



August 22, 2024

City of Paso Robles
c/o Casey Shepherd, Wastewater Resources Manager
1000 Spring St
Paso Robles, CA 93446
(805) 227-7238

Via email: csheperd@prcity.com

Copy to: Kirk Gonzalez, kgonzalez@prcity.com and Christopher Alakel, calakel@prcity.com

Re: Biological Report for Franklin Creek Exposed Sewer Line Project
City of Paso Robles, California

Dear Mr. Shepherd:

This report provides information regarding plant and wildlife species on a 3.3-acre portion of Assessor's Parcel Number (APN) 009-815-013 (Study Area), in the City of Paso Robles (City), California. Results include a habitat assessment, botanical and wildlife inventory, a discussion of special status species that have potential to occur within the Study Area, and an analysis of potential impacts to biological resources associated with protection of an exposed 21-inch diameter trunk sewer line that crosses Franklin Creek, a local tributary to the Salinas River (Project).

The Study Area is situated south of the Niblick Road and Nicklaus Street intersection, approximately 0.3-mile south of Niblick Road, 0.3-mile east of South River Road, and directly abuts Nicklaus Street to the west. Location coordinates are 35.61237 N, 120.67632°W (WGS 84) in the Templeton USGS 7.5' topographic quadrangle (Figure 1). The Study Area is an undeveloped, City-owned and maintained property that is surrounded by residential land uses and traversed by an existing 16-foot-wide sewer easement.

Franklin Creek is a locally named seasonal creek that conveys stormwater in a southeast to northwest direction through oak woodland and non-native grassland habitat. Downstream from the Study Area, Franklin Creek is conveyed beneath paved commercial property and roads until it merges with the Salinas River through a culvert outfall approximately 0.6-mile northwest (Figure 2).

An exposed 21-inch diameter trunk sewer line was recognized by City staff on September 14, 2023. The sewer line crossing is in an area that eroded immediately downstream from the sewer, exposing the line. The sewer line is in a location that is at risk of continued bed and bank erosion and is vulnerable to failure pending the upcoming rainy season. The City proposes to protect the

sewer line at this crossing during dry conditions (Project), as described by the following construction components:

- 1) Site Access. Workers will use the existing dirt access road to stage/stockpile in areas that are annually mowed and maintained by the City for easement access. A main access point was identified upstream from the exposed feature, and an alternate access point was identified downstream from the exposed feature. Temporary creek access will need to create an even slope by excavating the top bank and filling the void below to create a side slope using a mini excavator, approximately 10 to 15-feet-wide.
 - Temporary creek access impacts would occur at one location, either upstream from the sewer crossing or at an alternate location downstream from the sewer crossing. Estimated impact is approximately 400 square feet (0.01-acre).
- 2) Site Preparation. Workers will remove/excavate woody debris from the exposed sewer line location (i.e. exposed feature). Smaller tree roots from large red willow tree (*Salix laevigata*) will be cleared to minimize deleterious material. Red willow tree large roots may need to be cut and may be salvaged for habitat restoration. Using a mini excavator or skid steer the eroded feature surrounding the sewer line will be backfilled and compacted.
- 3) Protect Sewer Line at Crossing. Rock Slope Protection (RSP) will fill the area immediately surrounding the sewer line to support the crossing. Re-establish creek banks that were eroded away adjacent to the sewer pipe (upstream and downstream) to prevent further erosion at the crossing, and backfill the channel floor to re-establish the grade transition from upstream and downstream.
 - Permanent RSP around the exposed feature estimated within the Ordinary High Water Mark (OHWM) is approximately 1,400 square feet (sf; approximately 0.03- acre).
 - Cubic yards (cy) of RSP is approximately 177 cy.

A Slope Repair and Pipeline Protection letter from geotechnical engineer (Earth Systems, Inc.) is provided in Attachment B, for reference.

This Project qualifies for a California Environmental Quality Act (CEQA) Class 1 Categorical Exemption (§15301) that will be filed by the City of Paso Robles. Class 1 exemptions include minor alteration of existing public structures or facilities that consists of repair, maintenance, or permitting. The Project is consistent with the Class 1 Categorical Exemption because the proposed work activities will protect an existing public sewer line.

Methods

The Study Area was initially surveyed on September 19, 2023 by Senior Biologist Valerie Mattos and GIS Specialist Sullivan France. Additional spring surveys were conducted on March 26, 2024 by Althouse and Meade, Inc. Wildlife Biologist Diondra Jones and Botanist Rachel Wright to inventory wildlife and plant species and conduct a habitat assessment for special-status wildlife and plants. On March 27, 2024 Principal Scientist LynneDee Althouse and Senior Biologist Valerie Mattos surveyed the site for general biological resources and took creek measurements. General plant and wildlife species were documented during all surveys to identify any potential sensitive species and vegetation communities. All plant and wildlife species documented at the time of the surveys were recorded and are provided in Attachment C and Attachment D.

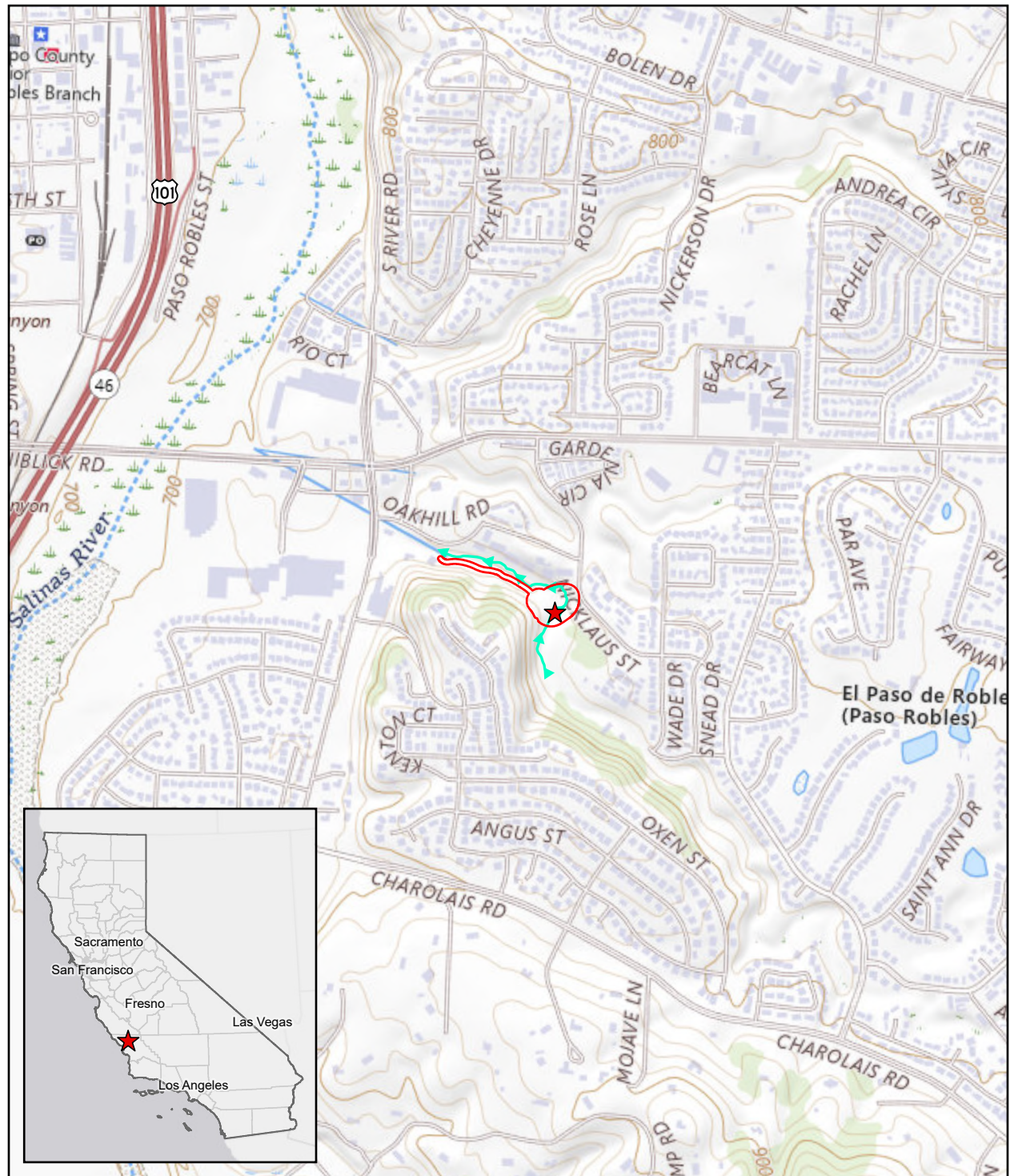
Plant species that could not be readily identified in the field were collected and identified using a taxonomic key. Biological surveys were conducted on foot to compile species lists, search for special status plants and animals, map habitats, and to photograph the Study Area. The general vegetation survey method included meandering transects with an emphasis on identifying each plant species observed. Botanical nomenclature used in this document follows Jepson eFlora (Jepson Flora Project 2024). Wildlife documentation included observations of animal presence and other wildlife sign (vocalizations, scat, tracks, burrows). Wildlife nomenclature for birds is in accordance with the American Ornithological Society Checklist (Chesser et al. 2019) and Revised Checklist of North American Mammals North of Mexico (Bradley et al. 2014).

Data from the CNDDDB and the California Native Plant Society (CNPS) On-line Inventory of Rare and Endangered Plants of California was reviewed on June 17, 2024 (CNDDDB 2024a, 2024b, 2024c, CNPS 2024). Other database searches included online museum/resources and herbarium specimen records for locality data within San Luis Obispo County as maintained by eBird (eBird 2022), and the Consortium of California Herbaria (CCH 2024). The data search area included Templeton USGS 7.5-minute quadrangle and the 8 surrounding quadrangles (Adelaida, Atascadero, Creston, Estrella, Morro Bay North, Paso Robles, Santa Margarita, and York Mountain). Data was compiled for sensitive plant and wildlife species and reviewed according to each species potential to occur at the Study Area. Special status species lists produced by database and literature searches were cross-referenced with the described habitat types in the Study Area. Sensitive species determined to have potential to occur are provided in Attachment E and Attachment F. Each special status species that was determined to have potential to occur in or near the Study Area are individually discussed based on the following criteria.

- **Present:** The species was observed in the Study Area during field surveys.
- **High Potential:** Highly suitable habitat and CNDDDB or CNPS occurrence records indicate the species is likely to occur in the Study Area. Individuals may not have been observed during field surveys; however, the species likely occurs in the project vicinity and could move onto the project site in the future.
- **Moderate Potential:** Suitable habitat is present in the Study Area and CNDDDB occurrences or surveys have recorded the species within 5 miles of the project. Individuals were not observed during field surveys, but the species could be present, at least seasonally or as a transient.
- **Low Potential:** Marginally suitable habitat is present in the Study Area, and there are no occurrence records or other historical (i.e., 50 years or older) records within 10 miles of the Study Area. Individuals were not observed during surveys and are not expected to be present.
- **No Potential:** Suitable habitat for the species is not present in the Study Area, and/or the species is not known to occur in the region.

Maps were created using aerial photo interpretation and spatial data imported to Esri ArcGIS, a Geographic Information System (GIS) software program using aerial images of San Luis Obispo County (NAIP 2022).

Figure 1. United States Geological Survey Topographic Map



Legend

- Study Area
- Franklin Creek
- ★ Exposed Sewer Line



City of Paso Robles
Exposed Trunk Sewer Line - Franklin Creek
 Map Center: 35.61225°N 120.67632°W
 Paso Robles, San Luis Obispo County

USGS Quadrangle: Templeton

Figure 2. Aerial Photograph



Existing Conditions

An exposed 21-inch diameter trunk sewer line found on September 14, 2023 by City of Paso Robles staff located in portion of an unnamed tributary locally referred to as Franklin Creek. The Project is in an area that eroded immediately downstream from the sewer line crossing, exposing the line (Photos 1 and 2). The eroded channel bed and bank presumably occurred during the past winter storm surges in 2022-2023. The exposed sewer line continued to erode the bank during the 2023-2024 rainy season. Potential sewer line failure is a public health and safety risk due to location within a creek that is tributary to the Salinas River, proximity to Pat Butler Elementary School (school yard is located 100 feet south), and adjacent multi-family residences.

The Study Area is accessible from a parking lot adjacent to Oak Hill Road where Franklin Creek is routed under this parking lot through a large culvert. A dirt access road parallels the creek from the parking through the oak woodland habitat and non-native grassland (Photo 3). The dirt access road follows the sewer line (Photo 4).



Photo 1. Franklin Creek exposed sewer line, August 7, 2024, view from top of bank (northwest).



Photo 2. Franklin Creek exposed sewer line, August 7, 2024, view upstream (southwest).



Photo 3. Dirt access road near entrance gate, facing east, April 26, 2024.



Photo 4. Dirt access road along sewer line and manhole pictured to left/south of access road, facing west-northwest, April 26, 2024.

Vegetation Communities and Botanical Resources

Three habitat types were identified within the Study Area: coast live oak woodland and forest, non-native annual grassland, and developed land (Table 1; Figure 3). No CDFW sensitive vegetation communities are present within the Study Area.

A total of 39 plant species were observed during the surveys. Plant species observed included a mixed assortment of trees, shrubs, forbs and grasses. No special status plants were observed within the Study Area during biological surveys. All plant species observed during the surveys are listed in Attachment C.

TABLE 1. HABITAT TYPES WITHIN STUDY AREA

Habitat	Total Area (Acres)
Coast live oak woodland and forest	2.1
Non-native annual grassland	1.1
Developed land	<0.1
TOTAL	3.3

Coast Live Oak Woodland and Forest (*Quercus agrifolia* Forest and Woodland Alliance) vegetation classification occurs where oak tree canopy is open to continuous, and sometimes savannah-like. Coast live oaks (*Quercus agrifolia*) co-dominate this vegetation classification onsite with blue oaks (*Quercus douglasii*), indicative of the *Quercus agrifolia* Forest and Woodland Alliance described in the Manual of California Vegetation (MCV; Sawyer 2009; Photos 5 to 8). The subcanopy is sparse to intermittent, consisting of species such as coyote brush (*Baccharis pilularis*), California coffee berry (*Frangula californica*), toyon (*Heteromeles arbutifolia*), and western poison oak (*Toxicodendron diversilobum*). The herbaceous understory consists principally of non-native grasses and forbs such as slender wild oats (*Avena barbata*), ripgut grass (*Bromus diandrus*), soft chess brome (*B. hordeaceus*), and annual fescue (*Festuca microstachys*). Franklin Creek runs principally through this habitat type within the Study Area with one red willow (*Salix laevigata*) present at the sewer line, Fremont cottonwood (*Populus fremontii*) also present closer to the dirt access road entry.



Photo 5. Coast live oak woodland and forest surrounding an opening of non-native annual grassland and south of access road, facing east April 26, 2024.



Photo 6. Coast live oak woodland and forest adjacent to Franklin Creek bank/escarpment, facing northeast, April 26, 2024.



Photo 7. Coast live oak woodland and forest above drainage feature on opposite bank, facing northeast September 20, 2023.



Photo 8. Coast live oak woodland and forest in Franklin Creek bed, facing northwest, September 20, 2023.

Non-native grassland (*Avena* spp. - *Bromus* spp. Herbaceous Semi-Natural Alliance) occurs within an opening of the Study Area generally associated with the sewer line and access (Photos 9 and 10). The grass consists of annual fescue and other non-native Mediterranean grasses such as soft chess brome, ripgut brome, and slender wild oats. This habitat aligns with the MCV Wild Oats and Annual Brome Grasslands (*Avena* ssp. – *Bromus* spp.) Herbaceous Semi-Natural Alliance (Sawyer et al. 2009) due to the open/continuous non-native annual grassland presence, and lack of shrub/canopy layers.



Photo 9. Non-native annual grassland surrounded by coast live oak woodland and forest, south of the dirt access road, facing northwest, April 26, 2024.




Photo 10. Non-native annual grassland in opening at proposed staging area, April 27, 2024.

A small area of **Developed Land** includes Nicklaus Street right-of-way (road, sidewalk and ornamental plantings). Nicklaus Street is a City collector road that connects with Niblick Road to the north and Rambouillet Road to the east.

