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Appendix A – Biological Resources Assessment

Biological Resources Assessment

Carmel Meadows Lift Station and Sewer Replacement

CARMEL AREA WASTEWATER DISTRICT, MONTEREY COUNTY, CALIFORNIA

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LIST OF ABBREVIATIONS AND ACRONYMS

CCC	California Coastal Commission
CDP	Coastal Development Permit
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFGC	California Fish and Game Code
CFR	Code of Federal Regulations
CNDDB	California Natural Diversity Database
Corps	U.S. Army Corps of Engineers
CNPS	California Native Plant Society
CRLF	California Red-Legged Frog
CRPR	California Rare Plant Rank
CWA	Clean Water Act
ESA	Federal Endangered Species Act
FAC	Facultative
FACW	Facultative Wetland
HCP	Habitat Conservation Plan
LCP	Local Coastal Plan
LSAA	Lake and Streambed Alteration Agreement
NOAA	National Oceanic and Atmospheric Administration
NRCS	National Resources Conservation Service
OBL	Obligate
OHWM	Ordinary High Water Mark
RWQCB	Regional Water Quality Control Board
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WBWG	Western Bat Working Group
WRA Inc.	WRA

1.0 INTRODUCTION AND PROJECT DESCRIPTION

On April 8, 2020, WRA, Inc. (WRA) conducted an assessment of biological resources at the site of the proposed Carmel Meadows Sewer Line Replacement and Lift Station Project (Project), located in unincorporated Monterey County, California, just south of the City of Carmel By-The-Sea (Appendix A, Figure 1). The Project is bounded by the Carmel Meadows residential neighborhood to the south, the Carmel River lagoon to the north, undeveloped land to the east, and Carmel River State Beach to the west. The majority of the Study Area is located on the hillside behind the residences of Carmel Meadows and intersects some landscaped backyards. In the far eastern end of the Study Area, it also runs along Mariposa Drive for approximately 130 feet. Staging for the Project will occur in an undeveloped lot on Ribera Road.

This report describes the results of the site survey, which assessed the Study Area, consisting of a 30-foot wide buffer around the centerline of the Project, for the potential to support special-status species and the presence of other sensitive biological resources protected by local, state, and federal laws and regulations. This biological resource assessment provides general information on the potential presence of sensitive species and habitats. The biological resources assessment is not an official protocol-level survey for listed species. This assessment is based on information available at the time of the study and on-site conditions that were observed on April 8, 2020.

1.1 Project Description

The existing sewer laterals flow downslope and northward, away from the homes and properties on Ribera Road, into an eight-inch ductile iron collector line which is adjacent to the restored Carmel River Estuary. Much of the existing sewer collector line is above ground and vulnerable to flooding, and if the line were to leak or break it could potentially contaminate the estuary. The existing pipeline is near the end of its useful life and therefore the District proposes a new sewer line that would be higher up the slope, closer to the houses it serves, and away from the Carmel River (Appendix A, Figure 2).

The Project will utilize a small lift station and a series of four small residential scale sewage pumps to enable the use/ reuse of accessible and less environmentally damaging pipeline alignments through the backyards of the residences being served. A 12-inch wide trench would be dug with a small excavator to about three-feet deep typically (maximum depth is five feet). Impacts to residential landscaping would be avoided where possible and/or restored to original or better condition. The total footprint of all permanent and temporary impacts from the pump station and pipeline replacement, as well as construction access and staging areas, is approximately 10,000 square feet. The total footprint of the pipeline will be 15-feet wide within the larger Study Area, however the final Project alignment has yet to be determined.

1.1.1 Pipeline Reuse

The western segment of the pipeline would remain gravity fed. The Project will reinforce the lining of an existing eight-inch diameter pipe using an epoxy resin that will improve the existing pipe, making it stronger and less susceptible to leaks or breaks. This technique eliminates the need for trenching in this area, though it does require equipment staging at the top and bottom of the pipeline segment.

1.1.2 Lift Station

The small lift station is proposed in the Mariposa Court cul-de-sac. It will be below the street surface and will draw electricity from the underground electric power in the center of Ribera Road. Minimally visible above ground equipment would include a power control panel, (about four-feet wide by about six-feet tall) with a small antenna for remote control communications equipment (up to twelve feet tall), and a manhole cover (flush with pavement).

1.1.3 Staging and Access

The District has identified a vacant lot at 2930 Ribera Road that could be used as a staging area, pending land owner approval. This would provide proximate staging near the proposed lift-station with nearby access to the pipeline alignments. Access to the pipeline alignments would be via Mariposa Court on the east and through a utility easement between 2935 and 2955 Ribera Road. The specifications for this staging area would include, at minimum, the following requirements:

- The staging area will be included in the Contractor's Stormwater Pollution Prevention Plan (SWPPP).
- The staging area will not be located in an environmentally or culturally sensitive area and/or impact water resources (rivers, streams, bays, inlet, lakes, drainage sloughs).
- The staging area will not be located in a regulatory floodway or within the base floodplain (100-year).
- The staging area will not affect access to properties or roadways.

2.0 REGULATORY BACKGROUND

The following sections explain the regulatory context of the biological resources assessment including applicable laws and regulations that relate to the field investigations.

2.1 Special-status Species

Special-status species include plant and wildlife species that have been formally listed, are proposed as endangered or threatened, or are candidates for such listing under the federal Endangered Species Act (ESA) or the California Endangered Species Act (CESA). These acts afford protection to both listed species and species proposed for listing. The federal Bald and Golden Eagle Protection Act also provides broad protections to both eagle species that in some regards are similar to those provided by ESA. In addition, California Department of Fish and Wildlife (CDFW) Species of Special Concern, which are species that face extirpation in California if current population and habitat trends continue, are considered special-status species. Although CDFW Species of Special Concern generally have no special legal status, they are given special consideration under the California Environmental Quality Act (CEQA). Bat species are also evaluated for conservation status by the Western Bat Working Group (WBWG), a non-governmental entity. Bats named as a "High Priority" or "Medium Priority" species for conservation by the WBWG are typically considered special-status and also considered under CEQA. In addition to regulations for special-status species, most native birds in the United States (including non-status species) are protected by the California Fish and Game Code (CFGC; Sections 3503, 3503.5, and 3513), and guidance for protection is provided by the Migratory Bird Treaty Act of 1918 (MBTA). Under the CFGC, destroying active nests, eggs, or young is illegal.

Plant species listed on the California Native Plant Society (CNPS) Rare and Endangered Plant Inventory (Inventory) with California Rare Plant Ranks (Ranks) of 1 and 2 are also considered special-status plant species and must be considered under CEQA. Rank 3 and Rank 4 species are afforded little or no protection under CEQA, but are included in this analysis for completeness. A description of the CNPS Ranks is provided below in Table 1.

Table 1. Description of CNPS Ranks and Threat Codes

California Rare Plant Ranks (formerly known as CNPS Lists)	
Rank 1A	Presumed extirpated in California and either rare or extinct elsewhere
Rank 1B	Rare, threatened, or endangered in California and elsewhere
Rank 2A	Presumed extirpated in California, but more common elsewhere
Rank 2B	Rare, threatened, or endangered in California, but more common elsewhere
Rank 3	Plants about which more information is needed - a review list
Rank 4	Plants of limited distribution - a watch list
Threat Ranks	
0.1	Seriously threatened in California
0.2	Moderately threatened in California
0.3	Not very threatened in California

Critical Habitat

Critical habitat is a term defined in the ESA as a specific and designated geographic area that contains features essential for the conservation of a threatened or endangered species and that may require special management and protection. The ESA requires federal agencies to consult with the USFWS to conserve listed species on their lands and to ensure that any activities or projects they fund, authorize, or carry out will not jeopardize the survival of a threatened or endangered species. In consultation for those species with critical habitat, federal agencies must also ensure that their activities or projects do not adversely modify critical habitat to the point that it will no longer aid in the species' recovery. In many cases, this level of protection is similar to that already provided to species by the ESA jeopardy standard. However, areas that are currently unoccupied by the species but which are needed for the species' recovery are protected by the prohibition against adverse modification of critical habitat.

2.2 Sensitive Biological Communities

Sensitive biological communities include habitats that fulfill special functions or have special values, such as wetlands, streams, or riparian habitat. These habitats are protected under federal regulations, such as the Clean Water Act (CWA); state regulations, such as the Porter-Cologne Water Quality Control Act, the CDFW Streambed Alteration Program, the California Coastal Act, and CEQA; or local ordinances or policies, such as city or county tree ordinances, Special Habitat Management Areas, and General Plan elements.

Waters of the United States

The U.S. Army Corps of Engineers (Corps) regulates "Waters of the United States" under Section 404 of the CWA. Waters of the U.S. are defined in the Code of Federal Regulations (CFR) as waters susceptible to use in commerce, including interstate waters and wetlands, all other waters (intrastate waterbodies, including wetlands), and their tributaries (33 CFR 328.3). Potential wetland areas, according to the three criteria used to delineate wetlands as defined in the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987), are identified by the presence of: (1) hydrophytic vegetation, (2) hydric soils, and (3) wetland hydrology. Areas that are inundated at a sufficient depth and for a sufficient duration to suppress growth of hydrophytic vegetation are subject to Section 404 jurisdiction as "other waters" (i.e., non-wetland waters) and are often characterized by an ordinary high water mark (OHWM). Other waters, for example, generally include lakes, rivers, and streams. The placement of fill material into Waters of the U.S generally requires an individual or nationwide permit from the Corps under Section 404 of the CWA.

Waters of the State

The term "Waters of the State" is defined by the Porter-Cologne Water Quality Control Act as "any surface water or groundwater, including saline waters, within the boundaries of the state." The Regional Water Quality Control Board (RWQCB) protects all waters in its regulatory scope and has special responsibility for wetlands, riparian areas, and headwaters. These waterbodies have high resource value, are vulnerable to filling, and are not systematically protected by other programs. RWQCB jurisdiction includes "isolated" wetlands and waters that may not be regulated by the Corps under Section 404 of the CWA. Waters of the State are regulated by the RWQCB under the State Water Quality Certification Program which regulates discharges of fill and dredged material under Section 401 of the CWA and the Porter-Cologne Water Quality Control Act.

Projects that require a Corps permit, or fall under other federal jurisdiction, and have the potential to impact Waters of the State, are required to comply with the terms of the Water Quality Certification determination. If a proposed project does not require a federal permit, but does involve dredge or fill activities that may result in a discharge to Waters of the State, the RWQCB has the option to regulate the dredge and fill activities under its state authority in the form of Waste Discharge Requirements.

CDFW Jurisdictional Streams, Lakes, and Riparian Habitat

Streams and lakes, as habitat for fish and wildlife species, are subject to jurisdiction by the CDFW under Sections 1600-1616 of the CFGC. Alterations to or work within or adjacent to streambeds or lakes generally require a Section 1602 Lake and Streambed Alteration Agreement (LSAA). The term "stream", which includes creeks and rivers, is defined in the California Code of Regulations (CCR) 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 [including] watercourses having a surface or subsurface flow that supports or has supported riparian vegetation" (14 CCR 1.72). In addition, the term "stream" can include ephemeral streams, dry washes, watercourses with subsurface flows, canals, aqueducts, irrigation ditches, and other means of water conveyance if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife (CDFG 1994). "Riparian" is defined as "on, or pertaining to, the banks of a stream." Riparian vegetation is defined as "vegetation which occurs in and/or adjacent to a stream and is dependent on, and occurs because of, the stream itself" (CDFG 1994). Removal of riparian vegetation also requires a Section 1602 LSAA from the CDFW.

California Coastal Commission Environmentally Sensitive Habitat Areas

On land, the California Coastal Zone varies in width from several hundred feet in highly urbanized areas up to 5 miles in certain rural areas, and offshore the coastal zone includes a 3-mile-wide band of ocean. Within the California Coastal Zone, an "environmentally sensitive area" is defined by the California Coastal Act as: "Any area 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" (Section 30107.5). The California Coastal Commission (CCC) regulates the diking, filling, or dredging of wetlands, which qualify as an Environmentally Sensitive Habitat Area (ESHA), within the California Coastal Zone. Section 30121 of the California Coastal Act defines "wetlands" as "lands within the Coastal Zone which may be covered periodically or permanently with shallow water and include saltwater marshes, freshwater marshes, open or closed brackish water marshes, swamps, mudflats, and fens." The CCC considers this definition as requiring the observation of one diagnostic feature of a wetland, such as wetland hydrology, dominance by wetland vegetation (i.e., hydrophytes), or presence of hydric soils, as a basis for asserting jurisdiction under the California Coastal Act. In addition to the above definition, the *Statewide Interpretive Guidelines for Identifying and Mapping Wetlands and Other Wet Environmentally Sensitive Habitat Areas* (CCC 1981) provide technical criteria for use in identifying and delineating wetlands and other environmentally sensitive habitat areas within the Coastal Zone. The technical criteria presented in the guidelines are based on the California Coastal Act definition and indicate that wetland hydrology is the most important

parameter for determining a wetland. If a project proposes to develop or grade areas within the California Coastal Zone, a Coastal Development Permit (CDP) is typically required from the CCC.

Monterey County Local Coastal Program

Local Coastal Programs (LCPs) are planning tools created and implemented by coastal cities and counties, in conjunction with and approved by the CCC. LCPs create the regulatory framework for future development and protection of coastal resources.

The LCP for Monterey County, the *Monterey County Coastal Implementation Plan*, divides all portions of Monterey County in the California Coastal Zone into four Land Use Plan (LUP) Areas: North County, Big Sur, Carmel, and Del Monte (County of Monterey 2003). The Project falls within the Carmel LUP Area. The following subsections detail the policy measures and recommendations that relate to natural resources and are pertinent to the Project.

General Policy 1

General Policy 1 limits "development, including vegetation removal, excavation, grading, filling, and the construction of roads and structures" within "critical and sensitive habitat areas, riparian corridors, wetlands, sites of known rare and endangered species of plants and animals, rookeries and major roosting and haul-out sites, and other wildlife breeding or nursery areas identified as critical." In addition, "only small-scale development necessary to support the resource-dependent uses may be located in sensitive habitat areas if they cannot feasibly be located elsewhere."

General Policy 2

General Policy 2 calls for "land uses adjacent to locations of environmentally sensitive habitats" that are "compatible with the long-term maintenance of the resource". In addition, "New land uses shall be considered compatible only where they incorporate all site planning and design features needed to prevent habitat impacts and where they do not establish a precedent for continued land development which, on a cumulative basis, could degrade the resource."

General Policy 5

General Policy 5 states that "Where private or public development is proposed in documented or expected locations of environmentally sensitive habitats - particularly those habitats identified in General Policy No. I - field surveys by qualified individuals or agency shall be required in order to determine precise locations of the habitat and to recommend mitigating measures to ensure its protection. This policy applies to the entire segment except the internal portions of Carmel Woods, Hatton Fields, Carmel Point (Night heron site excluded), Odello, Carmel Meadows, and Carmel Riviera. If any habitats are found on the site or within 100 feet from the site, the required survey shall document how the proposed development complies with all the applicable habitat policies."

Riparian Corridors and Other Terrestrial Wildlife Habitats Policy 1

Riparian Corridors and Other Terrestrial Wildlife Habitats Policy 1 states that "Riparian plant communities shall be protected by establishing setbacks consisting of a 150-foot open space buffer zone on each side of the bank of perennial streams and 50 feet on each side of the bank of intermittent streams, or the extent of riparian vegetation, whichever is greater. No new

development, including structural flood control projects, shall be allowed within the riparian corridor."

Wetlands and Marine Habitat Policy 1

Wetlands and Marine Habitat Policy 1 requires a "setback of 100 feet from the edge of all coastal wetlands shall be provided and maintained in open space use. No new development shall be allowed in this setback area."

Other Sensitive Biological Communities

Other sensitive biological communities not discussed above include habitats that fulfill special functions or have special values. Natural communities considered sensitive are those identified in local or regional plans, policies, regulations, or by the CDFW. CDFW ranks sensitive communities (alliances) as "threatened" or "very threatened" and keeps records of their occurrences in its California Natural Diversity Database (CNDDB; CDFW 2019). CNDDB vegetation alliances are ranked 1 through 5 based on NatureServe's (2010) methodology, with those alliances ranked globally (G) or statewide (S) as 1 through 3 considered sensitive. Impacts to sensitive natural communities identified in local or regional plans, policies, or regulations or those identified by the CDFW or USFWS must be considered and evaluated under CEQA (CCR Title 14, Div. 6, Chap. 3, Appendix G). Specific habitats may also be identified as sensitive in city or county general plans or ordinances.

2.3 Protected Trees

County of Monterey Tree Ordinance

The Monterey County Oak Protection Ordinance (Tree Ordinance) stipulates regulations designed to preserve and protect native trees on private or City-owned property. The Tree Ordinance requires permission from the County Planning Department for the removal of trees designated as "protected trees" that includes all oak trees that are six inches in diameter or more at two feet above ground level. Landmark trees are also protected under the Tree Ordinance and are defined as oak trees that are 24 inches or more in diameter at two feet above ground. No person shall do, cause, aid, abet, suffer, or furnish equipment or labor to remove, cut down, or trim more than one-third of the green foliage of any protected or landmark tree without the obtainment of a tree removal permit.

A tree assessment from a county-approved arborist or forester is required for all projects require the removal of protected trees. The removal of three or more protected trees per lot may also require a use permit or coastal development permit through the CCC.

3.0 METHODS

On April 8, 2020, the Study Area was traversed on foot to determine: (1) if existing conditions provide suitable habitat for any special-status plant or wildlife species, (2) plant communities present within the Study Area, and (3) if sensitive habitats are present. All observed plant and wildlife species are listed in Appendix B.

3.1 Special-status Species

3.1.1 Literature Review

Potential occurrence of special-status species in the Study Area was evaluated by first determining which special-status species occur in the vicinity of the Study Area through a literature and database search. Database searches for known occurrences of special-status species focused on the Monterey and four surrounding 7.5-minute U.S. Geological Survey (USGS) quadrangles, including Soberanes Point, Mount Carmel, Seaside, and Marina. The following sources were reviewed to determine which special-status plant and wildlife species have been documented to occur in the vicinity of the Study Area:

- CNDDB records (CDFW 2020)
- USFWS Information for Planning and Conservation Species Lists (USFWS 2020a)
- CNPS Inventory records (CNPS 2020)
- CDFG publication "California's Wildlife, Volumes I-III" (Zeiner et al. 1990)
- CDFG publication *California Bird Species of Special Concern* (Shuford and Gardali 2008)
- CDFW and University of California Press publication *California Amphibian and Reptile Species of Special Concern* (Thomson et al. 2016)
- *A Field Guide to Western Reptiles and Amphibians* (Stebbins 2003)

3.1.2 Site Assessment

A site visit was conducted in the Study Area to search for suitable habitats for special-status species. Habitat conditions observed in the Study Area were used to evaluate the potential for presence of special-status species based on these searches and the professional expertise of the investigating biologists. The potential for each special-status species to occur in the Study Area was then evaluated according to the following criteria:

- No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (e.g., foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
- Unlikely. Few of the habitat components meeting the species requirements are present, and/or the majority of habitat on and adjacent to the site is unsuitable or of very poor quality. The species is not likely to be found on the site.
- Moderate Potential. Some of the habitat components meeting the species requirements are present, and/or only some of the habitat on or adjacent to the site is unsuitable. The species has a moderate probability of being found on the site.

- High Potential. All of the habitat components meeting the species requirements are present and/or most of the habitat on or adjacent to the site is highly suitable. The species has a high probability of being found on the site.
- Present. The species is observed on the site or has been recorded (i.e., CNDDB other reports) on the site recently.

The site assessment was intended to identify the presence or absence of suitable habitat for each special-status species known to occur in the vicinity to determine its potential to occur in the Study Area. The site visit did not constitute a protocol-level survey and was not intended to determine the actual presence or absence of a species; however, if a special-status species was observed during the site visit, its presence was recorded and is discussed in the Results section of this document.

