch - California overwintering population
- 7 - Morro shoulderband (=banded dune) snail
- 8 - Northern California legless lizard
- 9 - pallid bat

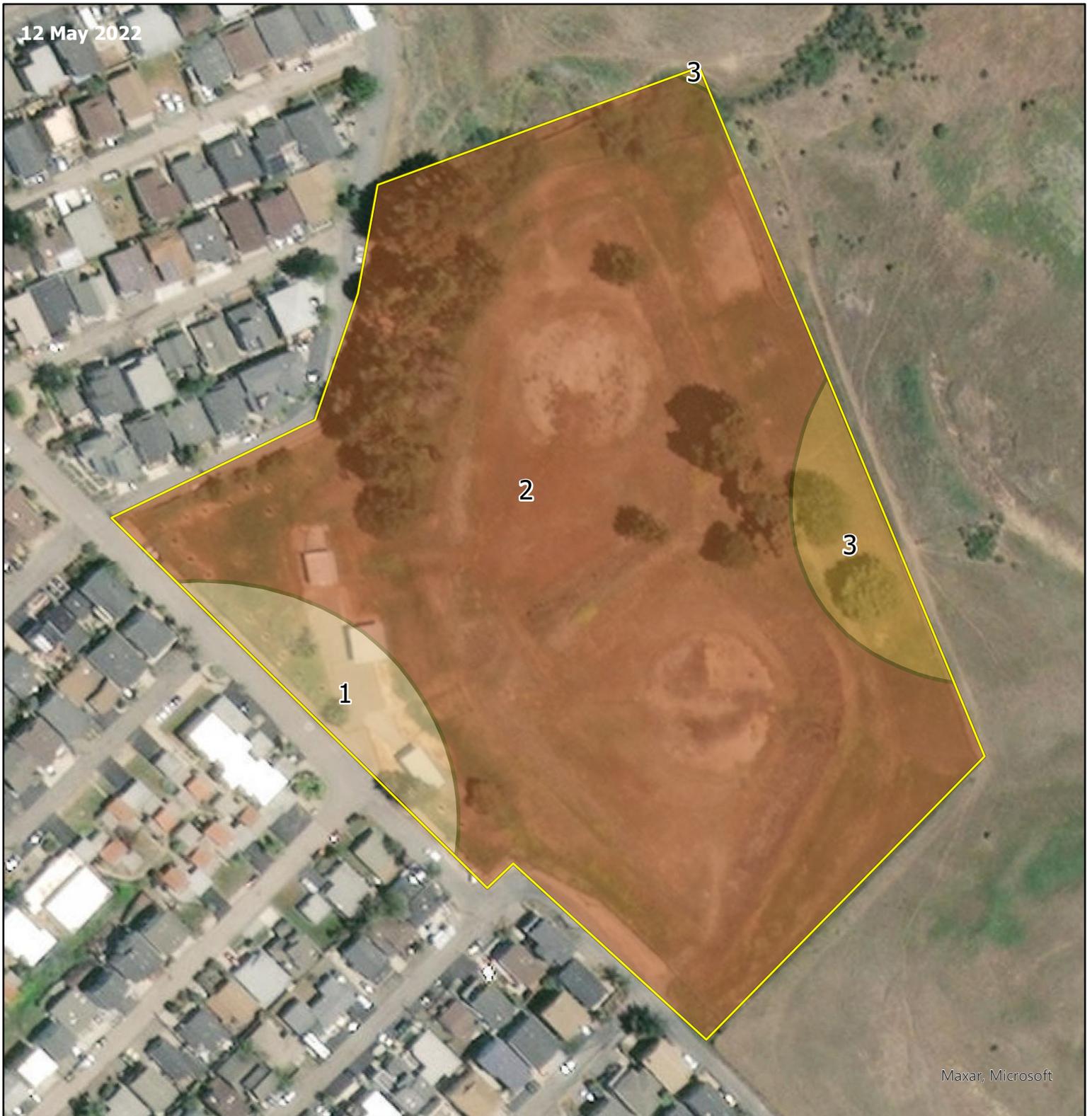
- 10 - steelhead - south-central California coast DPS
- 11 - tidewater goby
- 12 - western pond turtle
- 13 - western snowy plover

**USFWS-designated Critical Habitat**

- 14 - California red-legged frog
- 15 - Morro shoulderband (=Banded dune) snail
- 16 - Tidewater goby
- 17 - Western snowy plover
- 18 - Steelhead



12 May 2022



Maxar, Microsoft

### 3300 Panorama Drive Development Project Biological Resources Assessment Figure 4. Soils

 Survey Area

Soil Type

-  1 - Cropley clay, 2 to 9 percent slopes
-  2 - Diablo and Cibo clays, 9 to 15 percent slopes
-  3 - Los Osos-Diablo complex, 30 to 50 percent slopes

0 100 200  
US Feet



12 May 2022



Maxar, Microsoft

**3300 Panorama Drive Development Project  
Biological Resources Assessment  
Figure 5. Vegetation Communities and Sensitive Resources**

-  Survey Area (9.97 acres)
-  Purple Needlegrass (0.03 acre)

**Vegetation Community and Land Cover Type**

-  Annual Brome Grassland (7.82 acres)
-  Arroyo Willow Thicket (0.23 acre)
-  Ornamental (1.29 acres)
-  Ruderal/Developed (0.63 acre)

0 100 200  
US Feet



12 May 2022



Maxar, Microsoft

### 3300 Panorama Drive Development Project Biological Resources Assessment Figure 6. Hydrological Resources

-  Survey Area
-  USGS Blue Line
-  CDFW/RWQCB Jurisdiction (ESHA)
-  Culvert (Approximate)
-  Culvert Inlet
-  Culvert Outlet

0 100 200  
US Feet





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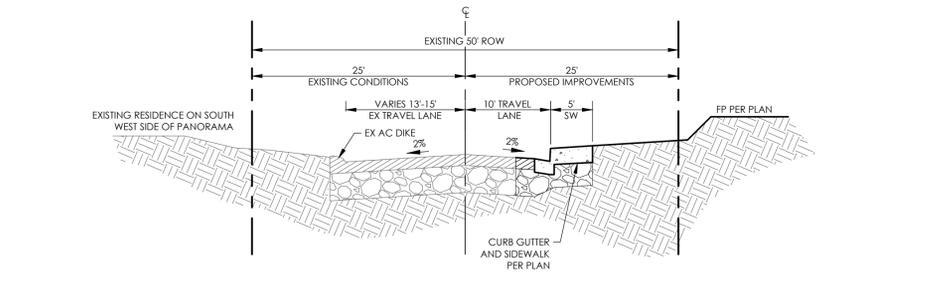
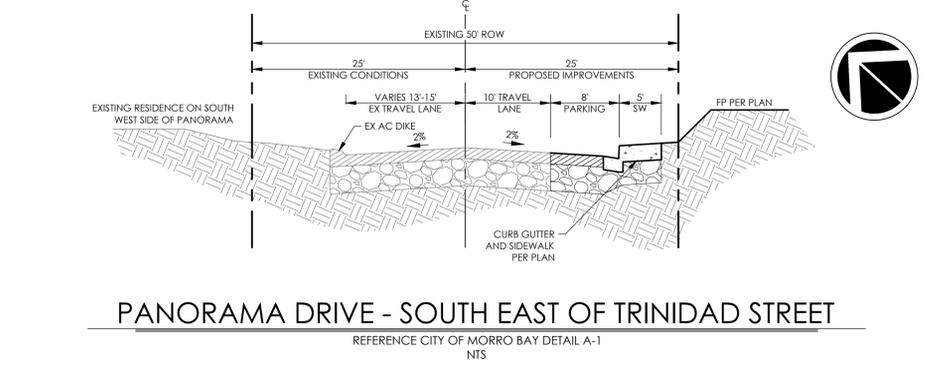
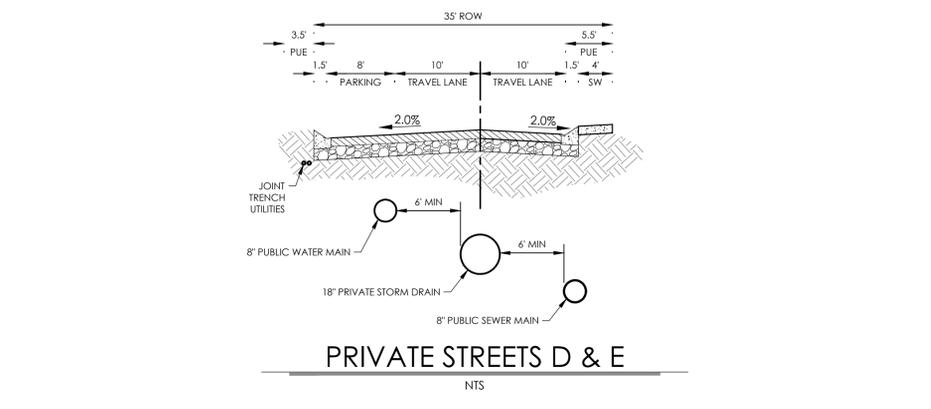
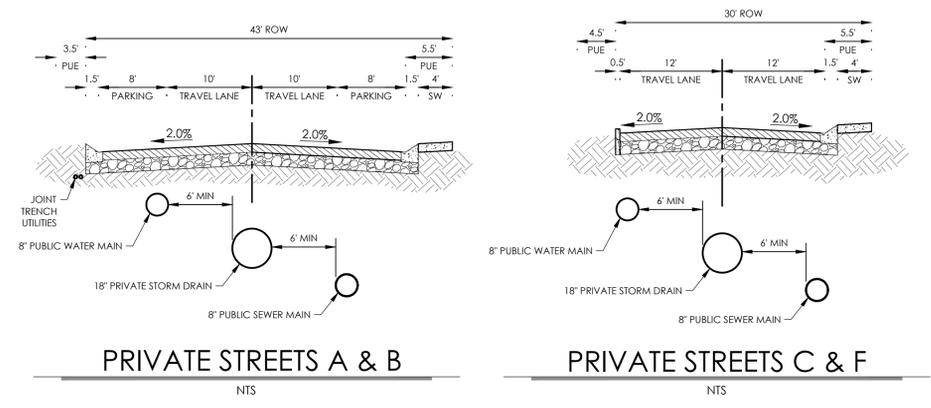
## **Appendix B – Preliminary Site Plans**



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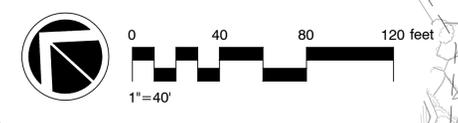
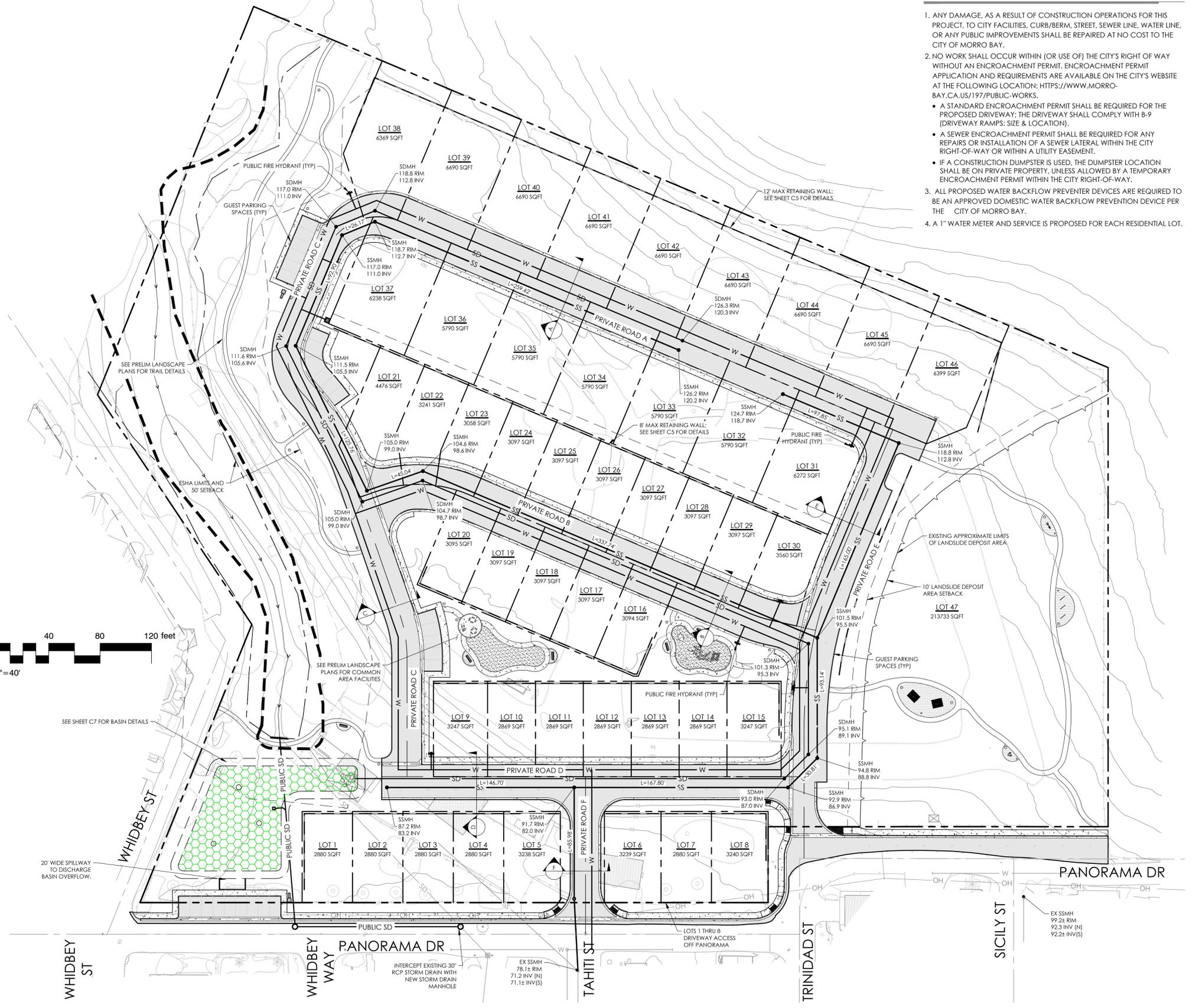
**LEGEND**

- SD PRIVATE STORM DRAIN, UNO
- SS 8" PUBLIC SEWER SERVICE
- W 8" PUBLIC WATER MAIN
- 500 EXISTING MAJOR CONTOUR
- 497 EXISTING MINOR CONTOUR
- PROPOSED FIRE HYDRANT (500' MAX SPACING)



**NOTES**

1. ANY DAMAGE, AS A RESULT OF CONSTRUCTION OPERATIONS FOR THIS PROJECT, TO CITY FACILITIES, CURB/BERM, STREET, SEWER LINE, WATER LINE, OR ANY PUBLIC IMPROVEMENTS SHALL BE REPAIRED AT NO COST TO THE CITY OF MORRO BAY.
2. NO WORK SHALL OCCUR WITHIN (OR USE OF) THE CITY'S RIGHT OF WAY WITHOUT AN ENCROACHMENT PERMIT. ENCROACHMENT PERMIT APPLICATION AND REQUIREMENTS ARE AVAILABLE ON THE CITY'S WEBSITE AT THE FOLLOWING LOCATION: [HTTPS://WWW.MORRO-BAY.CA.US/197/PUBLIC-WORKS](https://www.morrobay.ca.us/197/PUBLIC-WORKS).
- A STANDARD ENCROACHMENT PERMIT SHALL BE REQUIRED FOR THE PROPOSED DRIVEWAY; THE DRIVEWAY SHALL COMPLY WITH B-9 (DRIVEWAY RAMP: SIZE & LOCATION).
- A SEWER ENCROACHMENT PERMIT SHALL BE REQUIRED FOR ANY REPAIRS OR INSTALLATION OF A SEWER LATERAL WITHIN THE CITY RIGHT-OF-WAY OR WITHIN A UTILITY EASEMENT.
- IF A CONSTRUCTION DUMPSTER IS USED, THE DUMPSTER LOCATION SHALL BE ON PRIVATE PROPERTY, UNLESS ALLOWED BY A TEMPORARY ENCROACHMENT PERMIT WITHIN THE CITY RIGHT-OF-WAY.
3. ALL PROPOSED WATER BACKFLOW PREVENTER DEVICES ARE REQUIRED TO BE AN APPROVED DOMESTIC WATER BACKFLOW PREVENTION DEVICE PER THE CITY OF MORRO BAY.
4. A 1" WATER METER AND SERVICE IS PROPOSED FOR EACH RESIDENTIAL LOT.