Figure 3. Habitat Map



Legend

- | | | |
|---|------------------------|--|
|  | Exposed Sewer Line | Habitat Type |
|  | Franklin Creek |  Annual Grassland (1.1 acres) |
|  | Study Area (3.3 acres) |  Coastal Live Oak Woodland and Forest (2.1 acres) |
| | |  Developed (<0.1 acre) |



0 100 200 Feet

City of Paso Robles
Exposed Trunk Sewer Line - Franklin Creek
 Map Center: 35.61237°N 120.67632°W
 Paso Robles, San Luis Obispo County

Imagery Source: USDA NAIP, 05/13/2022

Non-Wetland Waters

Drainage identified onsite as a feature that display evidence of hydrology but do not contain vegetation suggestive of wetlands. Evidence of Ordinary High Water Mark (OHWM) was used to determine extent of U.S. Army Corp of Engineers (USACE) jurisdiction over non-wetland waters of the U.S. The OHWM Manual (USACE 2010) lists and describes indicators associated with areas that become flooded or ponded but are not dominated by wetland vegetation and the duration of flooding, ponding, and/or near-surface soil saturation (less than or equal to 12 inches) is not sufficient to cause hydric soils to form or wetland hydrology conditions to occur. Section 404 of the CWA authorizes the USACE to regulate activities that discharge dredged or fill material to wetlands and other waters of the United States. The term “waters of the United States” encompasses resources described by the Environmental Protection Agency (EPA) and the Corps regulations, 40 Code of Federal Regulations (CFR) § 230.3(s) and 33 CFR § 328.3(a). The geographic limits of relevant federal jurisdiction for non-tidal waters of the U.S. are defined at 33 CFR § 328.4(c).

Section 401 of the Clean Water Act requires that any applicant for a Section 404 permit also obtain a Water Quality Certification from the State (401 Certification). The Water Code defines “waters of the State” broadly to include “any surface water or groundwater, including saline waters, [natural, and artificial wetlands] within the boundaries of the state.” The state will also take jurisdiction over non-wetland waters including ephemeral drainages to the top of bank (TOB), isolated waters, and tidal waters to the higher high tide line (CWA section 404 jurisdiction).

The CDFW regulates rivers, streams, and lakes (including ephemeral features) under Fish and Game Code Section 1602. “An entity may not substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake, or deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake” (Fish and Game Code Section 1602(a)). CDFW found the USFWS wetland definition and classification system based on the 1979 Cowardin definition to be the most biologically valid (Cowardin et al. 1979). CDFW will take jurisdiction over drainage or lake features with a bed and bank and will limit their jurisdiction to the top of bank and may include adjacent wetland or riparian areas on a case-by-case basis.

Franklin Creek is identified as a non-wetland waters of the U.S. up to the OHWM and a non-wetland waters of the State up to the top of bank or riparian areas according to guidance stated above. Franklin Creek is a tributary to the Salinas River with a watershed encompassing much of the southeastern corner of the City limits (approximately 3,260 acres; Exhibit 1). Stormwater enters the Study Area from the south, east of Pat Butler Elementary School, then meanders easterly toward Nicklaus Street before it bends westerly, south of Canyon Creek Apartments. Approximately 0.25 creek miles from the exposed feature, the creek enters a large culvert and travels underground for approximately 0.6-mile northwest until it enters the Salinas River, north of Niblick Road, just east of the Niblick bridge crossing. The Study Area is in the Paso Robles Creek-Salinas River watershed (Figure 4) which is located centrally within San Luis Obispo’s North County.

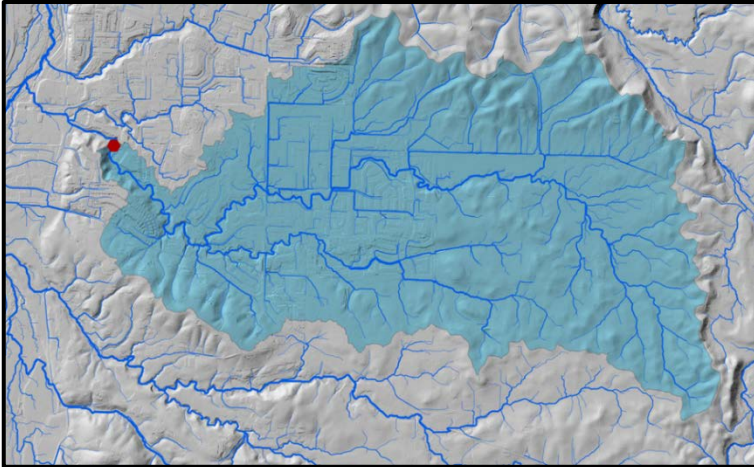


Exhibit 1. Exposed sewer line feature indicated by a star and above watershed indicated in light blue.

Franklin Creek is an unvegetated non-wetland waters of the U.S./State and has hydrologic drainage patterns evidenced by presence of a bed and bank, benches, and some debris drifts (Photos 11 and 12). The bank is mostly bare, with benches that are sometimes vegetated with herbs and grasses (and an occasional shrub, e.g. coyote brush). A cross-section is provided on Figure 5. On March 27, 2024 A&M surveyed the Study Area's hydrology using Arid West Ephemeral and Intermittent OHWM Datasheets, provided in Attachment G. The OHWM was measured 32 feet wide at location '1', noted just upstream from the exposed sewer pipe, and at location '2' situated just downstream of the exposed sewer pipe (Figure 5). Photos 13 and 14 shows the upstream location (Datasheet 1, Attachment G), and Photos 15 and 16 shows the downstream location (Datasheet 2, Attachment G).

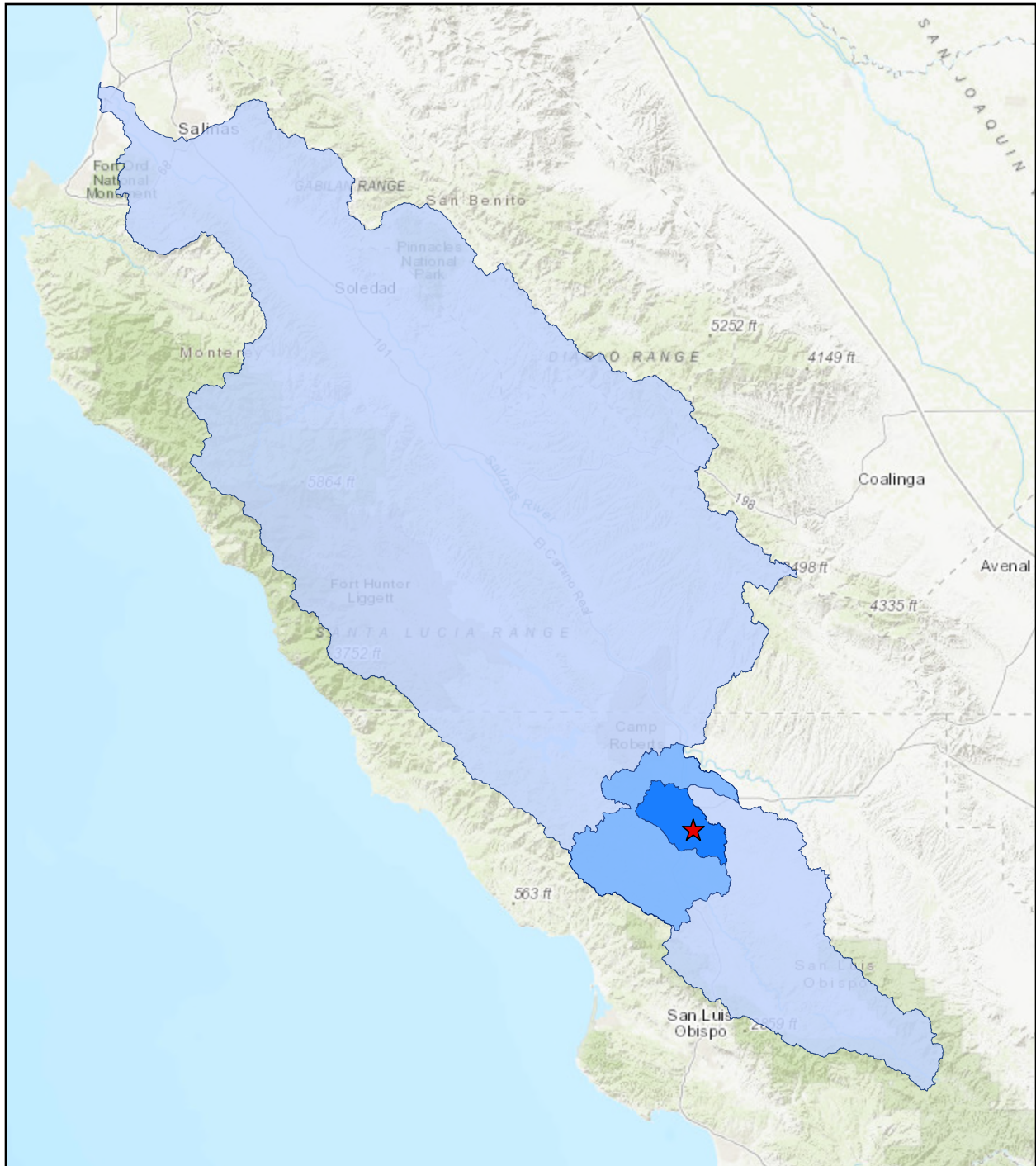


Photo 11. View inside Franklin Creek channel bottom, facing upstream (west), downstream from the exposed feature, March 26, 2024.



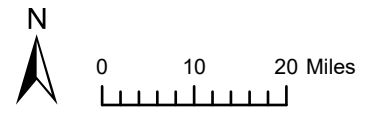
Photo 12. Located downstream from the exposed feature facing northeast, in the channel bottom, March 26, 2024.

Figure 4. Hydrologic Unit Codes



Legend

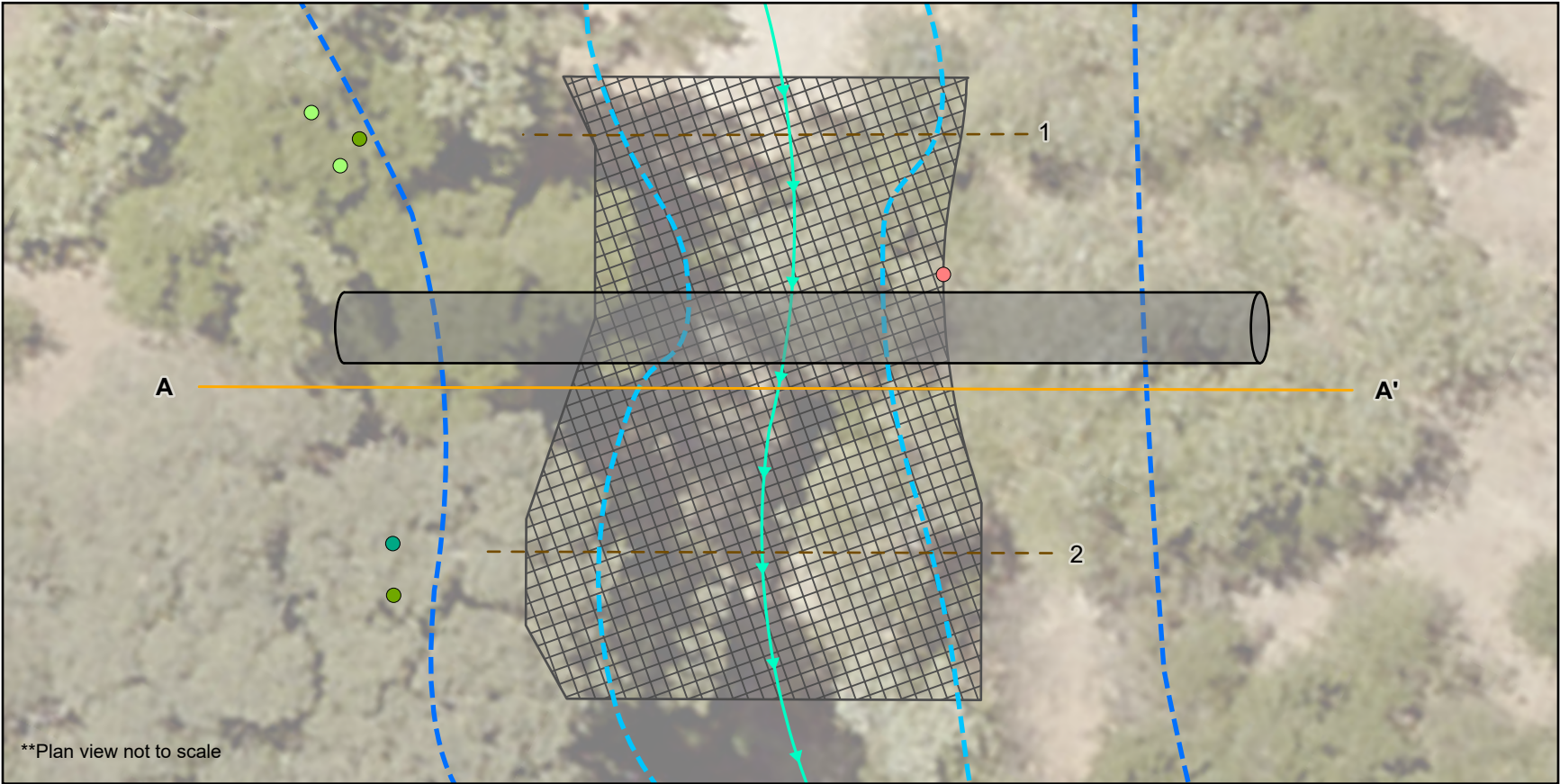
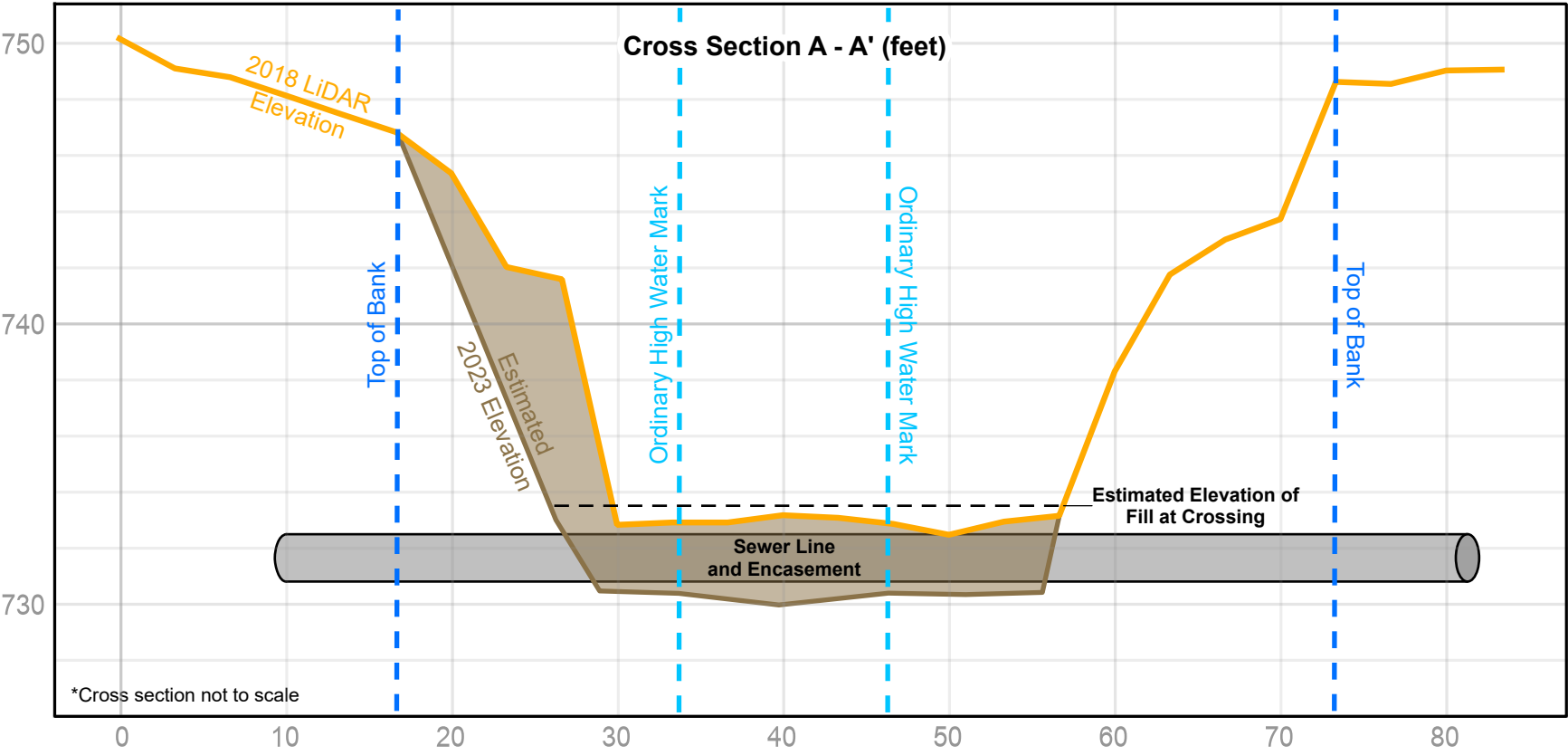
-  Study Area
-  18060005 (Salinas)
-  1806000504 (Paso Robles Creek-Salinas River)
-  180600050405 (Mustard Creek-Salinas River)



City of Paso Robles
Exposed Trunk Sewer Line - Franklin Creek
Map Center: 35.98738°N 121.00279°W
Paso Robles, San Luis Obispo County

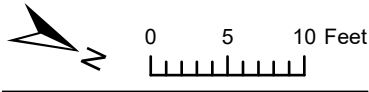
Data Source: United States Geological Survey

Figure 5. Cross Section



Legend

- | | | |
|-------------------------------------|---|--------------|
| --- Top of Bank | — Cross Section* | ● Red willow |
| --- Ordinary High Water Mark | --- Cross-section location, see Appendix F datasheets | ● Valley oak |
| Estimated Sewer Line and Encasement | Tree Species | |
| Proposed Riprap | ● Blue oak | |
| Franklin Creek | ● Coast live oak | |



City of Paso Robles
Exposed Trunk Sewer Line - Franklin Creek
Map Center: 35.61182°N 120.675°W
Paso Robles, San Luis Obispo County

Vertical Datum: NAVD88, 1-foot Contours
Data Source: 2018 FEMA Lidar: Region 9, CA
Imagery Source: County of San Luis Obispo, 08/24/2021



Photo 13. Franklin Creek channel bottom, upstream from exposed sewer line, facing east (Datasheet 1 location), March 27, 2024.