Appendix C presents the evaluation of the potential for occurrence of each special-status plant and wildlife species known to occur in the vicinity of the Study Area with their habitat requirements, potential for occurrence, and rationale for the classification based on criteria listed above. Recommendations for further surveys for species present or with a moderate or high potential to occur in the Study Area are provided in Section 5.0 below.

3.2 Biological Communities

Prior to the site visit, the Soil Survey of Monterey County, California (USDA 1978) was examined to determine if any unique soil types that could support sensitive plant communities and/or aquatic features were present in the Study Area. Biological communities present in the Study Area were classified based on existing plant community descriptions described in the *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986) or *Manual of California Vegetation* (Sawyer et.al. 2009). However, in some cases it is necessary to identify variants of community types or to describe non-vegetated areas that are not described in the literature. Biological communities were classified as sensitive or non-sensitive as defined by CEQA and other applicable laws and regulations.

3.2.1 Non-sensitive Biological Communities

Non-sensitive biological communities are not afforded special protection under state, federal, and local laws, regulations, and ordinances. Impacts to such communities would not be significant under CEQA. These communities may, however, provide suitable habitat for some special-status plant or wildlife species.

3.2.2 Sensitive Biological Communities

Sensitive biological communities are given special protection under CEQA and other applicable federal, state, and local laws, regulations and ordinances. Applicable laws and ordinances are discussed above in Section 2.0. Methods used to identify sensitive biological communities are discussed below.

Wetlands, Non-wetland Waters, and Riparian Vegetation

The Study Area was surveyed to determine if any wetlands, non-wetland waters, or riparian vegetation potentially subject to jurisdiction under the CWA, the Porter-Cologne Water Quality Control Act, the CFCG, and the California Coastal Act. The assessment was based primarily on

the presence of wetland plant indicators, but also included any observed indicators of wetland hydrology or hydric soils. Any potential wetland areas were identified as areas dominated by plant species with a wetland indicator status[1] of OBL, FACW, or FAC as provided on the Corps National Wetlands Plant List (Lichvar et al. 2016). Evidence of wetland hydrology can include direct (primary) indicators, such as visible inundation or saturation, algal mats, and oxidized root channels, or indirect (secondary) indicators, such as a water table within 2 feet of the soil surface during the dry season. Some indicators of wetland soils include dark colored soils, soils with a sulfidic odor, and soils that contain redoximorphic features as defined by the Corps Manual (Environmental Laboratory 1987) and Field Indicators of Hydric Soils in the U.S. (Natural Resources Conservation Service [NRCS] 2010).

A formal wetland delineation was conducted within the Study Area and a delineation report suitable for submission to the Corps and the CCC was prepared.

Other Sensitive Biological Communities

The Study Area was evaluated for the presence of other sensitive biological communities, including riparian areas and sensitive plant communities recognized by the CDFW. If present in the Study Area, these sensitive biological communities were mapped and are described below.

[1] OBL = Obligate, always found in wetlands (> 99% frequency of occurrence); FACW = Facultative wetland, usually found in wetlands (67-99% frequency of occurrence); FAC = Facultative, equal occurrence in wetland or non-wetlands (34-66% frequency of occurrence).

4.0 RESULTS

The Study Area borders the Carmel River lagoon in the Monterey USGS 7.5-minute quadrangle. The Study Area is at the crest and hillside of a north-facing slope that terminates near the edge of the lagoon. The Carmel Meadows residential neighborhood borders and intersects the Study Area to the south. Some sections of the Study Area are located within landscaped backyards and along Ribera Drive and on Mariposa Court. The proposed staging area for the Project is located in an undeveloped lot on Ribera Drive and is surrounded by residences. The remainder of the Study Area is a 30-foot wide alignment through back yards along Ribera Drive and skirting the edge of adjacent undeveloped land. The Project will be designed to minimize impacts to natural vegetation communities and will temporarily affect approximately 15-feet within the Study Area, depending on final alignment. Therefore the following subsections address the results within the full 30-foot wide Study Area.

4.1 Soils

The Study Area contains two soil types (California Soil Resource Laboratory [CSRL] 2020). Soil types in the Study Area are discussed below.

Narlon loamy fine sand. The Narlon loamy fine sand complex consists of somewhat poorly drained soils on the western edge of the Study Area. Runoff is very high in these soils. Soils in this complex have a hydric rating.

Xerothents, dissected. The Xerothents complex consists of well drained soils in the central and eastern portion of the Study Area. These soils formed from mixed, unconsolidated alluvium. Runoff is very high and these soils do not have a hydric rating.

4.2 Hydrology and Topography

The Study Area ranges in elevation from approximately 20 to 100 feet NGVD (all elevations are recorded in NGVD). The Study Area is mainly located along the edge of a steep hillside with the exception of the far western portion which is located along a footpath that provides access to the point of connection with existing sewer line. The Study Area then climbs steeply from the western extent towards the Carmel Meadows residential development.

Precipitation and runoff from the neighborhood are the main natural hydrological sources for the Study Area. Stormwater runoff throughout the Study Area drains north and downslope towards the Carmel River. Several small stormwater culverts originating in the residential neighborhood were observed on the northern edge of the Study Area.

4.3 Special-status Species

4.3.1 Plants

Based on a review of the resources and databases discussed in Section 3.1.1, 75 special-status plant species have been documented in the vicinity of the Study Area (Appendix A, Figure 3). Appendix C summarizes the potential occurrence for each special-status plant species located in the vicinity of the Study Area.

No special-status plant species were observed in the Study Area during the site visits. Of the 75 special-status species documented, none were determined to have a moderate or high potential to occur in the Study Area for one or more of the following reasons

- Absence of specific soil types (e.g., serpentine soils)
- Absence of suitable habitat (e.g., chaparral, coastal scrub, grassland, vernal pools or wetlands)
- Dominance of invasive, non-native species
- Outside the geographic range of species (e.g., Study Area is below known elevation range)
- Outside the known distribution of species (e.g., Study Area is too far north)
- Portions of the Study Area occur within back yards of residences that are routinely disturbed and maintained.

4.3.2 Wildlife

Based on a review of the resources and databases listed in Section 3.1.1, 32 special-status wildlife species have been documented in the vicinity of the Study Area. The locations of special-status wildlife species in the CNDDB within 5 miles of the Study Area are depicted in Figure 4 in Appendix A. Appendix C summarizes the potential for each of these species to occur within the Study Area. Of the 32 special-status species, 30 are considered unlikely, or have no potential, to occur in the Study Area for one or more of the following reasons:

- The Study Area is outside of the known or historical range of the species
- The Study Area lacks suitable aquatic habitat (e.g., rivers, streams, vernal pools)
- The Study Area lacks suitable foraging habitat (e.g., marshes)
- The Study Area lacks suitable nesting structures
- The Study Area lacks suitable soil for den development
- No mine shafts, caves, or abandoned buildings are present
- There is a lack of connectivity with suitable occupied habitat

While the aforementioned factors contribute to the absence of many special-status wildlife species, the Study Area was determined to have adequate conditions and locality to warrant a moderate or high potential for two special-status species to occur. Native nesting birds protected by the CFGC may also occur in the Study Area. These species are discussed below.

Wildlife Species with High Potential to Occur in the Study Area

California red-legged frog (CRLF; *Rana draytonii*). Federally Threatened Species. CDFW Species of Special Concern. CRLF is dependent on suitable aquatic, estivation, and upland habitat. During periods of wet weather, starting with the first rainfall in late fall, CRLF disperse from their estivation sites to seek suitable breeding habitat. Aquatic and breeding habitat is characterized by dense, shrubby, riparian vegetation and deep, still or slow-moving water. Breeding occurs between late November and late April. CRLFs estivate (period of inactivity) during the dry months. Upland habitats include areas within 300-feet of aquatic and riparian habitat and are comprised of grasslands, woodlands, and/or vegetation that provide shelter, forage, and predator avoidance. These upland features provide breeding, non-breeding, feeding, and sheltering habitat for juvenile and adult frogs (e.g., shelter, shade, moisture, cooler temperatures, a prey base, foraging opportunities, and areas for predator avoidance). Upland

habitat can include structural features such as boulders, rocks and organic debris (e.g. downed trees, logs), as well as small mammal burrows and moist leaf litter (USFWS 2010).

This species has been documented in the immediate vicinity of the Study Area in the CNDDB (Occurrence Number 472, CDFW 2020). The occurrence notes that three or more individuals were detected at three sites "between Ribera Road at Calle la Cruz Road and the Water Treatment Plant" in March of 2001. The occurrence also notes that CRLF were observed "throughout (the) south feature" in 2000 (CDFW 2020). In addition, Palo Corona Regional Park is periodically surveyed for CRLF. From 2013 to 2016, larvae and as many as 15 adult CRLF were detected in Entrance Pond within the park, approximately 1,400 feet northeast of the Study Area (Anderson 2016). The Carmel River lagoon also represents breeding habitat for CRLF (DD&A 2016).

No breeding or non-breeding aquatic habitat was observed within the Study Area. However, the south reach of the Carmel River lagoon represents suitable breeding habitat for CRLF. A large portion of the Study Area contains coast live oak woodland with leaf litter, which represents suitable upland refuge habitat for CRLF and all of this habitat falls within 300 feet of the edge of riparian habitat. Limited small mammal burrows were present within the Study Area. No CRLF were observed onsite during the field visit on April 8, 2020.

Wildlife Species with Moderate Potential to Occur in the Study Area

Hoary bat (*Lasiurus cinereus*), WBWG Medium Priority. Hoary bats are highly associated with forested habitats in the western United States, particularly in the Pacific Northwest. They are a solitary species and roost primarily in foliage of both coniferous and deciduous trees, near the ends of branches, usually at the edge of a clearing. Roosts are typically 10 to 30 feet above the ground. They have also been documented roosting in caves, beneath rock ledges, in woodpecker holes, in grey squirrel nests, under driftwood, and clinging to the side of buildings, though this behavior is not typical. Hoary bats are thought to be highly migratory, however, wintering sites and migratory routes have not been well documented. This species tolerates a wide range of temperatures and has been captured at air temperatures between 0 and 22 degrees Celsius. Hoary bats probably mate in the fall, with delayed implantation leading to birth in May through July. They usually emerge late in the evening to forage, typically from just over one hour after sunset to after midnight. This species reportedly has a strong preference for moths, but is also known to eat beetles, flies, grasshoppers, termites, dragonflies, and wasps (WBWG 2015).

The Study Area contains many medium or large coast live oak trees with dense foliage suitable for hoary bat roosting. In addition, the large Monterey cypress trees may also provide roosting habitat. The nearby Carmel River may also support abundant prey for hoary bats. No hoary bats were observed during the field visit on April 8, 2020.

4.3.3 Critical Habitat

The entire Study Area is located within critical habitat unit MNT-2: Carmel River, for CRLF, as designated by the USFWS (75 FR 12815-12959). MNT-2 includes the breeding and non-breeding aquatic and riparian habitat within the Carmel River and lagoon, as well as the riparian, upland, and dispersal habitat surrounding the Carmel River (Appendix A, Figure 5). However, developed land associated with the Carmel Meadows residential neighborhood represents a significant barrier to CRLF dispersal.

No other critical habitat is designated within the Study Area.

4.4 Biological Communities

The Study Area contains woodlands, scrub, developed land cover, landscape/ornamental vegetation, and iceplant mats (Appendix A, Figure 6). Woodland communities in the Study Area included coast live oak woodland and Monterey cypress woodland. Scrub in the Study Area included poison oak scrub and coastal brambles. Coastal brambles have a state rank of S3 and are, therefore, considered a sensitive biological community by CDFW.

In addition, one ephemeral stream originating at a concrete culvert was observed directly outside of the eastern portion of the Study Area, north of Mariposa Court. However, the stream and culvert will not be impacted during the Project and were not included in Table 2. All biological communities in the Study Area are depicted on Figure 6 of Appendix A.

Table 2. Biological Communities in the Study Area

Biological Community Type	Biological Community or Association	Sensitivity Type	Acreage
Sensitive Communities			
Scrub	Coastal brambles	CDFW	0.07
		Subtotal	**0.07**
Non-Sensitive Communities			
Woodland	Monterey cypress stands	N/A	0.08
Woodland	Coast live oak woodland	N/A	0.43
Scrub	Poison oak scrub	N/A	0.08
Herbaceous	Iceplant mats	N/A	0.31
Developed (e.g., hardscape, roads, trails)	Developed	N/A	0.20
Landscape	Landscape/ornamental	N/A	0.24
		Subtotal	**1.34**
		Total	**1.41**

4.4.1 Non-sensitive Biological Communities

Monterey Cypress Stands. Two stands of large Monterey cypress (*Hesperocyparis macrocarpa*) were observed within the Study Area. These stands are relatively narrow and located between residences within the Carmel Meadows neighborhood. Due to the even spacing and location of the trees, these stands are presumed to have been planted or may be remnant stands from before the construction of the subdivision. The understory is sparse in these stands

and contains patches of bare ground, ripgut brome (*Bromus diandrus*), and ornamental plant species.

Coast Live Oak Woodland (CDFW Rank G5/S4). Coast live oak woodland was observed in a large, continuous band throughout the majority of the Study Area. The coast live oak woodland is located on the steep, north-facing slope between the Carmel River lagoon and the landscaped backyards of Carmel Meadows. In the center of the Study Area, coast live oak woodland directly abuts backyard fences. Coast live oaks (*Quercus agrifolia*) are the sole dominants within this community with no other tree species observed. The understory largely consists of ripgut brome and bare ground, although patches of California blackberry (*Rubus ursinus*), coyote brush (*Baccharis pilularis*), and poison oak (*Toxicodendron diversilobum*) are also present within the coast live oak woodland. In some locations where houses bordered the coast live oak woodland, non-native ornamentals have been planted and maintained beneath the trees.

Poison Oak Scrub (CDFW Rank G4/S4). Poison oak scrub was observed exclusively in the western portion of the Study Area on a steep, north-facing slope. This community is predominantly comprised of poison oak, with a few scattered coyote brush. In some locations, English ivy (*Hedera helix*) and California blackberry were observed within the poison oak.

Iceplant Mats. Iceplant mats were observed in multiple patches throughout the Study Area between coast live oak woodland and houses where the iceplant (*Carpobrotus edulis*) had overtaken landscaping. The proposed staging area is also completely covered with iceplant mats. These mats are comprised almost completely of iceplant, although some mats also contains some ripgut brome.

Developed. Developed land cover in the Study Area includes residences, pavement in backyards, the dirt access road at the western terminus of the Project, Mariposa Court, and a small portion of Ribera Road.

Landscape/Ornamental. Landscape/ornamental land cover in the Study Area consists mainly of maintained gardens and landscaping, consisting mainly non-native vegetation in backyards along the length of the Project. This land cover also includes ornamental rock walls and other unvegetated landscape features. In addition, the access path in the center of the Study Area is comprised of a manicured turf that is also considered landscape.

4.4.2 Sensitive Biological Communities

Scrub Communities

Coastal Brambles (CDFW Rank G4/S3)**.** Coastal brambles within the Study Area occurs in several patches on the border between coast live oak woodlands and the landscaped backyards of the residences. Coastal brambles observed within the Study Area are areas dominated by California blackberry (*Rubus ursinus*, FAC). California blackberry is assumed not to be a hydrophyte in these areas based on sloping topography; rather is a deep-rooted species which is able to tap into deep groundwater sources and can grow in dry surface soils. Facultative species occur in uplands 50% of the time. These areas are considered to be uplands due to the lack of hydrology indicators and the absence of hydric soils. The upland conditions at these locations is further illustrated by the presence of upland plant species, such as coyote brush and poison oak and non-native species including pride-of-madeira (*Echium candicans*), poison hemlock (*Conium maculatum*), and English ivy growing within these coastal brambles. As such, these areas are not

considered wetlands. As such, the coastal brambles within the Study Area are not wetlands subject to CCC jurisdiction. Coastal brambles, however, do have a state rank of S3 and are, therefore, considered a sensitive biological community by CDFW.

4.5 Protected Trees

The Study Area contains trees that are considered protected trees per the County Tree Ordinance. The quantity and location of protected trees within the Study Area was not determined during the site assessment. A County-approved arborist will need to conduct a tree survey of the Study Area to document all existing trees and to determine the extent of impacts to trees that are protected by the County Tree Ordinance.

5.0 PROJECT IMPACTS AND MITIGATION MEASURES

The State CEQA Guidelines provide direction for assessing the impacts of projects on biological resources and determining which impacts will be significant. CEQA defines a "significant effect on the environment" as "a substantial adverse change in the physical conditions which exist in the area affected by the proposed project." Under State CEQA Guidelines Section 15065, a project's impacts on biological resources are deemed significant if the project would:

A. substantially reduce the habitat of a fish or wildlife species
B. cause a fish or wildlife population to drop below self-sustaining levels
C. threaten to eliminate a plant or animal community
D. reduce the number or restrict the range of a rare or endangered plant or animal

Additionally, Appendix G of State CEQA Guidelines provides a checklist of other potential impacts to consider when analyzing the significance of project effects. The impacts listed in Appendix G may or may not be significant, depending on the level of the impact. For biological resources, these impacts include whether the project would:

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS;
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFW or USFWS;
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance;
f) Conflict with the provisions of an adopted Habitat Conservation Plan (HCP), Natural Community Conservation Plan, or other approved local, regional, or state HCP.

This report uses these thresholds in the analysis of impacts and determination of the significance of those impacts. The assessment of impacts under CEQA is based on the change caused by the Project relative to the CEQA baseline, which in this case are the existing conditions in the Study Area.

Potential impacts on existing biological resources were evaluated by comparing the quantity and quality of habitats present in the Study Area under baseline conditions to the anticipated conditions after implementation of proposed Project activities. Direct and indirect impacts on special-status species and sensitive natural communities were assessed based on the potential for the species, their habitat, or the natural community in question to be disturbed or enhanced by the proposed Project. Determinations of whether or not Project activities will result in a substantial adverse effect to biological resources are provided in the following sections.

5.1 Impact BIO-1: Special-Status Species

Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS.

The following impact analysis describes the Project's adverse effects on special-status species. Appendix C lists the potentially occurring special-status plant and wildlife species, along with their listing status and basis for the determination of their absence from the Study Area.

Potential Impact BIO-1a: Federally and State-Listed Special-Status Plants and CRPR 1 or 2 Plants

No federally and state-listed plants, special-status plants or CRPR 1 or 2 plants were observed within the Study Area or have a moderate or high potential to occur within the Study Area. Therefore, no impacts to special-status plant species will occur from implementation of the Project.

Level of Significance: No Impact

Potential Impact BIO-1b: California Red-legged Frog

CRLF are considered to have a high potential to occur within the Study Area. The Carmel River lagoon provides suitable breeding habitat for CRLF, and given the proximity of suitable breeding habitat, the Study Area represents suitable upland refuge habitat for CRLF. CRLF could be harassed, harmed, or killed during Project activities, including vegetation removal and ground disturbance; however, avoidance and minimization measures will be implemented to prevent any potential take of CRLF.

The Project may result in a temporary loss in upland refuge habitat throughout the Study Area. However, all temporary impacts will be revegetated according to the Revegetation Plan, as further discussed in Section 5.2 below. Impacts to CRLF is considered significant under CEQA. This impact could be mitigated to a level considered less than significant pursuant to CEQA with implementation of the proposed mitigation measures.