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## **Appendix C – Regionally Occurring Special-status Species Table**



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**Regionally occurring special-status species list for the Morro Bay North and surrounding 7.5-minute quadrangles: Atascadero, Cayucos, Cypress Mountain, Morro Bay South, San Luis Obispo, Templeton, and York Mountain.**

<b>SENSITIVE VEGETATION COMMUNITIES AND HABITATS</b>			
<b>Community/ Habitat<sup>1</sup></b>	<b>Description<sup>2</sup></b>	<b>Observed on Site?</b>	<b>Comments / Potential for Occurrence</b>
<b>California Natural Diversity Database (CNDDDB)-designated Sensitive Natural Communities</b>			
Central Dune Scrub	Restricted to coastal areas with stabilized back dunes, slopes, ridges, and flats. Vegetation consists of shrubs, subshrubs, and herbs less than a meter tall. Indicator species include <i>Ericameria ericoides</i> , <i>Lupinus chamissonis</i> , and <i>Artemisia</i> sp.	No	Diagnostic species and substrate (soils) are not present on site; this community is not present within the surveys area.
Central Maritime Chaparral	Associated with well drained/dry soils. Exposed upland location with moderate to high cover. Typically dominated by <i>Arctostaphylos</i> species that develop into dense patches of vegetation.	No	Diagnostic species are not present on site; this community is not present within the surveys area.
Coastal and Valley Freshwater Marsh	Dominated by perennial, emergent, and tall monocots that often form closed canopies. Tend to be <i>Typha</i> -dominated and permanently flooded with fresh water, which results in deep peaty soils.	No	Diagnostic species composition and conditions are not present on site; this community is not present within the surveys area.
Coastal Brackish Marsh	Typically occurs along interior edges of coastal bays, estuaries, and in coastal lagoons. Dominated by perennial, emergent, and tall monocots that often form closed canopies. Typically composed of plants characteristic of salt and freshwater marshes. Vegetation depends on salinity, which may vary considerably.	No	Diagnostic species are not present on site; this community is not present within the surveys area.
Northern Coastal Salt Marsh	Dominated by herbaceous, suffrutescent, salt-tolerant hydrophytes which may be tall with dense cover, occurring along sheltered bay margins, lagoons, and estuaries. Plants are typically active in the summer and dormant in the winter and subject to regular tidal inundation for at least part of the year. Characteristic species include <i>Jaumea carnosa</i> , <i>Limonium californicum</i> , and <i>Frankenia salina</i> .	No	Diagnostic species composition and conditions are not present on site; this community is not present within the surveys area.

**SENSITIVE VEGETATION COMMUNITIES AND HABITATS**

<b>Community/ Habitat<sup>1</sup></b>	<b>Description<sup>2</sup></b>	<b>Observed on Site?</b>	<b>Comments / Potential for Occurrence</b>
	Well-developed around Humboldt Bay, Tomales Bay, San Francisco Bay, Elkhorn Slough, and Morro Bay.		
Northern Interior Cypress Forest	An open, fire-dependent scrubby forest dominated by <i>Hesperocyparis</i> species with dry, rocky, sterile, often ultramafic soils. Vegetation is usually less than 15 meters tall. Frequently associated with serpentine chaparral.	No	Diagnostic species and substrate are not present on site; this community is not present within the surveys area.
Serpentine Bunchgrass	Open grassland dominated by perennial bunchgrasses. Total cover is typically low, but native species are dominant and commonly include <i>Stipa</i> species. Always occurring on serpentine; scattered widely throughout the Coast Ranges, less common elsewhere.	No	Serpentine substrate is not present on site; this community is not present within the surveys area.
Valley Needlegrass Grassland	A mid-height (up to two feet) grassland dominated by perennial, tussock-forming species of <i>Stipa</i> . Native and introduced annuals occur between the perennials, often actually exceeding the bunchgrasses in cover.	No	Although a small patch of <i>Stipa</i> was observed at greater than 10 percent cover; however, the patch was approximately 1,208 square feet, less than 1 percent of the overall grassland community on site and less than 0.25 acre in size. Since the small patch does not represent an intact community, no valley needlegrass grassland was observed on site.
Valley Oak Woodland	Contains at least 50% relative cover in the tree canopy, or at least 30% relative cover when other tree species such as coast live oak ( <i>Quercus agrifolia</i> ) or arroyo willow ( <i>S. lasiolepis</i> ) are present. Tree density tends to decrease as one moves from lowlands to uplands. The understory shrub layer can be dense along drainages and very sparse in uplands. Trees are generally less than 30 meters tall, and the canopy is open to continuous. Shrubs are common to occasional, and the herbaceous layer may be grassy. This community is found in valley bottoms with seasonally	No	Diagnostic species and substrate are not present on site; this community is not present within the surveys area.

SENSITIVE VEGETATION COMMUNITIES AND HABITATS			
Community/ Habitat <sup>1</sup>	Description <sup>2</sup>	Observed on Site?	Comments / Potential for Occurrence
	saturated soils that may intermittently flood lower slopes and summit valleys at elevations from 0 to 775 meters.		

<sup>1</sup>List of sensitive vegetation communities and habitats obtained from CNDDDB (CDFW 2022a).

<sup>2</sup>Community and habitat descriptions acquired from CNDDDB and the U.C. Santa Barbara (UCSB) California Gap Analysis Project (CDFW 2022a; UCSB 2012).

SPECIAL-STATUS BOTANICAL SPECIES					
Scientific/Common Name <sup>1</sup>	Listing Status <sup>2</sup>	Blooming Period <sup>3</sup>	Habitat Type <sup>3</sup>	Observed/ Habitat Present? <sup>4</sup>	Comments / Potential for Occurrence
<i>Agrostis hooveri</i> Hoover's bent grass	CRPR 1B.2	April - August	Dry, sandy soils, open chaparral, oak woodland. Elevation: < 600 meters.	No / No	No suitable habitat on site; not detected during appropriately timed surveys.
<i>Arctostaphylos luciana</i> Santa Lucia manzanita	CRPR 1B.2	January – March	Shale outcrops, slopes, and upland chaparral near the coast. Elevation: 100 – 800 meters.	No / No	No suitable habitat on site; not detected during appropriately timed surveys.
<i>Arctostaphylos morroensis</i> Morro manzanita	Fed: Threatened CRPR 1B.1	January – March	Stabilized sand dunes, sandstones, and chaparral. Elevation: < 200 meters.	No / No	No suitable habitat on site; not detected during appropriately timed surveys.
<i>Arctostaphylos osoensis</i> Oso manzanita	CRPR 1B.2	December – February	Dacite (volcanic) outcrops, chaparral and cismontane woodland. Elevation: 50 – 375 meters.	No / No	No suitable habitat on site; not detected during appropriately timed surveys.
<i>Arctostaphylos pechoensis</i> Pecho manzanita	CRPR 1B.2	January – March	Shale outcrops, chaparral, and coniferous forest. Elevation: < 500 meters.	No / No	No suitable habitat on site; not detected during appropriately timed surveys.
<i>Arctostaphylos pilosula</i> Santa Margarita manzanita	CRPR 1B.2	December – March	Shale outcrops, slopes, chaparral. Elevation: 30 – 1,250 meters.	No / No	No suitable habitat on site; not detected during appropriately timed surveys.

SPECIAL-STATUS BOTANICAL SPECIES					
Scientific/Common Name <sup>1</sup>	Listing Status <sup>2</sup>	Blooming Period <sup>3</sup>	Habitat Type <sup>3</sup>	Observed/Habitat Present? <sup>4</sup>	Comments / Potential for Occurrence
<i>Arctostaphylos tomentosa</i> subsp. <i>daciticola</i> Dacite manzanita	CRPR 1B.1	December – March	Chaparral. Elevation 200 – 300 meters.	No / No	No suitable habitat on site; not detected during appropriately timed surveys.
<i>Arenaria paludicola</i> Marsh sandwort	Fed: Endangered State: Endangered CRPR: 1B.1	May – August	Wet meadows, marshes. Elevation: < 300 meters.	No / No	No suitable habitat on site; not detected during appropriately timed surveys.
<i>Astragalus didymocarpus</i> var. <i>milesianus</i> Miles' milk-vetch	CRPR 1B.2	March – May	Grassy areas near the coast, clay soils in coastal scrub. Elevation: < 400 meters.	No / Yes	Marginally suitable grassland habitat and clay soils present on site. Not observed during an appropriately timed botanical survey.
<i>Atriplex coulteri</i> Coulter's saltbush	CRPR 1B.2	March – October	Alkaline or clay soils, open sites, scrub, coastal bluff scrub. Elevation: < 500 meters.	No / No	No suitable habitat on site; not detected during appropriately timed surveys.
<i>Calochortus obispoensis</i> San Luis mariposa lily	CRPR 1B.2	May – June	Dry serpentine, generally open chaparral. Elevation: 100 – 500 meters.	No / No	No suitable habitat on site; not detected during appropriately timed surveys.
<i>Calochortus simulans</i> La Panza mariposa lily	CRPR 1B.3	May – July	Sand (often granitic), grassland, and yellow pine forest. Elevation: < 1,100 meters.	No / No	No suitable habitat on site; not detected during appropriately timed surveys.
<i>Calystegia subacaulis</i> subsp. <i>Episcopalis</i> Cambria morning-glory	CRPR 4.2	April – June	Dry, open scrub and woodland, chaparral, coastal prairie, grassland; usually in clay soil. Elevation: < 500 meters.	No / Yes	Suitable grassland habitat and clay soils present on site; not detected during appropriately timed surveys.

SPECIAL-STATUS BOTANICAL SPECIES					
Scientific/Common Name <sup>1</sup>	Listing Status <sup>2</sup>	Blooming Period <sup>3</sup>	Habitat Type <sup>3</sup>	Observed/Habitat Present? <sup>4</sup>	Comments / Potential for Occurrence
<i>Camissoniopsis hardhamiae</i> Hardham's evening primrose	CRPR 1B.2	March – May	Sandy soil, limestone; disturbed or burned areas in oak woodland. Elevation: 60 – 600 meters.	No / No	No suitable habitat on site; not detected during appropriately timed surveys.
<i>Carex obispoensis</i> San Luis Obispo sedge	CRPR 1B.2	March – June	Springs and stream sides in chaparral, generally on serpentine. Elevation: < 800 meters.	No / No	No suitable habitat on site; not detected during appropriately timed surveys.
<i>Castilleja densiflora</i> subsp. <i>obispoensis</i> San Luis Obispo owl's-clover	CRPR 1B.2	March – June	Coastal grassland. Elevation: < 400 meters.	No / Yes	Marginally suitable grassland habitat present on site. Not observed during an appropriately timed botanical survey.
<i>Caulanthus lemmonii</i> Lemmon's jewelflower	CRPR 1B.2	March – May	Grassland, chaparral, scrub. Elevation: 80 – 1,100 m.	No / No	No suitable habitat on site; not detected during appropriately timed surveys.
<i>Ceanothus thyrsiflorus</i> var. <i>obispoensis</i> San Luis Obispo ceanothus	CRPR 1B.1	June	Chaparral, Cismontane woodland on sandy soils. Elevation: 140 – 225 meters.	No / No	No suitable habitat on site; not detected during appropriately timed surveys.
<i>Centromadia parryi</i> subsp. <i>congdonii</i> Congdon's tarplant	CRPR 1B.1	June – October	Terraces, swales, floodplains, grassland, and disturbed sites. Elevation: < 300 meters.	No / No	No suitable habitat on site; not detected during appropriately timed surveys.
<i>Chenopodium littoreum</i> Coastal goosefoot	CRPR 1B.2	June – October	Generally sandy soils and dunes. Elevation: < 40 meters.	No / No	No suitable habitat on site; not detected during appropriately timed surveys.
<i>Chlorogalum pomeridianum</i> var. <i>minus</i> Dwarf soaproot	CRPR 1B.2	May – June	Serpentine outcrops in chaparral. Elevation: < 750 meters.	No / No	No suitable habitat on site; not detected during appropriately timed surveys.

SPECIAL-STATUS BOTANICAL SPECIES					
Scientific/Common Name <sup>1</sup>	Listing Status <sup>2</sup>	Blooming Period <sup>3</sup>	Habitat Type <sup>3</sup>	Observed/Habitat Present? <sup>4</sup>	Comments / Potential for Occurrence
<i>Chloropyron maritimum</i> subsp. <i>maritimum</i> Salt marsh bird's beak	Fed: Endangered State: Endangered CRPR 1B.2	May – October	Coastal salt marsh. Elevation: < 10 meters.	No / No	No suitable habitat on site; not detected during appropriately timed surveys.
<i>Chloropyron maritimum</i> subsp. <i>palustre</i> Point Reyes salty bird's-beak	CRPR 1B.2	June – October	Coastal salt marches. Elevation: <115 meters.	No / No	No suitable habitat on site; not detected during appropriately timed surveys.
<i>Chorizanthe aphanantha</i> Irish Hills spineflower	CRPR 1B.1	April – June	Chaparral edges and openings, coastal scrub. Elevation: 100 – 370 m.	No / No	No suitable habitat on site; not detected during appropriately timed surveys.
<i>Chorizanthe breweri</i> Brewer's spineflower	CRPR 1B.3	March – July	Gravel or rocks, typically on serpentine soil. Elevation: 60 – 800 meters.	No / No	No suitable habitat on site; not detected during appropriately timed surveys.
<i>Chorizanthe rectispina</i> Straight-awned spineflower	CRPR 1B.3	May – July	Sand or gravel. Elevation: 200 – 600 meters.	No / No	No suitable habitat on site; not detected during appropriately timed surveys.
<i>Cirsium fontinale</i> var. <i>obispoense</i> Chorro Creek bog thistle	Fed: Endangered State: Endangered CRPR 1B.2	April – October	Serpentine seeps and streams. Elevation: < 350 m.	No / No	No suitable habitat on site; not detected during appropriately timed surveys.
<i>Cirsium occidentale</i> var. <i>compactum</i> Compact cobwebby thistle	CRPR 1B.2	February – July	Bluffs. Elevation: < 50 m.	No / No	No suitable habitat on site; not detected during appropriately timed surveys.
<i>Cirsium occidentale</i> var. <i>lucianum</i> Cuesta Ridge thistle	CRPR 1B.2	April – July	Chaparral, woodland or forest openings, and often on serpentine. Elevation: 500 – 750 meters.	No / No	No suitable habitat on site; not detected during appropriately timed surveys.
<i>Cladonia firma</i> Popcorn lichen	CRPR 2B.1	NA	Coastal dunes (stabilized), Coastal scrub; usually found on soil, detritus, and/or moss. Elevation: 30 – 75 meters.	No / No	No suitable habitat on site; not detected during appropriately timed surveys.