Photo 14. Picture taken on top of north bank, upstream from exposed sewer line facing east (Datasheet 1 location), March 26, 2024.



Photo 15. Franklin Creek channel bottom, east of exposed sewer line, facing upstream (west; Datasheet 2 location), March 27, 2024.



Photo 16. Picture taken on top of south bank, downstream from exposed sewer line facing northwest, March 26, 2024.

Wildlife

Twenty-one (21) wildlife species were observed within the Study Area during the site survey. Wildlife species observed onsite generally include those adapted to urban and developed areas, and include mallard duck (*Anas platyrhynchos*), Anna's hummingbird (*Calypse anna*), turkey vulture (*Cathartes aura*). No special status wildlife species were observed during September 2023 and March 2024 biological surveys. The complete list of wildlife species observed during the time of the survey is presented in Attachment D.

Special Status Species

For the purpose of this Biological Report, special status species are those plants and animals listed, proposed for listing, or candidates for listing as threatened or endangered by the U.S. Fish and Wildlife Service (USFWS) under the Federal Endangered Species Act (FESA); those listed or proposed for listing as rare, threatened, or endangered by the California Department of Fish and Wildlife (CDFW) under the California Endangered Species Act (CESA); animals designated as

“Species of Special Concern (SSC),” “Fully Protected (FP),” or “Watch List (WL)” by the CDFW (CDFW 2023c); and plants with a California Rare Plant Rank (CRPR) of 1 (considered threatened or endangered throughout its range), 2 (considered threatened or endangered in California, but more common elsewhere), or 4 (limited distribution). Sensitive Natural Communities are designated through CDFW to specific vegetation associations of ecological importance (CDFW 2022). Evaluation is conducted at both the Global (G) and State (S) levels, resulting in a rank ranging from 1 for very rare and threatened to 5 for demonstrably secure. Natural Communities with ranks of S1-S3 are considered Sensitive Natural Communities in California and may need to be addressed in the environmental review processes of California Environmental Quality Act (CEQA) and its equivalents.

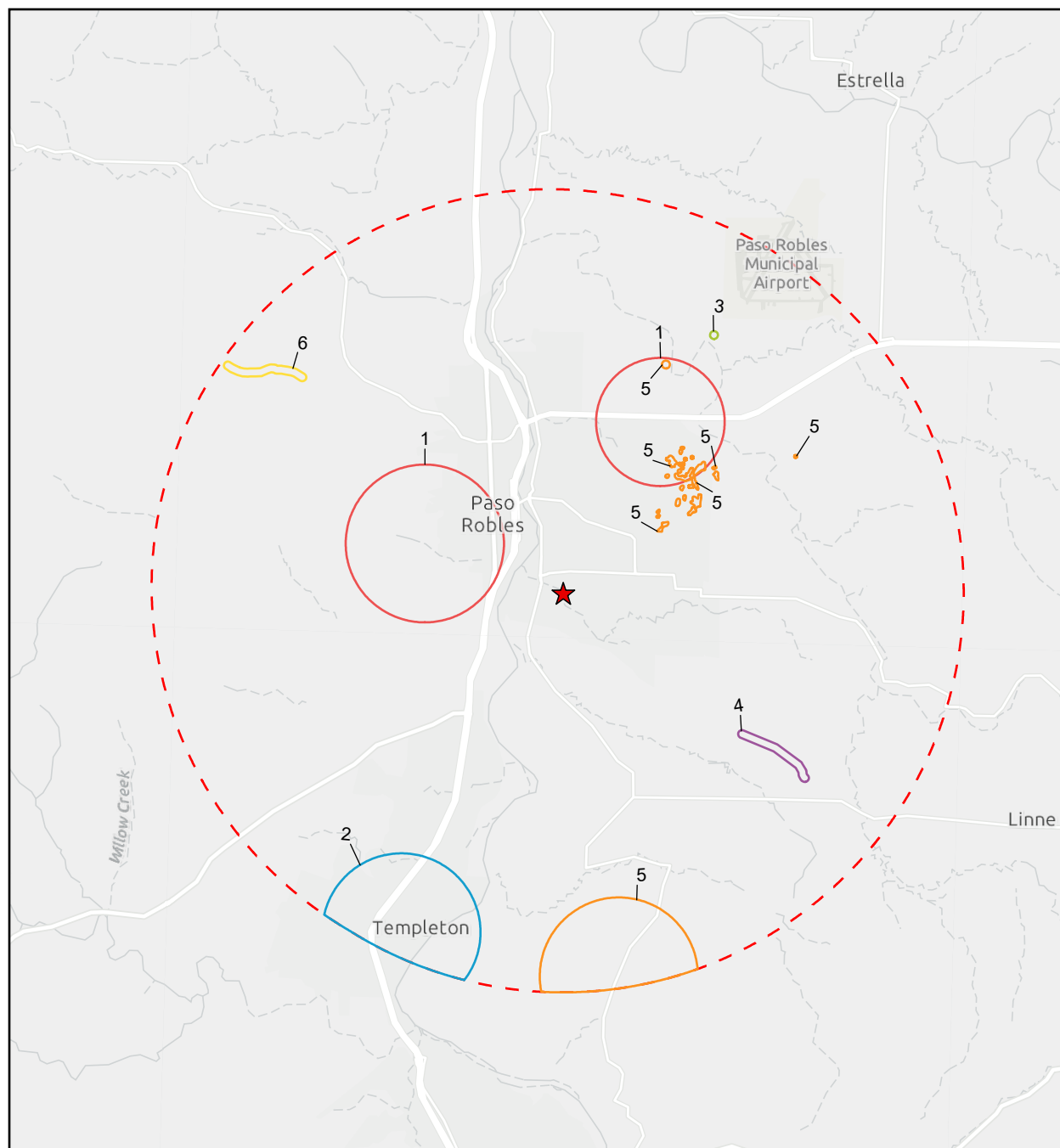
Sensitive Plants

Research on special status plant occurrences conducted within the designated search area determined 75 special status plant species are known to occur in the region (Attachment E, CNDDDB 2024a, CNDDDB 2024b, CNPS 2024). Figure 6 depicts the current GIS data for special status plants mapped near the Study Area by the CNDDDB.

Based on an analysis of known ecological requirements for the special status plant species reported from the region, and habitat conditions that were observed, one special status plant species has low potential to occur within the Study Area. The remaining 73 special status plant species are considered to have no potential to occur due to the absence of suitable habitat, or other ecological conditions and are not discussed further.

- 1. Shining navarretia** (*Navarretia nigelliformis* subsp. *radians*) is a CRPR 1B.2 subspecies endemic to California, primarily occurring in central California, with occurrences as far north as Butte and as far south as San Luis Obispo counties. It is known to occur in vernal pools, grassland, and cismontane woodland habitats, often on clay and alkaline sites between 65- and 1,000-meters elevation. It is an annual herb that typically blooms between (March) April and July. Branches are spreading to ascending from base and herbage is light gray-green (Keil and Hoover 2023, Jepson Flora Project 2023). Shining navarretia is further differentiated in the field by its yellow corolla (9-11 mm) and generally glabrous bract tips (Keil and Hoover 2023). The closest known record is approximately 1.4 miles northeast of the Study Area (CNDDDB #68). Other CNDDDB occurrences are within 5 miles of the Study Area (#4, #68, and #72). The species is typically found in heavy clay soils or vernal pools; however, the site had no identifiable or history of vernal pools and no evidence of shining navarretia was detected in the Study Area during the Spring 2024 survey.

Figure 6. California Natural Diversity Database Plant Records



Label Common Name

- 1 Beach spectaclepod
- 2 Black-flowered figwort
- 3 Blochman's dudleya
- 4 Brewer's spineflower
- 5 Cambria morning-glory
- 6 Chaparral ragwort
- 7 Congdon's tarplant
- 8 Dune larkspur
- 9 Dwarf soaproot
- 10 Hoover's bent grass
- 11 Hoover's button-celery
- 12 Indian Knob mountainbalm

Legend

- ★ Study Area
- 5-mile Buffer



0 1 2 Miles

City of Paso Robles
Exposed Trunk Sewer Line - Franklin Creek
 Map Center: 35.61415°N 120.68047°W
 Paso Robles, San Luis Obispo County

CNDDDB GIS Data Last Updated: April 2024



ALTHOUSE AND MEADE, INC.
 BIOLOGICAL AND ENVIRONMENTAL SERVICES

Map Updated:
 April 17, 2024 12:37 PM by SS

Sensitive Wildlife

The CNDDDB listed 39 special status wildlife species known to occur in the search area (Attachment F; CNDDDB2024a, CNDDDB 2024c). Figure 7 provides a summary of current GIS data for special status animals mapped near the Study Area by the CNDDDB. Analysis determined that two special status animals have moderate potential to occur and four have low potential to occur. The remaining 33 special status animals considered have no potential to occur due to the absence of suitable habitat, or other ecological conditions and are not discussed further. Due to habitat specifications and range restrictions the California red-legged frog (CRLF) and least Bell's vireo (LBVI) do not have potential to occur at the Study Area but were added to the discussion because of their high level of sensitivity. A total of eight species are discussed below.

1. **Southwestern pond turtle** (*Actinemys pallida*) is a federally proposed threatened species and a California Species of Special Concern. It has a widespread distribution in north and south California west of the Sierra-Cascade crest (Jennings and Hayes 1994). The southwestern pond turtle requires permanent to semi-permanent and slack or slow-moving water type habitat, including ponds, rivers, streams, reservoirs and wetlands found in grasslands, open forests and woodlands. It has also been observed in abandoned gravel pits, sewage treatment lagoons, irrigation ditches and stock ponds (Pilliod et al. 2013). Suitable water habitat will have plenty of basking and cover sites such as logs, reeds, rocks and muddy banks. The southwestern pond turtle also requires suitable upland habitat for nests, migration, overwintering and aestivation (Pilliod et al. 2013). Nests are laid on dry and unshaded south-facing slopes that are < 25° and of high clay or silt fraction (Jennings and Hayes 1994). Females lay eggs from April to August, depending on the latitude, and will travel as far as 400 meters from the water to find a suitable nesting spot (Jennings and Hayes 1994; Reese and Welsh 1997). The biggest threat to the western pond turtle is the destruction of wetland habitat, but its population size is also affected by the American bullfrog (*Lithobates catesbeianus*) which will prey on hatchlings and can even eliminate recruitment in some populations (USFWS 1992; Overtree and Collings 1997).

The species occurs in Franklin Creek approximately 0.8 'creek' mile upstream in a perennially ponded area. This information is based on annual wildlife surveys conducted in City-maintained open space, noting that at least one individual was observed basking before it fled (A&M 2023). Other records from 2006 maintained by the CNDDDB found over 28 individuals basking in the sun along the Salinas River, approximately 0.6-mile downstream (#1159). However, due to deeply incised bank escarpments and lack of a permanently ponded feature with appropriate basking and cover, the Study Area is unlikely to support the southwestern pond turtle. The southwestern pond turtle was not observed in the Study Area during the 2024 spring surveys and was determined to have low potential to occur.

2. **Northern California legless lizard** (*Anniella pulchra*) is a California Species of Special Concern that occurs from Contra Costa to Santa Barbara County. It has a Global Rank of G3 and a State Rank of S3, both of which indicate that this species is considered Vulnerable. Northern California legless lizard inhabits friable soils in a variety of habitats from coastal dunes to oak woodlands and chaparral. Adapted to subterranean life, the legless lizard thrives near native coastal shrubs that produce an abundance of leaf litter and have strong roots systems (Kuhn et al. 2005). Areas of exotic vegetation and open grassland do not provide suitable habitat for the legless lizard since these plant communities support smaller populations of insect prey and offer little protection from higher ground temperatures and soil desiccation (Slobodchikoff and Doyen 1977; Jennings and Hayes 1994). The closest reported occurrence

of the northern California legless lizard is historic, located approximately 3.8 miles southwest of the Study Area (CNDDDB #167, 1915). No northern California legless lizards were observed in the Study Area; however, appropriate cover under oak trees may provide marginally suitable habitat for shade, leaf litter, moisture, and protection. This species was determined to have low potential to occur.

3. **Obscure bumble bee** (*Bombus caliginosus*) is designated by CDFW as a Special Animal and has a Global Rank of G2G3 and a State Rank of S1S2 (NatureServe 2018). The State Rank of S1S2 is indicative of uncertainty regarding whether this species is Critically Imperiled or Imperiled, meaning the taxon is between rare and extremely rare due to steep declines, restricted range, minimal populations (5-20 or fewer), and/or other factors making it very vulnerable to extirpation from the state. The species' Global Rank indicates that it is Imperiled/Vulnerable (CNDDDB 2024a), meaning it is at a moderate to high risk of extinction due to restricted or fairly range, with few or relatively few populations or occurrences. There is cause for long-term concern due to declines or other factors such as climate change, habitat loss, and disease (Williams and Osborne 2009; Fürst et al. 2014). It is considered uncommon throughout its range, which stretches along the Pacific Coast from southern British Columbia to southern California with scattered occurrence records from the east side of California's Central Valley. Obscure bumble bees inhabit open coastal grasslands and meadows with colonies occurring underground and/or in abandoned bird's nests. Although this species is uncommon, the closest reported occurrence was located approximately 10 miles south of the project (CNDDDB #162, 1956). Foraging sources at or near the Study Area may be appropriate, and this species was determined to have a low potential to occur on site as a transient from the nearby coastal grasslands and meadows in the vicinity.
4. **Crotch's bumble bee** (*Bombus crotchii*) is designated by CDFW as a Special Animal and is presently a Candidate for listing as Endangered under the California Endangered Species Act. Crotch bumble bee is known from California, western Nevada, and northern Baja California, Mexico. The species inhabits open grassland and scrub habitats. Requirements for this, as well as all bumble bee species include suitable nesting sites, pollen and nectar sources, and suitable overwintering sites for the queen. In California, the flight period for the queen is approximately February to late October, peaking in early April, with a second pulse in July and the flight period for workers and males is from late March through September with a peak in July (Thorpe et al. 1983). In general, bumble bees forage from a diversity of plants, although individual species can vary greatly in their plant preferences, largely due to differences in tongue length (Hatfield et al. 2015). Crotch's bumble bees are classified as a short-tongued species, whose food plants include *Asclepias*, *Chaenactis*, *Lupinus*, *Medicago*, *Phacelia*, and *Salvia* (Williams et al. 2014). Little is known about overwintering for this species, however in general for bumble bees, suitable overwintering sites for queens may include soft, undisturbed soils, leaf litter, or under other debris. There is possible suitable habitat present in the non-native grassland openings. The closest recorded occurrence is documented by A&M biologists on south Vine Street in the spring of 2024, approximately 2 miles southwest (Personal Communication Herrera 2024). Due to the presence of potentially suitable habitat with available pollen and nectar sources (lupines, vetch) near the non-native grassland habitat and tributary, the non-native grassland has moderate potential to support Crotch's bumble bee; however this species was not observed in or around the Study Area during site surveys.
5. **White-tailed kite** (*Elanus leucurus*) is a CDFW Fully Protected species that can be found throughout California but known to forage and nest in certain areas of California in fluctuating

numbers (CNDDDB 2024a; Lehman 2018). The species nests primarily in evergreen trees, especially coast live oaks, near meadows, marshes, farmlands or grasslands where it forages on small animals, especially voles (Dunk 1995). Communal nocturnal roosts sites, which may shift in location, are often used from early fall to early winter. There is possible suitable open grassland habitat and dense tree canopy, with several eBird observations in the City of Paso Robles with the closest record as 1.2 miles northwest in 2006 (eBird 2024). White-tailed kite(s) were not observed at the Study Area during the site surveys, but has low potential to forage in the grasslands and vicinity, and nest in and adjacent to the oak woodland and forest habitat.