Level of Significance: Potentially Significant

The following mitigation measures will be implemented to avoid, reduce and/or mitigate impacts to CRLF:

<u>Mitigation Measure BIO-1: Workers Environmental Awareness Training</u>

Contractors and employees working on the Project will attend a Worker Environmental Awareness Training Program (WEAP) prior to beginning work at the site. The WEAP will consist of a brief presentation by a USFWS-approved biologist, which may be given either in-person or via an automated PowerPoint presentation. The program will include a description of visual identification of any special-status species and required habitat, an explanation of the status of these species and their protection, consequences of non-compliance, and a description of the Project-specific measures being taken to reduce effects to these species. Documentation of the training (i.e., a sign-in sheet) will be retained at the site and will be submitted with applicable reports.

Mitigation Measure BIO-2: Preconstruction Surveys and Construction Monitoring

Within 48 hours prior to any construction activities, a qualified biologist will conduct surveys for CRLF in and adjacent to the Study Area. A qualified biologist will be on-site during ground-disturbing activities, including fence installation and the operation of heavy equipment (e.g., during excavation and grading activities). The qualified biologist will be given authority to stop any work that may result in take of listed species. If at any time a CRLF is observed within the Project Area and relocation is necessary, the USFWS will be consulted, and the animal will be transported to a suitable relocation site within the Carmel River, outside of the Study Area and released.

Mitigation Measure BIO-3: Exclusion Fence

Exclusionary fencing will be placed around the Project Area to prevent CRLF from entering from any adjacent breeding habitat. Fencing will consist of silt fence or suitable substitute (e.g., ERTEC 48-inch high-visibility orange silt fencing), which will be buried at least 6-inches below the surface (or sealed in a like manner) to prevent incursion under the fence, and will stand at least 36 inches above ground. The fence will also be made of an opaque material for visibility. Exit funnels will be installed to allow any animals that may be occupying the Study Area to escape. Exclusion fencing will be inspected and maintained throughout the Project. Fencing will be removed only when all construction equipment is removed from the site.

The exclusion fence will be checked for breaches on a daily basis by the qualified biologist. However, if a qualified biologist is not required to be on-site for biological monitoring or other tasks, an on-site representative may be appointed to check the fence on a daily basis and conduct repairs. If an on-site representative is conducting inspections and repairs, a qualified biologist will verify the fence status on a weekly basis to assure repairs are occurring as needed. A comprehensive fencing plan will be submitted for District approval.

Mitigation Measure BIO-4: Covering Trenches

To prevent inadvertent entrapment of wildlife, any excavated, steep-walled holes or trenches more than 12 inches deep will either be covered at the close of each working day, or have one or more escape ramps constructed of earth fill or wooden planks installed with slopes less than 4:1 (H:V). Before any such holes or trenches are filled, they will be inspected for wildlife by a qualified biologist.

Mitigation Measure BIO-5: Work Windows

The Project will not operate heavy equipment on-site from 30 minutes after sunrise to 30 minutes before sunset, thereby avoiding disturbances during the most active times for the subject species. The Project may occur year-round.

Mitigation Measure BIO-6: Delineating Boundaries

The boundary of the Project Area will be clearly delineated with highly-visible stakes, fencing, or flagging.

Mitigation Measure BIO-7: Disposal of Trash

To eliminate attractants of predators, any food-related trash will be disposed of in closed containers and removed from the site regularly.

Mitigation Measure BIO-8: No Mono-filament Netting

Mono-filament netting or similar material will not be used on any erosion control devices specified in the SWPPP.

Mitigation Measure BIO-9: Vehicular Traffic

All vehicle traffic will be restricted to established or defined temporary access roads.

Mitigation Measure BIO-10. Revegetation

The Project will revegetate temporary disturbance areas (discussed in Section 5.2), as such, no permanent loss of CRLF upland refugia habitat is anticipated.

Level of Significance After Mitigation: Less Than Significant

Potential Impact BIO-1c: Hoary Bat

Hoary bats are considered to have a moderate potential to occur within the Study Area. Hoary bats may use medium and large coast live oak and Monterey cypress trees for roosting. If left unprotected, Hoary bats may be harassed, harmed, or killed during tree trimming and removal.

The Project may result in a loss of roosting habitat in coast live oak woodland and Monterey cypress stands in the Study Area. However, impacts to natural vegetation, including removal of coast live oak trees and Monterey cypress, will be revegetated according to the Revegetation Plan, discussed in further detail in Section 5.2. Impacts to hoary bats would be considered potentially significant under CEQA. This impact could be mitigated to level considered less than significant pursuant to CEQA with implementation of the proposed mitigation measures.

Level of Significance: Potentially Significant

The following measures will be implemented to reduce and mitigate impacts to hoary bats:

Mitigation Measure BIO-11: Bat Roost Assessment

To avoid impacts to roosting bats, trees and snags should be removed between October 1 and March 31, outside of the maternity roosting season (when female bats may have dependent young). If tree removal must occur between April 1 and September 30, a bat roost habitat assessment should be conducted by a qualified biologist. The bat roost habitat assessment would determine the likelihood of the Study Area supporting roosting bats at the time of tree or snag removal. If the assessment identifies suitable or potentially occupied roosts within the Study Area, a pre-construction bat survey should be performed no more than 14 days prior to removal using site appropriate survey methods to determine if potential roost structures are occupied.

If special-status bat species are detected during these surveys, the removal of trees or snags will be postponed until the end of the maternity roosting season. Irrespective of time of year, all felled trees should remain on the ground for at least 24 hours prior to chipping, off-site removal, or other processing to allow any bats to escape.

In addition, if mature coast live oak Monterey cypress are removed during construction, they will be replaced at a minimum ratio of 1:1 per the Revegetation Plan, as discussed in Section 5.2.

Level of Significance After Mitigation: Less Than Significant with Mitigation

Potential Impact BIO-1d: Common Nesting Birds

No special-status bird species have a moderate or high potential to occur within the Study Area. However, the Project has the potential to impact common nesting birds protected by the CFGC or MBTA. Project activities, such as vegetation and tree removal and ground disturbance, have the potential to impact these species by causing direct mortality of eggs or young, or by causing auditory, vibratory, and/or visual disturbance of a sufficient level to cause abandonment of an active nest. If Project activities occur during the nesting season, which generally extends from February 1 through August 31, nests of common birds could be impacted by construction and other ground-disturbing activities. The Project will revegetate temporary disturbance areas (discussed in Section 5.2 below), so no permanent loss of habitat is anticipated for nesting birds. Impacts to nesting birds would be considered potentially significant under CEQA. This impact could be mitigated to level considered less than significant pursuant to CEQA with implementation of the proposed mitigation measures.

Level of Significance: Potentially Significant

<u>Mitigation Measure BIO-12: Common Nesting Birds</u>

Project activities, such as vegetation removal, grading, or initial ground-disturbance, will be conducted between September 1 and January 31 (outside of the February 1 to August 31 nesting season) to the greatest extent feasible.

If Project activities must be conducted during the nesting season, a pre-construction nesting bird survey will be conducted by a qualified biologist no more than 14 days prior to vegetation removal or initial ground disturbance. The survey will include the Study Area and surrounding vicinity to identify the location and status of any nests that could potentially be affected either directly or indirectly by Project activities.

If active nests of native nesting bird species are located during the nesting bird survey, a work exclusion zone will be established around each nest by the qualified biologist. Established exclusion zones will remain in place until all young in the nest have fledged or the nest otherwise becomes inactive (e.g., due to predation). Appropriate exclusion zone sizes will be determined by a qualified biologist and will vary based on species, nest location, existing visual buffers, noise levels, and other factors. An exclusion zone radius may be as small as 50 feet for common, disturbance-adapted species, or as large as 250 feet or more for raptors. Exclusion zone size will be reduced from established levels by a qualified biologist if nest monitoring findings indicate that Project activities do not adversely impact the nest, and if a reduced exclusion zone would not adversely affect the nest.

Level of Significance After Mitigation: Less Than Significant with Mitigation

Potential Impact BIO-1e: Critical Habitat

The Project will impact upland habitat that is designated critical habitat by the USFWS for California red-legged frogs. Temporary impacts to habitat would occur as the result of vegetation trimming and removal, trenching, and sewer pipeline installation and repair work. All adverse effects will be temporary and all disturbed areas will be revegetated, per Mitigation Measure BIO-13, provided in the following section. Impacts to critical habitat from Project implementation would be less than significant.

Level of significance: Less than Significant

5.2 Impact BIO-2: Sensitive Communities

The CDFW defines sensitive natural communities and vegetation alliances using NatureServe's standard heritage program methodology (CDFG 2007), as described above in Section 2.2. Project impacts to CDFW sensitive natural communities, vegetation alliances/associations, or any such community identified in local or regional plans, policies, and regulations, were considered and evaluated.

The final footprint of the Project will avoid impacts to coastal bramble to the maximum extent feasible. However, the Project may result in temporary impacts to coastal bramble, a sensitive community under CDFW. Impacts to CDFW sensitive natural communities would be considered a significant impact under CEQA. This impact could be mitigated to level considered less than significant pursuant to CEQA with implementation of the Mitigation Measure BIO-13.

Level of Significance: Potentially Significant

Mitigation Measure BIO-13: Revegetation Plan

The Project will avoid impacts to coastal brambles, coast live oak woodland, and Monterey cypress stands to maximum extent feasible. To mitigate for impacts to coastal brambles that cannot be avoided, a Revegetation Plan will be drafted and submitted to CDFW for approval. All temporary impact areas within the Study Area will be mitigated via on-site revegetation at a minimum 1:1 ratio of impacted to restored habitat. Natural recruitment of native vegetation is expected to occur and will be augmented through seeding with a native seed mix. In addition, native California blackberry plugs will be installed throughout the areas of temporary impacts to coastal brambles to re-establish this sensitive natural community. If mature coast live oak and Monterey cypress trees are removed during construction, replacement trees will be planted at a minimum 1:1 ratio. Impacts to coastal brambles from Project implementation would be less than significant after implementation of this mitigation measure.

Level of Significance After Mitigation: Less Than Significant with Mitigation

5.3 Impact BIO-3: Jurisdictional Waters

Wetlands are considered sensitive environmental resources protected at federal, state, and local levels. They provide unique habitat functions and values for wildlife, and provide habitat for plant species adapted to wetland hydrology. Throughout California, the quality and quantity of wetlands has dramatically declined owing to the construction of dams, dikes, and levees, as well as because of water diversions, the filling of wetlands for development, and the overall degradation of water quality by inputs of runoff from agricultural, urban, and infrastructure development and other sources.

The Project will not impact any jurisdictional waters.

Level of Significance: No Impact

5.4 Impact BIO-4: Wildlife Movement

For many species, the landscape is a mosaic of suitable and unsuitable habitat types. Environmental corridors are segments of land that provide a link between these different habitats while also providing cover. Development that fragments natural habitats (i.e., breaks them into smaller, disjunct pieces) can have a twofold impact on wildlife: (1) as habitat patches become smaller they are unable to support as many individuals (patch size), and (2) the area between habitat patches may be unsuitable for wildlife species to traverse (connectivity). Vegetation removal and construction activities within coast live oak woodland may temporarily impact CRLF upland habitat. However, the Project would not develop the Project Area and it would continue to function for local movement of terrestrial species following the revegetation of all temporarily impacted areas.

Level of Significance: Less Than Significant

5.5 Impact BIO-5: Conflicts with Local Policies

Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

Potential Impact BIO-5a: Protected Trees

Protected trees defined by the County Tree Ordinance have been identified within the Study Area. It is anticipated that implementation of the proposed Project will result in unavoidable impacts to trees protected by the County Tree Ordinance. Impacts to protected trees would be considered a significant impact under CEQA.

Level of Significance: Potentially Significant

Mitigation Measure BIO-14: Arborist Survey Report

A County-approved arborist will conduct a tree survey of the Study Area to document all existing trees and to determine the extent of impacts to trees that are protected by the County Tree Ordinance. Information regarding each protected tree within the Study Area will be compiled in

an arborist survey report and submitted to the County as part of the tree removal permit application. The arborist survey report will identify the quantity and location of protected trees that will be impacted by the proposed Project. It is anticipated that protected tree replacement at a 2:1 ratio, and/or a fee will be required by the tree removal permit to mitigate for impacts associated with the removal of protected trees.

Level of Significance After Mitigation: Less Than Significant with Mitigation

5.6 Impact BIO-6: Conflicts with an Adopted Habitat Conservation Plan

Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan. The Project would not conflict with the provisions of an adopted HCP, natural community conservation plan, or other approved local, regional, or state habitat conservation plan. The Study Area is not within a geographic area covered by an adopted HCP or a natural community conservation plan. The Project conforms with all applicable measures and recommendations set forth in the Carmel Area LUP of the *Monterey County Coastal Implementation Plan*.

Level of Significance: No Impact

5.7 Impact BIO-7: Cumulative Impacts

Cumulative impacts on the biological resources that could be affected by the Project may result from a number of past, current, and reasonably foreseeable future projects that occur in the area. Although such projects could result in impacts on these sensitive habitats and species, it is expected that most current and future projects that impact these species and their habitats would be required to mitigate these impacts through the CEQA, Section 1602, or Section 404/401 permitting process, as well as through the ESA Section 7 consultation process. As a result, most projects in the region will mitigate their impacts on these resources, minimizing cumulative impacts on these species.

Through implementation of the avoidance and minimization, and/ or mitigation measures, incorporated into the Project, the proposed Project will not result in a considerable contribution to any significant cumulative impacts to biological resources.

Level of Significance: No Impact

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APPENDIX A

FIGURES

Path: L:\Acad 2000 Files\30000\30026\GIS\ArcMap\Location.mxd

Sources: National Geographic, WRA | Prepared By: njander, 3/12/2020

Figure 1. Study Area Regional Location Map

Carmel Meadows Lift Station Carmel Area Water Disctict
Monterey County, California

0 0.25 0.5 Miles

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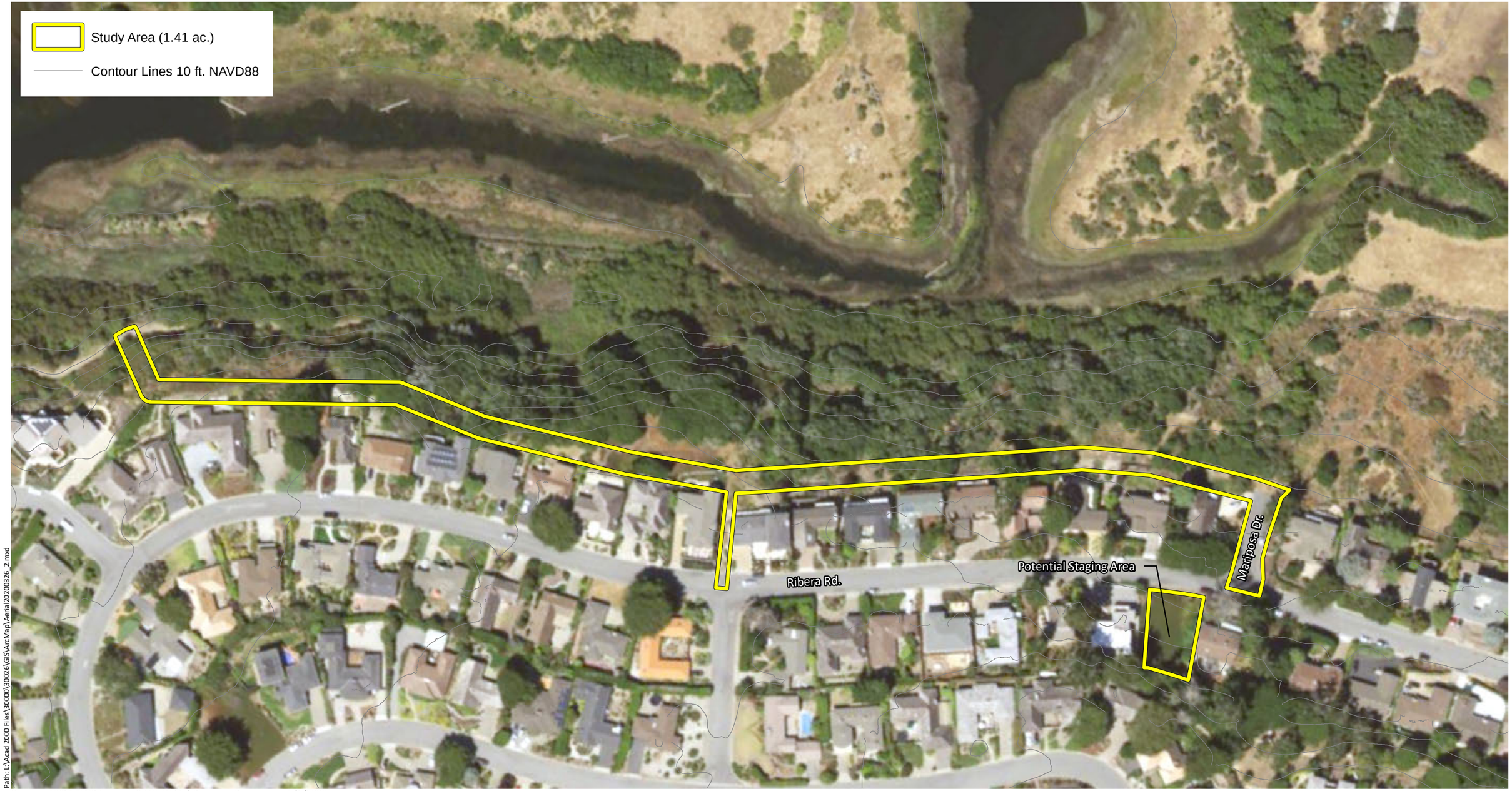

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Sources: USDA NAIP Imagery 2016, WRA | Prepared By: njander, 5/1/2020

Figure 2. Study Area

Carmel Meadows Lift Station
Carmel Area Wastewater District
Monterey County, CA

0 200 400 Feet

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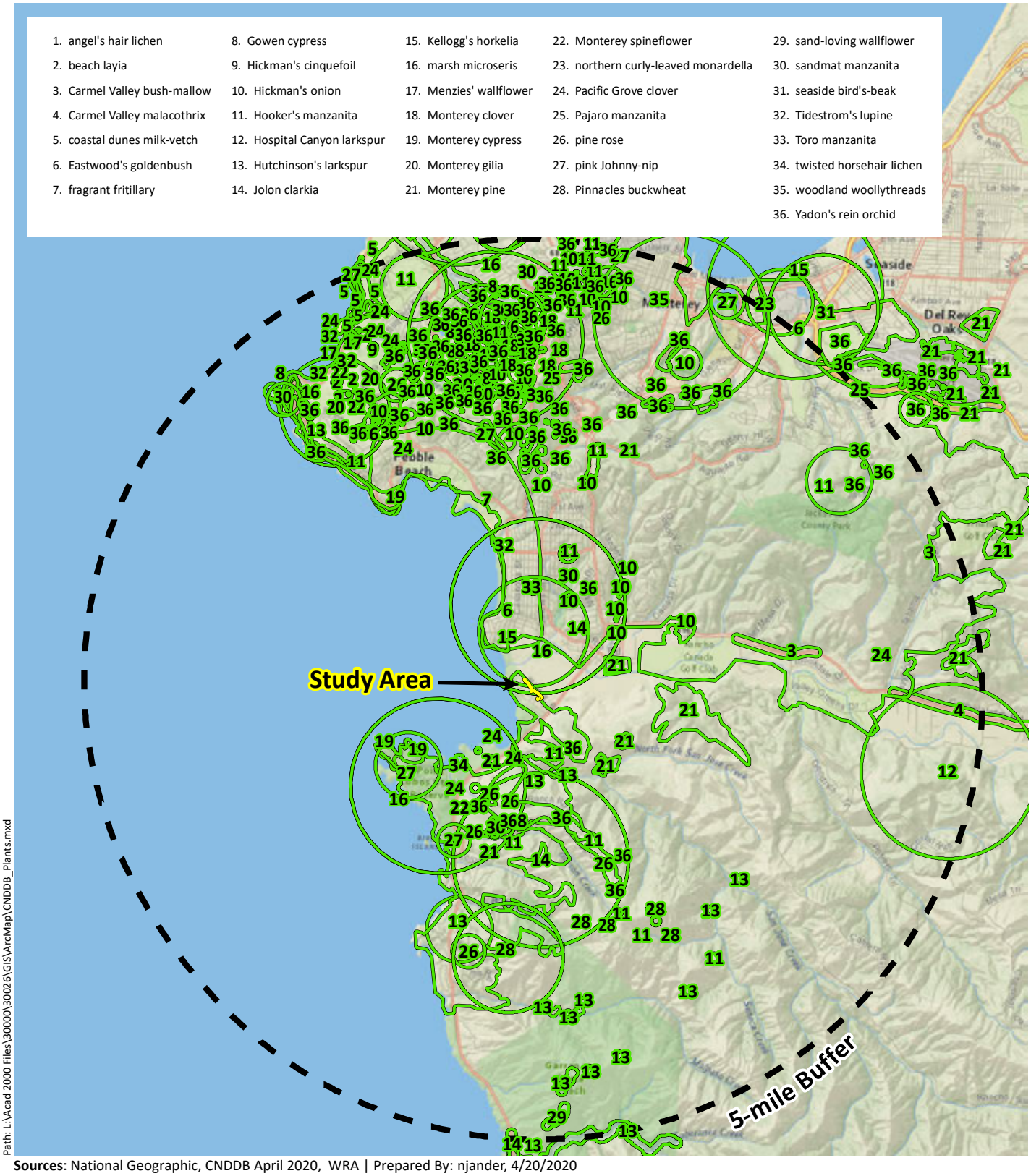