SPECIAL-STATUS BOTANICAL SPECIES					
Scientific/Common Name <sup>1</sup>	Listing Status <sup>2</sup>	Blooming Period <sup>3</sup>	Habitat Type <sup>3</sup>	Observed/Habitat Present? <sup>4</sup>	Comments / Potential for Occurrence
<i>Clarkia speciosa</i> subsp. <i>immaculata</i> Pismo clarkia	Fed: Endangered State: Rare CRPR 1B.1	May – July	Sandy coastal hills. Elevation: < 100 meters.	No / No	No suitable habitat on site; not detected during appropriately timed surveys.
<i>Delphinium parryi</i> subsp. <i>blochmaniae</i> Dune larkspur	CRPR 1B.2	April – May	Coastal chaparral, coastal dunes, sand. Elevation: < 200 meters.	No / No	No suitable habitat on site; not detected during appropriately timed surveys.
<i>Delphinium parryi</i> subsp. <i>eastwoodiae</i> Eastwood's larkspur	CRPR 1B.2	March – May	Coastal chaparral and grassland on serpentine. Elevation: 100 – 500 meters.	No / No	No suitable habitat on site; not detected during appropriately timed surveys.
<i>Delphinium umbracolorum</i> Umbrella larkspur	CRPR 1B.3	April – June	Moist oak forest. Elevation: 400 – 1,600 meters.	No / No	No suitable habitat on site; not detected during appropriately timed surveys.
<i>Dithyrea maritima</i> Beach spectaclepod	State: Threatened CRPR 1B.1	March – August	Seashores and coastal sand dunes. Elevation: < 50 meters.	No / No	No suitable habitat on site; not detected during appropriately timed surveys.
<i>Dudleya abramsii</i> subsp. <i>bettinae</i> Betty's dudleya	CRPR 1B.2	May – June	Rocky outcrops in serpentine grassland. Elevation: 50 – 180 meters.	No / No	No suitable habitat on site; not detected during appropriately timed surveys.
<i>Dudleya abramsii</i> subsp. <i>murina</i> Mouse-gray dudleya	CRPR 1B.3	May – June	Serpentine outcrops. Elevation: 120 – 300 meters.	No / No	No suitable habitat on site; not detected during appropriately timed surveys.
<i>Dudleya blochmaniae</i> subsp. <i>blochmaniae</i> Blochman's dudleya	CRPR 1B.1	April – June	Open, rocky slopes, often serpentine or clay-dominated. Elevation: < 450 meters.	No / No	No suitable habitat on site; not detected during appropriately timed surveys.
<i>Eriastrum luteum</i> Yellow-flowered eriastrum	CRPR 1B.2	May – June	Drying slopes. Elevation: < 1,000 m.	No / No	No suitable habitat on site; not detected during appropriately timed surveys.
<i>Erigeron blochmaniae</i> Blochman's leafy daisy	CRPR 1B.2	July – October	Sand dunes and hills, coastal dunes, and coastal scrub. Elevation: < 70 meters.	No / No	No suitable habitat on site; not detected during appropriately timed surveys.

SPECIAL-STATUS BOTANICAL SPECIES					
Scientific/Common Name <sup>1</sup>	Listing Status <sup>2</sup>	Blooming Period <sup>3</sup>	Habitat Type <sup>3</sup>	Observed/Habitat Present? <sup>4</sup>	Comments / Potential for Occurrence
<i>Eriodictyon altissimum</i> Indian Knob mountainbalm	Fed: Endangered State: Endangered CRPR: 1B.1	March – June	Sandstone ridges and chaparral. Elevation: < 270 meters.	No / No	No suitable habitat on site; not detected during appropriately timed surveys.
<i>Eryngium aristulatum</i> var. <i>hooveri</i> Hoover's button-celery	CRPR 1B.1	July	Vernal pools and seasonal wetlands, occasionally alkaline. Elevation: < 50 meters.	No / No	No suitable habitat on site; not detected during appropriately timed surveys.
<i>Extriplex joaquinana</i> San Joaquin spearscale	CRPR 1B.2	April – September	Alkaline soils in chenopod scrub, meadows, seeps, and grassland. Elevation: < 840 meters.	No / No	No suitable habitat on site; not detected during appropriately timed surveys.
<i>Fritillaria ojaiensis</i> Ojai fritillary	CRPR 1B.2	February – May	Rocky slopes and river basins. Elevation: 300 – 500 meters.	No / No	No suitable habitat on site; not detected during appropriately timed surveys.
<i>Galium hardhamiae</i> Hardham's bedstraw	CRPR 1B.3	May – September	Serpentine soil with Sargent cypress. Elevation: 400 – 950 m.	No / No	No suitable habitat on site; not detected during appropriately timed surveys.
<i>Horkelia cuneata</i> var. <i>puberula</i> Mesa horkelia	CRPR 1B.1	March – July	Dry, sandy, coastal chaparral. Elevation: 70 – 870 meters.	No / No	No suitable habitat on site; not detected during appropriately timed surveys.
<i>Horkelia cuneata</i> var. <i>sericea</i> Kellogg's horkelia	CRPR 1B.1	April – August	Old dunes, coastal sand hills. Elevation: < 200 meters.	No / No	No suitable habitat on site; not detected during appropriately timed surveys.
<i>Juncus luciensis</i> Santa Lucia dwarf rush	CRPR 1B.2	April – August	Wet, sandy soils of seeps, meadows, vernal pools, streams, roadsides. Elevation: 300 – 1,900 m.	No / No	No suitable habitat on site; not detected during appropriately timed surveys.
<i>Lasthenia californica</i> subsp. <i>macrantha</i> Perennial goldfields	CRPR 1B.2	January – November	Coastal bluff scrub and coastal dunes along immediate coast. Elevation: <500 meters.	No / No	No suitable habitat on site; not detected during appropriately timed surveys.

SPECIAL-STATUS BOTANICAL SPECIES					
Scientific/Common Name <sup>1</sup>	Listing Status <sup>2</sup>	Blooming Period <sup>3</sup>	Habitat Type <sup>3</sup>	Observed/Habitat Present? <sup>4</sup>	Comments / Potential for Occurrence
<i>Lasthenia glabrata</i> subsp. <i>coulteri</i> Coulter's goldfields	CRPR 1B.1	April – May	Saline marshes, swamps, vernal pools. Elevation: < 1,000 meters.	No / No	No suitable habitat on site; not detected during appropriately timed surveys.
<i>Layia jonesii</i> Jones' layia	CRPR 1B.2	March – May	Open serpentine or clayey slopes. Elevation: < 300 meters.	No / No	No suitable habitat on site; not detected during appropriately timed surveys.
<i>Malacothamnus palmeri</i> var. <i>palmeri</i> Santa Lucia bush-mallow	CRPR 1B.2	May – July	Interior valleys foothills. Elevation: 30 – 800 m.	No / No	No suitable habitat on site; not detected during appropriately timed surveys.
<i>Meconella oregana</i> Oregon meconella	CRPR 1B.2	March – May	Shaded canyons. Elevation: < 1,000 m.	No / No	No suitable habitat on site; not detected during appropriately timed surveys.
<i>Monardella palmeri</i> Palmer's monardella	CRPR 1B.2	June – August	Chaparral and forest on serpentine. Elevation: 200 – 800 meters.	No / No	No suitable habitat on site; not detected during appropriately timed surveys.
<i>Monardella sinuata</i> subsp. <i>sinuata</i> Southern curly-leaved monardella	CRPR 1B.2	April – September	Sandy soils, coastal strand, dune and sagebrush scrub, coastal chaparral and oak woodland. Elevation: < 300 meters.	No / Yes	No suitable habitat on site; not detected during appropriately timed surveys.
<i>Monolopia gracilens</i> Woodland woollythreads	CRPR 1B.2	March – July	Serpentine in grassland, open chaparral, oak woodland. Elevation: 100 – 1,200 meters.	No / No	No suitable habitat on site; not detected during appropriately timed surveys.
<i>Muhlenbergia utilis</i> Aparejo grass	CRPR 2B.2	October – March	Coastal Sage Scrub, Creosote Bush Scrub, wetland-riparian; usually occurs in wetlands. Elevation: 250 – 1000 meters.	No / No	No suitable habitat on site; not detected during appropriately timed surveys.
<i>Navarretia nigelliformis</i> subsp. <i>radians</i> Shining navarretia	CRPR 1B.2	May – July	Vernal pools, clay depressions. Elevation: 150 – 1,000 m.	No / No	No suitable habitat on site; not detected during appropriately timed surveys.

SPECIAL-STATUS BOTANICAL SPECIES					
Scientific/Common Name <sup>1</sup>	Listing Status <sup>2</sup>	Blooming Period <sup>3</sup>	Habitat Type <sup>3</sup>	Observed/Habitat Present? <sup>4</sup>	Comments / Potential for Occurrence
<i>Nemacaulis denudata</i> var. <i>denudata</i> Coast woolly-heads	CRPR 1B.2	March – August	Beaches. Elevation: < 100 meters.	No / No	No suitable habitat on site; not detected during appropriately timed surveys.
<i>Plagiobothrys uncinatus</i> Hooked popcornflower	CRPR 1B.2	April – May	Chaparral, canyon sides, and rocky outcrops; ± fire follower. Elevation: 300 – 600 meters.	No / No	No suitable habitat on site; not detected during appropriately timed surveys.
<i>Poa diaboli</i> Diablo Canyon blue grass	CRPR 1B.2	March – April	Thin soils on Edna shale slopes, upper coastal scrub, live-oak woodland, Bishop-pine forest, near coast. Elevation: 120 – 400 meters.	No / No	No suitable elevation range and habitat on site; not detected during appropriately timed surveys.
<i>Sanicula maritima</i> Adobe sanicle	State: Rare CRPR 1B.1	April – May	Coastal grassy, open wet meadows and ravines. Elevation: ± 150 meters.	No / No	No suitable habitat on site; not detected during appropriately timed surveys.
<i>Senecio aphanactis</i> Chaparral ragwort	CRPR 2B.2	February – May	Alkaline flats, dry open rocky areas. Elevation: 10 – 800 meters.	No / No	No suitable habitat on site; not detected during appropriately timed surveys.
<i>Sidalcea hickmanii</i> subsp. <i>anomalav</i> Cuesta Pass checkerbloom	State: Rare CRPR 1B.2	May – June	Closed-cone coniferous forest, generally serpentine. Elevation: 600 – 800 meters.	No / No	No suitable habitat on site; not detected during appropriately timed surveys.
<i>Suaeda californica</i> California seablite	Fed: Endangered CRPR 1B.1	July – October	Margins of coastal salt marshes. Elevation: < 5 meters.	No / No	No suitable habitat on site; not detected during appropriately timed surveys.
<i>Sulcaria isidiifera</i> Splitting yarn lichen	CRPR 1B.1	N/A	Coastal scrub (old growth) on branches of oaks and shrubs. Elevation: 20 – 30 meters.	No / No	No suitable habitat on site; not detected during surveys.
<i>Sulcaria spiralifera</i> Twisted horsehair lichen	CRPR 1B.2	N/A	Coastal dunes, North Coast coniferous forest. Elevation: 0 – 90 m.	No / No	No suitable habitat on site; not detected during appropriately timed surveys.

SPECIAL-STATUS BOTANICAL SPECIES					
Scientific/Common Name <sup>1</sup>	Listing Status <sup>2</sup>	Blooming Period <sup>3</sup>	Habitat Type <sup>3</sup>	Observed/Habitat Present? <sup>4</sup>	Comments / Potential for Occurrence
<i>Trifolium hydrophilum</i> Saline clover	CRPR 1B.2	April – June	Salt marshes and open areas in alkaline soils. Elevation: < 300 meters.	No / No	No suitable habitat on site; not detected during appropriately timed surveys.
<i>Triteleia ixioides subsp. cookii</i> Cook's triteleia	CRPR 1B.1	March – April	Alkaline soils, low hills, valleys. Elevation: < 400 meters.	No / No	No suitable habitat on site; not detected during appropriately timed surveys.

<sup>1</sup>List of regionally-occurring special-status species acquired from CNDDDB (CDFW 2022a), CCH (2022), and CNPS Rare and Endangered Plant Inventory (CNPS 2022a), and local expert knowledge.

<sup>2</sup>Listing status obtained from CNPS Rare and Endangered Plant Inventory (CNPS 2022a).

<sup>3</sup>Blooming period and habitat type obtained from Jepson eFlora (2022) and occasionally supplemented with information provided by CNPS (Jepson eFlora 2022; CNPS 2022a).

<sup>4</sup>Species determined to have suitable habitat present on the site, even marginally suitable habitat, indicated with gray highlight. Species highlighted gray are discussed further in the report.

**SPECIAL-STATUS WILDLIFE SPECIES**

Scientific/Common Name <sup>1</sup>	Listing Status <sup>1</sup>	Nesting/ Breeding Period <sup>2</sup>	Habitat Type <sup>2</sup>	Observed/ Habitat Present? <sup>3</sup>	Comments / Potential for Occurrence
<i>Accipiter cooperii</i> Cooper's hawk	State: Watch List	March – May	Found in woodland habitats such as woodlots, riparian woodland, and patched woodlands. Nests 25ft. - 50ft. high in crotches or horizontal branches of trees. Prefers perched locations where it can watch for small birds or rodents to prey on.	No / No	No suitable nesting habitat on site; not expected to occur.
<i>Actinemys pallida</i> Southwestern pond turtle	State: SSC	Spring – Fall	Ponds, lakes, rivers, creeks, marshes and irrigation ditches with abundant vegetation and rocky or muddy bottoms. Require rocks, logs or exposed banks for basking. Nest along water margins usually in full sunlight.	No / No	No suitable habitat on site; not expected to occur.
<i>Agelaius tricolor</i> Tricolored blackbird	State: SSC	Spring – Fall	Nests near water sources such as marshes, grassland, and wetlands. Requires access to substrates, usually aquatic, to build nests. Forages for insects and plant matter on agricultural sites and grasslands. Very colonial.	No / No	No suitable nesting habitat on site; not expected to occur.
<i>Anniella pulchra</i> Northern California legless lizard	State: SSC	March – July; live birth September - November	Moist warm loose soil with plant cover and under leaf litter. Found in beach dunes, chaparral, foothill woodlands, desert scrub, sandy washes, and stream terraces.	No / Yes	Suitable habitat below trees on site.