6. **California red-legged frog (*Rana draytonii*)** is a federally listed threatened species and a California Species of Special Concern. It occurs in California in the Coast Range, Sierras, the Transverse Range and south below 1,200 meters elevation (Sousa 2008). The main habitat types for the California red-legged frog (CRLF) are deep, still or slow-moving sources of water in lowlands and foothills with shrubby, riparian, or vegetative shorelines for cover (Jennings and Hayes 1994). Along with its aquatic habitat, the CRLF also utilizes upland habitat for seeking food, shelter and as migration corridors between breeding and non-breeding sites. Bulger et al. (2003) found that during dry summer months, CRLF were nearly always within 5 meters of a pond; however, during summer rain events and early winter rains, frogs moved up to 130 meters from their ponds, and some frogs even traveled up to 2,800 meters to migrate to a different pond.

California red-legged frogs are not historically documented in the City of Paso Robles' stretch of the Salinas River and associated tributaries/drainages. The closest reported occurrence of CRLF is in the community of Templeton approximately 5.8 miles south in a tributary just upstream from the Salinas River (CNDDDB #618, 2016). In addition, Franklin Creek lacks direct above-ground connection to the Salinas River because the creek is routed (approximately 0.6-mile) downstream from the exposed sewer line under parking lots and roadways before it reaches the Salinas River. This species is not known from the Study Area or surrounding vicinity, lacks suitable direct connection to the Salinas River, and lacks suitable habitat due to deeply-incised bank escarpments; therefore it was determined that the Study Area has no potential to support this species.

7. **Western spadefoot toad (*Spea hammondi*)** is endemic to California and northern Baja California, Mexico. Western spadefoot toad is primarily an inland species, occurring in grassland habitats with friable soils and seasonal rain pools (CNDDDB 2024a). Spadefoot toads remain underground for most of the year, emerging to breed in seasonal wetland pools during the rainy season and if enough rain occurs they can be found above ground from October through April. Typical breeding season is from December to March. Development of the larvae from egg to metamorphosis can be very quick (3-11 weeks), depending upon water temperature and food resources. Recruitment will most often fail if breeding ponds are inhabited by predators such as bullfrogs (*Lithobates catesbeiana*) and crayfishes (Jennings and Hayes 1994). The closest reported occurrence of the western spadefoot toad is from 2005, where six large tadpoles were found approximately 1.9 miles east of an isolated pool (#333). In addition, approximately 0.6-creek mile upstream from the Study Area, Sierran treefrog (*Pseudacris sierrae*) tadpoles were observed and mature adults were heard. At this same location potential spadefoot tadpoles were also observed in small numbers during biological surveys for an unrelated project; however, juvenile and adult crayfish were also present in the same area, reducing site suitability.

Ponded features just downstream from the sewer line and throughout the Study Area were determined to have moderate suitability as breeding habitat for western spadefoot toad; however, we surveyed all the ponded features within the Study Area for tadpoles and egg masses during the March 26, 2024 survey and no sign of western spadefoot toad or tadpoles were detected in these features (Photos 17 and 18).



Photo 17. View of a seasonally ponded area of the channel bottom, downstream from the exposed sewer line, March 26, 2024.



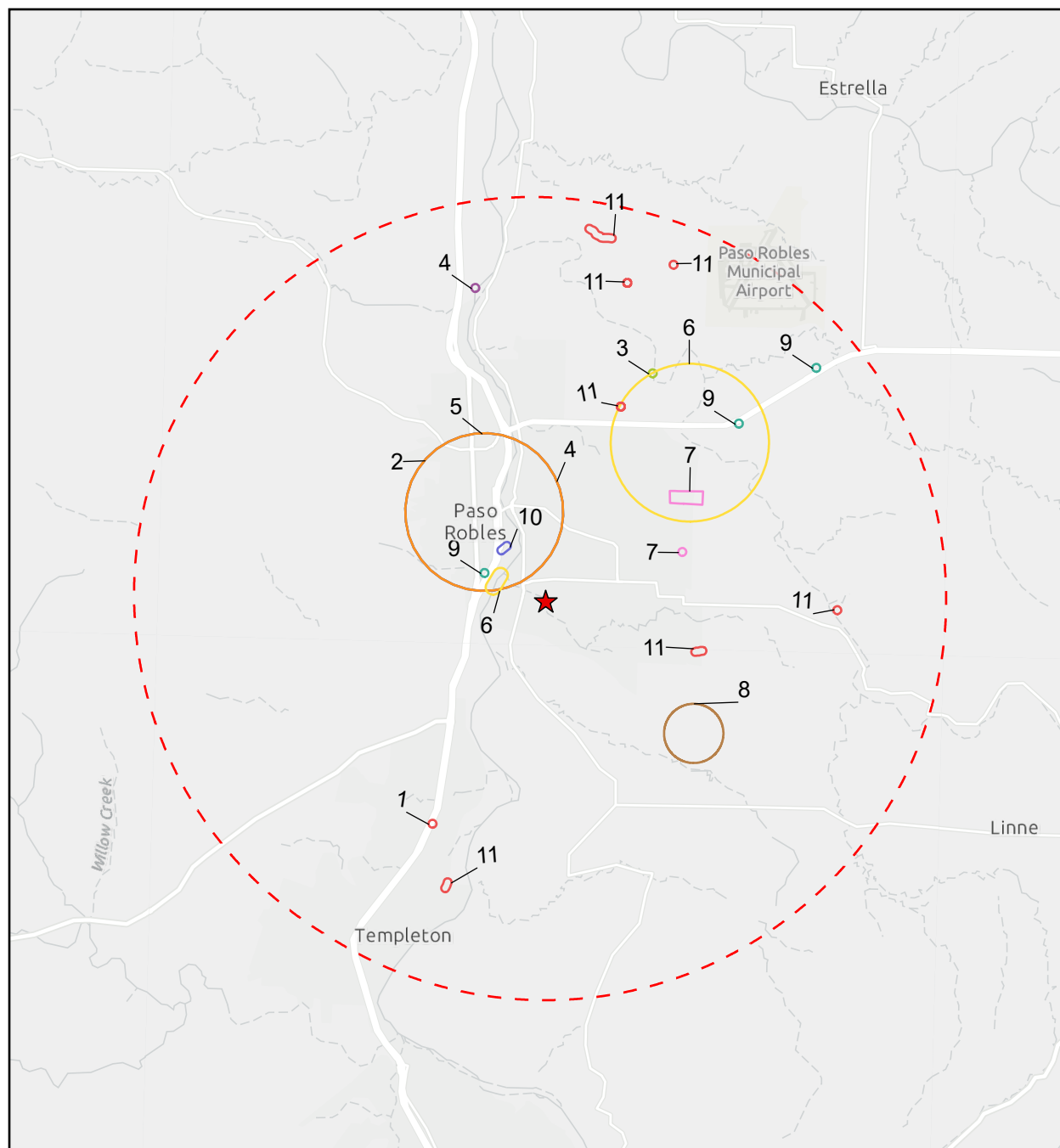
Photo 18. Downstream from the exposed feature facing west, in the channel bottom, September 19, 2023.

8. **Least Bell's vireo (*Vireo bellii pusillus*)** is one of four subspecies of Bell's vireo (*Vireo bellii*) and is both state and federally listed as endangered. The least Bell's vireo winters in Baja California, Mexico and migrates to California during the breeding season (generally March to September), where it is found in scattered populations from Central to Southern California. They are a small, olive colored bird whose habitat consists of low, dense riparian growth near dry and intermittent streams (USFWS 1994). Preferred nesting habitat is on low branches of willows (*Salix* spp.), mule fat (*Baccharis salicifolia*), and mesquite bushes (*Prosopis* spp.) where insects can be found for feeding (Brown 1993). Range wide decline has occurred due to habitat loss, and brood parasitism by brown-headed cowbirds (*Molothrus ater*) throughout range of California.

There has been no confirmed breeding by LBVI in San Luis Obispo County since at least the 1970s (USFWS 2006). The closest and most recent sighting of LBVI in the vicinity of the Study Area was approximately 3.9 miles north (CNDDB #323) in riparian habitat along the Salinas River in the summer of 2005. A singing male was observed from May through June 2005 and a pair of vireos was observed in July 2005, but no nest was found and breeding was not confirmed. The most recent confirmed sighting of LBVI in San Luis Obispo County was of a color-banded bird from Camp Pendleton in September 2009 in Los Osos, approximately 22 miles south of the Study Area (eBird 2020). The nearest extant viable breeding population of LBVI is on the Santa Clara River in Ventura County, approximately 125 miles south of the Study Area. Suitable habitat for LBVI is described as dense willow and mule fat riparian habitat.

The Study Area does not support LBVI because it lacks suitable willow riparian habitat, the nearest breeding population to the Study Area is 125 miles south, and the Study Area is surrounded by development with human disturbance in an around the site; therefore, it was determined that the Study Area has no potential to support this species.

Figure 7. California Natural Diversity Database Animal Records

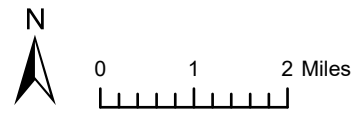


Label Common Name

- 1 Beach spectaclepod
- 2 Black-flowered figwort
- 3 Blochman's dudleya
- 4 Brewer's spineflower
- 5 Cambria morning-glory
- 6 Chaparral ragwort
- 7 Congdon's tarplant
- 8 Dune larkspur
- 9 Dwarf soaproot
- 10 Hoover's bent grass
- 11 Hoover's button-celery
- 12 Indian Knob mountainbalm

Legend

- ★ Study Area
- 5-mile Buffer



City of Paso Robles
Exposed Trunk Sewer Line - Franklin Creek
 Map Center: 35.61566°N 120.67659°W
 Paso Robles, San Luis Obispo County

CNDDDB GIS Data Last Updated: April 2024

Regulatory Framework

Clean Water Act – 404 Certification: The purpose of the CWA is to restore and maintain the chemical, physical, and biological integrity of all waters of the U.S. Section 404 of the CWA establishes a program to regulate the discharge of dredged or fill material into waters of the United States, including wetlands, under the U.S. Army Corps of Engineers (USACE). Permits may be issued on an individual basis or may be covered under approved nationwide permits.

Clean Water Act – 401 Certification: The Regional Water Quality Control Board (RWQCB) regulates impacts to water quality in federal waters of the U.S. under Section 401 of the Clean Water Act, but they also regulate any isolated waters that are impacted under the state Porter Cologne Act utilizing a Waste Discharge Requirement. Pursuant to Section 401 of the Clean Water Act, discharge of fill material into waters of the State not subject to the jurisdiction of the USACE may require authorization pursuant to the Porter Cologne Act through application for waste discharge requirements or through waiver of waste discharge requirements.

Lake or Streambed Alteration Agreement: Section 1602 of the California Fish and Game Code (CFGF) any person, state, or local governmental agency to provide advance written notification to CDFW prior to initiating any activity that would: 1) divert or obstruct the natural flow of, or substantially change or remove material from the bed, channel, or bank of any river, stream, or lake; or 2) result in the disposal or deposition of debris, waste, or other material into any river, stream, or lake. The state definition of “lakes, rivers, and streams” includes all rivers or streams that flow at least periodically or permanently through a well-defined bed or channel with banks that support fish or other aquatic life, and watercourses with surface or subsurface flows that support or have supported riparian vegetation.

Migratory Bird Treaty Act: The MBTA of 1918 was established to provide protection to the breeding activities of migratory birds throughout the U.S. The MBTA protects migratory birds and their breeding activities from take and harassment.

Birds: Under Section 3503 of the California Fish and Game Code, it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto. Section 3503.3 of the California Fish and Game Code prohibits take, possession, or destruction of any birds in the order Falconiformes (raptors) or Strigiformes (owls), or of their nests and eggs.

Oak Tree Protection: Pursuant to the City’s Oak Tree Preservation Ordinance (Section 10.01 of the City’s Municipal Code) oak tree protection measures are for trees measured at six inches or greater in diameter at 4.5 feet above ground level (DBH). Any oak tree slated for removal requires a permit and mitigation, as evaluated by an arborist. Trees not marked for removal or completely avoided are assessed according to their Critical Root Zone (CRZ). The City of Paso Robles defines the CRZ as the area circumscribed around the tree’s trunk using a radius of one foot per one-inch DBH.

Impact Analysis, Avoidance and Minimization Measures

The 3.3-acre Study Area is comprised of a 0.14-acre impact footprint. As shown on Figure 8, the Study Area is comprised of the following: (1) exposed sewer line protection, (2) main access route, (3) alternate access route, and (4) staging/stockpiling area.

No sensitive vegetation communities are present within the Study Area. The Study Area includes the existing access road, staging areas, access through the channel, and sewer line protection.

Existing dirt access roads will be utilized and a 0.10-acre area in non-native grassland will be used for staging/stockpiling. Federal and State non-wetland waters will be impacted via cut/fill areas that are confined to the access point (0.01-acre of non-native grassland) and the exposed feature (0.03-acre of coast live oak woodland understory). One individual red willow impact may result from clearing up roots and deleterious material situated along the sewer line. No individual oak trees are proposed for impact or removal.

TABLE 2. IMPACT AREA

Habitat	Study Area (Acres)	Impact (Acres)
Coast live oak woodland and forest	2.1	0.03*
Non-native annual grassland	1.1	0.11**
Developed land	<0.1	0.00
TOTAL	3.3	0.14











*Impact from sewer line RSP protection.

**Impact from 0.1-acre staging and 0.01-acre creek access point.

Figure 8. Impact Map



Legend

- | | | | |
|---|--|---|--------------------------|
|  | Study Area (3.3 acres) |  | Access Route |
|  | Staging/Stockpiling Area
(Annual Grassland - 0.09 ac.;
Coastal Live Oak & Forest - 0.01 ac.) |  | Alternative Access Route |
|  | Annual Grassland |  | Main Access Route |
|  | Coastal Live Oak
Woodland and Forest |  | Franklin Creek |
|  | Developed |  | Exposed Sewer Line |



0 100 200 Feet

City of Paso Robles
Exposed Trunk Sewer Line - Franklin Creek
 Map Center: 35.61219°N 120.67628°W
 Paso Robles, San Luis Obispo County

Imagery Source: USDA NAIP, 05/13/2022

Standard Minimization Measures

MM-1. All project personnel will participate in a Worker Environmental Awareness Program (WEAP) training presented by a qualified biologist prior to participating in construction activities onsite. At a minimum, the briefing will include a discussion of the project components and techniques as they relate to the existing habitat, a description of the species occurring or with potential to occur in the Action Area, and the general and specific measures and restrictions to protect the species during implementation of the Project.

MM-2 Best Management Practices. During construction and after-construction address the prevention of sedimentation into Franklin Creek by using best management practices such as:

- Existing disturbed areas shall be used for construction staging and storage to the maximum extent possible to minimize disturbance of undeveloped habitats.
- Construction equipment and vehicles shall be stored at least 100 feet away from Franklin Creek and adjacent riparian habitat, and all construction vehicle maintenance shall be performed in a designated offsite vehicle storage and maintenance area approved by the City.
- During construction activities within 50 feet of Franklin Creek, a City-approved biological monitor shall be present and have the authority to stop or redirect work as needed to protect biological resources.
- All construction materials (e.g., fuels, chemicals, construction materials) shall be stored at designated construction staging areas, which shall be located at least 100-feet from Franklin Creek. Should spills occur, or if any unanticipated hazardous materials are discovered, materials and/or contaminants shall be cleaned immediately and recycled or disposed
- The permittee shall implement post-construction measures designed to minimize construction-related erosion. Such measures may include silt fence, straw waddles, or other acceptable construction erosion control devices.