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Sources: National Geographic, CNDDB April 2020, WRA | Prepared By: njander, 4/20/2020

Figure 3. Special-Status Plant Species Documented within 5-miles of the Study Area

Carmel Meadows Lift Station
Carmel Area Wastewater District
Monterey County, California

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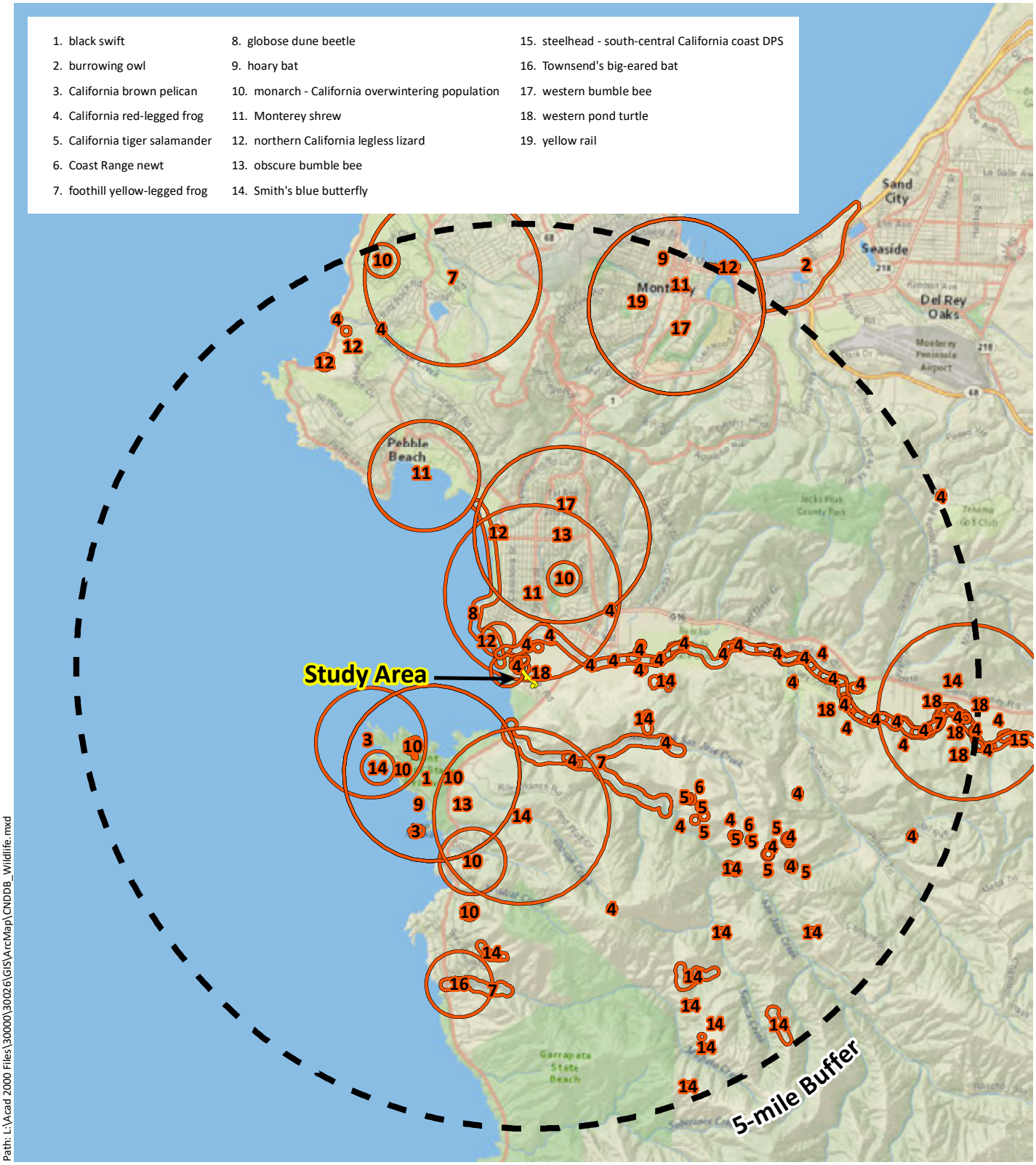

Path: L:\Acad 2000 Files\30000\30026\GIS\ArcMap\CNDDB_Wildlife.mxd

Sources: National Geographic, CNDDB April 2020, WRA | Prepared By: njander, 4/20/2020

Figure 4. Special-Status Wildlife Species Documented within 5-miles of the Study Area

Carmel Meadows Lift Station
Carmel Area Wastewater District
Monterey County, California

0 1 2 Miles

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Sources: USDA NAIP Imagery 2018, USFWS, WRA | Prepared By: njander, 5/1/2020

Figure 5. Critical Habitat

Carmel Meadows Lift Station
Carmel Area Wastewater District
Monterey County, CA

0 0.5 1 Miles

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Sources: USDA NAIP Imagery 2018, WRA | Prepared By: njander, 5/13/2020

Source: L:\Acad 2000 Files\30000\30026\GIS\ArcMap\BioComms20200413.mxd

Figure 6. Biological Communities in the Study Area

Carmel Meadows Lift Station
Carmel Area Wastewater District
Monterey County, CA

0 200 400 Feet

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ENVIRONMENTAL CONSULTANTS

APPENDIX B

LIST OF OBSERVED SPECIES

Appendix B-1. Plant species observed during April 8, 2020 site visit.

Scientific Name	Common Name	Origin	Form	Rarity Status[1]	CAL-IPC Status[2]	Wetland Status[3]
Acacia longifolia	Golden wattle	non-native	tree	-	-	-
Aesculus californica	Buckeye	native	tree	-	-	-
Allium triquetrum	White flowered onion	non-native	perennial herb (bulb)	-	-	-
Avena barbata	Slim oat	non-native (invasive)	annual, perennial grass	-	Moderate	-
Baccharis pilularis	Coyote brush	native	shrub	-	-	-
Brassica rapa	Common mustard	non-native (invasive)	annual herb	-	Limited	FACU
Bromus diandrus	Ripgut brome	non-native (invasive)	annual grass	-	Moderate	-
Bromus hordeaceus	Soft chess	non-native (invasive)	annual grass	-	Limited	FACU
Carduus pycnocephalus ssp. pycnocephalus	Italian thistle	non-native (invasive)	annual herb	-	Moderate	-
Carpobrotus edulis	Iceplant	non-native (invasive)	perennial herb	-	High	-
Ceanothus thyrsiflorus	Blueblossom	native	tree, shrub	-	-	-

Scientific Name	Common Name	Origin	Form	Rarity Status[1]	CAL-IPC Status[2]	Wetland Status[3]
Cirsium vulgare	Bullthistle	non-native (invasive)	perennial herb	-	Moderate	FACU
Claytonia parviflora ssp. parviflora	Miner's lettuce	native	annual herb	-	-	FACU
Conium maculatum	Poison hemlock	non-native (invasive)	perennial herb	-	Moderate	FACW
Convolvulus arvensis	Field bindweed	non-native	perennial herb, vine	-	-	-
Cortaderia jubata	Andean pampas grass	non-native (invasive)	perennial grass	-	High	FACU
Crassula multicava ssp. multicava	Cape province pygmyweed	non-native	perennial herb, shrub	-	-	-
Cyperus eragrostis	Tall cyperus	native	perennial grasslike herb	-	-	FACW
Delairea odorata	Cape ivy	non-native (invasive)	perennial herb	-	High	-
Echium candicans	Pride of madeira	non-native (invasive)	shrub	-	Limited	-
Foeniculum vulgare	Fennel	non-native (invasive)	perennial herb	-	High	-
Frangula californica	California coffeeberry	native	shrub	-	-	-

Scientific Name	Common Name	Origin	Form	Rarity Status[1]	CAL-IPC Status[2]	Wetland Status[3]
Genista monspessulana	French broom	non-native (invasive)	shrub	-	High	-
Geranium dissectum	Wild geranium	non-native (invasive)	annual herb	-	Limited	-
Hedera helix	English ivy	non-native (invasive)	vine, shrub	-	High	FACU
Helminthotheca echioides	Bristly ox-tongue	non-native (invasive)	annual, perennial herb	-	Limited	FAC
Hesperocyparis macrocarpa	Monterey cypress	native	tree	Rank 1B.2	-	-
Hirschfeldia incana	Short-podded mustard	non-native (invasive)	perennial herb	-	Moderate	-
Hordeum murinum	Foxtail barley	non-native (invasive)	annual grass	-	Moderate	FACU
Juncus patens	Common rush	native	perennial grasslike herb	-	-	FACW
Lactuca serriola	Prickly lettuce	non-native	annual herb	-	-	FACU
Lamium purpureum	Purple dead nettle	non-native	annual herb	-	-	-

Scientific Name	Common Name	Origin	Form	Rarity Status[1]	CAL-IPC Status[2]	Wetland Status[3]
Limonium perezii	Canarian sea lavender	non-native	perennial herb	-	-	-
Lotus corniculatus	Bird's foot trefoil	non-native	perennial herb	-	-	FAC
Lysimachia arvensis	Scarlet pimpernel	non-native	annual herb	-	-	FAC
Medicago polymorpha	California burclover	non-native (invasive)	annual herb	-	Limited	FACU
Myoporum laetum	Ngaio tree	non-native (invasive)	tree, shrub	-	Moderate	FACU
Myrica sp.	-	-	-	-	-	-
Oxalis pes-caprae	Bermuda buttercup	non-native (invasive)	perennial herb	-	Moderate	-
Plantago coronopus	Cut leaf plantain	non-native	annual herb	-	-	FAC
Plantago lanceolata	Ribwort	non-native (invasive)	perennial herb	-	Limited	FAC
Prunus cerasifera	Cherry plum	non-native (invasive)	tree	-	Limited	-
Quercus agrifolia	Coast live oak	native	tree	-	-	-
Rosa californica	California wild rose	native	shrub	-	-	FAC
Rubus ursinus	California blackberry	native	vine, shrub	-	-	FAC

Scientific Name	Common Name	Origin	Form	Rarity Status[1]	CAL-IPC Status[2]	Wetland Status[3]
Rumex crispus	Curly dock	non-native (invasive)	perennial herb	-	Limited	FAC
Salix lasiolepis	Arroyo willow	native	tree, shrub	-	-	FACW
Silybum marianum	Milk thistle	non-native (invasive)	annual, perennial herb	-	Limited	-
Sisyrinchium bellum	Blue eyed grass	native	perennial herb	-	-	FACW
Stachys sp.	-	-	-	-	-	-
Toxicodendron diversilobum	Poison oak	native	vine, shrub	-	-	FACU
Trifolium dubium	Shamrock	non-native	annual herb	-	-	UPL
Vinca major	Vinca	non-native (invasive)	perennial herb	-	Moderate	-
Zantedeschia aethiopica	Callalily	non-native (invasive)	perennial herb	-	Limited	OBL

- All species identified using the *Jepson eFlora* [Jepson Flora Project (eds.) 2020]; nomenclature follows *Jepson eFlora* [Jepson Flora Project (eds.) 2020]

*Special-status only within its native range. The Study Area is outside of the native range of this species.

[1]Rarity Status: The CNPS Inventory of Rare and Endangered Plants (CNPS 2020)

FE:	Federal Endangered
FT:	Federal Threatened
SE:	State Endangered
ST:	State Threatened
SR:	State Rare
Rank 1A:	Plants presumed extinct in California
Rank 1B:	Plants rare, threatened, or endangered in California and elsewhere
Rank 2:	Plants rare, threatened, or endangered in California, but more common elsewhere
Rank 3:	Plants about which we need more information – a review list

Rank 4: Plants of limited distribution – a watch list

[2]Invasive Status: California Invasive Plant Inventory (Cal-IPC 2020)

High: Severe ecological impacts; high rates of dispersal and establishment; most are widely distributed ecologically.

Moderate: Substantial and apparent ecological impacts; moderate-high rates of dispersal, establishment dependent on disturbance; limited-moderate distribution ecologically

Limited: Minor or not well documented ecological impacts; low-moderate rate of invasiveness; limited distribution ecologically

Assessed: Assessed by Cal-IPC and determined to not be an existing current threat

[3]Wetland Status: National List of Plant Species that Occur in Wetlands, California – Arid West Region (Lichvar et al. 2016)

OBL: Almost always found in wetlands;

FACW: Usually found in wetlands

FAC: Equally found in wetlands and uplands

FACU: Usually not found in wetlands

UPL: Almost never found in wetlands

NL: Not listed, assumed almost never found in wetlands

NI: No information; not factored during wetland delineation

Appendix B-2. Wildlife species observed in the Project Area on April 8, 2020.

Scientific Name	Common Name
Birds	
Agelaius phoeniceus	Red-winged blackbird
Aphelocoma californica	California scrub-jay
Baeolophus inornatus	Oak titmouse
Buteo lineatus	Red-shouldered hawk
Callipepla californica	California quail
Calypte anna	Anna's hummingbird
Cathartes aura	Turkey vulture
Colaptes auratus	Northern flicker
Corvus brachyrhynchos	American crow
Dryobates nuttallii	Nuttall's woodpecker
Geothlypis trichas	Common yellowthroat
Junco hyemalis	Dark-eyed junco
Empidonax difficilis	Pacific-slope flycatcher
Haemorhous mexicanus	House finch
Melospiza melodia	Song sparrow
Melanerpes formicivorus	Acorn woodpecker
Mimus polyglottos	Northern mockingbird
Pheucticus melanocephalus	Black-headed grosbeak
Poecile rufescens	Chesnut-backed chickadee
Psaltriparus minimus	Bushtit
Sayornis nigricans	Black phoebe
Selasphorus sasin	Allen's hummingbird
Streptopelia decaocto	Eurasian collared-dove