**SPECIAL-STATUS WILDLIFE SPECIES**

<b>Scientific/Common Name<sup>1</sup></b>	<b>Listing Status<sup>1</sup></b>	<b>Nesting/ Breeding Period<sup>2</sup></b>	<b>Habitat Type<sup>2</sup></b>	<b>Observed/ Habitat Present?<sup>3</sup></b>	<b>Comments / Potential for Occurrence</b>
<i>Antrozous pallidus</i> Pallid bat	State: SSC	Winter	Low elevations of California within grasslands, shrublands, woodlands, and forests. Most common in dry habitats with rocky areas for roosting.	No / Yes	Suitable roosting habitat within abandoned structures on site.
<i>Aquila chrysaetos</i> Golden eagle	State: Fully Protected, Watch List, Sensitive	March – August	Semi-open and open habitats including tundra, open coniferous forest, and grasslands. Common in mountain areas but also found around wetlands and estuarine areas. Very large nests commonly on cliff edges but also in trees.	No / No	No suitable nesting habitat on site; not expected to occur.
<i>Athene cunicularia</i> Burrowing owl	State: SSC	March – July	Open, dry grasslands and deserts. Will use the burrows of other terrestrial animals. Also found in cleared residential areas such as vacant lots and golf courses.	No / Yes	Suitable burrow habitat in grassland onsite.
<i>Batrachoseps minor</i> Lesser slender salamander	State: SSC	Spring	Moist locations in mixed oak forests, sycamore, and laurel above 400 meters. Found only in southern Santa Lucia Mountains of San Luis Obispo County.	No / No	No suitable habitat on site; not expected to occur.
<i>Branchinecta lynchi</i> Vernal pool fairy shrimp	Fed: Threatened	Rainy season	Vernal pools and depressions in grasslands.	No / No	No suitable habitat on site; not expected to occur.
<i>Buteo regalis</i> Ferruginous hawk	State: Watch List	February – July	Lowlands, plateaus, rolling hills of grasslands, ranches and agricultural fields. Primarily nests in trees.	No / No	No suitable nesting habitat on site; not expected to occur.

**SPECIAL-STATUS WILDLIFE SPECIES**

<b>Scientific/Common Name<sup>1</sup></b>	<b>Listing Status<sup>1</sup></b>	<b>Nesting/ Breeding Period<sup>2</sup></b>	<b>Habitat Type<sup>2</sup></b>	<b>Observed/ Habitat Present?<sup>3</sup></b>	<b>Comments / Potential for Occurrence</b>
<i>Charadrius alexandrinus nivosus</i> Western snowy plover	Fed: Threatened State: SSC	March – September	Coastal beaches, sand spits, dune-backed beaches, sparsely vegetated dunes, beaches at creek mouths, and estuaries.	No / No	No suitable habitat on site; not expected to occur.
<i>Circus hudsonius</i> Northern harrier	State: SSC	April – September	Frequents meadows, grasslands, open rangelands, desert sinks, fresh and saltwater emergent wetlands. Nests on the ground in shrubby vegetation in emergent wetlands or along rivers and lakes.	No / No	No suitable nesting habitat on site; not expected to occur.
<i>Corynorhinus townsendii</i> Townsend's big-eared bat	State: SSC	November – May	Montane forests including pine, fir, and aspens surrounded by shrub and grasslands. Colonies roosts in caves, mines, tunnels, buildings, and human made structures.	No / Yes	Suitable roosting habitat in abandoned structures on site.
<i>Danaus plexippus</i> Monarch butterfly	Fed: Candidate State: Special Animal	Spring	Relies on milkweed and protected stands of trees for roosting, usually blue gum eucalyptus. Found in fields, meadows, weedy areas, marshes, and along roadsides.	No/No	No suitable stands of trees (eucalyptus) for roosting observed in surveys area.
<i>Dipodomys heermanni morroensis</i> Morro Bay kangaroo rat	Fed: Endangered State: Endangered Fully Protected	March – August	Stabilized sand dune, coastal dune and coastal sage scrub; sandy soils essential for burrowing. Localized south of Morro Bay in Baywood fine sands.	No / No	No suitable habitat on site, and outside known range; not expected to occur.

**SPECIAL-STATUS WILDLIFE SPECIES**

<b>Scientific/Common Name<sup>1</sup></b>	<b>Listing Status<sup>1</sup></b>	<b>Nesting/ Breeding Period<sup>2</sup></b>	<b>Habitat Type<sup>2</sup></b>	<b>Observed/ Habitat Present?<sup>3</sup></b>	<b>Comments / Potential for Occurrence</b>
<i>Elanus leucurus</i> White-tailed kite	State: Fully Protected	March – August	Savannah, open woodlands, marshes, desert, grassland. Prefer partially cleared fields such as ranches and cultivated fields. They build nests on top of old ones of other species in trees.	No / Yes	Marginally suitable nesting habitat in cypress trees on site.
<i>Eremophila alpestris actia</i> California horned lark	State: Watch List	March – August	Open, barren country. Prefers short grasses. Ground nests woven of fine grasses.	No / No	No suitable habitat on site; not expected to occur.
<i>Eucyclogobius newberryi</i> Tidewater goby	Fed: Endangered State: SSC	Year – round (April - May)	Found in shallow water lagoons and lower stream reaches, they need fairly still but not stagnant water and high oxygen levels. Can tolerate an array of different conditions depending on seasonal changes.	No / No	No suitable habitat on site; not expected to occur.
<i>Eumops perotis californicus</i> Western mastiff bat	State: SSC	March – July	Broad open areas, chaparral, montane meadows, rocky cliffs, canyon areas, roosts in crevices, tunnels, also in tall buildings.	No / No	No suitable habitat on site; not expected to occur.
<i>Helminthoglypta walkeriana</i> Morro shoulderband snail	Fed: Endangered	October – April	Found in association with woody coastal dune scrub and under iceplant. Current range limited to south of Morro Bay, west of Los Osos Creek, and north of Hazard Canyon.	No / No	Site is outside well-documented species range, and suitable habitat features are very limited; not expected to occur.
<i>Lanius ludovicianus</i> Loggerhead shrike	State: SSC	April – July	Open country with short vegetation and well spaced shrubs. Frequents agricultural fields, pastures, desert scrublands, savannas, and prairies.	No / Yes	Marginally suitable nesting habitat in cypress trees on site.

**SPECIAL-STATUS WILDLIFE SPECIES**

Scientific/Common Name <sup>1</sup>	Listing Status <sup>1</sup>	Nesting/ Breeding Period <sup>2</sup>	Habitat Type <sup>2</sup>	Observed/ Habitat Present? <sup>3</sup>	Comments / Potential for Occurrence
<i>Laterallus jamaicensis coturniculus</i> California black rail	State: Threatened Fully Protected	February – June	Nests in high portions of salt marshes, shallow freshwater marshes, wet meadows, flooded grassy vegetation. Requires dense cover for predator protection.	No / No	No suitable nesting habitat on site; not expected to occur.
<i>Neotoma lepida intermedia</i> San Diego desert woodrat	State: SSC	November – April	Woodland, mixed chaparral and desert habitats. Forms dens using gathered materials, such as twigs and leaves, in cracks of boulders.	No / No	No suitable habitat on site; not expected to occur.
<i>Nyctinomops macrotis</i> Big free-tailed bat	State: SSC	February – June	Rugged, rocky terrain; preferably weathered fissures and crevices. Roosts in rocky cliffs, tall buildings, and some plants (ponderosa pines, Douglas fir, and desert shrubs).	No / No	No suitable habitat on site; not expected to occur.
<i>Oncorhynchus mykiss irideus</i> Steelhead - southern California DPS	Fed: Endangered	April – July	Federal listing refers to runs in coastal basins from Santa Maria River south to the US-Mexico border.	No / No	No suitable habitat on site; not expected to occur.
<i>Oncorhynchus mykiss</i> Steelhead – south-central California coast DPS	Fed: Threatened	February – April	Federal listing refers to runs in coastal basins from Pajaro River south to, but not including, the Santa Maria River.	No / No	No suitable habitat on site; not expected to occur.
<i>Phrynosoma blainvillii</i> Coast horned lizard	State: SSC	May – September	Inhabits open, loose, sandy soil and low vegetation in valleys, foothills, and semiarid mountains below 2,438 meters. Found in grasslands, coniferous forests, woodlands, and chaparral, and frequently found near ant hills.	No / Yes	Marginally suitable habitat in grasslands on site.

**SPECIAL-STATUS WILDLIFE SPECIES**

<b>Scientific/Common Name<sup>1</sup></b>	<b>Listing Status<sup>1</sup></b>	<b>Nesting/ Breeding Period<sup>2</sup></b>	<b>Habitat Type<sup>2</sup></b>	<b>Observed/ Habitat Present?<sup>3</sup></b>	<b>Comments / Potential for Occurrence</b>
<i>Progne subis</i> Purple martin	State: SSC	May – June	Woodlands in close proximity to water bodies and open fields for foraging. Will live close to humans and are very attracted to bird feeders. They are cavity nesters.	No / No	No suitable nesting habitat on site; not expected to occur.
<i>Rallus obsoletus obsoletus</i> California Ridgway's rail	Fed: Endangered State: Endangered Fully Protected	March – July	Found in wetlands and coastal salt marshes.	No / No	No suitable habitat on site; Not expected to occur.
<i>Rana boylei</i> Foothill yellow-legged frog	State: SSC	April – July	Rocky streams and rivers with rocky substrate. Found in woodlands, chaparral and forests with open sunny banks.	No / No	No suitable habitat on site; Not expected to occur.
<i>Rana draytonii</i> California red-legged frog	Fed: Threatened State: SSC	January – July	Most common in ponds of woodlands and grasslands. Found in habitats adjacent to streams or water access.	No / Yes	Low quality aquatic and suitable dispersal habitat present throughout surveys area.
<i>Spea hammondi</i> western spadefoot	State: SSC	January – August	Seasonal/vernal pools in grassland, coastal scrub, chaparral, woodland habitat, and open areas with sandy or gravelly soils.	No / No	No suitable habitat on site; not expected to occur.
<i>Taricha torosa</i> Coast Range newt	State: SSC	December – April	Slow moving streams, ponds, and lakes with surrounding evergreen/oak forests along coast. Aquatic when breeding.	No / No	No suitable habitat on site; Not expected to occur.
<i>Taxidea taxus</i> American badger	State: SSC	Late Summer – Early Fall	Dry, open fields with friable soil for tunneling and foraging.	No / Yes	Suitable habitat in grassland on site.

SPECIAL-STATUS WILDLIFE SPECIES					
Scientific/Common Name <sup>1</sup>	Listing Status <sup>1</sup>	Nesting/ Breeding Period <sup>2</sup>	Habitat Type <sup>2</sup>	Observed/ Habitat Present? <sup>3</sup>	Comments / Potential for Occurrence
<i>Vireo bellii pusillus</i> Least Bell's Vireo	Fed: Endangered State: Endangered	March – September	Dense, shrubby vegetation in brushy fields, second-growth forest, woodland, riparian, chaparral, and mesquite brush lands; often near water in arid regions. Nests suspended from branches of small trees or shrubs.	No / No	No suitable nesting habitat onsite; not expected to occur.
<i>Vulpes macrotis mutica</i> San Joaquin kit fox	Fed: Endangered State: Threatened	December – February	Open, arid regions; desert scrub, chaparral, and grasslands. Prefer loose soils to construct dens.	No / No	No suitable nesting habitat onsite; not expected to occur.

<sup>1</sup>List of regionally-occurring special-status species and listing status acquired from CNDDDB (CDFW 2022a) and local expert knowledge.

<sup>2</sup>Life history information obtained from multiple sources, including Cornell Lab of Ornithology Online (Cornell) (Cornell 2022), CaliforniaHerps.com (Nafis 2022), and USFWS Environmental Conservation Online System (ECOS) (USFWS 2022c).

<sup>3</sup>Species determined to have suitable habitat present on the site, even marginally suitable habitat, indicated with gray highlight. Species highlighted gray are discussed further in the report.



## **Appendix D – Botanical and Wildlife Species Observed**



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**Panorama Development Project**  
List of Botanical Species Observed April 28, 2022

Family	Scientific Name	Common Name	Origin
<b>Aizoaceae, Iceplant Family</b>	<i>Carpobrotus edulis</i>	Freeway iceplant	Naturalized
<b>Anacardiaceae, Sumac Family</b>	<i>Toxicodendron diversilobum</i>	Western poison oak	Native
<b>Apiaceae, Carrot Family</b>	<i>Conium maculatum</i>	Poison hemlock	Naturalized
	<i>Foeniculum vulgare</i>	Fennel	Naturalized
<b>Asteraceae, Sunflower Family</b>	<i>Baccharis pilularis</i>	Coyote brush	Native
	<i>Carduus pycnocephalus</i>	Italian thistle	Naturalized
	<i>Cirsium vulgare</i>	Bull thistle	Naturalized
	<i>Cynara cardunculus</i> subsp. <i>cardunculus</i>	Artichoke	Naturalized
	<i>Hedypnois rhagadioloides</i>	Crete weed	Naturalized
	<i>Logfia gallica</i>	Narrowleaf cottonrose	Naturalized
	<i>Osteospermum</i> sp.	African daisy	Naturalized
	<i>Pseudognaphalium luteoalbum</i>	Jersey cudweed	Naturalized
	<i>Madia sativa</i>	Coast tarweed	Native
	<i>Silybum marianum</i>	Milk thistle	Naturalized
	<i>Sonchus asper</i> subsp. <i>asper</i>	Prickly sow thistle	Naturalized
	<i>Sonchus oleraceus</i>	Common sow thistle	Naturalized
	<i>Tragopogon porrifolius</i>	Salsify	Naturalized
<b>Brassicaceae, Mustard Family</b>	<i>Brassica nigra</i>	Black mustard	Naturalized
	<i>Hirschfeldia incana</i>	Mustard	Naturalized
<b>Chenopodiaceae, Goosefoot Family</b>	<i>Atriplex semibaccata</i>	Australian saltbush	Naturalized
<b>Convolvulaceae Morning-glory Family</b>	<i>Calystegia macrostegia</i> subsp. <i>cyclostegia</i>	Coast morning-glory	Native
<b>Cupressaceae, Cypress Family</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	Native / CRPR 1B.2
<b>Euphorbiaceae, Spruge Family</b>	<i>Euphorbia peplus</i>	Petty spurge	Naturalized
<b>Fabaceae, Legume Family</b>	<i>Lathyrus</i> sp.	Pea	Naturalized
	<i>Medicago minima</i>	Burclover	Naturalized