Aquatic Resources and Species Protection and Minimization Measures

MM-3 Designate work and staging areas. Work crews will be restricted to designated and clearly defined work areas. Equipment shall be staged within designated areas away from Franklin Creek (minimum 100 feet). No equipment fueling, hazardous materials storage, portable restrooms, concrete washouts, or overnight vehicle or equipment staging shall be permitted within 100 feet of aquatic features during construction. Any hazardous materials shall be properly stored within secondary containment. All power equipment and vehicles will be kept in good working order and inspected each day for leaks prior to use. Leaks will be repaired immediately, and any problematic vehicles or equipment will be removed from the Project site. Appropriate spill containment and clean-up materials will be made available on site and any spills will be cleaned up immediately.

MM-4 Work conducted during dry season. Construction activities within 100 feet of aquatic features shall be completed outside of the rainy season (November through April). Work in the drainage will cease if National Weather Service predicts a 25 percent or more chance of rain within 24 hours. No work shall occur within the banks of the stream during or within 24 hours following significant rainfall events, defined as rainfall totaling 0.25-inch or more rain in a 24-hour period. All project activity shall occur when the work area is naturally dry.

MM-5 Re-estabish with local native seed mix. Any exposed slopes or exposed areas created by Project activities shall utilize coconut fiber blankets (such as Geocoir®) seeded with a minimum of two locally-native grass species such as purple needlegrass (*Stipa pulchra*), deergrass (*Muhlenbergia rigens*), or one-sided bluegrass (*Poa secunda*) and may contain one or two native wildflower species such as miniature lupine (*Lupinus bicolor*), California poppy (*Eschscholzia californica*), and/or common fiddleneck (*Amsinckia intermedia*). Table 5 suggests native species that may be distributed for erosion control over exposed bank to help stabilize the soil along the temporarily impacted access point and at staging/stockpiling locations. Seeding shall be completed as soon as possible, but no later than November 15 of the year project activities ends. All exposed areas where seeding is considered unsuccessful shall receive appropriate soil preparation and a second application of seeded coconut fiber blanket as soon as is practical on a date agreed upon.

The seed mix shall contain a minimum of two native wildflowers and two native bunch grasses.

TABLE 3. RECOMMENDED SEED MIX

Scientific Name	Common Name
Wildflowers	
<i>Eschscholzia californica</i>	California poppy
<i>Lupinus bicolor</i>	Miniature lupine
<i>Lupinus microcarpus</i>	Chick lupine
<i>Lupinus nanus</i>	Sky lupine
<i>Trifolium gracilentum</i> var. <i>gracilentum</i>	Pinpoint clover
Grasses	
<i>Bromus carinatus</i>	California brome
<i>Elymus triticoides</i>	Creeping wildrye
<i>Muhlenbergia rigens</i> *	Deergrass
<i>Poa secunda</i> *	One-sided bluegrass
<i>Stipa pulchra</i> *	Purple needlegrass
*native bunchgrass	

MM-6 Rehabilitation. Collect red willow poles and mulefat of local origin for installation between RSP layers along bank channel following procedures provided in Appendix H; (DOT 2014). Approximately seven poles and cuttings will be inserted into the ground along each side of the bank (14 total) between RSP and in rock pockets to vegetate the stabilized bank during construction.

- Collect poles having proper diameter and length from healthy (non-diseased) willows within project vicinity without defects, such as knots or stripped bark.
- Remove side branches and top growth from cutting. Trim the bottom or basal end to a 45-degree angle and trim the top so it is flat. When trimming, keep in mind that at least two bud scars should be above ground when cutting is ultimately planted.
- Soak live cuttings for fourteen days, or plant the cuttings the day they are harvested.
- Use a rod or auger to create a pilot hole and place cutting basal end into hole. To ensure they receive sunlight, the cuttings should be placed taller than the surrounding vegetation. Plant cuttings at desired spacing and pattern.
- Fill hole around cutting with a water and soil slurry mixture.
- Willow pole may be planted into the streambank with either a vertical or perpendicular orientation.
- Performance criteria for plantings will be the successful establishment of 14 tree and shrub individuals along the channel banks after two years.
- Tree and shrub count data will be collected during the dry season (June 1 – October 1). If any of the planted trees or shrubs need to be replaced, monitoring will be extended to ensure 2-year survivorship of each tree and shrub.

Special Status Species

One special status reptile, southwestern pond turtle, and one special status amphibian, western spadefoot toad, have potential to occur within the Study Area. Both species are proposed federally threatened by the USFWS and both are considered special species of concern by CDFW. The Project is not expected to impact southwestern pond turtle or western spadefoot toad because the Project is designed to avoid the rainy season, with all work during dry conditions. See MM-4 above.

Obscure bumble bee and Crotch's bumble bee have a potential to occur in the Study Area and may forage or nest in the non-native grassland. Potential species occurrence in the non-native grassland from project staging may occur over a 0.1-acre impact footprint. To reduce potential impacts to this species, a pre-activity survey for bumblebee nests will be conducted prior to construction staging and stockpiling.

MM-7 Pre-activity survey for sensitive bumble bees. For avoidance of these species a pre-activity bumblebee survey shall be performed by a qualified biologist if vegetation clearing occurs during the Colony Active Period of April-August. If an Obscure or Crotch's bumble bee colony is detected during the survey, the colony shall be avoided, and the construction staging and stockpiling location will be moved to a non-nesting colony location.

Ferruginous hawk is a special status raptor that is known to winter in open grassland habitats in San Luis Obispo County and was determined to have low potential to winter or migrate through the Study Area. Due to the large amount of suitable wintering habitat in the area, this Project's impacts are considered negligible and no surveys or mitigation are recommended.

White-tailed kite may be observed foraging throughout the open grasslands in the Study Area and surrounding environment and may nest in the adjacent oak tree habitat. Due to the large amount of suitable foraging habitat in this area 0.1-acre of temporary impacts to non-native grassland is considered negligible. In addition, the Project has been designed to avoid direct impacts to canopy and oak trees; therefore, the Project would have no impact to these species during nesting season. No mitigation measures are recommended for this species.

Nesting birds were not observed onsite during biological surveys; however, indirect impacts have the potential to impact nesting birds if nests are destroyed or adults abandon nests due to disruption from construction noise levels or human activity. Migratory non-game native bird species are protected by international treaty under the Federal MBTA of 1918 (50 C.F.R. Section 10.13). Sections 3503, 3503.5 and 3513 of the CFGC prohibit take of all native birds and their active nests, including raptors and other migratory non-game birds (as listed under the Federal MBTA).

A variety of native birds, protected under the MBTA and CFGC may utilize the Study Area for nesting. The following recommendation is provided to avoid potential impacts to nesting birds if:

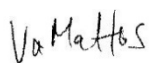
MM-8 Nesting Bird Avoidance. If ground disturbing activities occur between March 15 and August 15, nesting bird surveys may be conducted. If surveys do not locate nesting birds, construction activities may commence. If nesting birds are located, no construction activities shall occur within 100 feet of nests until chicks are fledged (or other setback distance are determined). Work may not be allowed within the buffer while the nest is in use. A Project biologist may authorize to reduce or increase the recommended buffer depending upon site conditions and the species. Once occupied nests are deemed inactive and/or chicks have fledged and are no longer dependent on the nest, work may commence in these areas.

Conclusion

This sewer line protection project will impact non-wetland waters of the U.S./State and is subject to federal and state regulations. Sewer line protection will improve streambed conditions by protecting the eroded streambank feature and restore temporary impacts. No sensitive species were documented in the Study Area or are expected to occur.

Thank you for allowing us to be of assistance. If you have any questions or concerns, please contact our office at (805) 237-9626.

Sincerely,



Valerie Mattos
Senior Biologist/Project Manager

List of Attachments

- **Attachment A. References**
- **Attachment B. Letter of Slope Repair and Pipeline Protection Recommendation, including Rock Slope Protection Structure Detail (Earth Systems, October 17, 2023)**
- **Attachment C. Vascular Plant List**
- **Attachment D. Wildlife List**
- **Attachment E. Special Status Plants Reported from the Region**
- **Attachment F. Special Status Animals Reported from the Region**
- **Attachment G. Arid West Ephemeral and Intermittent Streams OHWM Datasheets**
- **Attachment H. Hybrid Streambank Revetments: Vegetated Rock Slope Protection (pages 38-46; DOT 2014)**

ATTACHMENT A. REFERENCES

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**ATTACHMENT B. LETTER OF SLOPE REPAIR AND PIPELINE PROTECTION RECOMMENDATION,
INCLUDING ROCK SLOPE PROTECTION STRUCTURE DETAIL (EARTH SYSTEMS, OCTOBER 17,
2023)**



October 17, 2023

File No.: 306367-001

Mr. Kirk Gonzalez, PE
City of Paso Robles
Utilities Engineering Manager
1000 Spring Street
Paso Robles, California 93446

PROJECT: CITY OF PASO ROBLES
FRANKLIN CREEK TRUNK SEWER STORM REPAIR
PASO ROBLES, CALIFORNIA

SUBJECT: Letter of Slope Repair and Pipeline Protection Recommendations

Dear Mr. Gonzalez:

The purpose of this letter is to provide recommendations for repair of the eroded channel which has exposed the city sewer main and the adjacent slope in Franklin Creek in Paso Robles, California.

A site visit to the location was performed by the undersigned on September 19, 2023. Erosion during the winter 2022-2023 storms have caused the concrete encased sewer line to become exposed and has eroded the slope immediately downstream, threatening exposing portions of the pipeline that are not encased, as well as the improvements at the top of the slope.

There were three main areas observed during our visit. The first area is the slope upstream of the pipe where rock slope protection (RSP) was previously placed but stopped approximately 15 feet upstream of the pipeline. The second is a section of the eastern slope just downstream of the pipeline which was heavily eroded. The final area, area 3, is the channel where the pipe has been exposed.

Based upon the site visit and discussions with the City, we recommend the use of RSP and re-vegetation as remedial measures in all three areas to protect the exposed, encased-pipeline and reduce further slope erosion which could expose the portion of the pipeline which is not encased in concrete.

In area 1, the existing RSP slope protection (Class VIII RSP) should continue along the bank to the pipeline, approximately 30 inches wide and extending approximately 5 feet up the slope. It is assumed the slope is stable at the existing inclination and the RSP is to reduce the erosive forces on the slope face.

In area 2, a keyway should be excavated approximately 3 feet deep and into the slope face to allow a minimum width of Class VIII RSP of 9 feet at the toe. The RSP should be placed to approximately 5 feet above the existing creek channel. The slope of the face should match the existing slope at both the upstream and downstream edges and should be approximately 30 inches wide at the top. Existing site soils may be placed behind the RSP to fill the remaining void. The RSP should be placed by Method A placement. The voids between the rock should be filled with site soils to allow for revegetation but should not impact the point-to-point contact of the rock.



We have broken area 3 (the creek channel) into two sections, upstream and downstream of the pipeline; 3a and 3b, respectively. For area 3a, we recommend placing a layer of Class III RSP approximately 24 inches deep. The RSP should be planned to extend from the toe of the RSP placed in areas 1 and 2 to approximately 18 feet to the west. At the upstream side, the full thickness of the RSP should match the existing channel, then gradually slope up to provide approximately 12 inches of cover over the pipe encasement. In area 3b, downstream of the pipe, prior to continuing the Class III RSP placement for approximately the same width, an excavation should be made immediately adjacent to the exposed pipeline to a depth of 5 feet below the top of pipe. This excavation should extend approximately 9 feet beyond the pipeline. Class VIII RSP should then be placed by method A placement in the excavation. An excavation should be made continuing from this point approximately 15 feet in length. The excavation should match the existing channel at each end and be 2 feet deep at the middle, creating a depressed surface. The Class III RSP should then be placed over the Class VIII RSP and extend to the termination 24 feet from the pipeline at roughly 12 inches in thickness.

Rock slope protection measures should conform to Section 72 of the Caltrans 2018 Standard Specifications. We have attached a Rock Slope Protection Structure Detail.

We appreciate the opportunity to have provided services for this project and look forward to working with you again in the future. If there are any questions concerning this letter, please do not hesitate to contact us.

Sincerely,

Earth Systems Pacific

A blue ink signature of Robert Down, Principal Engineer.

Robert Down, PE
Principal Engineer

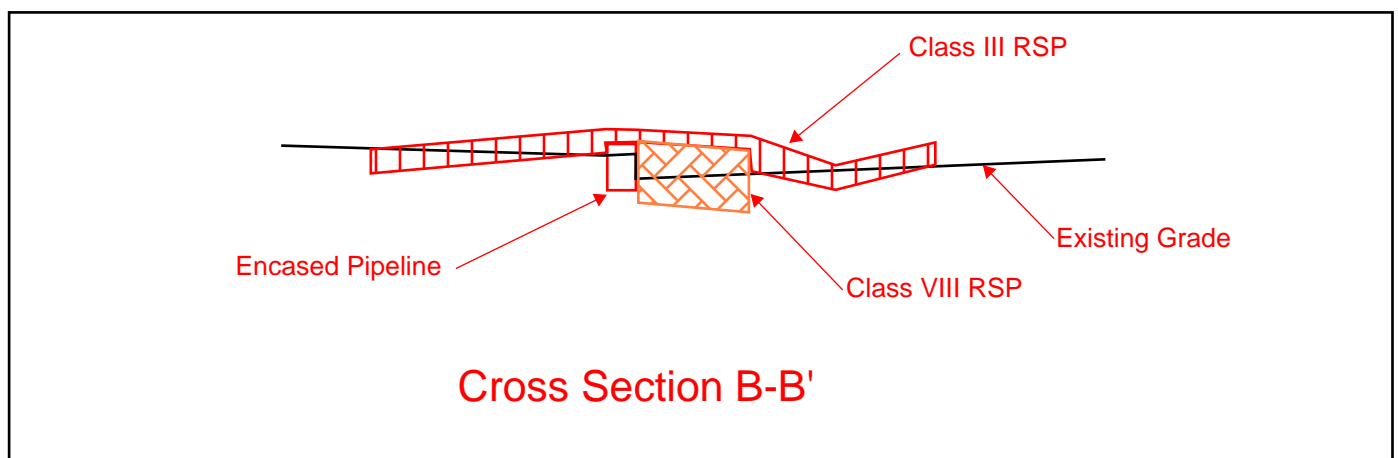
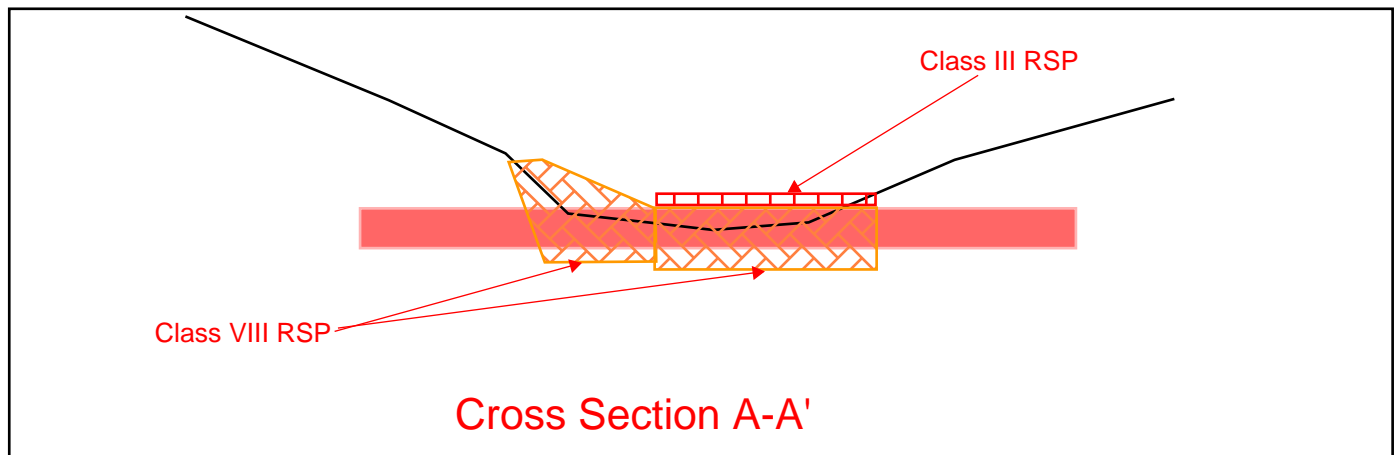
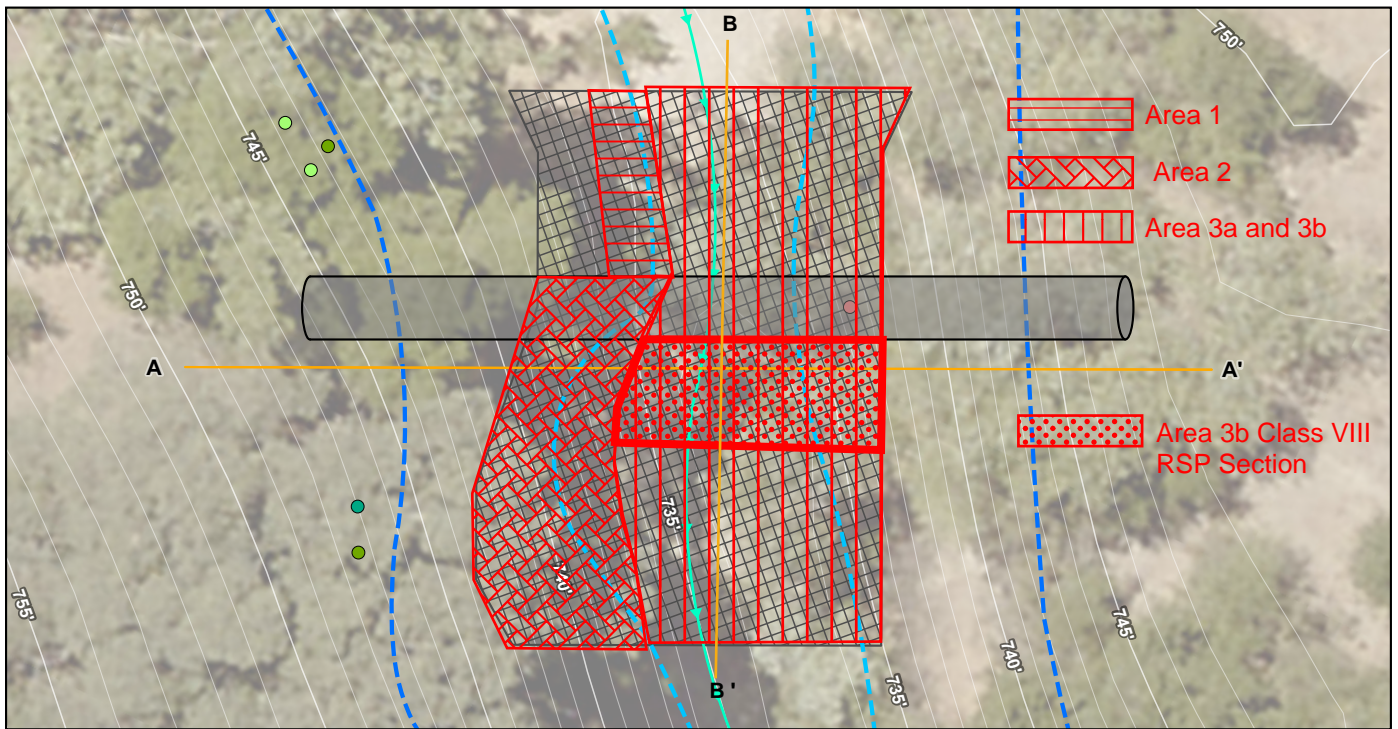