Scientific Name	Common Name
Amphibians	
Pseudacris sierra	Sierran treefrog

APPENDIX C

SPECIAL-STATUS PLANT AND WILDLIFE SPECIES POTENTIALS TABLE

Appendix C. Potential for Special-Status Plant and Wildlife Species to Occur in the Study Area. List compiled from the California Department of Fish and Wildlife (CDFW) Natural Diversity Database (2020), U.S. Fish and Wildlife Service (USFWS) Species Lists (2020), and California Native Plant Society (CNPS) Electronic Inventory (2020) searches of the 5 Quad Search centered on the Monterey USGS 7.5-minute quadrangle.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
Plants				
vernal pool bent grass *Agrostis lacuna-vernalis*	Rank 1B.1	Vernal pools (mima mounds). Elevation ranges from 375 to 475 feet (115 to 145 meters). Blooms Apr-May.	**No Potential.** Suitable habitat not present within Study Area. Study Area is out of the species elevation range.	No further actions are recommended.
Hickman's onion *Allium hickmanii*	Rank 1B.2	Closed-cone coniferous forest, chaparral (maritime), coastal prairie, coastal scrub, valley and foothill grassland. Elevation ranges from 15 to 655 feet (5 to 200 meters). Blooms Mar-May.	**Unlikely.** Suitable habitat not present within the Study Area. Portions of the Study Area that are considered woodland are frequently disturbed due to close proximity to residential homes.	No further actions are recommended.
Howell's onion *Allium howellii var. howellii*	Rank 4.3	Valley and foothill grassland. Elevation ranges from 160 to 7220 feet (50 to 2200 meters). Blooms Mar-Apr.	**No Potential.** Suitable habitat not present within Study Area. Study Area is out of the species elevation range.	No further actions are recommended.
Little Sur manzanita *Arctostaphylos edmundsii*	Rank 1B.2	Coastal bluff scrub, chaparral. Elevation ranges from 30 to 345 feet (10 to 105 meters). Blooms Nov-Apr (May).	**No Potential.** No manzanita observed in the Study Area. Suitable habitat not present within Study Area. Portions of the Study Area are frequently disturbed due to close proximity to residential homes and are dominated by non-native invasive species.	No further actions are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
Hooker's manzanita *Arctostaphylos hookeri ssp. hookeri*	Rank 1B.2	Closed-cone coniferous forest, chaparral, cismontane woodland, coastal scrub. Elevation ranges from 195 to 1760 feet (60 to 536 meters). Blooms Jan-Jun.	**Unlikely.** Suitable habitat not present within the Study Area. Portions of the Study Area are frequently disturbed due to close proximity to residential homes and are dominated by non-native invasive species. There is no coniferous forest or coniferous forest habitat within the Study Area.	No further actions are recommended.
Toro manzanita *Arctostaphylos montereyensis*	Rank 1B.2	Chaparral (maritime), cismontane woodland, coastal scrub. Elevation ranges from 95 to 2395 feet (30 to 730 meters). Blooms Feb-Mar.	**No Potential.** No manzanita observed in the Study Area. Suitable habitat not present within Study Area. Coastal scrub and chaparral habitats are not present within the Study Area.	No further actions are recommended.
Pajaro manzanita *Arctostaphylos pajaroensis*	Rank 1B.1	Chaparral (sandy). Elevation ranges from 95 to 2495 feet (30 to 760 meters). Blooms Dec-Mar.	**No Potential.** No manzanita observed in the Study Area. Suitable habitat not present within Study Area. Coastal scrub and chaparral habitats are not present within the Study Area.	No further actions are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
sandmat manzanita *Arctostaphylos pumila*	Rank 1B.2	Closed-cone coniferous forest, chaparral (maritime), cismontane woodland, coastal dunes, coastal scrub. Elevation ranges from 5 to 675 feet (3 to 205 meters). Blooms Feb-May.	**No Potential.** No manzanita observed in the Study Area. Suitable habitat not present within Study Area. Coastal scrub and chaparral habitats are not present within the Study Area.	No further actions are recommended.
ocean bluff milk-vetch *Astragalus nuttallii var. nuttallii*	Rank 4.2	Coastal bluff scrub, coastal dunes. Elevation ranges from 5 to 395 feet (3 to 120 meters). Blooms Jan-Nov.	**No Potential.** Suitable habitat not present within Study Area. Coastal scrub and chaparral are not present within the Study Area.	No further actions are recommended.
coastal dunes milk-vetch *Astragalus tener var. titi*	FE, SE, Rank 1B.1	Coastal bluff scrub (sandy), coastal dunes, coastal prairie (mesic). Elevation ranges from 0 to 165 feet (1 to 50 meters). Blooms Mar-May.	**No Potential.** Suitable habitat not present within Study Area. Coastal scrub and prairie habitats are not present within the Study Area.	No further actions are recommended.
twisted horsehair lichen *Bryoria spiralifera*	Rank 1B.1	North coast coniferous forest (immediate coast). Elevation ranges from 0 to 100 feet (0 to 30 meters).	**No Potential.** Suitable habitat not present within Study Area. There is no coniferous forest habitat present within the Study Area.	No further actions are recommended.
pink Johnny-nip *Castilleja ambigua var. insalutata*	Rank 1B.1	Coastal prairie, coastal scrub. Elevation ranges from 0 to 330 feet (0 to 100 meters). Blooms May-Aug.	**No Potential.** Suitable habitat not present within Study Area. Coastal scrub and prairie habitats are not present within the Study Area.	No further actions are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
Monterey Coast paintbrush *Castilleja latifolia*	Rank 4.3	Closed-cone coniferous forest, cismontane woodland (openings), coastal dunes, coastal scrub. Elevation ranges from 0 to 605 feet (0 to 185 meters). Blooms Feb-Sep.	**No Potential.** Suitable habitat not present within Study Area. There is no coniferous forest habitat present within the Study Area.	No further actions are recommended.
Point Reyes ceanothus *Ceanothus gloriosus var. gloriosus*	Rank 4.3	Coastal bluff scrub, closed-cone coniferous forest, coastal dunes, coastal scrub. Elevation ranges from 15 to 1705 feet (5 to 520 meters). Blooms Mar-May.	**Unlikely.** Suitable habitat not present within the Study Area. Portions of the Study Area are frequently disturbed due to close proximity to residential homes and are dominated by non-native invasive species.	No further actions are recommended.
Monterey ceanothus *Ceanothus rigidus*	Rank 4.2	Closed-cone coniferous forest, chaparral, coastal scrub. Elevation ranges from 5 to 1805 feet (3 to 550 meters). Blooms Feb-Apr(Jun).	**No Potential.** Suitable habitat not present within Study Area. There is no coniferous forest habitat present within the Study Area.	No further actions are recommended.
Congdon's tarplant *Centromadia parryi ssp. congdonii*	Rank 1B.1	Valley and foothill grassland (alkaline). Elevation ranges from 0 to 755 feet (0 to 230 meters). Blooms May-Oct(Nov).	**No Potential.** Suitable habitat not present within Study Area. Study Area does not include valley and foothill grassland habitat.	No further actions are recommended.
Douglas' spineflower *Chorizanthe douglasii*	Rank 4.3	Chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, valley and foothill grassland. Elevation ranges from 180 to 5250 feet (55 to 1600 meters). Blooms Apr-Jul.	**No Potential.** Suitable habitat not present within Study Area. Study Area is out of the species elevation range.	No further actions are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
Fort Ord spineflower *Chorizanthe minutiflora*	Rank 1B.2	Chaparral (maritime), coastal scrub. Elevation ranges from 180 to 490 feet (55 to 150 meters). Blooms Apr-Jul.	**No Potential.** Suitable habitat not present within Study Area. Study Area is out of the species elevation range.	No further actions are recommended.
Monterey spineflower *Chorizanthe pungens var. pungens*	FT, Rank 1B.2	Chaparral (maritime), cismontane woodland, coastal dunes, coastal scrub, valley and foothill grassland. Elevation ranges from 5 to 1475 feet (3 to 450 meters). Blooms Apr-Jun(Jul-Aug).	**Unlikely.** Suitable habitat not present within the Study Area. Portions of the Study Area are frequently disturbed due to close proximity to residential homes and are dominated by non-native invasive species.	No further actions are recommended.
robust spineflower *Chorizanthe robusta var. robusta*	FE, Rank 1B.1	Chaparral (maritime), cismontane woodland (openings), coastal dunes, coastal scrub. Elevation ranges from 5 to 985 feet (3 to 300 meters). Blooms Apr-Sep.	**Unlikely.** Suitable habitat not present within the Study Area. Portions of the Study Area are frequently disturbed due to close proximity to residential homes and are dominated by non-native invasive species.	No further actions are recommended.
Jolon clarkia *Clarkia jolonensis*	Rank 1B.2	Chaparral, cismontane woodland, coastal scrub, riparian woodland. Elevation ranges from 65 to 2165 feet (20 to 660 meters). Blooms Apr-Jun.	**Unlikely.** Suitable habitat not present within the Study Area. Portions of the Study Area are frequently disturbed due to close proximity to residential homes and are dominated by non-native invasive species.	No further actions are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
Lewis' clarkia *Clarkia lewisii*	Rank 4.3	Broadleafed upland forest, closed-cone coniferous forest, chaparral, cismontane woodland, coastal scrub. Elevation ranges from 95 to 3920 feet (30 to 1195 meters). Blooms May-Jul.	**No Potential.** Suitable habitat not present within Study Area. There is no coniferous forest habitat present within the Study Area.	No further actions are recommended.
San Francisco collinsia *Collinsia multicolor*	Rank 1B.2	Closed-cone coniferous forest, coastal scrub. Elevation ranges from 95 to 820 feet (30 to 250 meters). Blooms (Feb)Mar-May.	**No Potential.** Suitable habitat not present within Study Area. There is no coniferous forest habitat present within the Study Area.	No further actions are recommended.
seaside bird's-beak *Cordylanthus rigidus ssp. littoralis*	SE, Rank 1B.1	Closed-cone coniferous forest, chaparral (maritime), cismontane woodland, coastal dunes, coastal scrub. Elevation ranges from 0 to 1690 feet (0 to 515 meters). Blooms Apr-Oct.	**Unlikely.** Suitable habitat not present within the Study Area. Portions of the Study Area are frequently disturbed due to close proximity to residential homes and are dominated by non-native invasive species.	No further actions are recommended.
branching beach aster *Corethrogyne leucophylla*	Rank 3.2	Closed-cone coniferous forest, coastal dunes. Elevation ranges from 5 to 195 feet (3 to 60 meters). Blooms May,Jul,Aug,Sep,Oct,Dec.	**No Potential.** Suitable habitat not present within Study Area. There is no coniferous forest habitat present within the Study Area.	No further actions are recommended.
Rattan's cryptantha *Cryptantha rattanii*	Rank 4.3	Cismontane woodland, riparian woodland, valley and foothill grassland. Elevation ranges from 800 to 3000 feet (245 to 915 meters). Blooms Apr-Jul.	**No Potential.** Suitable habitat not present within Study Area. There is no riparian woodland and grassland habitat present within the Study Area.	No further actions are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
Hospital Canyon larkspur *Delphinium californicum ssp. interius*	Rank 1B.2	Chaparral (openings), cismontane woodland (mesic), coastal scrub. Elevation ranges from 635 to 3595 feet (195 to 1095 meters). Blooms Apr-Jun.	**Unlikely.** Suitable habitat not present within the Study Area. Portions of the Study Area are frequently disturbed due to close proximity to residential homes and are dominated by non-native invasive species.	No further actions are recommended.
Hutchinson's larkspur *Delphinium hutchinsoniae*	Rank 1B.2	Broadleafed upland forest, chaparral, coastal prairie, coastal scrub. Elevation ranges from 0 to 1400 feet (0 to 427 meters). Blooms Mar-Jun.	**Unlikely.** Suitable habitat not present within the Study Area. Portions of the Study Area are frequently disturbed due to close proximity to residential homes and are dominated by non-native invasive species.	No further actions are recommended.
umbrella larkspur *Delphinium umbraculorum*	Rank 1B.3	Chaparral, cismontane woodland. Elevation ranges from 1310 to 5250 feet (400 to 1600 meters). Blooms Apr-Jun.	**Unlikely.** Suitable habitat not present within the Study Area. Portions of the Study Area are frequently disturbed due to close proximity to residential homes and are dominated by non-native invasive species.	No further actions are recommended.
Eastwood's goldenbush *Ericameria fasciculata*	Rank 1B.1	Closed-cone coniferous forest, chaparral (maritime), coastal dunes, coastal scrub. Elevation ranges from 95 to 900 feet (30 to 275 meters). Blooms Jul-Oct.	**No Potential.** Suitable habitat not present within Study Area. There is no coniferous forest habitat present within the Study Area.	No further actions are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
elegant wild buckwheat *Eriogonum elegans*	Rank 4.3	Cismontane woodland, valley and foothill grassland. Elevation ranges from 655 to 5005 feet (200 to 1525 meters). Blooms May-Nov.	**No Potential.** Suitable habitat not present within Study Area. There is no grassland habitat present within the Study Area.	No further actions are recommended.
Pinnacles buckwheat *Eriogonum nortonii*	Rank 1B.3	Chaparral, valley and foothill grassland. Elevation ranges from 980 to 3200 feet (300 to 975 meters). Blooms (Apr)May-Aug(Sep).	**Unlikely.** Suitable habitat not present within the Study Area. Portions of the Study Area are frequently disturbed due to close proximity to residential homes and are dominated by non-native invasive species. No grassland habitat is present within the Study Area.	No further actions are recommended.
sand-loving wallflower *Erysimum ammophilum*	Rank 1B.2	Chaparral (maritime), coastal dunes, coastal scrub. Elevation ranges from 0 to 195 feet (0 to 60 meters). Blooms Feb-Jun.	**Unlikely.** Suitable habitat not present within the Study Area. Portions of the Study Area are frequently disturbed due to close proximity to residential homes and are dominated by non-native invasive species.	No further actions are recommended.
Menzies wallflower *Erysimum menziesii*	FE, SE, Rank 1B.1	Coastal dunes. Elevation ranges from 0 to 115 feet (0 to 35 meters). Blooms Mar-Sep.	**No Potential.** Suitable habitat not present within Study Area. Coastal dune habitat is not present within the Study Area.	No further actions are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
fragrant fritillary *Fritillaria liliacea*	Rank 1B.2	Cismontane woodland, coastal prairie, coastal scrub, valley and foothill grassland. Elevation ranges from 5 to 1345 feet (3 to 410 meters). Blooms Feb-Apr.	**Unlikely.** Suitable habitat not present within the Study Area. Portions of the Study Area are frequently disturbed due to close proximity to residential homes and are dominated by non-native invasive species.	No further actions are recommended.
Santa Lucia bedstraw *Galium clementis*	Rank 1B.3	Lower montane coniferous forest, upper montane coniferous forest. Elevation ranges from 3705 to 5840 feet (1130 to 1780 meters). Blooms (Apr)May-Jul.	**No Potential.** Suitable habitat not present within Study Area. Study Area is out of the species elevation range.	No further actions are recommended.
Monterey gilia *Gilia tenuiflora ssp. arenaria*	FE, ST, Rank 1B.2	Chaparral (maritime), cismontane woodland, coastal dunes, coastal scrub. Elevation ranges from 0 to 150 feet (0 to 45 meters). Blooms Apr-Jun.	**Unlikely.** Suitable habitat not present within the Study Area. Portions of the Study Area are frequently disturbed due to close proximity to residential homes and are dominated by non-native invasive species.	No further actions are recommended.
San Francisco gumplant *Grindelia hirsutula var. maritima*	Rank 3.2	Coastal bluff scrub, coastal scrub, valley and foothill grassland. Elevation ranges from 45 to 1310 feet (15 to 400 meters). Blooms Jun-Sep.	**Unlikely.** Suitable habitat not present within Study Area. No serpentine soils present within the Study Area.	No further actions are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
Gowen cypress *Hesperocyparis goveniana*	FT, Rank 1B.2	Closed-cone coniferous forest, chaparral (maritime). Elevation ranges from 95 to 985 feet (30 to 300 meters).	**No Potential.** Suitable habitat not present within Study Area. There is no coniferous forest habitat present within the Study Area.	No further actions are recommended.
Monterey cypress *Hesperocyparis macrocarpa*	Rank 1B.2	Closed-cone coniferous forest. Elevation ranges from 30 to 100 feet (10 to 30 meters).	**No Potential.** Suitable habitat not present within Study Area. There is no coniferous forest habitat present within the Study Area.	No further actions are recommended.
Kellogg's horkelia *Horkelia cuneata var. sericea*	Rank 1B.1	Closed-cone coniferous forest, chaparral (maritime), coastal dunes, coastal scrub. Elevation ranges from 30 to 655 feet (10 to 200 meters). Blooms Apr-Sep.	**No Potential.** Suitable habitat not present within Study Area. There is no coniferous forest and coastal dune habitat present within the Study Area.	No further actions are recommended.
Point Reyes horkelia *Horkelia marinensis*	Rank 1B.2	Coastal dunes, coastal prairie, coastal scrub. Elevation ranges from 15 to 2475 feet (5 to 755 meters). Blooms May-Sep.	**Unlikely.** Suitable habitat not present within the Study Area. Portions of the Study Area are frequently disturbed due to close proximity to residential homes and are dominated by non-native invasive species.	No further actions are recommended.
coast iris *Iris longipetala*	Rank 4.2	Coastal prairie, lower montane coniferous forest, meadows and seeps. Elevation ranges from 0 to 1970 feet (0 to 600 meters). Blooms Mar-May.	**No Potential.** Suitable habitat not present within Study Area. There is no coniferous forest habitat present within the Study Area.	No further actions are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
Contra Costa goldfields *Lasthenia conjugens*	FE, Rank 1B.1	Cismontane woodland, playas (alkaline), valley and foothill grassland, vernal pools. Elevation ranges from 0 to 1540 feet (0 to 470 meters). Blooms Mar-Jun.	**Unlikely.** Suitable habitat not present within Study Area. Site has been disturbed and no vernal pool habitat is present within the Study Area.	No further actions are recommended.
beach layia *Layia carnosa*	FE, SE, Rank 1B.1	Coastal dunes, coastal scrub (sandy). Elevation ranges from 0 to 195 feet (0 to 60 meters). Blooms Mar-Jul.	**Unlikely.** Suitable habitat not present within the Study Area. Portions of the Study Area are frequently disturbed due to close proximity to residential homes and are dominated by non-native invasive species.	No further actions are recommended.
large-flowered leptosiphon *Leptosiphon grandiflorus*	Rank 4.2	Coastal bluff scrub, closed-cone coniferous forest, cismontane woodland, coastal dunes, coastal prairie, coastal scrub, valley and foothill grassland. Elevation ranges from 15 to 4005 feet (5 to 1220 meters). Blooms Apr-Aug.	**Unlikely.** Suitable habitat not present within the Study Area. Portions of the Study Area are frequently disturbed due to close proximity to residential homes and are dominated by non-native invasive species.	No further actions are recommended.
small-leaved lomatium *Lomatium parvifolium*	Rank 4.2	Closed-cone coniferous forest, chaparral, coastal scrub, riparian woodland. Elevation ranges from 65 to 2295 feet (20 to 700 meters). Blooms Jan-Jun.	**Unlikely.** Suitable habitat not present within the Study Area. Portions of the Study Area are frequently disturbed due to close proximity to residential homes and are dominated by non-native invasive species.	No further actions are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
Tidestrom's lupine *Lupinus tidestromii*	FE, SE, Rank 1B.1	Coastal dunes. Elevation ranges from 0 to 330 feet (0 to 100 meters). Blooms Apr-Jun.	**No Potential.** Suitable habitat not present within Study Area. Study Area does not contain coastal dune habitat.	No further actions are recommended.
Carmel Valley bush-mallow *Malacothamnus palmeri var. involucratus*	Rank 1B.2	Chaparral, cismontane woodland, coastal scrub. Elevation ranges from 95 to 3610 feet (30 to 1100 meters). Blooms Apr-Oct.	**Unlikely.** Suitable habitat not present within the Study Area. Portions of the Study Area are frequently disturbed due to close proximity to residential homes and are dominated by non-native invasive species.	No further actions are recommended.
Santa Lucia bush-mallow *Malacothamnus palmeri var. palmeri*	Rank 1B.2	Chaparral (rocky). Elevation ranges from 195 to 1180 feet (60 to 360 meters). Blooms May-Jul.	**No Potential.** Suitable habitat not present within Study Area. Study Area is out of the species elevation range.	No further actions are recommended.
Carmel Valley malacothrix *Malacothrix saxatilis var. arachnoidea*	Rank 1B.2	Chaparral (rocky), coastal scrub. Elevation ranges from 80 to 3400 feet (25 to 1036 meters). Blooms (Mar)Jun-Dec.	**Unlikely.** Suitable habitat not present within the Study Area. Portions of the Study Area are frequently disturbed due to close proximity to residential homes and are dominated by non-native invasive species.	No further actions are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
Mt. Diablo cottonweed *Micropus amphibolus*	Rank 3.2	Broadleafed upland forest, chaparral, cismontane woodland, valley and foothill grassland. Elevation ranges from 145 to 2705 feet (45 to 825 meters). Blooms Mar-May.	**No Potential.** Suitable habitat not present within Study Area. Study Area is out of the species elevation range.	No further actions are recommended.
marsh microseris *Microseris paludosa*	Rank 1B.2	Closed-cone coniferous forest, cismontane woodland, coastal scrub, valley and foothill grassland. Elevation ranges from 15 to 1165 feet (5 to 355 meters). Blooms Apr-Jun(Jul).	**Unlikely.** Suitable habitat not present within the Study Area. Portions of the Study Area are frequently disturbed due to close proximity to residential homes and are dominated by non-native invasive species. There is no coniferous forest or grassland habitat within the Study Area.	No further actions are recommended.
San Antonio Hills monardella *Monardella antonina ssp. antonina*	Rank 3	Chaparral, cismontane woodland. Elevation ranges from 1045 to 3280 feet (320 to 1000 meters). Blooms Jun-Aug.	**No Potential.** Suitable habitat not present within Study Area. Study Area is out of the species elevation range.	No further actions are recommended.
northern curly-leaved monardella *Monardella sinuata ssp. nigrescens*	Rank 1B.2	Chaparral (scr co.), coastal dunes, coastal scrub, lower montane coniferous forest (scr co., ponderosa pine sandhills). Elevation ranges from 0 to 985 feet (0 to 300 meters). Blooms (Apr)May-Jul(Aug-Sep).	**Unlikely.** Suitable habitat not present within the Study Area. Portions of the Study Area are frequently disturbed due to close proximity to residential homes and are dominated by non-native invasive species.	No further actions are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
woodland woolythreads *Monolopia gracilens*	Rank 1B.2	Broadleafed upland forest (openings), chaparral (openings), cismontane woodland, north coast coniferous forest (openings), valley and foothill grassland. Elevation ranges from 325 to 3935 feet (100 to 1200 meters). Blooms (Feb)Mar-Jul.	**No Potential.** Suitable habitat not present within Study Area. Study Area is out of the species elevation range.	No further actions are recommended.
California adder's-tongue *Ophioglossum californicum*	Rank 4.2	Chaparral, valley and foothill grassland, vernal pools (margins). Elevation ranges from 195 to 1720 feet (60 to 525 meters). Blooms (Dec)Jan-Jun.	**No Potential.** Suitable habitat not present within Study Area. Study Area is out of the species elevation range.	No further actions are recommended.
Gairdner's yampah *Perideridia gairdneri ssp. gairdneri*	Rank 4.2	Broadleafed upland forest, chaparral, coastal prairie, valley and foothill grassland, vernal pools. Elevation ranges from 0 to 2000 feet (0 to 610 meters). Blooms Jun-Oct.	**No Potential.** Suitable habitat not present within Study Area. There is no grassland or vernal pool habitat present within the Study Area.	No further actions are recommended.
south coast branching phacelia *Phacelia ramosissima var. austrolitoralis*	Rank 3.2	Chaparral, coastal dunes, coastal scrub, marshes and swamps (coastal salt). Elevation ranges from 15 to 985 feet (5 to 300 meters). Blooms Mar-Aug.	**Unlikely.** Suitable habitat not present within the Study Area. Portions of the Study Area are frequently disturbed due to close proximity to residential homes and are dominated by non-native invasive species.	No further actions are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
Monterey pine *Pinus radiata*	Rank 1B.1	Closed-cone coniferous forest, cismontane woodland. Elevation ranges from 80 to 605 feet (25 to 185 meters).	**No Potential.** Suitable habitat not present within Study Area. There is no coniferous forest habitat present within the Study Area.	No further actions are recommended.
Michael's rein orchid *Piperia michaelii*	Rank 4.2	Coastal bluff scrub, closed-cone coniferous forest, chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest. Elevation ranges from 5 to 3000 feet (3 to 915 meters). Blooms Apr-Aug.	**Unlikely.** Suitable habitat not present within the Study Area. Portions of the Study Area are frequently disturbed due to close proximity to residential homes and are dominated by non-native invasive species.	No further actions are recommended.
Yadon's rein orchid *Piperia yadonii*	FE, Rank 1B.1	Coastal bluff scrub, closed-cone coniferous forest, chaparral (maritime). Elevation ranges from 30 to 2475 feet (10 to 755 meters). Blooms (Feb)May-Aug.	**Unlikely.** Suitable habitat not present within the Study Area. Portions of the Study Area are frequently disturbed due to close proximity to residential homes and are dominated by non-native invasive species.	No further actions are recommended.
Hickman's popcornflower *Plagiobothrys chorisianus var. hickmanii*	Rank 4.2	Closed-cone coniferous forest, chaparral, coastal scrub, marshes and swamps, vernal pools. Elevation ranges from 45 to 605 feet (15 to 185 meters). Blooms Apr-Jun.	**No Potential.** Suitable habitat not present within Study Area. There is no coniferous forest habitat present within the Study Area.	No further actions are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
hooked popcornflower *Plagiobothrys uncinatus*	Rank 1B.2	Chaparral (sandy), cismontane woodland, valley and foothill grassland. Elevation ranges from 980 to 2495 feet (300 to 760 meters). Blooms Apr-May.	**No Potential.** Suitable habitat not present within Study Area. Study Area is out of the species elevation range.	No further actions are recommended.
Hickman's cinquefoil *Potentilla hickmanii*	FE, SE, Rank 1B.1	Coastal bluff scrub, closed-cone coniferous forest, meadows and seeps (vernally mesic), marshes and swamps (freshwater). Elevation ranges from 30 to 490 feet (10 to 149 meters). Blooms Apr-Aug.	**No Potential.** Suitable habitat not present within Study Area. Wetland and riparian habitats are not present within the Study Area.	No further actions are recommended.
angel's hair lichen *Ramalina thrausta*	Rank 2B.1	North coast coniferous forest. Elevation ranges from 245 to 1410 feet (75 to 430 meters).	**No Potential.** Suitable habitat not present within Study Area. Study Area is out of the species elevation range.	No further actions are recommended.
Lobb's aquatic buttercup *Ranunculus lobbii*	Rank 4.2	Cismontane woodland, north coast coniferous forest, valley and foothill grassland, vernal pools. Elevation ranges from 45 to 1540 feet (15 to 470 meters). Blooms Feb-May.	**No Potential.** Suitable habitat not present within Study Area. Vernal pool habitat is not present within the Study Area.	No further actions are recommended.
pine rose *Rosa pinetorum*	Rank 1B.2	Closed-cone coniferous forest, cismontane woodland. Elevation ranges from 5 to 3100 feet (2 to 945 meters). Blooms May-Jul.	**No Potential.** Suitable habitat not present within Study Area. There is no coniferous forest habitat present within the Study Area.	No further actions are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
maple-leaved checkerbloom *Sidalcea malachroides*	Rank 4.2	Broadleafed upland forest, coastal prairie, coastal scrub, north coast coniferous forest, riparian woodland. Elevation ranges from 0 to 2395 feet (0 to 730 meters). Blooms (Mar)Apr-Aug.	**Unlikely.** Suitable habitat not present within the Study Area. Portions of the Study Area are frequently disturbed due to close proximity to residential homes and are dominated by non-native invasive species. There is no coniferous forest or riparian woodland habitat present within the Study Area.	No further actions are recommended.
Santa Cruz microseris *Stebbinsoseris decipiens*	Rank 1B.2	Broadleafed upland forest, closed-cone coniferous forest, chaparral, coastal prairie, coastal scrub, valley and foothill grassland. Elevation ranges from 30 to 1640 feet (10 to 500 meters). Blooms Apr-May.	**No Potential.** Suitable habitat not present within Study Area. Study Area does not contain shale or serpentine soils.	No further actions are recommended.
California screw-moss *Tortula californica*	Rank 1B.2	Chenopod scrub, valley and foothill grassland. Elevation ranges from 30 to 4790 feet (10 to 1460 meters).	**No Potential.** Suitable habitat not present within Study Area. Study Area does not contain grassland habitat.	No further actions are recommended.
Santa Cruz clover *Trifolium buckwestiorum*	Rank 1B.1	Broadleafed upland forest, cismontane woodland, coastal prairie. Elevation ranges from 340 to 2000 feet (105 to 610 meters). Blooms Apr-Oct.	**No Potential.** Suitable habitat not present within Study Area. Study Area is out of the species elevation range.	No further actions are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
saline clover *Trifolium hydrophilum*	Rank 1B.2	Marshes and swamps, valley and foothill grassland (mesic, alkaline), vernal pools. Elevation ranges from 0 to 985 feet (0 to 300 meters). Blooms Apr-Jun.	**No Potential.** Suitable habitat not present within Study Area. Wetland habitat is not present within the Study Area.	No further actions are recommended.
Pacific Grove clover *Trifolium polyodon*	SR, Rank 1B.1	Closed-cone coniferous forest, coastal prairie, meadows and seeps, valley and foothill grassland. Elevation ranges from 15 to 1395 feet (5 to 425 meters). Blooms Apr-Jun(Jul).	**Unlikely.** Suitable habitat not present within the Study Area. There is no coniferous forest or grassland habitat present within the Study Area.	No further actions are recommended.
Monterey clover *Trifolium trichocalyx*	FE, SE, Rank 1B.1	Closed-cone coniferous forest (sandy, openings, burned areas). Elevation ranges from 95 to 1000 feet (30 to 305 meters). Blooms Apr-Jun.	**No Potential.** Suitable habitat not present within Study Area. There is no coniferous forest habitat present within the Study Area.	No further actions are recommended.