Family	Scientific Name	Common Name	Origin
	<i>Medicago polymorpha</i>	California burclover	Naturalized
	<i>Melilotus indicus</i>	Sourclover	Naturalized
<b>Geraniaceae, Geranium Family</b>	<i>Erodium botrys</i>	Longbeak stork's bill	Naturalized
	<i>Erodium cicutarium</i>	Redstem filaree	Naturalized
<b>Iridaceae, Iris Family</b>	<i>Sisyrinchium bellum</i>	Western blue-eyed-grass	Native
<b>Juncaceae, Rush Family</b>	<i>Juncus</i> sp.	Rush	Native
<b>Malvaceae, Mallow Family</b>	<i>Malva neglecta</i>	Common mallow	Naturalized
<b>Myrsinaceae, Myrsine Family</b>	<i>Lysimachia arvensis</i>	Scarlet pimpernel	Naturalized
<b>Oxalidaceae, Oxalis Family</b>	<i>Oxalis pes-caprae</i>	Bermuda buttercup	Naturalized
<b>Papaveraceae, Poppy Family</b>	<i>Eschscholzia californica</i>	California poppy	Native
<b>Plantaginaceae, Plantain Family</b>	<i>Plantago lanceolata</i>	English plantain	Naturalized
<b>Poaceae, Grass Family</b>	<i>Avena barbata</i>	Slender wild oat	Naturalized
	<i>Avena fatua</i>	Wild oat	Naturalized
	<i>Brachypodium distachyon</i>	Purple false brome	Naturalized
	<i>Bromus diandrus</i>	Ripgut brome	Naturalized
	<i>Festuca perennis</i>	Italian rye grass	Naturalized
	<i>Hordeum brachyantherum</i>	California barley	Native
	<i>Hordeum murinum</i>	Wall barley	Naturalized
	<i>Polypogon monspeliensis</i>	Rabbitfoot grass	Naturalized
	<i>Stipa pulchra</i>	Purple needlegrass	Native
<b>Polygonaceae, Buckwheat Family</b>	<i>Polygonum aviculare</i>	Prostrate knotweed	Naturalized
	<i>Rumex crispus</i>	Curly dock	Naturalized
<b>Rosaceae, Rose Family</b>	<i>Rubus ursinus</i>	California blackberry	Native
<b>Salicaceae, Willow Family</b>	<i>Salix lasiolepis</i>	Arroyo willow	Native
<b>Scrophulariaceae, Figwort Family</b>	<i>Myoporum laetum</i>	Myoporum	Naturalized



**Panorama Development Project**  
List of Wildlife Species Observed on April 28, 2022

<b>Taxa</b>	<b>Scientific Name</b>	<b>Common Name</b>
<b>Birds</b>	<i>Aphelocoma californica</i>	California scrub-jay
	<i>Baeolophus inornatus</i>	oak titmouse
	<i>Bubo virginianus</i>	great horned owl
	<i>Buteo jamaicensis</i>	red-tailed hawk
	<i>Calypte anna</i>	Anna's hummingbird
	<i>Cathartes aura</i>	turkey vulture
	<i>Corvus brachyrhynchos</i>	American crow
	<i>Falco sparverius</i>	American kestrel
	<i>Haemorhous mexicanus</i>	house finch
	<i>Junco hyemalis</i>	dark-eyed junco
	<i>Meleagris gallopavo</i>	wild turkey
	<i>Melospiza crissalis</i>	California towhee
	<i>Mimus polyglottos</i>	northern mockingbird
	<i>Passer domesticus</i>	house sparrow
	<i>Petrochelidon pyrrhonota</i>	cliff swallow
	<i>Psaltiriparus minimus</i>	bushtit
	<i>Streptopelia decaocto</i>	Eurasian collared dove
	<i>Sturnella neglecta</i>	western meadowlark
<i>Sturnus vulgaris</i>	European starling	
<b>Mammals</b>	<i>Otospermophilus beecheyi</i>	California ground squirrel
	<i>Thomomys bottae</i>	Botta's pocket gopher (burrows)



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## **Appendix E – Representative Site Photographs**



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**Photo 1.** View north of parking lot and abandoned buildings (April 28, 2022).



**Photo 2.** View north of parking lot and abandoned building (April 28, 2022).



**Photo 3.** View east of project area (April 28, 2022).



**Photo 4.** View south of project area (April 28, 2022).



**Photo 5.** View west of project area (April 28, 2022).



**Photo 6.** View west of the drainage culvert (April 28, 2022).



**Photo 7.** View north of the drainage channel and surrounding slopes beneath ornamental tree plantings (April 28, 2022).



**Photo 8.** View north of drainage channel near culvert with pooled water (April 28, 2022).



**Photo 9.** View south of the drainage channel and surrounding slopes beneath ornamental tree plantings (April 28, 2022).



**Photo 10.** View west of an existing mud nest on abandoned building (April 28, 2022).



**Photo 9.** View east of needle grass patches in the northeastern portion of the project area (April 28, 2022).



**Photo 10.** Patches of needle grass in the project area (April 28, 2022).



## **Appendix F – Arborist Report**



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# ARBORIST REPORT

## 3300 PANORAMA

Location:  
3300 Panorama Drive  
Morro Bay, CA 93442

Revised:  
June 5, 2023

Prepared For:  
Morro 94, LLC

Prepared By:  
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ISA Certified Arborist WE-11830A  
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# 1 INTRODUCTION

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RRM Design Group was contracted by Morro 94, LLC to complete a tree inventory, assessment, and arborist report for trees located within the property boundary of the proposed project site located at 3300 Panorama Drive in Morro Bay (APN: 065-038-001). Our scope of services includes locating, tagging, measuring, assessing, and photographing the condition of all trees included in the inventory. Preservation suitability and health are based on the current site conditions. The proposed project may change the preservation suitability and impact the health of the trees.

## 1.1 Project Location

The 10.6-acre project site is located less than one half mile from the Pacific Ocean in the northeast corner of Morro Bay. It consists of several unoccupied structures, an environmentally sensitive habitat (ESH) area along an existing drainage, and two large earthen basins. It is bounded by residential housing to the south and west, and undeveloped land to the north and east.

According to a Mitigated Negative Declaration (MND) published by the City of Morro Bay on June 11, 2018, the project site was previously owned and operated by the U.S. Department of Defense as a Defense Fuel Support Point (DFSP) facility. Two aboveground JP-5 jet fuel storage tanks capable of storing 5,527,000 gallons each and a 100,000 gallon fire-water tank were constructed in 1961. Fuel was pumped to the storage tanks from an offshore tanker mooring point, stored onsite, and transferred to Lemoore Naval Air Station in Fresno County via a 98-mile pipeline. The site was closed in 1991 and decommissioned in 1996. Site infrastructure associated with the storage and distribution of jet fuel was removed or capped and abandoned underground in 2018 in accordance with the MND.

## 1.2 Project Description

The proposed development project consists of a single family residential subdivision with a vehicular road that loops through the development. The ESH area located in the northwestern corner of the property is proposed to remain mostly untouched with some opportunities for passive outdoor recreation proposed. Preliminary grading plans indicate extensive earthwork will be required to develop the property. Many existing trees are proposed to be protected in place.

## **2 METHODOLOGY**

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### **2.1 Regulatory Overview**

Refer to the City of Morro Bay Municipal Code, Chapter 12.08 – City Tree Regulations and the City of Morro Bay Public Services Department Major Vegetation Removal, Replacement, and Protection Guidelines.

### **2.2 Tree Survey Methodology**

Our tree survey work is a deliberate and systematic practice of cataloging trees on site:

1. Identify each tree species.
  2. Tag each tree with a metal tag (as feasible) and note its location on a site map.
  3. Measure each trunk diameter at 54” above grade per current International Society of Arboriculture (ISA) best practices and City of Morro Bay guidelines.
  4. Evaluate the health and structure of each tree using the following numerical standard:
    - 5 - A healthy, vigorous tree, reasonably free of disease, with good structure and form typical of the species.
    - 4 - A tree with slight decline in vigor, small amount of twig dieback, minor structural defects that could be corrected.
    - 3 - A tree with moderate vigor, moderate twig and small branch dieback, thinning of crown, poor leaf color, moderate structural defects that may be mitigated with care.
    - 2 - A tree in decline, epicormic growth, extensive dieback of medium to large branches, significant structural defects that cannot be abated.
    - 1 - A tree in severe decline, dieback of scaffold branches and or trunk, mostly epicormic growth; extensive structural defects that cannot be abated.
  5. Evaluate the vigor of each tree using the following scale:

High – Tree putting on healthy, new twig growth in quantities characteristic of the species.

Moderate – Tree putting on new twig growth but showing signs of stress.

Low – Tree putting on most of their new twig growth as epicormic shoots with signs of severe stress. There may be areas of dieback in the crown.
  6. Evaluate the crown opacity of each tree using the following scale:

High – Tree with a thin crown characterized by lack of old growth and small quantities of newer growth. Visually, the sky is seen through the crown with little obstruction.
-

Moderate – Tree with a moderately thin crown, or with high opacity areas in the crown.

Low – Tree with a healthy, full crown that is characteristic of the species. Visually, it is difficult to see the sky through the crown.

## 2.3 Terms and Conditions

The following terms and conditions apply to all oral and written reports and correspondence pertaining to consultations, inspections, and activities of RRM Design Group.

1. The scope of any report or other correspondence is limited to the trees and conditions specifically mentioned in those reports and correspondence. RRM Design Group assumes no liability for the failure of trees or parts of trees, either inspected or otherwise. RRM Design Group assumes no responsibility to report on the condition of any tree or landscape feature not specifically requested by the named client.

2. No tree described in this report was climbed, unless otherwise stated. RRM Design Group does not take responsibility for any defects, which could have only been discovered by climbing. A full root collar inspection, consisting of excavating the soil around the tree to uncover the root collar and major buttress roots was not performed unless otherwise stated. RRM Design Group does not take responsibility for any root defects, which could only have been discovered by such an inspection.

3. RRM Design Group shall not be required to provide further documentation, give testimony, be deposed, or attend court by reason of this appraisal or report unless subsequent contractual arrangements are made, including payment of additional fees for such services as described by RRM Design Group or in the schedule of fees or contract.

4. RRM Design Group guarantees no warranty, either expressed or implied, as to the suitability of the information contained in the reports for any reason. It is the responsibility of the client to determine applicability to his/her case.

5. Any report and the values, observations and recommendations expressed therein represent the professional opinion of RRM Design Group, and the fee for services is in no manner contingent upon the reporting of a specified value nor upon any finding to be reported.

6. Any photographs, diagrams, graphs, sketches, or other graphic material included in any report, being intended solely as visual aids, are not necessarily to scale and should not be construed as engineering reports or surveys, unless otherwise noted in the report. Any reproductions of graphic material or the work produced by other persons, is intended solely for the purpose of clarification and ease of reference. Inclusion of said information does not constitute a representation by RRM Design Group as to the sufficiency or accuracy of that information.

7. Trees can be managed, but cannot be controlled. To live near trees is to accept some degree of risk. The only way to eliminate risk associated with trees is to remove them.

### 3 SUMMARY OF FINDINGS

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On January 6, 2022 and June 15, 2022 RRM Design Group conducted a tree inventory of 83 trees located within the property boundary. Aside from recent activities involved with the demolition of the site in 2018, there appears to be little maintenance performed on these trees since the site was decommissioned in 1996. Fifteen of the existing Monterey cypress trees had been previously identified with numbered tree tags, and those tree tag numbers are referenced throughout this report. Sixteen additional Monterey cypress trees were planted recently to mitigate for several tree removals associated with the 2018 demolition of the DFSP facility and are numbered 269-283. Generally, the health of the trees inspected is poor-moderate with many exhibiting signs of stress like high crown opacity, low vigor, pests, epicormic, and sucker growth.

There are three suspected sources of stress that have led to the decline of many trees onsite: (1) construction of the DFSP facility, (2) several extended periods of exceptional drought, and (3) demolition of the facility.

The DFSP facility was originally constructed in 1961. The earthwork involved with the construction of the facility required the removal of most of the existing trees, however the study of archival aerial photographs dating back to 1937 suggests nine trees were preserved (*Figure 3*). The root zones of these trees sustained impacts from over excavation, compaction from the installation of a 100,000 gallon water tank, and the installation of shotcrete to form the basin walls.

The DFSP facility was decommissioned in 1996 and demolished in 2018. According to records available from the U.S. Drought Monitor (USDM), a multi-agency government partnership that coordinates drought monitoring, forecasting, and planning, San Luis Obispo County experienced several exceptional droughts over that 23 year period. Most notable are the extended drought periods lasting from 2006-2009, and again from 2012-2017. These periods of drought led to the devastation of many, already stressed, native and planted forests throughout the County, and the greater state of California. The stress associated with these drought periods may have been great enough to allow boring insects to colonize the Monterey cypress and Monterey pine trees throughout the site.

Demolition of the DFSP facility in 2018 introduced heavy equipment and soil disturbance to the root zones of several trees. Additionally, several trees were removed, and others over pruned to facilitate access to demolition areas. This work may represent the final stressor that led to the decline of several additional trees onsite. At least sixteen Monterey cypress trees were planted along the Panorama Drive and Whidbey Street frontages with drip irrigation to aid in establishment. As of June 6, 2022, two of the sixteen trees are in declining health and two have died of drought stress. The battery operated irrigation system providing supplemental irrigation to dead trees 268 and 269 was observed as non-functional. Most of the remaining fourteen mitigation trees are in good health. The battery operated irrigation system providing supplemental irrigation to these trees uses bluetooth wireless technology for control and appears to be functioning correctly, although it could not be confirmed in the field.

See *Section 5.1 Individual Species Observations and Recommendations* for a detailed summary of major tree species findings observed onsite.

## 4 SITE PLAN REVIEW

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Many trees will be affected by the proposed development project, and special consideration should be given to any trees proposed to remain. The native topography of the site was a combination of gentle to steep slopes on a sparsely vegetated hillside. Construction of the DFSP facility 1961 drastically altered that topography and left behind steep slopes and large flat basins. The challenging topography that exists today will require substantial earthwork to populate the site with the moderate density residential homes called for by the May 2021 version of *Plan Morro Bay*, the City's General Plan and Local Coastal Plan. Ultimately, the proposed earthwork will lead to the removal of most trees located outside of the ESH area.

The proposed site plan shown in *Figure 2 - Site Plan Review* indicates forty-eight trees are proposed for preservation, thirty-five trees are proposed for removal, and at least fifty-one trees are proposed to replace those removed.

### 4.1 Tree Preservation

Forty-eight trees in total will be preserved. The project proposes the preservation of all trees within the ESH area, along with nine trees located just outside the ESH area. This is a thoughtful concept on paper, but given the health and structure of some of these specimens, careful consideration should be given to which trees should remain given the proximity to adjacent roadways and homes. A level 1 ISA Basic Tree Risk Assessment should be performed on all trees proposed to remain, based on the proposed site conditions. The results of the tree risk assessment should drive long-term tree preservation goals for this development.

### 4.2 Tree Removal

Thirty-five trees are proposed for removal in favor of the proposed development project. All tree removals represent conflicts with proposed grading associated with the building lots, public improvements, infrastructure improvements, and a proposed stormwater basin. Preservation of any of these trees would require a site plan redesign and preservation would likely lead to reduced dwelling density.

Sixteen of the trees proposed for removal were planted as required mitigation trees associated with the 2018 demolition of the DFSP facility. Two of these trees are dead (268 & 269), and two are in declining health (272 & 280). It should be noted that none of these trees meet the minimum size threshold of a protected tree per the City's 2007 *Major Vegetation Removal Guidelines*.

No trees in the ESH area are proposed for removal.

Per the *Major Vegetation Removal Guidelines*, qualifying trees should be replaced at a ratio of two 5-gallon trees or one 15-gallon tree for every tree removed. There is no

specific guidance in the policy directing mitigation requirements for previously planted mitigation trees under the size threshold. For that reason we recommend replacing those sixteen trees at a 2:1 ratio of the quantities called for in the *Major Vegetation Removal Guidelines*.