A blue ink signature of Sydney Johnson, Project Manager.

Sydney Johnson
Project Manager

Attachments: Rock Slope Protection Structure Detail

Doc. No.: 2310-064.LTR/pm



Earth Systems Pacific

October 2023

4378 Old Santa Fe Road
 San Luis Obispo, CA 93401-8116
 (805) 544-3276 • FAX (805) 544-1786
 E-mail: esp@earthsystems.com
 306367-001

ATTACHMENT C. VASCULAR PLANT LIST

Scientific Name	Common Name	Special Status	Origin
Trees - 6 Species			
<i>Aesculus californica</i>	California buckeye	None	Native
<i>Platanus racemosa</i>	Western sycamore	None	Native
<i>Populus fremontii</i> subsp. <i>fremontii</i>	Fremont cottonwood	None	Native
<i>Prunus ilicifolia</i>	Hollyleaf cherry	None	Native
<i>Quercus agrifolia</i>	Coast live oak	None	Native
<i>Quercus douglasii</i>	Blue oak	None	Native
Shrubs - 7 Species			
<i>Baccharis pilularis</i>	Coyote brush	None	Native
<i>Baccharis salicifolia</i>	Mule fat	None	Native
<i>Frangula californica</i>	California coffee berry	None	Native
<i>Heteromeles arbutifolia</i>	Toyon	None	Native
<i>Lonicera subspicata</i> var. <i>denudata</i>	Southern honeysuckle	None	Native
<i>Sambucus mexicana</i>	Blue elderberry	None	Native
<i>Toxicodendron diversilobum</i>	Western poison oak	None	Native
Forbs - 19 Species			
<i>Amsinckia intermedia</i>	Common fiddleneck	None	Native
<i>Asclepias fascicularis</i>	Narrow-leaf milkweed	None	Native
<i>Carduus pycnocephalus</i> subsp. <i>pycnocephalus</i>	Italian thistle	None	Introduced
<i>Chlorogalum pomeridianum</i> var. <i>pomeridianum</i>	Common soap plant	None	Native
<i>Clarkia purpurea</i>	Wine cups	None	Native
<i>Claytonia perfoliata</i>	Miner's lettuce	None	Native
<i>Erodium brachycarpum</i>	Foothill filaree	None	Introduced
<i>Galium andrewsii</i>	Phlox-leaved bedstraw	None	Native
<i>Galium aparine</i>	Goose grass	None	Native
<i>Hesperomecon linearis</i>	Narrowleaf queen poppy	None	Native
<i>Lupinus bicolor</i>	Miniature lupine	None	Native
<i>Marrubium vulgare</i>	Horehound	None	Introduced

Scientific Name	Common Name	Special Status	Origin
<i>Melica imperfecta</i>	Little California melica	None	Native
<i>Micranthes californica</i>	California saxifrage	None	Native
<i>Sanicula crassicaulis</i>	Sanicle	None	Native
<i>Torilis arvensis</i>	Tall sock-destroyer	None	Introduced
<i>Vicia villosa</i>	Hairy vetch, winter vetch	None	Introduced
<i>Viola pedunculata</i>	Johnny-jump-up	None	Native
<i>Wyethia glabra</i>	Mule ears	None	Native
Graminoids - 7 Species			
<i>Avena barbata</i>	Slender wild oat	None	Introduced
<i>Bromus diandrus</i>	Ripgut grass	None	Introduced
<i>Bromus hordeaceus</i>	Soft chess	None	Introduced
<i>Elymus triticoides</i>	Beardless Wild-Rye	None	Native
<i>Festuca microstachys</i>	Annual fescue	None	Native
<i>Hordeum murinum</i>	Wall barley	None	Introduced
<i>Phalaris</i> sp.	Canarygrass	None	Introduced

ATTACHMENT D. WILDLIFE LIST

Scientific Name	Common Name	Special Status	Habitat Type
Invertebrates – 1 Species			
<i>Pterourus rutulus</i>	Western Tiger Swallowtail	None	Woodlands and more open areas, often near streams. Also common in cities and suburbs
Birds – 18 Species			
<i>Anas platyrhynchos</i>	Mallard	None	Lakes, ponds, streams
<i>Baeolophus inornatus</i>	Oak Titmouse	None	Nests in cavities in oak woodland habitat. Non-migratory.
<i>Buteo jamaicensis</i>	Red-Tailed Hawk	None	Open, semi-open country
<i>Buteo lineatus</i>	Red-Shouldered Hawk	None	Oak, riparian woodlands
<i>Calypte anna</i>	Anna's Hummingbird	None	Many habitats
<i>Cathartes aura</i>	Turkey Vulture	None	Open country
<i>Catharus guttatus</i>	Hermit Thrush	None	Woodland and brush
<i>Charadrius vociferus</i>	Killdeer	None	Mud flats, stream banks, grazed fields
<i>Colaptes auratus</i>	Northern Flicker	None	Woodlands
<i>Dryobates nuttallii</i>	Nuttall's Woodpecker	None	Oak, riparian woodlands
<i>Melanerpes formicivorus</i>	Acorn Woodpecker	None	Oak woodland, urban areas with oaks
<i>Psaltiriparus minimus</i>	Bushtit	None	Woodlands, chaparral
<i>Setophaga coronata</i>	Yellow-Rumped Warbler	None	Coniferous and mixed woodland (breeding); shrubby areas and parks (winter)
<i>Sturnus vulgaris</i>	European Starling	None	Agricultural, livestock areas
<i>Thryomanes bewickii</i>	Bewick's Wren	None	Riparian woodland, scrub
<i>Toxostoma redivivum</i>	California Thrasher	None	Chaparral, coastal scrub
<i>Troglodytes aedon</i>	House Wren	None	Shrubby areas
<i>Turdus migratorius</i>	American Robin	None	Streamsides, woodlands, urban parks
Mammals – 2 Species			
<i>Odocoileus hemionus</i>	Mule deer	None	Varied
<i>Procyon lotor</i>	Raccoon	None	Varied

ATTACHMENT E. SPECIAL STATUS PLANTS REPORTED FROM THE REGION

	Scientific Name	Common Name	Federal/State Status Global/State Rank CA Rare Plant Rank	Blooming Period	Habitat Preference	Potential to Occur
1.	<i>Abies bracteata</i>	Bristlecone fir	-/- G2G3/S2S3 1B.3	-	Steep, rocky, fire-resistant slopes, generally in canyon-live-oak phase of mixed-evergreen forest	No Potential. No suitable habitat and tree species not observed during survey.
2.	<i>Abronia maritima</i>	Red sand-verbena	-/- G4/S3? 4.2	Feb-Nov	Coastal dunes. <100 m.	No Potential. No suitable habitat (coastal dunes) within the Study Area.
3.	<i>Agrostis hooveri</i>	Hoover's bent grass	-/- G2/S2 1B.2	Apr-Jul	Sandy sites within chaparral, cismontane woodland, coniferous forest, valley and foothill grassland.	No Potential. No suitable habitat or soils within the Study Area.
4.	<i>Amsinckia douglasiana</i>	Douglas' fiddleneck	-/- G4/S4 4.2	Mar-May	Valley and foothill grassland. Dry habitats with unstable shaly sedimentary slopes. 150-1600 m.	No Potential. No suitable soils within the Study Area.
5.	<i>Antirrhinum ovatum</i>	Oval-leaved snapdragon	-/- G3/S3 4.2	May-Nov	Heavy, adobe-clay soils on gentle, open slopes, also disturbed areas	No Potential. Unsuitable soils occur within the Study Area.
6.	<i>Arctostaphylos luciana</i>	Santa Lucia manzanita	-/- G2/S2 1B.2	Dec-Mar	Chaparral. On shale outcrops, slopes, near coast. 100-800m	No Potential. No suitable habitat and perennial shrub species not observed during survey.
7.	<i>Arctostaphylos obispoensis</i>	Bishop manzanita	-/- G3/S3 4.3	Feb-Jun	Chaparral, open closed-cone forest near coast. Rocky, generally serpentine soils. 60-950m.	No Potential. No suitable habitat and perennial shrub species not observed during survey.
8.	<i>Arctostaphylos pilosula</i>	Santa Margarita manzanita	-/- G2?/S2? 1B.2	Dec-May	Chaparral. Shale outcrops, slopes. 30-1250 m.	No Potential. No suitable habitat and perennial shrub species not observed during survey.

Scientific Name	Common Name	Federal/State Status Global/State Rank CA Rare Plant Rank	Blooming Period	Habitat Preference	Potential to Occur
10. <i>Astragalus didymocarpus</i> var. <i>milesianus</i>	Miles' milk-vetch	-/- G5T2/S2 1B.2	Mar-Jun	Coastal scrub and grassy areas near coast. Clay soils. <400 m.	No Potential. Study Area is outside of suitable geographic range.
11. <i>Astragalus macrodon</i>	Salinas milk-vetch	-/- G4/S4 4.3	Apr-Jul	Eroded pale shales or sandstone, serpentine alluvium	No Potential. No suitable habitat or substrate within the Study Area.
12. <i>Astragalus nuttallii</i> var. <i>nuttallii</i>	Ocean bluff milk-vetch	-/- G4T4/S4 4.2	Jan-Nov	Coastal bluffs, dunes. Sandy soils. <250 m.	No Potential. No suitable habitat within the Study Area.
13. <i>Calandrinia breweri</i>	Brewer's calandrinia	-/- G4/S4 4.2	Mar-Jun	Chaparral, coastal scrub. Disturbed sites, burns. Sandy to loamy soil. <1200 m.	No Potential. No suitable habitat within the Study Area.
14. <i>Calochortus clavatus</i> var. <i>clavatus</i>	Club-haired mariposa lily	-/- G4T3/S3 4.3	Mar-Jun	Generally serpentine	No Potential. No suitable habitat within the Study Area.
15. <i>Calochortus obispoensis</i>	San Luis mariposa-lily	-/- G2/S2 1B.2	May-Jul	Open chaparral, cismontane woodland, coastal scrub, grasslands. Dry serpentine substrates. 100-500 m.	No Potential. No suitable habitat or substrate within the Study Area.
16. <i>Calochortus simulans</i>	La Panza mariposa-lily	-/- G2/S2 1B.3	Apr-Jun	Valley and foothill grassland, coniferous woodland, chaparral. Decomposed granitic sand, sometimes serpentine. <1100 m.	No Potential. No suitable habitat or soils within the Study Area.
17. <i>Calycadenia villosa</i>	Dwarf calycadenia	-/- G3/S3 1B.1	May-Oct	Dry, rocky hills, ridges, grassland, openings in foothill woodland	No Potential. No suitable habitat/rocky soils within the Study Area

	Scientific Name	Common Name	Federal/State Status Global/State Rank CA Rare Plant Rank	Blooming Period	Habitat Preference	Potential to Occur
18.	<i>Calystegia subacaulis</i> subsp. <i>episcopalis</i>	Cambria morning-glory	-/- G3T2?/S2? 4.2	Mar-Jul	Dry woodland, open scrub. Usually clay soil. <500 m.	No Potential. No suitable habitat within the Study Area and perennial herb species was not observed during botanical survey.
19.	<i>Camissoniopsis hardhamiae</i>	Hardham's evening-primrose	-/- G2/S2 1B.2	Mar-May	Sandy soil, limestone, disturbed oak woodland	No Potential. No suitable habitat or soils within the Study Area.
20.	<i>Carex obispoensis</i>	San Luis Obispo sedge	-/- G3?/S3? 1B.2	Apr-Jun	Seeps and springs within chaparral, coniferous forest, coastal scrub, grassland. Usually in transition zone on sand, clay, serpentine, or gabbro. <800 m.	No Potential. No suitable habitat or soils within the Study Area. No seeps/springs -seasonal creek is typically dry throughout the summer/fall.
21.	<i>Castilleja densiflora</i> var. <i>obispoensis</i>	San Luis Obispo owl's-clover	-/- G5T2/S2 1B.2	Mar-May	Coastal grassland. Often serpentine soil. <400 m.	No Potential. No suitable habitat or substrate within the Study Area.
22.	<i>Caulanthus californicus</i>	California jewelflower	FE/CE G1/S1 1B.1	Feb-May	Flats, slopes, generally in non-alkaline grassland.	No Potential. Previous records are historic and/or are over 60 miles southeast from the Study Area (CCH SBBG216003).
23.	<i>Caulanthus lemmonii</i>	Lemmon's jewelflower	-/- G3/S3 1B.2	Feb-May	Grassland, chaparral, scrub	No Potential. CNDDDB #21 (1957) is located 0.7-mile to west but record indicates 'Needs ID' and has low location accuracy. Study Area is adjacent to high traffic areas (Nicklaus Street) with a dominance of non-native grasses.