*** Key to status codes:**

FE	Federal Endangered
FT	Federal Threatened
BCC	USFWS Birds of Conservation Concern
SE	State Endangered
ST	State Threatened
SSC	CDFW Species of Special Concern
CFP	CDFW Fully Protected Animal
WBWG	Western Bat Working Group (High or Medium) Priority species
NMFS	Species under the Jurisdiction of the NMFS
Rank 1A	CRPR Rank 1A: Presumed extirpated in California and either rare or extinct elsewhere
Rank 1B	CRPR Rank 1B: Plants rare, threatened or endangered in California and elsewhere
Rank 2B	CRPR Rank 2B: Plants rare, threatened, or endangered in California, but more common elsewhere
Rank 3	CRPR Rank 3: Plants about which CNPS needs more information (a review list)
Rank 4	CRPR Rank 4: Plants of limited distribution – a watch list
Rank X.1	Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)
Rank X.2	Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)
Rank X.3	Not very threatened in California (less than 20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURENCE	RECOMMENDATIONS
Mammals				
American badger *Taxidea taxus*	SSC	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Requires friable soils and open, uncultivated ground. Preys on burrowing rodents.	**Unlikely.** Much of the Study Area was overgrown and no burrows indicative of use by badger were observed during the April 2020 site visit. In addition, no evidence of burrowing rodents was observed within the Study Area. The nearest documented occurrence is approximately 7 miles to the north from 1919 (CDFW 2020).	No further actions are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURENCE	RECOMMENDATIONS
hoary bat *Lasiurus cinereus*	WBWG Medium	Prefers open habitats or habitat mosaics, with access to trees for cover and open areas or habitat edges for feeding. Roosts in dense foliage of medium to large trees. Feeds primarily on moths. Requires standing water to drink.	**Moderate Potential.** Several medium and large coast live oak trees with dense foliage were observed within the Study Area. In addition, the nearby Carmel River likely supports high prey abundance for hoary bats.	Trees and snags should be removed between October 1 and March 31 to the extent feasible. If trees are removed between April 1 and September 30, a roost habitat assessment should be conducted by a qualified biologist. If suitable roosts are detected during the habitat assessment, a pre-construction bat survey should be performed no more than 14 days prior to removal. If special status bat-species or maternity roosts are detected during surveys, species and roost specific measures will be developed in consultation with CDFW. See Section 5.2 for further details.
Monterey shrew *Sorex ornatus salarius*	SSC	Riparian, wetland and upland areas in the vicinity of the Salinas River delta. Prefers moist microhabitats. Feeds on insects and other invertebrates found under logs, rocks, and litter.	**Unlikely.** Although coast live oak forests are within the Study Area, the Study Area is outside of the Salinas River delta. In addition, the nearest documented occurrence is from 1938 and no occurrences have been documented since 1939 within 15 miles of the Study Area (CDFW 2020).	No further actions are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURENCE	RECOMMENDATIONS
southern sea otter *Enhydra lutris nereis*	FT, CFP, SSC	Nearshore marine environments from about Año Nuevo, San Mateo County to Point Sal, Santa Barbara County. Needs canopies of giant kelp and bull kelp for rafting and feeding. Prefers rocky substrates with abundant invertebrates.	**No Potential.** No marine habitats are present within the Study Area that might support this species.	No further actions are recommended.
Townsend's big-eared bat *Corynorhinus townsendii*	SSC, WBWG High	This species is associated with a wide variety of habitats from deserts to mid-elevation mixed coniferous-deciduous forest. Females form maternity colonies in buildings, caves and mines and males roost singly or in small groups. Foraging occurs in open forest habitats where they glean moths from vegetation.	**Unlikely.** No caves or mines for suitable roosting habitat for Townsend's big-eared bat were observed within the Study Area. In addition, the nearest documented occurrence is approximately 3.5 miles to the south from 1948 (CDFW 2020). Townsend's big-eared bat may occasionally forage within the Study Area.	No further actions are recommended.
Birds				
ashy storm-petrel *Oceanodroma homochroa*	SSC	Marine species; nests in rocky crevices on offshore islands and rocks from southern Mendocino County to northern Baja California. Forages over open ocean for invertebrates and larval fishes.	**No Potential.** No marine habitats are present within the Study Area that might support this species	No further actions are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURENCE	RECOMMENDATIONS
bank swallow *Riparia riparia*	ST	Summer resident in riparian and other lowland habitats near rivers, lakes and the ocean in northern California. Nests colonially in excavated burrows on vertical cliffs and bank cuts (natural and manmade) with fine-textured soils. Historical nesting range in southern and central areas of California has been eliminated by habitat loss. Currently known to breed in Siskiyou, Shasta, and Lassen Cos., portions of the north coast, and along Sacramento River from Shasta Co. south to Yolo Co.	**Unlikely.** The nearest documented breeding colony is approximately 8.9 miles northeast of the Study Area in Seaside (CDFW 2020). In addition, no vertical cliffs or bank cuts were observed within the Study Area. This species may occasionally forage in the Study Area.	No further actions are recommended.
black swift *Cypseloides niger*	SSC	Summer resident with a fragmented breeding distribution; most occupied areas in California either montane or coastal. Breeds in small colonies on cliffs behind or adjacent to waterfalls, in deep canyons, and sea-bluffs above surf. Forages aerially over wide areas.	**Unlikely.** No cliffs or sea bluffs were observed within the Study Area. In addition, the nearest documented occurrence is from 1952 (CDFW 2020). Black swifts may occasionally forage in the Study Area.	No further actions are recommended.
burrowing owl *Athene cunicularia*	SSC	Year-round resident and winter visitor. Occurs in open, dry grasslands and scrub habitats with low-growing vegetation, perches and abundant mammal burrows. Preys upon insects and small vertebrates. Nests and roosts in old mammal burrows, most commonly those of ground squirrels.	**Unlikely.** No mammal burrows or burrow surrogates were observed within the Study Area during the April 2020 site visit. In addition, the majority of the Study Area is densely vegetated. Finally, the nearest documented occurrence is approximately 5.4 miles to the northeast in Monterey (CDFW 2020).	No further actions are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURENCE	RECOMMENDATIONS
California black rail *Laterallus jamaicensis coturniculus*	ST, CFP	Year-round resident in marshes (saline to freshwater) with dense vegetation within four inches of the ground. Prefers larger, undisturbed marshes that have an extensive upper zone and are close to a major water source. Extremely secretive and cryptic.	**No Potential**. No suitable nesting or foraging marsh habitat is present within the Study Area.	No further actions are recommended.
California brown pelican *Pelecanus occidentalis californicus*	FD, SD, CFP	(Nesting colony) colonial nester on coastal islands just outside the surf line. Nests on coastal islands of small to moderate size which afford immunity from attack by ground-dwelling predators.	**No Potential.** No suitable nesting habitat is present within the Study Area.	No further actions are recommended.
California condor *Gymnogyps californianus*	FE, SE, CFP	Year-round resident in vast expanses of open savannah, grasslands, and foothill chaparral in mountain ranges of moderate altitude. Deep canyons containing clefts in the rocky walls provide nesting sites. Forages up to 100 miles from roost/nest.	**No Potential.** California condor is known to nest within Monterey County, however no suitable nesting habitat is present within the Study Area. In addition, the Study Area is directly adjacent to a residential subdivision. This species may occasionally be observed flying over the Study Area.	No further actions are recommended.
California least tern *Sternula antillarum browni*	FE, SE, CFP	Summer resident along the coast from San Francisco Bay south to northern Baja California; inland breeding also very rarely occurs. Nests colonially on barren or sparsely vegetated areas with sandy or gravelly substrates near water, including beaches, islands, and gravel bars. In San Francisco Bay, has also nested on salt pond margins.	**No Potential.** The Study Area does not contain suitable sandy beaches to support nesting by the species.	No further actions are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURENCE	RECOMMENDATIONS
golden eagle *Aquila chrysaetos*	CFP	Occurs year-round in rolling foothills, mountain areas, sage-juniper flats, and deserts. Cliff-walled canyons provide nesting habitat in most parts of range; also nests in large trees, usually within otherwise open areas.	**No Potential.** The Study Area does not contain suitable cliff habitat or large trees surrounded by open habitat to support nesting by this species. In addition the Study Area is directly adjacent to a residential subdivision. This species may occasionally be observed flying over the Study Area.	No further actions are recommended.
least bell's vireo *Vireo bellii pusillus*	FE, SE	Summer resident. Breeds in riparian habitat along perennial or intermittent rivers and creeks; prefers a multi-tiered canopy with dense early successional vegetation in the understory. Willows, mulefat and other understory species are typically used for nesting.	**Unlikely.** No suitable riparian habitat with multi-tiered canopy and dense understory is present within the Study Area. In addition, no documented occurrences are located within 15 miles of the Study Area (CDFW 2020).	No further actions are recommended.
marbled murrelet *Brachyramphus marmoratus*	FT, SE	Predominantly coastal marine. Nests in old-growth coniferous forests up to 30 miles inland along the Pacific coast, from Eureka to Oregon border, and in Santa Cruz/San Mateo Counties. Nests are highly cryptic, and typically located on platform-like branches of mature redwoods and Douglas firs. Forages on marine invertebrates and small fishes.	**No Potential.** The Study Area does not contain old-growth redwoods or Douglas firs suitable for nesting. In addition, no documented occurrences are located within 15 miles of the Study Area.	No further actions are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURENCE	RECOMMENDATIONS
southwestern willow flycatcher *Empidonax traillii extimus*	FE, SE	Summer resident. Breeds in dense riparian forest and woodlands, usually in floodplain-like environments with standing or slow-moving water. Vegetative microhabitats used for nesting variable, and include willows and cottonwood.	**Unlikely.** The Study Area does not contain dense riparian forests suitable for nesting. In addition, no documented occurrences are located within 15 miles of the Study Area (CDFW 2020). Other willow flycatcher subspecies may occasionally forage within the Study Area.	Future project activities should occur to the extent feasible between September 1 and January 31, which is outside of the nesting season. If this is not possible, and project activities are initiated during the nesting season (February 1 through August 31), a nesting bird survey will be conducted by a qualified wildlife biologist no more than 14 days prior to the start of Project activities. If nests are identified, a no-disturbance buffer will be implemented to avoid impacts to nesting birds. See Section 5.3 for further details.
tricolored blackbird *Agelaius tricolor*	ST, SSC, RP	Nearly endemic to California, where it is most numerous in the Central Valley and vicinity. Highly colonial, nesting in dense aggregations over or near freshwater in emergent growth or riparian thickets. Also uses flooded agricultural fields. Abundant insect prey near breeding areas essential.	**Unlikely.** The Study Area does not contain large tracts of emergent vegetation suitable for nesting. In addition, the nearest documented occurrence for tricolored blackbird is located approximately 9 miles east of the Study Area (CDFW 2020). Tricolored blackbird may occasionally fly through the Study Area.	No further actions are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURENCE	RECOMMENDATIONS
western snowy plover *Charadrius alexandrinus nivosus*	FT, SSC	Federal listing applies only to the Pacific coastal population. Year-round resident and winter visitor. Occurs on sandy beaches, salt pond levees, and the shores of large alkali lakes. Nests on the ground, requiring sandy, gravelly or friable soils.	**No Potential**. The Study Area is located along the coast but does not contain beach, shore, or salt pond habitat to support nesting by the species.	No further actions are recommended.
yellow rail *Coturnicops noveboracensis*	SSC	Summer resident in eastern Sierra Nevada in Mono County, breeding in shallow freshwater marshes and wet meadows with dense vegetation. Also a rare winter visitor along the coast and other portions of the state. Extremely cryptic.	**No Potential**. No suitable marsh or wet meadow habitat is present within the Study Area.	No further actions are recommended.
Reptiles and Amphibians				
California red-legged frog *Rana aurora draytonii*	FT, SSC	Lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation. Requires 11 to 20 weeks of permanent water for larval development. Associated with quiet perennial to intermittent ponds, stream pools and wetlands. Prefers shorelines with extensive vegetation. Disperses through upland habitats after rains.	**Moderate to High Potential.** This species was documented in the CNDDB within immediate vicinity of the Study Area in 2001 (CNDDB Occurrence No. 472) (CDFW 2020). The Carmel River lagoon is considered to be occupied breeding habitat for California red-legged frog (DD&A 2016) and there is suitable upland dispersal habitat within the Study Area.	Mitigation measures include worker environmental awareness training, preconstruction surveys, construction monitoring, exclusion fence, covering trenches, work windows, delineating boundaries, disposal of trash, no mon-filament netting, and speed limit restrictions. See section 5.2 for further details.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURENCE	RECOMMENDATIONS
California tiger salamander *Ambystoma californiense*	FT, ST	Populations in Santa Barbara and Sonoma counties currently listed as endangered. Inhabits grassland, oak woodland, ruderal and seasonal pool habitats. Seasonal ponds and vernal pools are crucial to breeding. Adults utilize mammal burrows as aestivation habitat.	**Unlikely.** No seasonal ponds suitable for California tiger salamander breeding were observed within the Study Area. In addition, the nearest documented occurrence is 2.3 miles southeast of the Study Area (CDFW 2020).	No further actions are recommended.
black legless lizard *Anniella pulchra nigra*	SSC, FS sensitive	Sand dunes and sandy soils in the Monterey Bay and Morro Bay regions. Inhabit sandy soil/dune areas with bush lupine and mock heather as dominant plants. Moist soil is essential.	**Unlikely.** One documented occurrence is recorded within 0.2 mile of the Study Area (CDFW 2020). However no suitable dunes or mock heather and bush lupine-dominated vegetation communities were observed in the Study Area. In addition, the coast live oak woodland and scrub vegetation communities observed onsite were very densely vegetated and not suitable for this species.	No further actions are recommended.
Blainville's (Coast) horned lizard *Phrynosoma blainvillii (coronatum)*	SSC	Frequents a wide variety of habitats, most common in lowlands along sandy washes with scattered low bushes. Prefers friable, rocky, or shallow sandy soils for burial; open areas for sunning; bushes for cover; and an abundant supply of ants and other insects.	**Unlikely.** Although suitable oak woodland habitat was observed in the Study Area, no harvester ants (*Pogonomyrmex* sp.), which serve as primary prey for coast horned lizard were observed within the Study Area. The majority of Study Area was also densely vegetated, which precludes areas for sunning. In addition, the nearest documented occurrence of this species is 6.8 miles to the southeast (CDFW 2020).	No further actions are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURENCE	RECOMMENDATIONS
coast range newt *Taricha torosa torosa*	SSC (only in Monterey co. & south)	Coastal drainages from Mendocino County to San Diego County. Lives in terrestrial habitats and will migrate over 1 kilometer to breed in ponds, reservoirs and slow moving streams.	**Unlikely.** No ponds or reservoirs for breeding were observed in the Study Area. Potential suitable breeding habitat may be present within the Carmel River lagoon to the north of the Study Area, however the nearest documented occurrence of coast range newt is 2.4 miles southeast of the Study Area (CDFW 2020). This species was also not detected in adjacent habitat during surveys for the Carmel River Floodplain and Environmental Enhancement Project in 2019 (DD&A 2019).	No further actions are recommended.
foothill yellow-legged frog *Rana boylii*	SC, SSC	Found in or near rocky streams in a variety of habitats. Prefers partly-shaded, shallow streams and riffles with a rocky substrate; requires at least some cobble-sized substrate for egg-laying. Needs at least 15 weeks to attain metamorphosis. Feeds on both aquatic and terrestrial invertebrates.	**No Potential.** The Study Area does not contain suitable rocky stream habitat. One historic occurrences was documented within 1 mile of the Study Area, however this record is from 1907 and this population is now considered possibly extirpated (CDFW 2020).	No further actions are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURENCE	RECOMMENDATIONS
western pond turtle *Actinemys marmorata*	SSC	A thoroughly aquatic turtle of ponds, marshes, rivers, streams and irrigation ditches with aquatic vegetation. Need basking sites and suitable (sandy banks or grassy open fields) upland habitat for egg-laying.	**Unlikely.** The nearest documented occurrence for western pond turtle is less than 0.1 mile from the Study Area, however this record is associated the Carmel River lagoon to the north of the Study Area (CDFW 2020). At its closest, the Study Area is approximately 130 feet from the Carmel River and does not contain suitable aquatic habitat with pools and basking sites or open grassy fields for egg laying.	No further actions are recommended.
Fishes				
steelhead - south/central CA coast DPS *Oncorhynchus mykiss irideus*	FT	Occurs in coastal basins from the Pajaro River south to, but not including, the Santa Maria River. Adults migrate upstream to spawn in cool, clear, well-oxygenated streams. Juveniles remain in fresh water for 1 or more years before migrating downstream to the ocean.	**No Potential.** The Study Area does not contain any aquatic habitats that's are known to support this species.	No further actions are recommended.
tidewater goby *Eucyclogobius newberryi*	FE, SSC	Brackish water habitats along the California coast from Agua Hedionda Lagoon, San Diego County to the mouth of the Smith River. Found in shallow lagoons and lower stream reaches; requires fairly still but not stagnant water and high oxygen levels.	**No Potential.** The Study Area does not contain any aquatic habitats that's are known to support this species.	No further actions are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURENCE	RECOMMENDATIONS
Invertebrates				
Smith's blue butterfly *Euphilotes enoptes smithi*	FE, SSI	Most commonly associated with coastal dunes and coastal sage scrub plant communities in Monterey and Santa Cruz counties. Hostplant: *Eriogonum latifolium* and *Eriogonum parvifolium* are utilized as both larval and adult foodplants.	**Unlikely.** The plant communities in the Study Area were generally dense and no suitable coastal dunes or coastal sage scrub plant communities were observed within the Study Area. In addition, no host plants for Smith's blue butterfly were observed within the Study Area.	No further actions are recommended.
monarch butterfly *Danaus plexippus*	None (Winter roost sites protected by CDFW)	Winter roost sites extend along the coast from northern Mendocino to Baja California, Mexico. Roosts located in wind-protected tree groves (eucalyptus, Monterey pine, Monterey cypress), with nectar and water sources nearby.	**Unlikely.** The Study Area does not contain wind-protected tree groves to support roosting by this species. Monterey cypress stands observed within the Study Area are limited in size and not wind-protected. Monarchs may occasionally be observed migrating through the Study Area.	No further actions are recommended.
western bumble bee Bombus occidentalis	SC	Once widespread in the western United States and Canada, populations of this insect have drastically declined in recent decades. Pollinates a variety of wild flowering plants and crops. Nests in the ground, usually in association with small mammal burrows with sunny aspects. Current populations are thought to be restricted to high elevation sights in the Sierras with scattered occurrences on the northern California coast (Xerces, 2020).	**No Potential**. The Study Area is outside of this species documented current range (Xerces 2020).	No further actions are recommended.