### 4.3 Tree Replacement

The *Landscape Concept Plan*, Sheet L1 of the plans, suggests replacing the thirty-five trees proposed for removal with a diverse species list totaling at least fifty-one 15-gallon trees. These trees will be a combination of eleven different species, six of which are native to California. Of the six California native species, four are regionally native, the coast live oak (*Quercus agrifolia*), western sycamore (*Platanus racemosa*), black elderberry (*Sambucus nigra*), and hollyleaf cherry (*Prunus ilicifolia*). Within ten years of planting, the proposed palette of trees is expected to meet and exceed the existing canopy of the thirty-five trees proposed for removal, and will offer more species diversity.

Given the proximity to ESH area and the site boundary shared with existing open space area, California native and regionally native species are recommended to be located closer to the site margins. Non-native species better suited for urban development should be planted in the interior portion of the site in the core of the proposed development.

## 5 TREE OBSERVATIONS AND RECOMMENDATIONS

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### 5.1 Individual Species Observations and Recommendations

Species: *Hesperocyparis macrocarpa* (Monterey cypress)

Quantity: 61

Observations: Many of the Monterey cypress exhibit signs of long-term stress, as exhibited by moderate to high crown opacity, low vigor, and moderate borer insect damage throughout the lower main stems. Review of archival photography dating back to 1930 shows the property planted with a series of windrows that form a pentagonal shape (*Figure 3*). When compared with aerial photography from 1969 and 2021, it appears at least nine of the Monterey cypress specimens included in this tree inventory were planted before the property was developed as a DFSP facility. These trees are 815-821, 825 and 198. Development of the property required extensive earthwork, much of which occurred nearby these nine trees. It's likely much of the stress these trees are experiencing can be traced back to a combination of impacts to the root zone associated with the original development of the DFSP facility, many consecutive years of drought, and recent impacts to the root zone associated with the deconstruction of the DFSP infrastructure.

Most of the remaining Monterey cypress specimens exhibit similar signs of stress to those described above. This species of cypress is susceptible to borer insects and it is likely that years of drought conditions, resource competition, and construction related impacts have weakened these trees to a point that bark beetles have populated most of the cypress on the property. There is also a notable history of large limb failures and standing dead trees throughout the site.

Recommendations: Once the project has been designed to a suitable conceptual level, a tree protection plan should be developed to identify potential candidates for preservation. A level 1 ISA Basic Tree Risk Assessment should be performed on all trees proposed to remain, based on the proposed site conditions. The results of the tree risk assessment should drive tree preservation decisions.

Species: *Pinus radiata* (Monterey pine)

Quantity: 9

Observations: The Monterey pines are located in the ESH area, and have largely been out competed by the Monterey cypress. These specimens are overcrowded with crowns that have naturally been reduced to the top few feet of the tree, or a live crown ratio of 5-10%. The stress of being out competed, coupled with years of drought has weakened these trees and allowed borer insects to populate the stand. Monterey pines are declining in the same fashion throughout the state at an alarming rate, and these specimens are no exception.

Recommendations: Most, if not all, of the Monterey pines are likely candidates for removal

pending the results of a level 1 ISA Basic Tree Risk Assessment. They have been stressed into an irreversible decline. The low live crown ratios also may present as a high risk if nearby trees are removed due to an elevated risk of windthrow.

Species: *Juniperus chinensis* 'Torulosa' (Hollywood juniper)

Quantity: 6

Observations: The aerial image circa 1969 included in *Figure 3* indicates these trees were originally planted as a screen hedge along the fence line of the DFSP facility. Most have died or have been removed over the years. The interesting form of these trees can lead to structural defects, such as pockets of decay low in the main stems. As the trees put on foliage and additional weight, these pockets of decay can lead to the failure of large portions of the crown.

Recommendations: The potential failure of these trees or tree parts presents a low risk due to the small size and crown spread. They can be retained if they do not conflict with the proposed development and the ornamental quality suits the site. Supplemental irrigation may extend their lifespan.

Species: *Salix lasiolepis* (Arroyo willow)

Quantity: 6

Observations: The Arroyo willows are located in the ESH area along the northern property boundary behind chain link fence topped with barbed wire. The area was not safely accessible while onsite to perform the tree inventory for this report, so tree diameters and locations were estimated from outside the fenced perimeter.

When grown in a riparian habitat, the sprawling form of the species can look like a dense forest of willow shrubs, but careful observation will reveal many large stems traveling along the ground and originating from one central location. These specimens bear this horizontal, sprawling form. Although semi-dormant when observed, these appear to be in moderate health.

Recommendations: Exercise caution when removing or replacing fencing along the northern property boundary to avoid damaging the Arroyo willows in this area. The horizontal sprawling form of these trees will not support the installation of recreational trails beneath the canopy, and is not recommended.

## 5.2 Recommendations During Construction

Site preparation: All existing trees shall be fenced off along the extent of the drip line of the tree, as feasible. Alternatively, where this is not feasible, the trunk shall be wrapped with a

straw waddle and orange snow fencing. Tree protection fencing should be a minimum of four feet high, made of pig wire with steel stakes or any material superior in quality, such as cyclone fencing. A tree protection zone sign shall be affixed to the fencing at appropriate intervals as determined by the arborist on site. If the fence is within the drip line of the trees, the crown shall be raised to offset the chance of limb breakage from construction equipment encroaching within the drip line. All contractors, subcontractors and other personnel shall be warned that encroachment within the fenced area is forbidden without the consent of the Project Arborist. This includes, but is not limited to, storage of lumber and other materials, disposal of paints, solvents or other noxious materials, parked cars, grading equipment or other heavy equipment. Penalties, based on the cost of remedial repairs and the evaluation guide published by the international society of arboriculture, shall be assessed for damages to the trees.

**Grading/excavating:** All grading plans that specify grading within the drip line of any tree, or within the distance from the trunk as outlined in the site preparation section above when said distance is outside the drip line, shall first be reviewed by a certified arborist. Provisions for aeration, drainage, pruning, tunneling beneath roots, root pruning or other necessary actions to protect the trees shall be outlined by an arborist. If trenching is necessary within the area as described above, said trenching shall be undertaken by hand labor and dug directly beneath the trunk of the tree. All roots 2 inches or larger shall be tunneled under and other roots shall be cut smoothly to the trunk side of the trench. The trunk side should be draped immediately with two layers of untreated burlap to a depth of 3 feet from the surface. The burlap shall be soaked nightly and left in place until the trench is back filled to the original level. An arborist shall examine the trench prior to back filling to ascertain the number and size of roots cut, to suggest the necessary remedial repairs.

**Remedial repairs:** An arborist shall have the responsibility of observing all ongoing activities that may affect the trees and prescribing necessary remedial work to ensure the health and stability of the trees. This includes, but is not limited to, all arborist activities brought out in the previous sections. In addition, pruning, as outlined in the “pruning standards” of the western chapter of the International Society of Arboriculture, shall be prescribed as necessary. Fertilizing, aeration, irrigation, pest control and other activities shall be prescribed according to the tree needs, local site requirements, and state agricultural pest control laws. All specifications shall be in writing. For pest control operations, consult the local county agricultural commissioner’s office for individuals licensed as pest control advisors or pest control operators.

**Final inspection:** Upon completion of the project, the arborist shall review all work undertaken that may impact the existing trees. Special attention shall be given to cuts and fills, compacting, drainage, pruning and future remedial work. An arborist should submit a final report in writing outlining the ongoing remedial care following the final inspection.

### 5.3 Maintenance Recommendations for Trees to Remain

Regular maintenance, designed to promote plant health and vigor, ensures longevity of existing trees. Regular inspections and the necessary follow-up care of mulching, fertilizing, and pruning can detect problems and correct them before they become damaging or fatal.

**Tree Inspection:** Regular inspections of mature trees at least once a year can prevent or reduce the severity of future disease, insect, and environmental problems. During tree inspection, four characteristics of tree vigor should be examined: new leaves or buds, leaf size, twig growth, and absence of crown dieback (gradual death of the upper part of the tree). A reduction in the extension of shoots (new growing parts), such as buds or new leaves, is a reliable cue that the tree's health has recently changed. Growth of the shoots over the past three years may be compared to determine whether there is a reduction in the tree's typical growth pattern. Further signs of poor tree health are trunk decay, crown dieback, or both. These symptoms often indicate problems that began several years before. Loose bark or deformed growths, such as trunk conks (mushrooms), are common signs of stem decay. Any abnormalities found during these inspections, including insect activity, and spotted, deformed, discolored, or dead leaves and twigs, should be noted and observed closely.

**Mulching:** Mulch, or decomposed organic material, placed over the root zone of a tree reduces environmental stress by providing a root environment that is cooler and contains more moisture than the surrounding soil. Mulch can also prevent mechanical damage by keeping machines such as lawn mowers and string trimmers away from the tree's base. Furthermore, mulch reduces competition from surrounding weeds and turf. To be most effective, mulch should be placed 2 to 4 inches deep and cover the entire root system, which may be as far as 2 or 3 times the diameter of the branch spread of the tree. If the area and activities happening around the tree do not permit the entire area to be mulched, it is recommended that as much of the area under the drip line of the tree is mulched as possible. When placing mulch, care should be taken not to cover the actual trunk of the tree. This mulch-free area, 1 to 2 inches wide at the base, is sufficient to avoid moist bark conditions and prevent trunk decay. An organic mulch layer 2 to 4 inches deep of loosely packed shredded leaves, pine straw, peat moss, or composted wood chips is adequate. Plastic should not be used as it interferes with the exchange of gases between soil and air, which inhibits root growth. Thicker mulch layers, 5 to 6 inches deep or greater, may also inhibit gas exchange.

**Fertilization:** Trees require certain nutrients (essential elements) to function and grow. Urban landscape trees may be growing in soils that do not contain sufficient available nutrients for satisfactory growth and development. In certain situations, it may be necessary to fertilize to improve plant vigor. Fertilizing a tree can improve growth; however, if fertilizer is not applied wisely, it may not benefit the tree at all and may even adversely affect the tree. Mature trees making satisfactory growth may not require fertilization. When considering supplemental fertilizer, it is important to consider nutrient deficiencies and how and when to amend the deficiencies. Soil conditions, especially pH and organic matter content, vary greatly, making the proper selection and use of fertilizer

a somewhat complex process. To that end, it is recommended that the soil be tested for nutrient content. A soil testing laboratory can give advice on application rates, timing, and the best blend of fertilizer for each tree and other landscape plants on site. Mature trees have expansive root systems that extend from 2 to 3 times the size of the leaf canopy. A major portion of actively growing roots is located outside the tree's drip line. Understanding the actual size and extent of a tree's root system before applying fertilizer is paramount to determine quantity, type, and rate at which to best apply fertilizer. Always follow manufacturer recommendations for use and application.

**Pruning:** Pruning is often desirable or necessary to remove dead, diseased, or insect-infested branches and to improve tree structure, enhance vigor, or maintain safety. Because each cut has the potential to change the growth of (or cause damage to) a tree, no branch should be removed without reason. Removing foliage from a tree has two distinct effects on growth: (1) it reduces photosynthesis and, (2) it may reduce overall growth. Pruning should always be performed sparingly. Caution must be taken not to over-prune as a tree may not be able to gather and process enough sunlight to survive. Pruning mature trees may require special equipment, training, and experience. Arborists are equipped to provide a variety of services to assist in performing the job safely and reducing risk of personal injury and property damage.

**Removal:** There are circumstances when removal is necessary. An arborist can help decide whether a tree should be removed. Professionally trained arborists have the skills and equipment to remove trees safely and efficiently. Removal is recommended when a tree: (1) is dead, dying, or considered irreparably hazardous; (2) is causing an obstruction or is crowding and causing harm to other trees and the situation is impossible to correct through pruning; (3) is to be replaced by a more suitable specimen, and (4) should be removed to allow for construction. Pruning or removing trees, especially large trees, can be dangerous work. It should be performed only by those trained and equipped to work safely in trees.

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**TABLE 1 - TREE QUANTITY SUMMARY**

<b>Tree Quantity by Species</b>		
<b>Species</b>	<b>Quantity</b>	<b>% of Site</b>
<i>Hesperocyparis macrocarpa</i>	61	73%
<i>Juniperus chinensis</i>	6	7%
<i>Pinus radiata</i>	9	11%
<i>Myoporum laetum</i>	1	1%
<i>Salix lasiolepis</i>	6	7%
<b>Total</b>	<b>83</b>	<b>100%</b>
<b>Tree Quantity by Protection Status</b>		
	<b>Quantity</b>	<b>% of Site</b>
Landmark Tree	0	0%
Mitigation Tree	16	19%
Protected Tree (6"+)	66	80%
<b>Tree Quantity by Native Range</b>		
	<b>Quantity</b>	<b>% of Site</b>
Regionally Native Species	6	7%
Exotic Species	77	93%
<b>Total</b>	<b>83</b>	<b>100%</b>

**TABLE 2 - TREE EVALUATION SUMMARY**

<b>Preservation Suitability</b>		
<b>Good</b>	Tree with good health and structural stability that have the potential for longevity at the site.	
<b>Mod.</b>	Tree in somewhat declining health and/or exhibits structural defects that cannot be abated with treatment. Tree may require more intense management and will have a shorter lifespan than those in the 'Good' category.	
<b>Poor</b>	Tree in poor health or with significant structural defects that cannot be mitigated. Tree is expected to decline, regardless of treatment.	
<b>Health Rating</b>		
<b>5</b>	A healthy, vigorous tree, reasonably free of pests and disease, with good form typical of the species	
<b>4</b>	Tree with good vigor and slight signs of stress	
<b>3</b>	Tree with moderate vigor and moderate signs of stress	
<b>2</b>	Tree in decline	
<b>1</b>	Tree in severe decline	
<b>Vigor</b>		
<b>High</b>	Tree putting on healthy, new twig growth in quantities characteristic of the species.	
<b>Mod.</b>	Tree putting on new twig growth but showing signs of stress.	
<b>Low</b>	Tree putting on most of their new twig growth as epicormic shoots with signs of severe stress. There may be areas of dieback in the crown.	
<b>Crown Opacity</b>		
<b>High</b>	Tree with a thin crown characterized by lack of old growth and small quantities of newer growth. Visually, the sky is seen through the crown with little obstruction.	
<b>Mod.</b>	Tree with a moderately thin crown, or with high opacity areas in the crown.	
<b>Low</b>	Tree with a healthy, full crown that is characteristic of the species. Visually, it is difficult to see the sky through the crown.	
<b>Abbreviations and Definitions</b>		
<b>BB</b>	Bark Beetles	Sap flows on stems indicative of an attempt to pitch bark beetles.
<b>CD</b>	Codominant Stems	Forked branches nearly the same size in diameter, arising from a common junction and lacking a normal branch union.
<b>CDB</b>	Crown Dieback	Condition where branches in the tree crown die from the tips toward the center.
<b>CR</b>	Crowded	Growing in a crowded space with other trees competing for light.
<b>D</b>	Decline	Tree shows obvious signs of decline, which may be indicative of the presence of multiple biotic and abiotic disorders.
<b>DBH</b>	Diameter at Breast Height	Measurement of tree diameter in inches. Measurement height varies by agency and is noted above.
<b>EG</b>	Epicormic Growth	Watersprouting on trunk and main leaders. Typically indicative of tree stress.
<b>EH</b>	Exposed Heartwood	Exposure of the tree's heartwood is typically seen as an open wound that leaves a tree more susceptible to pathogens, disease or infection.
<b>IB</b>	Included Bark	Structural defect where bark is included between branch attachment so wood can't join, often having a higher probability of failure.
<b>LC</b>	Low Crotch	Multiple central leaders originating below the DBH measurement site.
<b>LN</b>	Lean	Tree leaning, see notes for severity.
<b>LS</b>	Leaf Spot	Specific to the coast live oaks for this project, this indicates a combination of whiteflies and black sooty mold caused by the accumulation of their moist frass on leaf surfaces.
<b>S</b>	Suckers	Shoot arising from the roots.
<b>SD</b>	Structural Defects	Naturally or secondary conditions including cavities, poor branch attachments, cracks, or decayed wood in any part of the tree that may contribute to structural failure.
<b>SR</b>	Surface Roots	Roots visible at finished grade.
<b>TP</b>	Topped	Poor pruning practice of removing the top of main leaders to limit tree height.
<b>ST</b>	Stress	Environmental factor inhibiting regular tree growth. Includes drought, salty soils, nitrogen and other nutrient deficiencies in the soil.
<b>WU</b>	Weak Union	Weak union or fork in tree branching structure.