Scientific Name	Common Name	Federal/State Status Global/State Rank CA Rare Plant Rank	Blooming Period	Habitat Preference	Potential to Occur
24. <i>Ceanothus cuneatus</i> <i>var. fascicularis</i>	Lompoc ceanothus	-/- G5T4/S4 4.2	Feb-Apr	Coastal chaparral. Sandy substrates. <275 m.	No Potential. No suitable habitat and perennial shrub species not observed during survey.
25. <i>Hooveria purpurea</i> <i>var. purpurea</i>	Purple amole	FT/- G2T2/S2 1B.1	Apr-Jun	Often in grassy areas with blue oaks in foothill woodland. Gravelly clay soils.	No Potential. No suitable habitat present within the Study Area and Study Area is southeast of known range for this species.
26. <i>Chorizanthe breweri</i>	Brewer's spineflower	-/- G3/S3 1B.3	Apr-Aug	Chaparral, cismontane woodland, coastal scrub. Rocky serpentine sites; barren areas. 60-800 m.	No Potential. No suitable habitat or soils within the Study Area.
27. <i>Chorizanthe douglasii</i>	Douglas' spineflower	-/- G4/S4 4.3	Apr-Jul	Cismontane woodland, lower montane coniferous forest, chaparral, coastal scrub, valley and foothill grassland; in sand or gravel.	No Potential. No suitable habitat or soils within the Study Area.
28. <i>Chorizanthe palmeri</i>	Palmer's spineflower	-/- G4/S4 4.2	Apr-Aug	Chaparral, cismontane woodland, grassland. Clay soils, generally in areas of serpentine or partially serpentinized igneous rock. 60-700 m.	No Potential. No suitable habitat within the Study Area.
29. <i>Chorizanthe rectispina</i>	Straight-awned spineflower	-/- G2/S2 1B.2	Apr-Jul	Chaparral, cismontane woodland, coastal scrub. In sand or disintegrating shale, often on granite. 200-600 m.	No Potential. No suitable habitat or soils within the Study Area.

Scientific Name	Common Name	Federal/State Status Global/State Rank CA Rare Plant Rank	Blooming Period	Habitat Preference	Potential to Occur
30. <i>Cirsium fontinale</i> <i>var. obispoense</i>	Chorro Creek bog thistle	FE/CE G2T2/S2 1B.2	Feb-Sep	Serpentine seeps and streams	No Potential. No suitable habitat present within the Study Area. Drainage is seasonally dry throughout the summer/fall, no serpentine influence.
31. <i>Cirsium occidentale</i> <i>var. lucianum</i>	Cuesta Ridge thistle	-/- G3G4T2/S2 1B.2	Apr-Jun	Chaparral, woodland or forest openings, often on serpentine	No Potential. No suitable habitat or soils within the Study Area.
32. <i>Convolvulus</i> <i>simulans</i>	Small-flowered morning-glory	-/- G4/S4 4.2	Mar-Jul	Clay substrates, occasionally serpentine, annual grassland, coastal-sage scrub, chaparral	No Potential. No suitable habitat within the Study Area.
33. <i>Deinandra</i> <i>paniculata</i>	Paniculate tarplant	-/- G4/S4 4.2	Mar-Dec	Grassland, open chaparral and woodland, disturbed areas, often in sandy soils	No Potential. No known records within a10 mile vicinity. SBBG40552 (1969) is located approximately 20 miles away in Morro Bay. Surveys would have observed this conspicuous species in high traffic area.
34. <i>Delphinium parryi</i> <i>subsp. blochmaniae</i>	Dune larkspur	-/- G4T2/S2 1B.2	Apr-Jun	Coastal chaparral, sand	No Potential. No suitable habitat or soils within the Study Area.
35. <i>Delphinium parryi</i> <i>subsp. eastwoodiae</i>	Eastwood's larkspur	-/- G4T2/S2 1B.2	Feb-Mar	Uncommon. Coastal chaparral, grassland, on serpentine	No Potential. No suitable habitat or soils within the Study Area.

Scientific Name	Common Name	Federal/State Status Global/State Rank CA Rare Plant Rank	Blooming Period	Habitat Preference	Potential to Occur
36. <i>Delphinium umbraculorum</i>	Umbrella larkspur	-/- G3/S3 1B.3	Apr-Jun	Moist oak forest	No Potential. Nearest record is 6.7 miles northwest (CNDDB #26, 1959). Study Area is adjacent to high traffic areas (Nicklaus Street) with a dominance of non-native grasses.
37. <i>Dudleya abramsii</i> subsp. <i>bettinae</i>	Betty's dudleya	-/- G4T2/S2 1B.2	May-Jul	Rocky outcrops in serpentine grassland	No Potential. No suitable habitat or soils within the Study Area.
38. <i>Dudleya abramsii</i> subsp. <i>murina</i>	Mouse-gray dudleya	-/- G4T2/S2 1B.1	May-Jun	Serpentine outcrops	No Potential. No suitable habitat or soils within the Study Area.
39. <i>Dudleya blochmaniae</i> subsp. <i>blochmaniae</i>	Blochman's dudleya	-/- G3T2/S2 1B.1	Apr-Jun	Open, rocky slopes, often serpentine or clay-dominated	No Potential. No suitable habitat or soils within the Study Area.
40. <i>Eleocharis parvula</i>	Small spikerush	-/- G5/S3 4.3	Apr-Sep	Brackish wet soil, coastal	No Potential. No suitable habitat or soils within the Study Area.
41. <i>Eriastrum luteum</i>	Yellow-flowered eriastrum	-/- G2/S2 1B.2	May-Jun	Bare sandy decomposed granite slopes in cismontane woodland, chaparral, forest	No Potential. No suitable habitat or soils within the Study Area.
42. <i>Erigeron blochmaniae</i>	Blochman's leafy daisy	-/- G2/S2 1B.2	Jun-Aug	Sand dunes and hills	No Potential. No suitable habitat or soils within the Study Area.
43. <i>Erysimum suffrutescens</i>	Suffrutescent wallflower	-/- G3/S3 4.2	Jan-Aug	Stabilized coastal sand dunes, coastal scrub	No Potential. No suitable habitat or soils within the Study Area.

Scientific Name	Common Name	Federal/State Status Global/State Rank CA Rare Plant Rank	Blooming Period	Habitat Preference	Potential to Occur
44. <i>Eschscholzia hypocoides</i>	San Benito poppy	-/- G4/S4 4.3	Mar-Jun	Grassy areas in woodland, chaparral	No Potential. Suitable habitat is present in the Study Area. 1958 occurrence record (CCH SBBG 169441) cited several miles west of the City of Paso Robles; the specimen location is historic.
45. <i>Extriplex joaquinana</i>	San Joaquin spearscale	-/- G2/S2 1B.2	Apr-Oct	Alkaline soils	No Potential. No suitable soils within the Study Area.
46. <i>Fritillaria agrestis</i>	Stinkbells	-/- G3/S3 4.2	Mar-Jun	Clay, often vertic, occasionally serpentine	No Potential. No suitable soils within the Study Area.
47. <i>Fritillaria ojaiensis</i>	Ojai fritillary	-/- G3/S3 1B.2	Feb-May	Rocky slopes, river basins	No Potential. No suitable habitat or soils within the Study Area.
48. <i>Gilia latiflora</i> subsp. <i>cuyamensis</i>	Cuyama gilia	-/- G5?T4/S4 4.3	Apr-Jun	Sandy flats, pinyon/juniper woodland, lower river valleys	No Potential. No suitable habitat or soils within the Study Area.
49. <i>Gilia tenuiflora</i> subsp. <i>amplifaucalis</i>	Trumpet-throated gilia	-/- G3G4T3/S3 4.3	Mar-Apr	Sandy soil of dry creeks, floodplains, slopes	No Potential. Suitable habitat is potentially present in the Study Area. A 1948 occurrence record (CCH UCR0108385) cited 3 miles east of the City of Paso Robles; the specimen location is historic.
50. <i>Hesperervax caulescens</i>	Hogwallow starfish	-/- G3/S3 4.2	Mar-Jun	Declining. Drying shrink-swell clay of vernal pools, flats, steep slopes (sometimes serpentine)	No Potential. No suitable habitat or soils within the Study Area.

Scientific Name	Common Name	Federal/State Status Global/State Rank CA Rare Plant Rank	Blooming Period	Habitat Preference	Potential to Occur
51. <i>Horkelia cuneata</i> var. <i>puberula</i>	Mesa horkelia	-/- G4T1/S1 1B.1	Feb-Sep	Dry, sandy, coastal chaparral and oak woodland	No Potential. No suitable habitat (coastal chaparral or soils) is present within the Study Area.
52. <i>Horkelia cuneata</i> var. <i>sericea</i>	Kellogg's horkelia	-/- G4T1?/S1? 1B.1	Apr-Sep	Old dunes, coastal sandhills	No Potential. No suitable habitat (dunes) within the Study Area
53. <i>Horkelia yadonii</i>	Santa Lucia horkelia	-/- G3/S3 4.2	Apr-Jul	Sandy meadow edges, seasonal streambeds in chaparral or foothill-pine woodland	No Potential. No suitable habitat or soils within the Study Area.
54. <i>Juncus acutus</i> subsp. <i>leopoldii</i>	Southwestern spiny rush	-/- G5T5/S4 4.2	Mar-Jun	Moist saline places, salt marshes, alkaline seeps	No Potential. No suitable habitat or soils within the Study Area.
55. <i>Juncus luciensis</i>	Santa Lucia dwarf rush	-/- G3/S3 1B.2	Apr-Jul	Wet, sandy soils of seeps, meadows, vernal pools, streams, roadsides	No Potential. Vernal pool habitat unsuitable; 1958 occurrence record (CCH SBBG 18411) cited over 6 miles southeast the City of Paso Robles; the specimen location is historic.
56. <i>Lasthenia leptalea</i>	Salinas Valley goldfields	-/- G3/S3 4.3	Feb-Apr	Openings in woodland	No Potential. Suitable habitat is potentially present in the Study Area. A 1958 occurrence record (CCH SBBG 7772) cited north of Traffic Way in Atascadero is 8 miles south of the City of Paso Robles; the specimen location is historic.

Scientific Name	Common Name	Federal/State Status Global/State Rank CA Rare Plant Rank	Blooming Period	Habitat Preference	Potential to Occur
57. <i>Layia jonesii</i>	Jones' layia	-/- G2/S2 1B.2	Mar-May	Open serpentine or clayey slopes	No Potential. No suitable habitat or soils within the Study Area.
58. <i>Lepidium jaredii</i> subsp. <i>jaredii</i>	Jared's pepper-grass	-/- G2G3T1T2/S1S2 1B.2	Mar-May	Valley and foothill grassland (alkaline, adobe)	No Potential. No suitable soils within the Study Area.
59. <i>Lessingia tenuis</i>	Spring lessingia	-/- G4/S4 4.3	May-Jul	Openings in chaparral, woodland	No Potential. No suitable habitat within the Study Area.
60. <i>Lomatium parvifolium</i>	Small-leaved lomatium	-/- G3/S3 4.2	Jan-Jun	Pine woodland, serpentine outcrops	No Potential. No suitable habitat or soils within the Study Area.
61. <i>Malacothamnus jonesii</i>	Jones' bush-mallow	-/- G4/S4 4.3	Mar-Oct	Open chaparral in foothill woodland	No Potential. No suitable habitat within Study Area and perennial shrub was not observed during survey.
62. <i>Malacothamnus palmeri</i>	Santa Lucia bush-mallow	-/- G3T2Q/S2 1B.2	-May-Jul	-Post burn woody vegetation, edge of openings	No Potential. No suitable habitat or soils within the Study Area.
63. <i>Malacothamnus palmeri</i> var. <i>palmeri</i>	Santa Lucia bush-mallow	-/- G3T2Q/S2 1B.2	May-Jul	Interior valleys foothills	No Potential. No suitable habitat within Study Area and perennial shrub was not observed during survey.
64. <i>Meconella oregana</i>	Oregon meconella	-/- G2G3/S2 1B.1	Mar-Apr	Shaded canyons	No Potential. No suitable habitat within Study Area and outside of species accepted floristic range.
65. <i>Mielichhoferia elongata</i>	Elongate copper moss	-/- G5/S3S4 4.3	Capsules mature Apr- Jun	Metamorphic rock, usually acidic, usually vernal mesic, often roadsides, sometimes carbonate	No Potential. No suitable habitat or soils within the Study Area.

Scientific Name	Common Name	Federal/State Status Global/State Rank CA Rare Plant Rank	Blooming Period	Habitat Preference	Potential to Occur
66. <i>Monardella palmeri</i>	Palmer's monardella	-/- G2/S2 1B.2	Jun-Aug	Chaparral, forest, on serpentine	No Potential. No suitable habitat or substrate within the Study Area.
67. <i>Monolopia gracilens</i>	Woodland woollythreads	-/- G3/S3 1B.2	Feb-Jul	Serpentine grassland, open chaparral, oak woodland	No Potential. No suitable habitat or substrate within the Study Area.
68. <i>Navarretia fossalis</i>	Spreading navarretia	FT/- G2/S2 1B.1	Apr-Jun	Vernal pools, ditches	No Potential. No suitable habitat within the Study Area.
69. <i>Navarretia nigelliformis</i> subsp. <i>radians</i>	Shining navarretia	-/- G4T2/S2 1B.2	Mar-Jul	Grassland and cismontane woodland. Often on clay and alkaline sites, sometimes vernal pools. 65-1,000 m.	Low. Potentially suitable habitat and soils are present in the Study Area. CNDDDB #68 (2005) was recorded within 5 miles of the Study Area.
70. <i>Plagiobothrys uncinatus</i>	Hooked popcornflower	-/- G2/S2 1B.2	Apr-May	Chaparral, canyon sides, rocky outcrops, +- fire follower	No Potential. No suitable habitat (chaparral/canyon or soils) present within Study Area
71. <i>Senecio aphanactis</i>	Chaparral ragwort	-/- G3/S2 2B.2	Jan-May	Alkaline flats, dry open rocky areas	No Potential. No suitable habitat (alkaline soils) present within Study Area
72. <i>Senecio astephanus</i>	San Gabriel ragwort	-/- G3/S3 4.3	May-Jul	Steep rocky slopes in chaparral/coastal-sage scrub and oak woodland	No Potential. No suitable habitat or rocky soils present within the Study Area
73. <i>Sidalcea hickmanii</i> subsp. <i>anomala</i>	Cuesta Pass checkerbloom	-/CR G3T1/S1 1B.2	May-Jun	Closed-cone-conifer forest, generally serpentine	No Potential. No suitable habitat present within the Study Area.
74. <i>Streptanthus albidus</i> subsp. <i>peramoenus</i>	Most beautiful jewelflower	-/- G2T2/S2 1B.2	Mar-Oct	serpentinite	No Potential. No suitable substrate present within the Study Area.

Scientific Name	Common Name	Federal/State Status Global/State Rank CA Rare Plant Rank	Blooming Period	Habitat Preference	Potential to Occur
75. <i>Suaeda californica</i>	California seablite	FE/- G1/S1 1B.1	Jul-Oct	Margins of coastal salt marshes	No Potential. No suitable habitat within the Study Area.

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 PT: Proposed Federally Threatened
 CE: California Endangered
 CR: California Rare
 CT: California Threatened
 CCE: Candidate for California Endangered
 CCT: Candidate for California Threatened

California Rare Plant Ranks:

CRPR 1A: Plants presumed extirpated in California and either rare or extinct elsewhere
 CRPR 1B: Plants rare, threatened, or endangered in California and elsewhere
 CRPR 2A: Plants presumed extirpated in California, but common elsewhere
 CRPR 2B: Plants rare, threatened, or endangered in California, but more common elsewhere
 CRPR 4: Plants of limited distribution - a watch list
 0.1 - Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)
 0.2 - Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)
 0.3 - Not very threatened in California (less than 20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

Global/State Ranks:

G1/S1 – Critically Imperiled
 G2/S2 – Imperiled
 G3/S3 – Vulnerable G4/S4 – Apparently Secure
 G5/S5 – Secure
 Q – Element is very rare but there are taxonomic questions associated with it.
 Range rank – (e.g., S2S3 means rank is somewhere between S2 and S3)
 ? – (e.g., S2? Means rank is more certain than S2S3 but less certain than S2)

ATTACHMENT F. SPECIAL STATUS ANIMALS REPORTED FROM THE REGION

	Scientific Name	Common Name	Federal/State Status Global/State Rank CDFW Status	Habitat Preference	Potential to Occur
1.	<i>Actinemys pallida</i>	Western pond turtle	FPT/- G3G4/S3 SSC	Permanent or semi-permanent streams, ponds, lakes.	Low. The species occurs in Franklin Creek approximately 0.8 'creek' mile upstream in a perennially ponded area of the creek. However, the Study Area does not have a permanent pond and does not have good basking and cover sites with slopes suitable for nesting.
2.	<i>Agelaius tricolor</i>	Tricolored blackbird	-/CT G1G2/S2 SSC	Requires open water, protected nesting substrate, & foraging area with insect prey near nesting colony.	No Potential. No suitable open water/ wetland habitat present within the Study Area.
3.	<i>Ammodramus savannarum</i>	Grasshopper sparrow	-/- G5/S3 SSC	Nests in grassland habitats on mountain slopes, foothills, & valleys. May nest colonially.	No Potential. No suitable habitat in or near the Study Area.
4.	<i>Anniella pulchra</i>	Northern California legless lizard	-/- G3/S2S3 SSC	Sandy or loose loamy soils under coastal scrub or oak trees. Soil moisture essential.	Low. Suitable leaf litter with loamy soil are present within oak woodland. CNDDDB #155 (1966) is located 0.4-mile to the northwest.
5.	<i>Antrozous pallidus</i>	Pallid bat	-/- G4/S3 SSC	Uses rock crevices, caves, tree hollows, mines, old buildings, & bridges for roosting.	No Potential. No suitable roosting habitat present within the Study Area.
6.	<i>Aquila chrysaetos</i>	Golden eagle	-/- G5/S3 FP; WL	Nests in large, prominent trees in valley and foothill woodland. Requires adjacent food source.	No Potential. No suitable nesting habitat, with large prominent trees, adjacent development/food source is not suitable.
7.	<i>Ardea herodias</i>	Great blue heron	-/- G5/S4 -	Rookeries located in tall trees near foraging areas.	No Potential. No suitable habitat/foraging areas present within the Study Area.