*** Key to status codes:**

FE	Federal Endangered
FT	Federal Threatened
SE	State Endangered
ST	State Threatened
SR	State Rare
CFP	CDFW Fully Protected Species
SSC	CDFW Species of Special Concern
BCC	USFWS Bird of Conservation Concern
SSI	Special Status Invertebrate
WBWG	Western Bat Working Group High or Medium Priority species
RP	Recovery Plan exists for this species
Rank 1A	CNPS Rank 1A: Plants presumed extinct in California
Rank 1B	CNPS Rank 1B: Plants rare, threatened or endangered in California and elsewhere
Rank 2	CNPS Rank 2: Plants rare, threatened, or endangered in California, but more common elsewhere
Rank 3	CNPS Rank 3: Plants about which CNPS needs more information (a review list) *[not special status]*

Species Evaluations:

No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).

Unlikely. Few of the habitat components meeting the species requirements are present, and/or the majority of habitat on and adjacent to the site is unsuitable or of very poor quality. The species is not likely to be found on the site.

Moderate Potential. Some of the habitat components meeting the species requirements are present, and/or only some of the habitat on or adjacent to the site is unsuitable. The species has a moderate probability of being found on the site.

High Potential. All of the habitat components meeting the species requirements are present and/or most of the habitat on or adjacent to the site is highly suitable. The species has a high probability of being found on the site.

Present. Species was observed on the site or has been recorded (i.e. CNDDB, other reports) on the site recently.

(A) Representative photo facing south of iceplant mats within the proposed staging area.

(B) Representative north-facing photo of Mariposa Court at the eastern edge of the Project Area.

(C) West-facing photo of coast live oak woodland adjacent to a landscaped backyard within the eastern portion of the Project Area.

(D) North-facing photo coastal brambles on a steep slope bordered by coast live oak woodlands in the eastern portion of the Project Area.

(E) West-facing view of landscape/ornamental vegetation bordered by coast live oak woodland in the eastern portion of the Project Area.

(F) North-facing view of coastal brambles on a steep slope bordered by coast live oak woodlands in the center of the Project Area.

(G) South-facing view of the proposed access route through landscaped turf in the center of the Project Area.

(H) West-facing view of iceplant mats and landscape/ornamental vegetation in the center of the Project Area.

(E) East-facing view of landscape/ornamental vegetation in a residential backyard bordered by a Monterey cypress stand.

(F) East-facing view of coastal brambles in the western portion of the Project Area.

(G) South-facing view of poison oak scrub at the western edge of the Project Area.

(H) Northwest-facing view of the Carmel River lagoon.

Appendix B – Arborist Report

ARBORIST REPORT

CARMEL MEADOWS LIFT STATION AND SEWER REPLACEMENT

CARMEL-BY-THE-SEA, MONTEREY, CALIFORNIA

Prepared for:

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WRA #30026
DECEMBER 2021

ENVIRONMENTAL CONSULTANTS

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LIST OF PREPARERS

Tali Ashurov – Project Manager
Carla Angulo – ISA Certified Arborist
Michael Rochelle – GIS Analyst

LIST OF ACRONYMS

ANSI	American National Standard Institution
BMP	Best management practices
GIS	Geographical Information System
LUP	Land Use Plan
WRA	WRA, Inc.

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1.0 INTRODUCTION

On December 9 and 10, 2021 WRA, Inc. (WRA) conducted an arborist survey of the proposed Carmel Meadows lift and sewer replacement project site, located off Mariposa Court and behind Ribera Road (Study Area) in Carmel-by-the-Sea, Monterey County, California. The survey was conducted by ISA-Certified Arborist, Carla Angulo (ISA #WE-13573A) for the purposes of identifying and documenting the presence of all "protected trees" as defined by *Chapter 21.64.260 Preservation of oak and other protected trees* of the Monterey County (County) Tree Ordinance within the Study Area (County 2021). This survey was conducted to fulfill a California Environmental Quality Act (CEQA) requirement for a qualified arborist to map, measure, and quantify all non-exempt trees greater than or equal to six (6) inches diameter at two (2) feet above grade within the Study Area.

GPS locations for all the protected trees surveyed within the Study Area and information regarding the species, size in diameter at two (2) feet above grade, estimated crown radius, estimated height, and health, condition, and structure ratings were collected and are included in this report. A table with all the relevant information pertaining to surveyed trees is provided in Appendix A. A tree survey location map is provided in Appendix B. Representative photographs are provided in Appendix C.

1.1 Study Area Description

The = proposed project site is approximately 1.41 acres, and predominantly consists of oak woodland, ice plant, landscaped backyards, developed land, cypress, and coastal brambles. The Study Area runs behind 20 houses along Ribera Road from 2795 Ribera Road on the west end to 2935 Ribera Road, including the Mariposa Drive cul-de-sac on the eastern end. Protected trees are located within some backyards and north of the sewer easement. The proposed project includes abandonment of the wastewater interceptor between manholes T603 and S609 via lift station installation and sewer line redirection as well as installation of sewer system improvements between manholes S601 and T604. Sewer improvements are understood to include pipe and manhole replacement, gravity sewer installation, and existing sewer rehabilitation along residential homes. The existing sewer pipeline will be left in place and no tree impacts are expected to occur along that structure. The project site is located within Monterey County and is subject to the Monterey County Land Use Plan (LUP).

1.2 Regulatory Background

1.2.1 Monterey County Tree Ordinance

Per Chapter 21.64.260 of the County Tree Ordinance regarding protected trees, "no oak or madrone or redwood tree six inches or more in diameter two feet above ground level shall be removed in the Carmel Valley Master Plan area without approval of the permit(s) required in Subsection 21.64.240D" (County 2021). No native tree six inches or more in diameter two feet above ground level shall be removed in the Cachagua Area Plan area without approval of the permit(s) required in Subsection 21.64.240D" (County 2021).

Native trees are:

a. Santa Lucia Fir (*Abies bracteate*);

b. Black Cottonwood (*Populus balsamifera ssp. Trichocarpa*);
c. Fremont Cottonwood (*Populus fremontii*);
d. Box Elder (*Acer negundo*);
e. Willows (*Salix spp.*);
f. California Laurel (*Umbellularia californica*);
g. Sycamores (*Platanus spp.*);
h. Oaks (*Quercus spp*.); and
i. Madrones (*Arbutus menziesii*).

"No oak tree six inches or more in diameter two feet above ground level may be removed in any other area of the County of Monterey designated in the applicable area plan as Resource Conservation, Residential, Commercial or Industrial (except Industrial, Mineral Extraction) without approval of the permit(s) required in Subsection 21.64.240D" (County 2021). No landmark oak trees are to be removed unless a permit is attained. Landmark oak trees are trees with a diameter of 24 inches at 2 feet above grade or trees that are visually or historically significant or are an exemplary specimen of their species.

Permits are required in the County for any person who plans to use equipment or labor to cut down or trim more than one-third of the green canopy of any trees previously specified. No one can poison or kill or destroy any tree previously specified (County 2021). The County ordinance also states that if trees are approved to be removed, relocation or replacement of each removed protected tree would be required, unless relocation or replacement causes hardship to the habitat (County 2021).

2.0 METHODS

On December 9 and 10, 2021, the Study Area was traversed on foot to inventory all trees as defined per the County of Monterey Ordinance. WRA's ISA-Certified Arborist surveyed the area and recorded relevant tree information for each surveyed tree including species, diameter at two (2) feet above grade, estimated crown radius, estimated height, and health, condition, and structure ratings. A picture of each tree was taken, and an aluminum tag was nailed on each tree if access was not an issue, the trees with no tag were given a GIS object identification number for purposes of mapping.

2.1 Tree Inventory

Locations of trees within the Study Area were recorded using a handheld GPS unit with sub-meter accuracy. Each tree was given an aluminum tree tag with a unique identification number or GIS given identification number is tree was not accessible which is included in Appendix A.

Diameter was calculated for surveyed trees by measuring the trunk diameter at two (2) feet above grade. Total diameter for multi-trunked trees was calculated by measuring each individual trunk and calculating the sum total of trunk diameters. In cases where multi-trunked trees had more than five main trunks, only the five largest trunks were measured. In cases where an irregular buttress or bulge occurred at two (2) feet above ground, measurements were taken above or below the irregular feature in order to best represent the size of the tree. In cases where homeowner fences prevented access to the trunk of the tree, diameter of the trunk was estimated.

2.2 Tree Assessment

General notes on the condition of trees were taken, including health, structure, and overall condition. Assessment of the health, structure, and overall condition of each tree was conducted according to the narratives listed in Table 1.

TABLE 1. RATING NARRATIVES FOR TREE ASSESSMENT

Health	
Good	Tree is free from symptoms of disease and stress.
Fair	Tree shows some symptoms of disease or stress including twig and small branch dieback, evidence of fungal / parasitic infection, thinning of crown, or poor leaf color.
Poor	Tree shows symptoms of severe decline.
Structure	
Good	Tree is free from major structural defects.
Fair	Tree shows some structural defects in branches but overall structure is stable.
Poor	Tree shows structural failure of a major branch or co-dominant trunk.
General Condition	
Good	Tree shows condition of foliage, bark, and overall structure characteristic of the species and lacking obvious defect, or disease.
Fair	Tree shows condition of foliage, bark, and overall structure characteristic of the species with some evidence of stress, defect, or disease.
Poor	Tree shows condition of foliage, bark, and overall structure uncharacteristic of the species with obvious evidence of stress, defect, or disease.

3.0 RESULTS

3.1 Tree Inventory

Ninety-eight (98) protected coast live oak trees (*Quercus agrifolia*) were identified and assessed in the Study Area. A complete list of all surveyed trees is presented in Appendix A. The GPS locations of surveyed trees are shown in Appendix B (some are slightly out of the Study Area due to canopy cover reducing GPS satellite accuracy). Trees range in size from 6.35 inches to 46.6 inches in diameter (measured at 2 feet above grade).

3.2 Tree Assessment

The condition, health, and structure of trees inventoried during this assessment ranged from poor to good, with most trees ranking good in health, structure, and general condition. Four trees were found to be suppressed ranking them in fair condition and 11 trees were found to have minor dieback ranking them in fair general health. Tree 461 was found to have major decay and dieback therefore ranking it in poor health and condition. Five trees, #390, #432, #458, #454 and #128, were found to have poor growth form or a significant lean and were ranked in fair health and condition. Table 2 below summarizes the assessment results for all protected trees surveyed.

TABLE 2. TREE ASSESSMENT RESULTS SUMMARY

CRITERIA ASSESSED/RATING	CONDITION	HEALTH	STRUCTURE
Good	66 (67.3%)	66 (67.3%)	83 (84.7%)
Fair	31 (31.6%)	36 (36.7%)	14 (14.3%)
Poor	0 (0%)	1 (1%)	2 (1%)

3.3 Tree Impact Assessment and Mitigation Summary

Tree impacts that require a permit from the County include removal or trimming more than one third of the green foliage. Potential impacts to trees do not require permits but can include encroachment into the dripline of any tree, which can encroach into the critical root zone and cause stress to trees and result in decline of the overall health of the tree. Potential impacts can also include trimming any lateral branch greater than 4 inches in diameter, which can result in stress in oak trees. Per the project plans, no direct impacts or removals are proposed to any of the trees surveyed within the Study Area since the proposed work will be performed in landscaped backyards (SRT Consultants 2019).

Potential impacts to all trees were analyzed by comparing tree survey data with the conceptual 10% design plans of the sewer pipeline replacement and installation (SRT Consultants 2019). A total of 35 trees have the potential to be impacted by the project during construction due to proximity, for full list of trees see Appendix A and Appendix B. Potential impacts include encroachment into the dripline of the tree and trimming of limbs greater than four (4) inches in diameter. Trees #382, #383, #384, #385, #386, and #387 could potentially be impacted due to machine access and trenching that can disrupt root systems (Appendix C. Photograph 1). Trees #429, #430, #431, #432, #433, #434, #435, #436, and #437 are located on a slope and care must be taken to not disturb the soil around them. Recommended mitigation measures to avoid potential impacts to protected trees in the vicinity of construction zone include installation of construction fencing at the dripline of all protected trees and the presence of an ISA-Certified Arborist during construction activities.

4.0 SUMMARY AND RECOMMENDATIONS

A total of 98 trees are protected and have been identified in the Study Area. No trees will be removed within the project. Sixty-three (63) trees have no impacts, and 35 trees could have potential impacts based on comparison of project plans and tree survey data collected (SRT Consultants 2019). The following mitigation measure would be required to be implemented for the project in order to avoid impacting 35 oak trees during construction: The applicant shall install construction fencing at the dripline of all protected trees in the Study Area, where machinery will work. All equipment will be maintained and stored in the designated staging area ensuring that the tree protection zone is established. Fence material shall be high visibility construction fencing and have a height of four feet. If work must occur within dripline, the trunk of the tree shall be wrapped with orange construction fencing and waddles up to 6 feet to prevent damage to trunk. Trimming of trees to provide access for machines and equipment shall be done with a hand saw or electrical saw, and no major limbs measuring four (4) inches in diameter 0.5 feet from the branch union shall be removed. If any root trimming is required, it should be done at 90 degrees to the grade, at the node and only up to two (2) inches in diameter (ANSI 2017). No stockpiling of excavated soil during trenching shall be placed within the dripline of any protected tree.