Tree Tag	Botanical Name	Common Name	Diameter at Breast Height (in.)	Multi Leader Individual DBH (in.)	Regional Native	Health	Pres. Suit.	Vigor	Crown Opacity	Field Notes & Recommendations	Disposition
<b>53</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	38.5			2	Mod.	Low	Mod.	measured at 2' above grade - inferior stems not accessible, several recent limb failures, previously tagged, SD, EH, BB	Remove
<b>198</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	37.5			3	Poor	Mod.	Mod.	previously tagged, BB, SD, TP	Remove
<b>268</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	1.0			1	Poor	Low	High	Dead, irrigation system non-functional	Remove
<b>269</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	1.0			1	Poor	Low	High	Dead, irrigation system non-functional	Remove
<b>270</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	2.0			4	Good	Mod.	Low	Remove lodgepole, minor drought stress	Remove
<b>271</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	2.0			4	Good	Mod.	Low	Remove lodgepole	Remove
<b>272</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	1.0			2	Poor	Low	Mod.	ST, D, CDB, BB	Remove
<b>273</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	2.0			4	Good	Mod.	Low	Remove lodgepole	Remove
<b>274</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	1.0			4	Good	Mod.	Low	Remove lodgepole	Remove
<b>275</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	1.0			4	Good	Mod.	Low	Remove lodgepole	Remove
<b>276</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	2.0			4	Good	Mod.	Low	Remove lodgepole	Remove
<b>277</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	1.0			4	Good	Mod.	Low	Remove lodgepole, severe lean from improper staking at install	Remove
<b>278</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	1.0			4	Good	Mod.	Low	Remove lodgepole, lean from improper staking at install	Remove
<b>279</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	1.0			4	Good	Mod.	Low	Remove lodgepole	Remove
<b>280</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	1.0			2	Poor	Low	Mod.	Remove lodgepole, ST, BB	Remove

Tree Tag	Botanical Name	Common Name	Diameter at Breast Height (in.)	Multi Leader Individual DBH (in.)	Regional Native	Health	Pres. Suit.	Vigor	Crown Opacity	Field Notes & Recommendations	Disposition
<b>281</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	2.0			4	Good	Mod.	Low	Remove lodgepole	Remove
<b>282</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	1.0			4	Good	Mod.	Low	Remove lodgepole	Remove
<b>283</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	1.0			4	Good	Mod.	Low	Remove lodgepole, lean from improper staking at install	Remove
<b>340</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	38*			3	Mod.	Mod.	Mod.	previously tagged	Protect
<b>341</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	37.0			3	Mod.	Mod.	Mod.	previously tagged, CR, BB	Protect
<b>344</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	25.5			2	Poor	Low	High	large failure, previously tagged, TP, CR, LN, CDB, BB	Protect
<b>345</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	22.0			2	Poor	Low	High	previously tagged, CR, BB	Protect
<b>347</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	30.0			2	Poor	Low	High	previously tagged, CR, CDB, ST, BB	Protect
<b>349</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	24.5			3	Mod.	Mod.	Mod.	previously tagged, CR	Protect
<b>350</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	32*			3	Mod.	Mod.	Mod.	previously tagged, CR, ST	Protect
<b>351</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	24.5			3	Mod.	Low	Mod.	previously tagged, CR, ST, EH	Protect
<b>352</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	11.0			2	Poor	Low	High	previously tagged, CR, ST, BB	Protect
<b>353</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	11.5			2	Poor	Low	High	previously tagged, CR, ST, BB	Protect
<b>354</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	14.5			3	Poor	Low	High	previously tagged, CR, BB	Protect
<b>356</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	31.0	12, 11, 8		2	Poor	Low	High	previously tagged, EH, SD, BB, ST	Protect
<b>357</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	31.0			2	Mod.	Low	High	previously tagged, LN, BB, ST	Protect

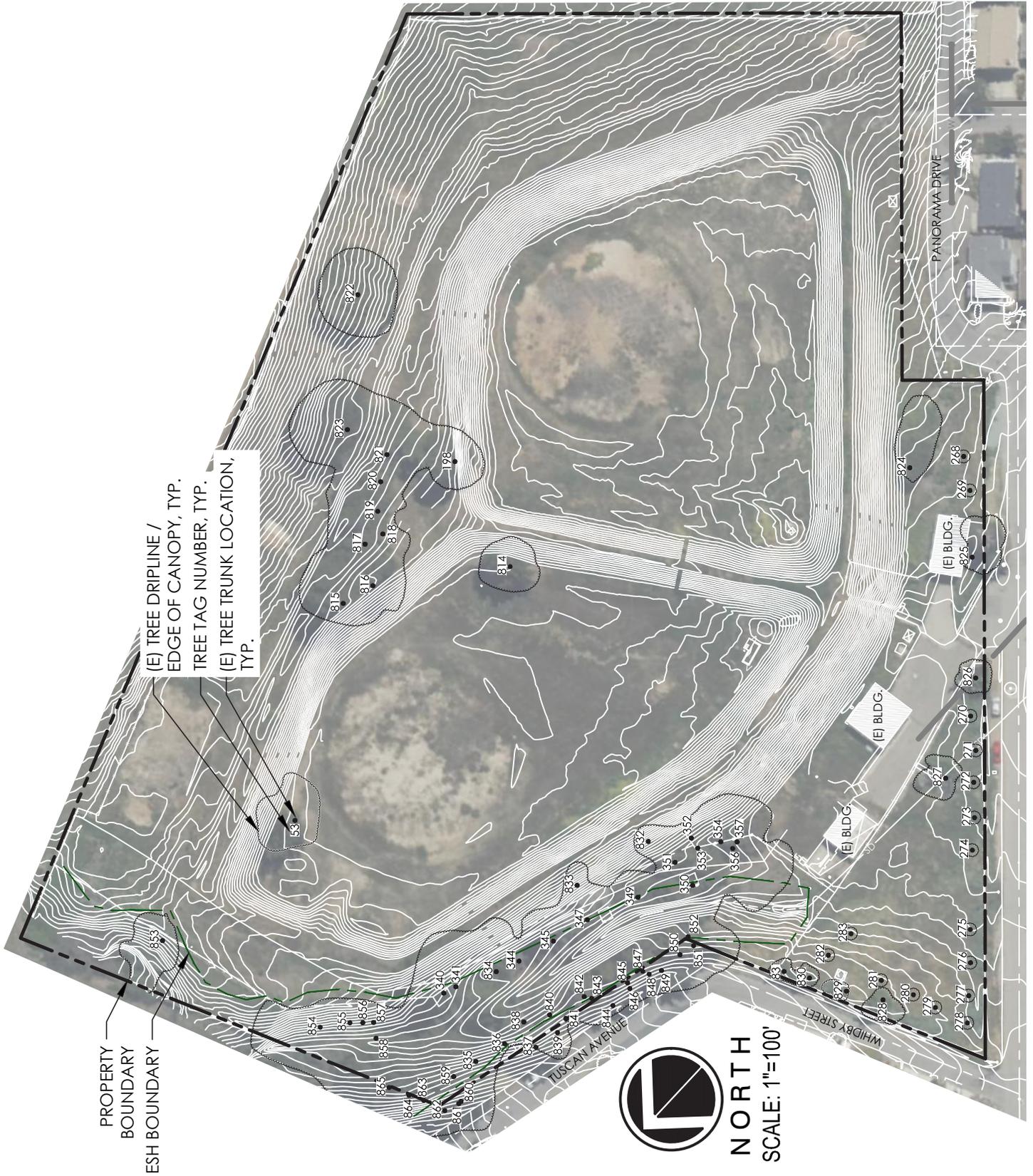
Tree Tag	Botanical Name	Common Name	Diameter at Breast Height (in.)	Multi Leader Individual DBH (in.)	Regional Native	Health	Pres. Suit.	Vigor	Crown Opacity	Field Notes & Recommendations	Disposition
<b>814</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	60.0	22, 14.5, 11, 8.5, 4		2	Poor	Low	High	overpruned, EH, BB	Remove
<b>815</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	38.5			3	Mod.	Low	High	LN, BB, SR	Remove
<b>816</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	63.0	43.5, 19.5		2	Poor	Low	High	BB, EH	Remove
<b>817</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	32.0			2	Poor	Low	High	LN, CR, BB, EH	Remove
<b>818</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	24.5			1	Poor	Low	High	LN, CR	Remove
<b>819</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	35.5	25, 10.5		3	Mod.	Low	Mod.	remove large dead stem, LN, CR, EH	Remove
<b>820</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	49.5	22.5, 14.5, 12.5		1	Poor	Low	High	SD, EH	Remove
<b>821</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	43.5			3	Mod.	Mod.	Mod.	several recent limb failures, LN	Remove
<b>822</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	58.0			4	Mod.	High	Mod.	measured at 2' above grade - interior stems not accessible	Remove
<b>823</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	68.0			2	Poor	Low	High	canker at root collar, BB, ST	Remove
<b>824</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	16.0			3	Mod.	Mod.	Mod.	LN, CD	Remove
<b>825</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	32.0			3	Poor	Mod.	Mod.	large limb failure, close proximity to high voltage lines, LN, EH	Remove
<b>826</b>	<i>Juniperus chinensis</i>	Hollywood juniper	28.5	10.5, 9, 9		2	Poor	Mod.	Mod.	EH, ST	Remove
<b>827</b>	<i>Juniperus chinensis</i>	Hollywood juniper	28.0	10.5, 9.5, 8		2	Poor	Low	Mod.	cavities at root collar, EH, LN, SD	Remove
<b>828</b>	<i>Juniperus chinensis</i>	Hollywood juniper	32.0	9.5, 8.5, 7.5, 6.5		2	Mod.	Mod.	Mod.	EH, ST	Remove
<b>829</b>	<i>Juniperus chinensis</i>	Hollywood juniper	24.0	7, 6.5, 5.5, 5		2	Poor	Low	High	EH, CDB, ST	Remove

Tree Tag	Botanical Name	Common Name	Diameter at Breast Height (in.)	Multi Leader Individual DBH (in.)	Regional Native	Health	Pres. Suit.	Vigor	Crown Opacity	Field Notes & Recommendations	Disposition
<b>830</b>	<i>Juniperus chinensis</i>	Hollywood juniper	17.5			3	Mod.	Mod.	Mod.	EH	Remove
<b>831</b>	<i>Juniperus chinensis</i>	Hollywood juniper	14.0	7, 7		2	Poor	Low	High	EH, ST	Protect
<b>832</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	14.5			2	Mod.	Mod.	Mod.	BB, CR	Protect
<b>833</b>	<i>Myoporum laetum</i>	ngaio	12.5			2	Poor	Low	High	thrips, ST, EG, CR, EH, LN	Protect
<b>834</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	25.5			1	Poor	Low	High	CR, BB, CDB	Protect
<b>835</b>	<i>Pinus radiata</i>	Monterey pine	15.5			1	Poor	Low	High	BB, CR, D	Protect
<b>836</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	37.5			2	Mod.	Mod.	Mod.	CR, BB	Protect
<b>837</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	32*			2	Mod.	Mod.	Mod.	tagged nearby wood post, LN, BB, EH, ST	Protect
<b>838</b>	<i>Pinus radiata</i>	Monterey pine	17.0			1	Poor	Low	High	CR, BB, CDB	Protect
<b>839</b>	<i>Pinus radiata</i>	Monterey pine	19.0			1	Poor	Low	High	CR, BB, CDB, LN	Protect
<b>840</b>	<i>Pinus radiata</i>	Monterey pine	13.0			1	Poor	Low	High	CR, BB, CDB	Protect
<b>841</b>	<i>Pinus radiata</i>	Monterey pine	15.0			1	Poor	Low	High	CR, BB, CDB	Protect
<b>842</b>	<i>Pinus radiata</i>	Monterey pine	13.0			1	Poor	Low	High	CR, BB, CDB	Protect
<b>843</b>	<i>Pinus radiata</i>	Monterey pine	19.0			1	Poor	Low	High	CR, BB, CDB	Protect
<b>844</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	21.0			2	Mod.	Mod.	Mod.	LN, BB, EH, ST	Protect
<b>845</b>	<i>Pinus radiata</i>	Monterey pine	12.0			1	Poor	Low	High	CR, BB, CDB, LN	Protect

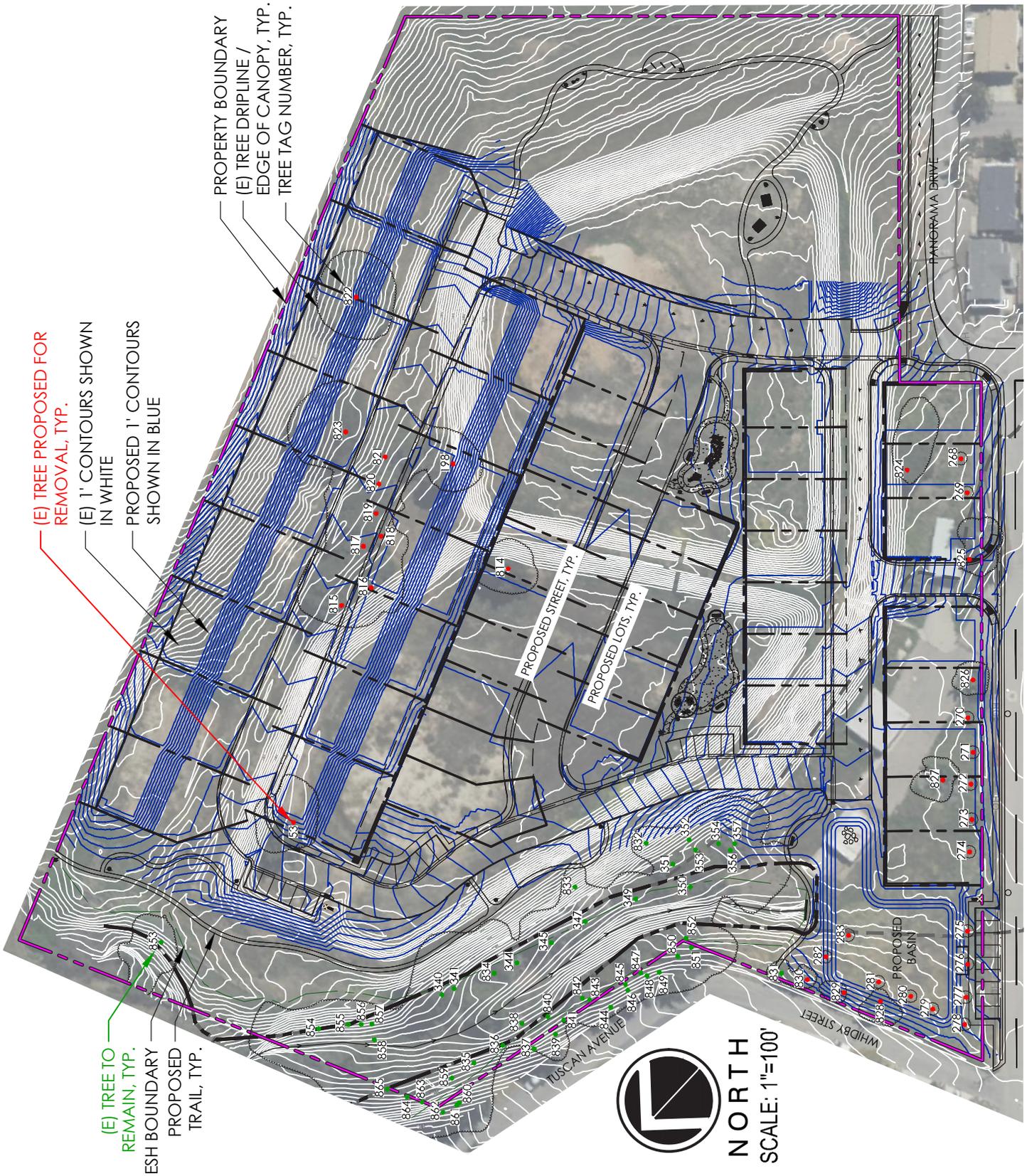
Tree Tag	Botanical Name	Common Name	Diameter at Breast Height (in.)	Multi Leader Individual DBH (in.)	Regional Native	Health	Pres. Suit.	Vigor	Crown Opacity	Field Notes & Recommendations	Disposition
<b>846</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	21*			2	Mod.	Mod.	Mod.	tagged nearby wood post, LN, BB, EH, ST	Protect
<b>847</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	21*			2	Mod.	Mod.	Mod.	tagged nearby wood post, LN, BB, EH, ST	Protect
<b>848</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	23.0			2	Mod.	Mod.	Mod.	LN, BB, EH, ST	Protect
<b>849</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	21.5			2	Mod.	Mod.	Mod.	BB, EH, ST	Protect
<b>850</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	30*			2	Mod.	Mod.	Mod.	tagged nearby wood post, BB, EH, ST	Protect
<b>851</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	34*			2	Mod.	Mod.	Mod.	tagged nearby wood post, BB, EH, ST	Protect
<b>852</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	24.5			2	Mod.	Mod.	Mod.	BB, ST, CR	Protect
<b>853</b>	<i>Salix lasiolepis</i>	Arroyo willow	10*		X	2	Mod.	Low	High	no tag, LN, ST	Protect
<b>854</b>	<i>Salix lasiolepis</i>	Arroyo willow	38*	8, 8, 8, 6, 4, 4	X	3	Mod.	Mod.	Mod.	no tag, LN	Protect
<b>855</b>	<i>Salix lasiolepis</i>	Arroyo willow	18*	8, 6, 4	X	3	Mod.	Mod.	Mod.	no tag, LN	Protect
<b>856</b>	<i>Salix lasiolepis</i>	Arroyo willow	26*	8, 6, 6, 6	X	3	Mod.	Mod.	Mod.	no tag, LN	Protect
<b>857</b>	<i>Salix lasiolepis</i>	Arroyo willow	8*		X	3	Mod.	Mod.	Mod.	no tag, LN	Protect
<b>858</b>	<i>Salix lasiolepis</i>	Arroyo willow	8*		X	3	Mod.	Mod.	Mod.	no tag, LN	Protect
<b>859</b>	<i>Pinus radiata</i>	Monterey pine	14*			1	Poor	Low	High	no tag, BB, CR, D	Protect
<b>860</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	34*			2	Mod.	Mod.	Mod.	no tag, CR, BB	Protect
<b>861</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	30*			2	Mod.	Mod.	Mod.	no tag, CR, BB	Protect
<b>862</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	36*			2	Mod.	Mod.	Mod.	no tag, CR, BB	Protect

Tree Tag	Botanical Name	Common Name	Diameter at Breast Height (in.)	Multi Leader Individual DBH (in.)	Regional Native	Health	Pres. Suit.	Vigor	Crown Opacity	Field Notes & Recommendations	Disposition
<b>863</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	12*			2	Poor	Low	High	no tag, LN, CR, BB	Protect
<b>864</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	28*			2	Mod.	Mod.	Mod.	no tag, LN, CR, BB	Protect
<b>865</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	40*			2	Mod.	Mod.	Mod.	no tag, LN, CR, BB	Protect
*Indicates an estimated DBH measurement. These trees were inaccessible due to impassible fencing and it was not possible to obtain a physical measurement in the field.											

# FIGURE 1 - TREE LOCATION MAP



# FIGURE 2 - SITE PLAN REVIEW



## FIGURE 3 - ARCHIVAL AERIAL PHOTOGRAPHY

### 1930

This aerial image dates back to 1930 and shows the original trees located within and nearby the property. The watersheds were compared between images to determine the property extents as they exist today, outlined in yellow. The ESH drainage that exists today appears devoid of vegetation. Trees 815-821 and 198 are encircled with an orange ellipse. Tree 825 is located at the entrance to the southwest and is also shown circled in orange.



### 1969

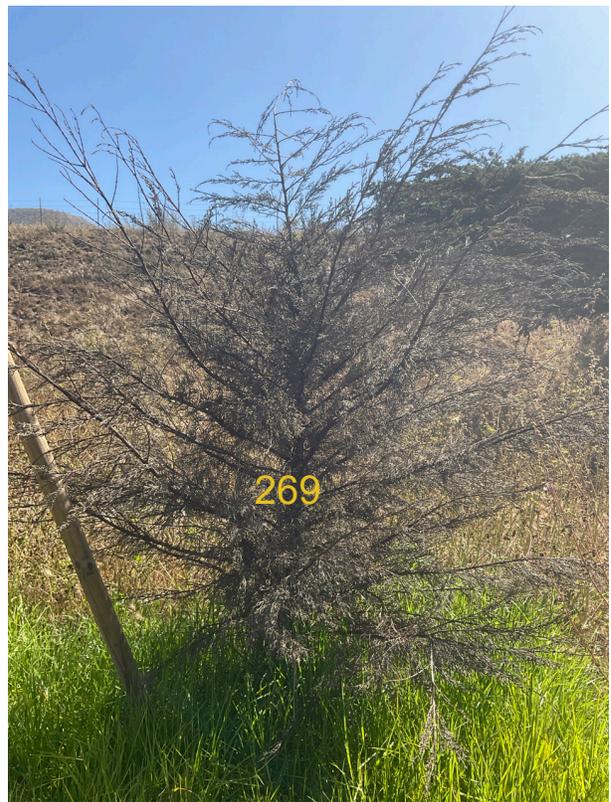
This aerial image was taken in 1969 and shows the operational DFSP facility. The same trees described above are also encircled in this image. It appears the remaining trees shown in the above image were removed to construct this facility and a new windrow along the ESH drainage was planted, which remains today in a similar form.



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# APPENDIX A TREE PHOTOGRAPHS

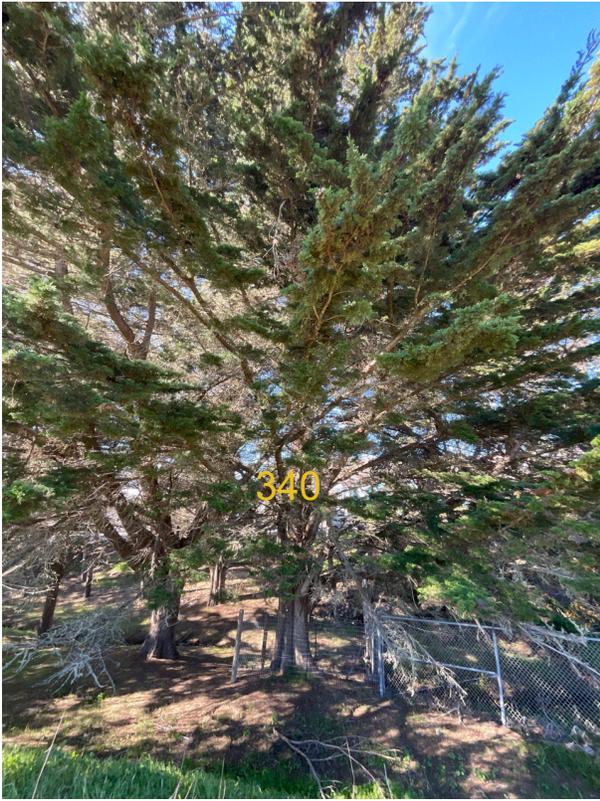
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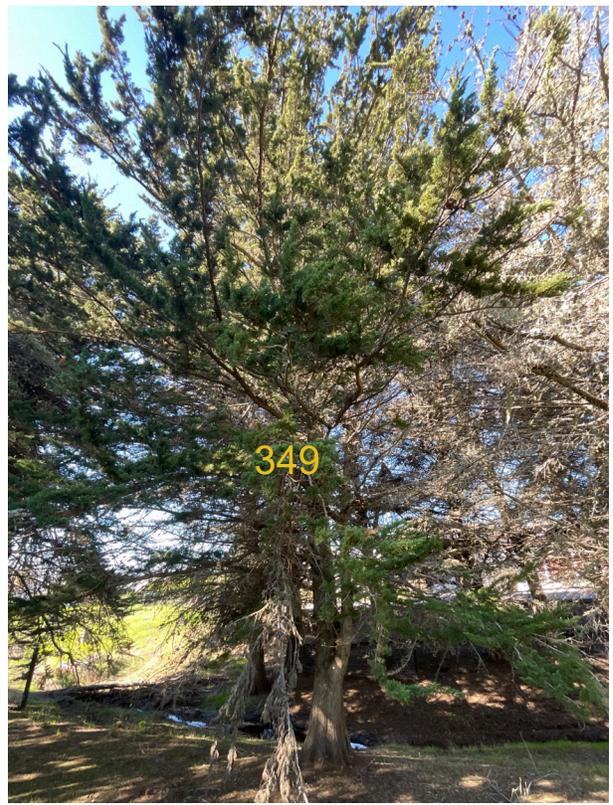
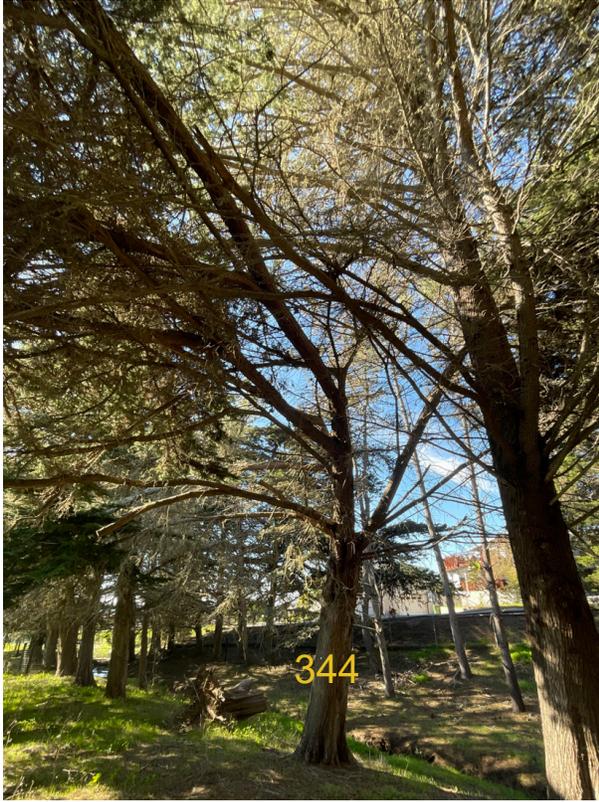


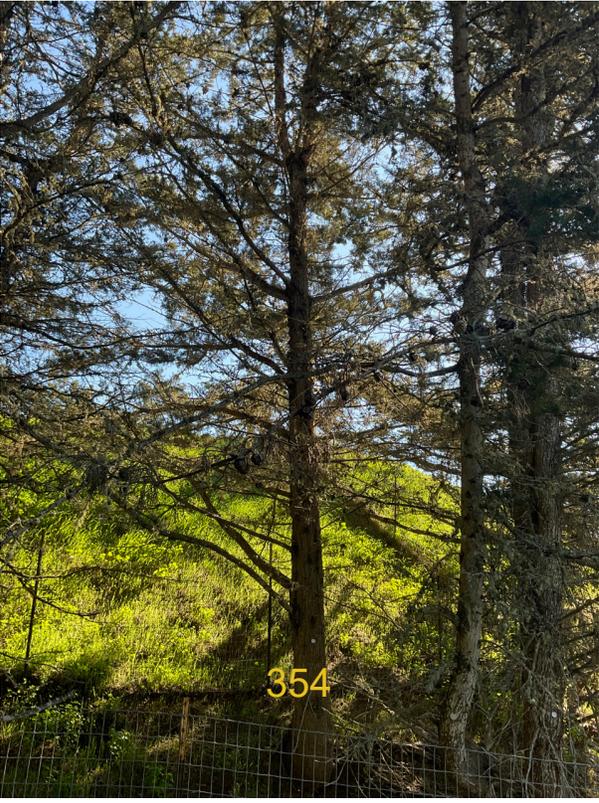












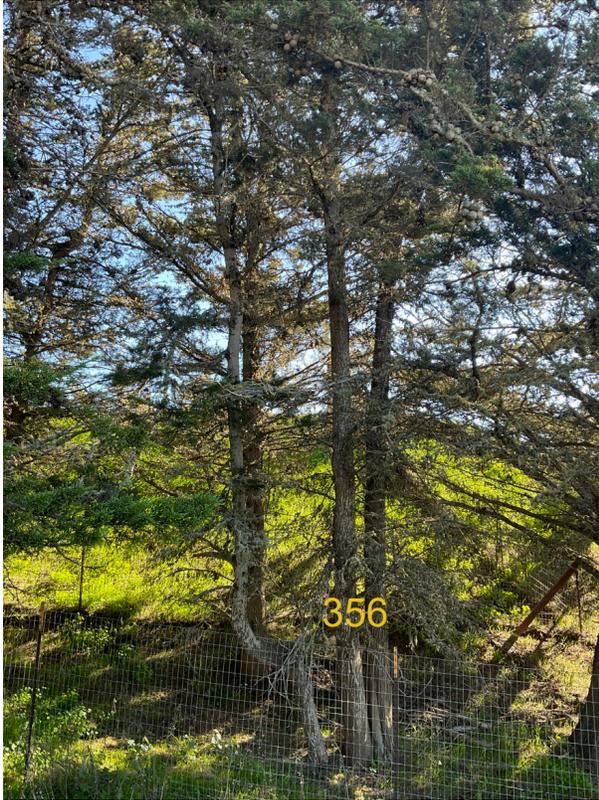


Photo of sap flows from tree 814, typical of most Monterey cypress onsite. Trees exude sap to trap and remove boring insects from the cambium.