5.0 REFERENCES

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APPENDIX A – TREE SURVEY TABLE

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Appendix A. Carmel Meadows Protected Tree Survey, December 2021

Tree ID	Common Name	Species	Multistem	Total Diameter at 2 Feet (in)	Average Dripline (ft)	Height (ft)	Condition	General Health	Structure	Status	Potential Impacts
135	coast live oak	*Quercus agrifolia*	no	16	10	29	Good	Good	Good	Protected	Yes
189	coast live oak	*Quercus agrifolia*	no	16.5	7	22	Good	Good	Good	Protected	No
190	coast live oak	*Quercus agrifolia*	no	12.3	2	16	Good	Fair	Good	Protected	No
191	coast live oak	*Quercus agrifolia*	no	12.2	2	22	Good	Good	Good	Protected	No
195	coast live oak	*Quercus agrifolia*	no	14.2	3	22	Good	Good	Good	Protected	No
196	coast live oak	*Quercus agrifolia*	no	7.4	2	11	Fair	Poor	Good	Protected	No
374	coast live oak	*Quercus agrifolia*	no	8.6	1	18	Good	Good	Good	Protected	No
375	coast live oak	*Quercus agrifolia*	no	12.75	2	17	Fair	Fair	Good	Protected	No
381	coast live oak	*Quercus agrifolia*	no	16.5	2	35	Fair	Fair	Fair	Protected	No
382	coast live oak	*Quercus agrifolia*	no	8.6	1	25	Fair	Fair	Good	Protected	Yes
383	coast live oak	*Quercus agrifolia*	no	15.3	2	35	Good	Good	Good	Protected	Yes
384	coast live oak	*Quercus agrifolia*	no	12.4	3	35	Good	Good	Good	Protected	Yes
385	coast live oak	*Quercus agrifolia*	no	10.6	1	23	Fair	Fair	Good	Protected	Yes
386	coast live oak	*Quercus agrifolia*	no	9.55	1	20	Fair	Fair	Good	Protected	Yes
387	coast live oak	*Quercus agrifolia*	no	19	2	31	Good	Good	Good	Protected	Yes
388	coast live oak	*Quercus agrifolia*	no	8.45	2	23	Good	Good	Good	Protected	No
389	coast live oak	*Quercus agrifolia*	no	7.4	1	20	Good	Good	Good	Protected	No
390	coast live oak	*Quercus agrifolia*	no	9.4	2	12	Good	Good	Fair	Protected	No
391	coast live oak	*Quercus agrifolia*	no	17.5	3	35	Good	Good	Good	Protected	No
392	coast live oak	*Quercus agrifolia*	yes	14.4	2	30	Good	Good	Good	Protected	No
393	coast live oak	*Quercus agrifolia*	yes	9.4	1	13	Fair	Fair	Good	Protected	No
394	coast live oak	*Quercus agrifolia*	no	17	5	30	Good	Good	Good	Protected	No
395	coast live oak	*Quercus agrifolia*	no	11.1	4	28	Fair	Good	Good	Protected	No
396	coast live oak	*Quercus agrifolia*	yes	18.7	5	20	Good	Good	Good	Protected	No
397	coast live oak	*Quercus agrifolia*	yes	10.4	1	11	Good	Good	Good	Protected	No
398	coast live oak	*Quercus agrifolia*	no	8.3	2	24	Fair	Fair	Fair	Protected	No
399	coast live oak	*Quercus agrifolia*	no	12.1	4	31	Good	Good	Good	Protected	No
401	coast live oak	*Quercus agrifolia*	no	12.5	4	32	Fair	Fair	Good	Protected	No
402	coast live oak	*Quercus agrifolia*	no	9.5	3	30	Good	Fair	Good	Protected	No
403	coast live oak	*Quercus agrifolia*	no	8.5	3	18	Good	Good	Good	Protected	No
404	coast live oak	*Quercus agrifolia*	no	10	3	18	Good	Good	Good	Protected	No

Tree ID	Common Name	Species	Multistem	Total Diameter at 2 Feet (in)	Average Dripline (ft)	Height (ft)	Condition	General Health	Structure	Status	Potential Impacts
405	coast live oak	*Quercus agrifolia*	no	12.5	4	26	Good	Good	Good	Protected	No
406	coast live oak	*Quercus agrifolia*	no	18.2	4	40	Good	Good	Good	Protected	No
407	coast live oak	*Quercus agrifolia*	no	22.6	3	30	Good	Good	Good	Protected	No
409	coast live oak	*Quercus agrifolia*	no	14.9	3	31	Good	Good	Good	Protected	No
410	coast live oak	*Quercus agrifolia*	yes	19.3	3	20	Good	Good	Good	Protected	No
411	coast live oak	*Quercus agrifolia*	no	15.8	3	20	Good	Good	Good	Protected	No
412	coast live oak	*Quercus agrifolia*	yes	16.6	2	21	Fair	Fair	Good	Protected	No
413	coast live oak	*Quercus agrifolia*	yes	20	3	23	Good	Good	Good	Protected	No
416	coast live oak	*Quercus agrifolia*	yes	42.2	5	30	Good	Good	Good	Protected	No
417	coast live oak	*Quercus agrifolia*	yes	31.2	5	30	Good	Good	Fair	Protected	No
418	coast live oak	*Quercus agrifolia*	no	14.2	3	28	Fair	Good	Good	Protected	No
419	coast live oak	*Quercus agrifolia*	no	13.6	2	28	Fair	Fair	Good	Protected	No
420	coast live oak	*Quercus agrifolia*	no	9.3	3	26	Fair	Fair	Fair	Protected	No
421	coast live oak	*Quercus agrifolia*	yes	18.3	5	28	Good	Good	Good	Protected	No
422	coast live oak	*Quercus agrifolia*	no	12.2	2	30	Good	Good	Good	Protected	No
423	coast live oak	*Quercus agrifolia*	no	9	3	28	Good	Good	Good	Protected	No
424	coast live oak	*Quercus agrifolia*	no	11.3	3	22	Good	Good	Good	Protected	No
425	coast live oak	*Quercus agrifolia*	no	7.25	2	18	Fair	Good	Good	Protected	No
426	coast live oak	*Quercus agrifolia*	no	11.1	2	30	Good	Fair	Good	Protected	No
427	coast live oak	*Quercus agrifolia*	no	14.3	3	30	Good	Good	Fair	Protected	No
429	coast live oak	*Quercus agrifolia*	no	10	3	28	Fair	Fair	Good	Protected	Yes
430	coast live oak	*Quercus agrifolia*	yes	24.5	4	30	Good	Good	Good	Protected	Yes
431	coast live oak	*Quercus agrifolia*	no	9.9	2	30	Good	Good	Good	Protected	Yes
432	coast live oak	*Quercus agrifolia*	no	8.85	2	28	Fair	Fair	Fair	Protected	Yes
433	coast live oak	*Quercus agrifolia*		24.7	3	30	Good	Fair	Good	Protected	Yes
435	coast live oak	*Quercus agrifolia*	yes	23.7	5	30	Fair	Fair	Good	Protected	Yes
436	coast live oak	*Quercus agrifolia*	yes	26.6	4	35	Good	Good	Fair	Protected	Yes
437	coast live oak	*Quercus agrifolia*	no	18.5	4	32	Fair	Fair	Fair	Protected	Yes
438	coast live oak	*Quercus agrifolia*		12.4	4	25	Good	Good	Good	Protected	No
441	coast live oak	*Quercus agrifolia*	no	7.1	2	16	Fair	Fair	Fair	Protected	No
442	coast live oak	*Quercus agrifolia*	yes	36.4	3	30	Fair	Fair	Fair	Protected	No
439	coast live oak	*Quercus agrifolia*	no	7.65	4	25	Fair	Fair	Fair	Protected	No
440	coast live oak	*Quercus agrifolia*	no	17.5	2	35	Good	Good	Good	Protected	No
443	coast live oak	*Quercus agrifolia*	no	14.95	5	35	Good	Good	Good	Protected	No
445	coast live oak	*Quercus agrifolia*	no	14.3	2	35	Good	Good	Good	Protected	No

Tree ID	Common Name	Species	Multistem	Total Diameter at 2 Feet (in)	Average Dripline (ft)	Height (ft)	Condition	General Health	Structure	Status	Potential Impacts
446	coast live oak	*Quercus agrifolia*	no	7.4	2	30	Good	Good	Good	Protected	No
447	coast live oak	*Quercus agrifolia*	no	10.6	2	30	Good	Good	Good	Protected	No
448	coast live oak	*Quercus agrifolia*	no	7.7	1	20	Good	Fair	Good	Protected	No
449	coast live oak	*Quercus agrifolia*	no	15.6	7	40	Good	Good	Good	Protected	No
450	coast live oak	*Quercus agrifolia*	no	15	2	35	Good	Good	Good	Protected	No
451	coast live oak	*Quercus agrifolia*	yes	38.3	5	32	Good	Fair	Good	Protected	No
452	coast live oak	*Quercus agrifolia*	no	12.5	3	30	Good	Good	Good	Protected	No
453	coast live oak	*Quercus agrifolia*	yes	42.25	8	35	Good	Good	Good	Protected	No
456	coast live oak	*Quercus agrifolia*	no	14.5	2	25	Good	Good	Good	Protected	No
457	coast live oak	*Quercus agrifolia*	no	14.5	3	40	Good	Good	Good	Protected	No
460	coast live oak	*Quercus agrifolia*	no	10.6	2	35	Fair	Good	Good	Protected	No
461	coast live oak	*Quercus agrifolia*	no	11.6	1	35	Fair	Fair	Poor	Protected	Yes
462	coast live oak	*Quercus agrifolia*	yes	41.4	4	35	Good	Good	Good	Protected	Yes
463	coast live oak	*Quercus agrifolia*	yes	19.8	2	20	Good	Good	Good	Protected	Yes
464	coast live oak	*Quercus agrifolia*	no	7.4	1	15	Fair	Good	Good	Protected	Yes
465	coast live oak	*Quercus agrifolia*	no	6.7	1	16	Good	Good	Good	Protected	Yes
466	coast live oak	*Quercus agrifolia*	no	7.7	2	22	Fair	Good	Good	Protected	Yes
467	coast live oak	*Quercus agrifolia*	no	9.4	2	25	Good	Fair	Good	Protected	Yes
468	coast live oak	*Quercus agrifolia*	no	8.1	2	22	Good	Good	Good	Protected	Yes
469	coast live oak	*Quercus agrifolia*	no	8.5	2	23	Good	Good	Good	Protected	Yes
470	coast live oak	*Quercus agrifolia*	yes	18.3	3	25	Fair	Good	Good	Protected	Yes
458	coast live oak	*Quercus agrifolia*	no	6.55	1	22	Fair	Good	Fair	Protected	Yes
459	coast live oak	*Quercus agrifolia*	yes	12.8	3	22	Fair	Fair	Good	Protected	Yes
454	coast live oak	*Quercus agrifolia*	no	6.35	1	17	Fair	Fair	Fair	Protected	Yes
128	coast live oak	*Quercus agrifolia*	no	8	3	7	Fair	Fair	Good	Protected	Yes
129	coast live oak	*Quercus agrifolia*	no	8	2	16	Fair	Good	Good	Protected	Yes
130	coast live oak	*Quercus agrifolia*	no	10	2	35	Good	Good	Good	Protected	Yes
131	coast live oak	*Quercus agrifolia*	yes	18	5	20	Good	Fair	Good	Protected	Yes
132	coast live oak	*Quercus agrifolia*	no	9	1	18	Good	Fair	Good	Protected	Yes
133	coast live oak	*Quercus agrifolia*	yes	43	17	40	Good	Good	Good	Protected	Yes
134	coast live oak	*Quercus agrifolia*	yes	32	5	35	Good	Good	Good	Protected	Yes
474	coast live oak	*Quercus agrifolia*	yes	19	2	20	Good	Good	Good	Protected	No

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APPENDIX B – TREE SURVEY MAP

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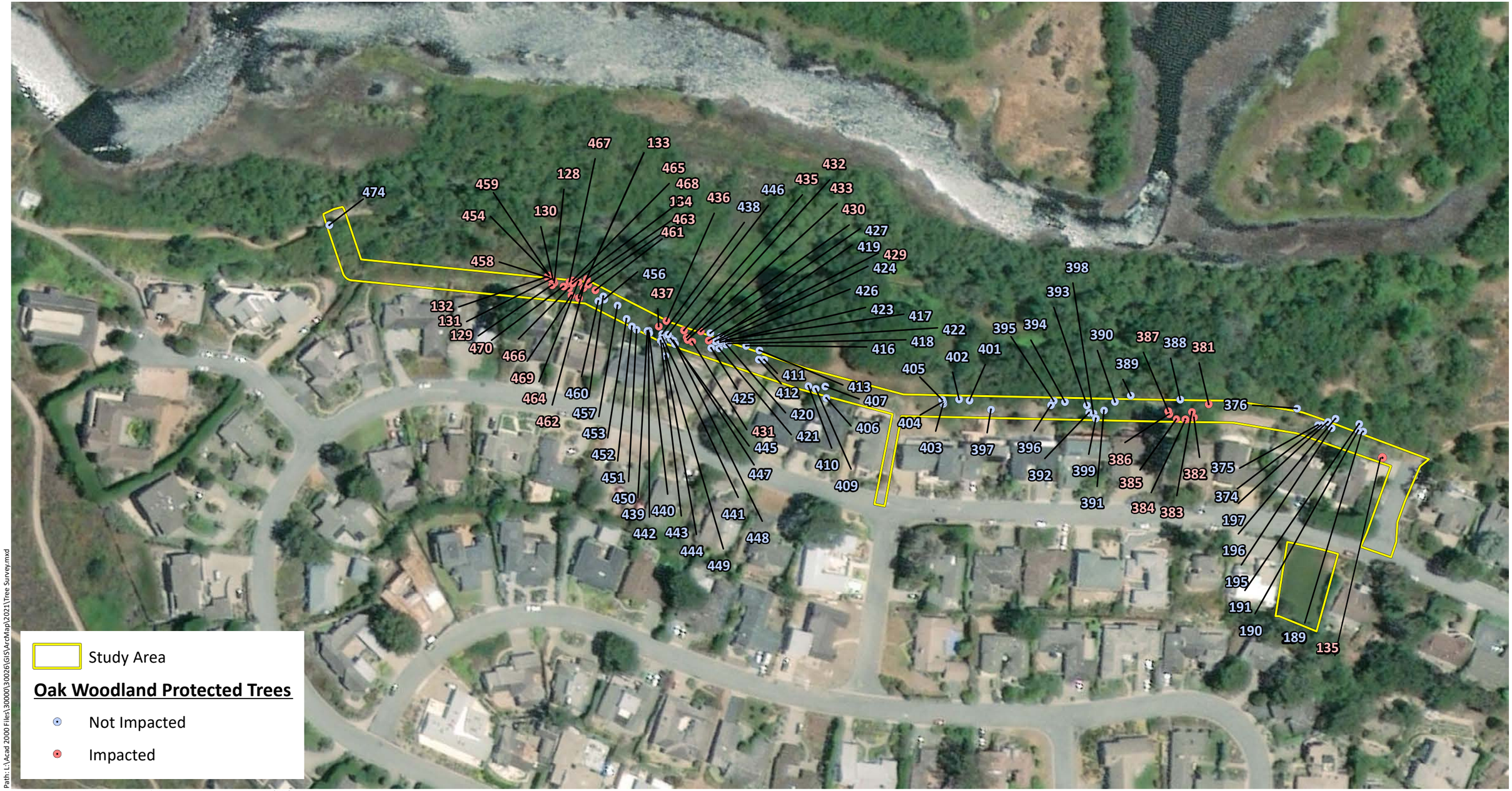

Path: I:\Acad 2000 Files\30000\30026\GIS\ArcMap\2021\Tree Survey.mxd

Sources: Vivid 2019 Aerial, WRA | Prepared By: mrochelle, 12/16/2021

Appendix B. Oak Woodland Protected Trees

Carmel Meadows Lift Station
Carmel Area Wastewater District
Monterey County, CA

0 200 400 Feet

wra ENVIRONMENTAL CONSULTANTS

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APPENDIX C – REPRESENTATIVE PHOTOGRAPHS

Photograph 1. Trees #382 - #387, protected coast live oaks, behind address 2905 Ribera Road. These trees are adjacent to the new sewer replacement.

Photograph 2. Protected trees #429 - #437 behind 2805 Ribera Road. These trees are on a slope at the northeastern edge of the Study Area.

Photograph 3. Trees on a slope and above manhole to be cleaned out between addresses 2805 and 2795 Ribera Road.

Photograph 4. Trees #460 - #470 , all protected coast live oaks, behind 2785 Ribera Road within the Study Area. These trees are along proposed replacement sewer pipeline alignment.

Photograph 5. Trees #468 - #470, all protected coast live oaks, behind 2785 Ribera Road within the Study Area along proposed replacement sewer pipeline alignment.

Appendix C – Cultural Resources Inventory Report Executive Summary

Confidential – Not for Public Distribution

Cultural Resources Survey Report

CARMEL MEADOWS LIFT STATION AND SEWER REPLACEMENT PROJECT MONTEREY COUNTY, CALIFORNIA

Prepared For:
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Date:
June 2020

WRA Project #:
30026

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LIST OF PREPARERS

Robin Hoffman – Principal Investigator (cultural resources)/Author

LIST OF ACRONYMS

C-APE	CEQA Area of Potential Effects
California Register	California Register of Historical Resources
CAWD	Carmel Area Wastewater District
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
HSC	California Health and Safety Code
NAHC	California Native American Heritage Commission
National Register	National Register of Historic Places
NWIC	Northwest Information Center
OHP	California Office of Historic Preservation
PRC	California Public Resources Code
RPA	Registered Professional Archaeologist
SCA	Society for California Archaeology
SLF	(NAHC) Sacred Lands File
SOIS	U.S. Secretary of the Interior's Professional Qualifications Standards
USC	United States Code
USDA	U.S. Department of Agriculture
USGS	U.S. Geological Survey
WRA	WRA, Inc.

NADB REPORT CITATION

Author(s):	Hoffman, Robin
Year:	2020 (May)
Title:	Cultural Resources Survey Report: Carmel Meadows Lift Station Project, Monterey County, California
Type:	Unpublished report
Organization:	WRA, Inc.
State:	California
County:	Monterey
Town:	Carmel-by-the-Sea (Vicinity)
Work Type:	Archeological Identification Study (Phase I); Historical Resources Study; Field Reconnaissance, Intensive
Keyword(s):	no impact on historical resources; no impact on archaeological resources; wastewater; no cultural resources identified
Federal Agency:	[none]
Local Agency:	Carmel Area Wastewater District
Acreage:	1.25 acres

STATEMENT OF CONFIDENTIALITY

This document identifies cultural resources locations, public disclosure of which may violate both federal and state laws. Federal regulations applicable to such disclosure include, but may not be limited to, Section 304 of the National Historic Preservation Act (54 United States Code [USC] § 307103) and the Archaeological Resources Protection Act (16 USC § 470h). California state regulations applicable to such disclosure include, but may not be limited to, California Government Code § 6250 *et seq*. and 6254 *et seq*. California Office of Historic Preservation policy prohibits disclosure of cultural resources location information to individuals other than those meeting the U.S. Secretary of the Interior's Professional Qualifications Standards for Archeology, Architectural History, Architecture, Historic Architecture, or History, or the requirements of the California State Personnel Board for Associate State Archaeologist or State Historian II.

EXECUTIVE SUMMARY

WRA, Inc. (WRA) prepared this report to document the methods and results of a cultural resources inventory completed for the Carmel Meadows Lift Station Project (Project), in Monterey County, California. The Carmel Area Wastewater District (CAWD) proposes the Project, which would install a small lift station and sewer improvements, including sewer line and manhole replacement, and existing sewer rehabilitation. The Project is subject to state environmental regulations, including the California Environmental Quality Act (CEQA), for which CAWD is the lead reviewing agency.

This document records the existing conditions of the Project site regarding cultural resources, for use in required Project documentation for review under CEQA. Work performed consisted of: a records search of the California Historical Resources Information System (CHRIS); correspondence with relevant Native American representatives, including the California Native American Heritage Commission (NAHC); research on existing cultural resources literature; an intensive-level pedestrian survey of the CEQA Area of Potential Effects (C-APE); and conclusions and recommendations.

CHRIS has no record of any previously recorded cultural resources in or adjacent to the C-APE. The NAHC Sacred Lands File search for the Project returned positive results for sacred sites in vicinity of the C-APE; this positive result is believed to be associated with the Mission San Carlos Borromeo del Rio Carmelo, which is well outside the C-APE.

In April 2020, WRA conducted a cultural resources pedestrian survey of the C-APE. Intensive pedestrian survey methods were used, consisting of walking parallel transects spaced at no more than 5 meters apart and inspecting the surface for cultural material (archaeological or architectural) or evidence thereof. During the pedestrian survey, WRA did not identify any cultural resources.

In summary, this study did not identify any cultural resources in the C-APE. As a result, WRA does not foresee that the Project would result in any adverse change in the significance of an historical resource or unique archaeological resource, as defined in CEQA. Recommendations for protocol for inadvertent discovery of archaeological resources or human remains during Project construction are included in the *Recommendations* section of this document.