	Scientific Name	Common Name	Federal/State Status Global/State Rank CDFW Status	Habitat Preference	Potential to Occur
8.	<i>Atractelmis wawona</i>	Wawona riffle beetle	-/- G3/S1S2 -	Strong preference for inhabiting submerged aquatic mosses.	No Potential. Study Area outside of species suitable range.
9.	<i>Batrachoseps minor</i>	Lesser slender salamander	-/- G1/S1 SSC	Inhabits moist locations in forests of mixed oak, tanbark oak, sycamore & laurel above 1,300 ft (400 m).	No Potential. Outside of species accepted range (CalHerps 2020).
10.	<i>Bombus caliginosus</i>	Obscure bumble bee	-/- G2G3/S1S2 -	Open coastal grasslands & meadows. Food plant genera include Baccharis, Cirsium, Lupinus, Lotus, Grindelia & Phacelia.	Low. There is possible suitable habitat present. However, there are no known occurrences in the Paso Robles area and this species has a higher likelihood to occur closer to the coast.
11.	<i>Bombus crotchii</i>	Crotch's bumble bee	-/CCE G2/S2 -	Open grassland & scrub habitats. Food plant genera include Antirrhinum, Phacelia, Clarkia, Dendromecon, Eschscholzia, & Eriogonum.	Moderate. There is possible suitable habitat present in the non-native grassland openings. The closest recorded occurrence is documented by A&M biologists on south Vine Street in the spring of 2024, approximately 2 miles southwest (pers. comm. 2024).
12.	<i>Branchinecta lynchi</i>	Vernal pool fairy shrimp	FT/- G3/S3 -	Clear water sandstone depression pools, grassed swale, earth slump, or basalt flow depression pools.	No Potential. Suitable vernal pool habitat is not present within the Study Area.
13.	<i>Buteo regalis</i>	Ferruginous hawk	-/- G4/S3S4 WL	Winters locally in open grassland or savannah habitats. More common in interior SLO County than coast.	No Potential (breeding); Low (foraging). Species uncommon to the region. Ebird observations in Paso Robles area are winter foragers (not-breeding) from 2017 and 1998 north of Highway 46 (2.8-miles north) and in the downtown park area (1.2 miles northwest) (eBird 2024).

	Scientific Name	Common Name	Federal/State Status Global/State Rank CDFW Status	Habitat Preference	Potential to Occur
14.	<i>Charadrius nivosus nivosus</i>	Western snowy plover	FT/- G3T3/S3 SSC	Sandy beaches, salt pond levees, & shorelines of large alkali lakes. Needs friable soils for nesting.	No Potential. Suitable sandy beaches and salt ponds are not present within the Study Area.
15.	<i>Cicindela hirticollis grvida</i>	Sandy beach tiger beetle	-/- G5T2/S2 -	Adjacent to non-brackish water near the coast from San Francisco to N. Mexico. Clean, dry, light-colored sand in the upper zone.	No Potential. There is no suitable habitat present within the Study Area.
16.	<i>Coelus globosus</i>	Globose dune beetle	-/- G1G2/S1S2 -	Coastal sand dune habitat. Inhabits foredunes & sand hummocks.	No Potential. There is no suitable habitat present within the Study Area.
17.	<i>Corynorhinus townsendii</i>	Townsend's big-eared bat	-/- G4/S2 SSC	Roosts in caves, abandoned buildings, tunnels. Roosting sites limiting. Sensitive to human disturbance.	No Potential. There is no suitable habitat present within the Study Area.
18.	<i>Danaus plexippus plexippus</i>	Monarch - California overwintering population	FC/- G4T1T2Q/S2 -	Roosts located in wind-protected tree groves (eucalyptus, Monterey pine, cypress), with nectar & water sources nearby.	No Potential. Trees at the Study Area is not a known overwintering site, nor is the oak canopy woodland habitat suitable for overwintering; however, individuals may pass through during their migration.
19.	<i>Elanus leucurus</i>	White-tailed kite	-/- G5/S3S4 FP	Nests in dense tree canopy near open foraging areas	Low. There is possible suitable open grassland habitat and dense tree canopy, with several eBird observations in the City of Paso Robles. The closest record is 1.2 miles northwest in 2006 (eBird 2024).
20.	<i>Eucyclogobius newberryi</i>	Tidewater goby	FE/- G3/S3 -	Found in shallow lagoons & lower stream reaches, they need fairly still but not stagnant water & high oxygen levels.	No Potential. There is no suitable habitat present within the Study Area.

	Scientific Name	Common Name	Federal/State Status Global/State Rank CDFW Status	Habitat Preference	Potential to Occur
21.	<i>Helminthoglypta walkeriana</i>	Morro shoulderband	FT/- G2/S2 -	Restricted to the coastal strand & sage scrub habitats in the immediate vicinity of Morro Bay.	No Potential. Outside of range, no suitable habitat.
22.	<i>Icaricia icarioides moroensis</i>	Morro Bay blue butterfly	-/- G5T2/S2 -	Inhabits stabilized dunes and surrounding areas in coastal SLO County and nw SB County. Dependent on dune lupine (<i>Lupinus chamissonis</i>).	No Potential. There is no suitable habitat present within the Study Area.
23.	<i>Linderiella occidentalis</i>	California linderiella	-/- G2G3/S2S3 -	Seasonal pools in unplowed grasslands with alluvial soils.	No Potential. There is no suitable habitat present within the Study Area.
24.	<i>Neotoma macrotis luciana</i>	Monterey dusky-footed woodrat	-/- G5T3/S3 SSC	Variety of habitats with moderate to dense understory vegetation.	No Potential. Species not known to the area, closest recorded occurrence is over 8 miles northwest of the Study Area (CNDDDB #1, 1997).
25.	<i>Oncorhynchus mykiss irideus</i>	Steelhead - south-central California coast DPS	FT/- G5T2Q/S2 -	Federal listing refers to runs in coastal basins from the Pajaro River south to, but not including, the Santa Maria River.	No Potential. The Salinas River is considered critical habitat for migrating steelhead. The creek in the Study Area is a tributary to Salinas River which is a steelhead watershed. Although mapped critical habitat is within Salinas River downstream, steelhead are not known to occur in the region with the closest occurrence outside of the Salinas River watershed in Toro Creek over 10 miles southwest (CNDDDB #16).
26.	<i>Perognathus inornatus psammophilus</i>	Salinas pocket mouse	-/- G2G3T2?/S1 SSC	Annual grassland & desert shrub in Salinas Valley, with friable soils.	No Potential. Species not known to the area, closest recorded occurrence is over 8 miles northwest of the Study Area (CNDDDB #3, 1995).
27.	<i>Phrynosoma blainvillii</i>	Coast horned lizard	-/- G4/S4 SSC	Frequents a wide variety of habitats, most common in lowlands along sandy washes with scattered low bushes.	No Potential. There is no suitable habitat present within the Study Area.

	Scientific Name	Common Name	Federal/State Status Global/State Rank CDFW Status	Habitat Preference	Potential to Occur
28.	<i>Polyphylla nubila</i>	Atascadero June beetle	-/- G1/S1 -	Known only from sand dunes in Atascadero & SLO.	No Potential. There is no suitable habitat present within the Study Area.
29.	<i>Progne subis</i>	Purple martin	-/- G5/S3 SSC	In SLO County prefers nesting in Sycamore trees along riparian corridors.	No Potential. No suitable nesting habitat (no sycamore trees and no dense riparian vegetation).
30.	<i>Pyrgulopsis taylori</i>	San Luis Obispo pyrg	-/- G1/S1 -	Freshwater habitats in SLO County.	No Potential. Study Area is located outside of species known range with the closest recorded occurrence over 12 miles southwest of the Study Area (CNDDDB #5, 1994).
31.	<i>Rana draytonii</i>	California red-legged frog	FT/- G2G3/S2S3 SSC	Lowlands & foothills in or near sources of deep water with dense, shrubby or emergent riparian vegetation. Requires 11-20 weeks for larval development.	No Potential. This species is not known from the Study Area or surrounding vicinity. Study Area lacks suitable direct connection to the Salinas River, and lacks suitable habitat due to deeply-incised bank escarpments, and fast-moving water.
32.	<i>Spea hammondi</i>	Western spadefoot	FPT/- G2G3/S3S4 SSC	Grassland & woodland habitats with vernal pools for breeding. Most of year spent underground.	Moderate. Suitable breeding habitat in seasonally ponded channel bottom; however, presence of crayfish upstream increases predation. CNDDDB records from 2005 found six large tadpoles approximately 1.9 miles east of an isolated pool (#333). No sign of tadpoles or egg masses were observed in Study Area ponded features in channel bottoms.
33.	<i>Strix occidentalis occidentalis</i>	California Spotted Owl	-/- G3G4T2T3/S3 SSC	Most often found in deep-shaded canyons, on north-facing slopes, & within 984 ft (300 m) of water.	No Potential. There is no suitable habitat present within the Study Area.

Scientific Name	Common Name	Federal/State Status Global/State Rank CDFW Status	Habitat Preference	Potential to Occur
34. <i>Taricha torosa</i>	Coast Range newt	-/- G4/S4 SSC	Lives in terrestrial habitats & will migrate >0.62 mi (1 km) to breed in ponds, reservoirs & slow moving streams.	No Potential. This species is not known from the Study Area or surrounding vicinity. Study Area lacks suitable breeding habitat because breeding pools are not accessible due to deeply-incised bank escarpments, and fast-moving water.
35. <i>Taxidea taxus</i>	American badger	-/- G5/S3 SSC	Needs friable soils in open ground with abundant food source such as California ground squirrels.	No Potential. Although squirrels are abundant, the Study Area does not possess open, friable soils. No dens were observed during biological surveys.
36. <i>Trimerotropis occulens</i>	Lompoc grasshopper	-/- G1G2/S1S2 -	Gravelly/rocky substrates & road cuts. Known only from Santa Barbara & SLO Counties.	No Potential. There is no suitable gravelly/weathered shale-habitat present within the Study Area.
37. <i>Vireo bellii pusillus</i>	Least Bell's vireo	FE/CE G5T2/S3 -	Riparian habitat, near water or dry streambed, <2000 ft. Nests in willows, mesquite, Baccharis.	No Potential. Appropriate dense willow and mulefat riparian habitat is not present in the Study Area.
38. <i>Vulpes macrotis mutica</i>	San Joaquin kit fox	FE/CT G4T2/S3 -	Annual grasslands or grassy open stages with scattered shrubby vegetation. Needs loose textured sandy soil & prey base.	No Potential. Appropriate grassland habitat is not present and the Study Area is outside the current known range of this species.

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CDFW Rank:

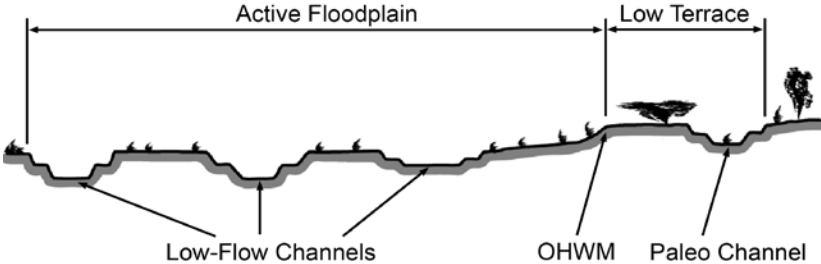
WL: Watch List
 SSC: Species of Special Concern
 FP: Fully Protected
 SA: Special Animal

USFWS:

BCC: Bird Species of Conservation
 Concern

ATTACHMENT G. ARID WEST EPHEMERAL AND INTERMITTENT STREAMS OHWM DATASHEETS

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Franklin Creek exposed sewer Project Number: 2948 Stream: Unnamed tributary to Salinas River Investigator(s): V. Mattos, L. Althouse	Date: 3/27/2024 Town: Paso Robles Photo begin file#:	Time: 3:00pm State: CA Photo end file#:				
Y <input checked="" type="checkbox"/> / N <input type="checkbox"/> Do normal circumstances exist on the site? Y <input type="checkbox"/> / N <input type="checkbox"/> Is the site significantly disturbed?	Location Details: <table style="width: 100%;"> <tr> <td style="width: 50%;">Projection:</td> <td style="width: 50%;">Datum:</td> </tr> <tr> <td colspan="2">Coordinates:</td> </tr> </table>		Projection:	Datum:	Coordinates:	
Projection:	Datum:					
Coordinates:						
Potential anthropogenic influences on the channel system: Urban setting, below an elementary school						
Brief site description: Seasonal creek, incised channel with boulders and large cobble, pools after last week's rain.						
Checklist of resources (if available): <table style="width: 100%;"> <tr> <td style="width: 50%; vertical-align: top;"> <input checked="" type="checkbox"/> Aerial photography Dates: <input checked="" type="checkbox"/> Topographic maps <input type="checkbox"/> Geologic maps <input type="checkbox"/> Vegetation maps <input type="checkbox"/> Soils maps <input type="checkbox"/> Rainfall/precipitation maps <input type="checkbox"/> Existing delineation(s) for site <input checked="" type="checkbox"/> Global positioning system (GPS) <input type="checkbox"/> Other studies </td> <td style="width: 50%; vertical-align: top;"> <input type="checkbox"/> Stream gage data Gage number: Period of record: <input type="checkbox"/> History of recent effective discharges <input type="checkbox"/> Results of flood frequency analysis <input type="checkbox"/> Most recent shift-adjusted rating <input type="checkbox"/> Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event </td> </tr> </table>			<input checked="" type="checkbox"/> Aerial photography Dates: <input checked="" type="checkbox"/> Topographic maps <input type="checkbox"/> Geologic maps <input type="checkbox"/> Vegetation maps <input type="checkbox"/> Soils maps <input type="checkbox"/> Rainfall/precipitation maps <input type="checkbox"/> Existing delineation(s) for site <input checked="" type="checkbox"/> Global positioning system (GPS) <input type="checkbox"/> Other studies	<input type="checkbox"/> Stream gage data Gage number: Period of record: <input type="checkbox"/> History of recent effective discharges <input type="checkbox"/> Results of flood frequency analysis <input type="checkbox"/> Most recent shift-adjusted rating <input type="checkbox"/> Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event		
<input checked="" type="checkbox"/> Aerial photography Dates: <input checked="" type="checkbox"/> Topographic maps <input type="checkbox"/> Geologic maps <input type="checkbox"/> Vegetation maps <input type="checkbox"/> Soils maps <input type="checkbox"/> Rainfall/precipitation maps <input type="checkbox"/> Existing delineation(s) for site <input checked="" type="checkbox"/> Global positioning system (GPS) <input type="checkbox"/> Other studies	<input type="checkbox"/> Stream gage data Gage number: Period of record: <input type="checkbox"/> History of recent effective discharges <input type="checkbox"/> Results of flood frequency analysis <input type="checkbox"/> Most recent shift-adjusted rating <input type="checkbox"/> Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event					
Hydrogeomorphic Floodplain Units 						
Procedure for identifying and characterizing the floodplain units to assist in identifying the OHW: <ol style="list-style-type: none"> 1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site. 2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units. 3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units. <ol style="list-style-type: none"> a) Record the floodplain unit and GPS position. b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit. c) Identify any indicators present at the location. 4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section. 5. Identify the OHW and record the indicators. Record the OHW position via: <table style="width: 100%;"> <tr> <td style="width: 50%;"> <input checked="" type="checkbox"/> Mapping on aerial photograph <input type="checkbox"/> Digitized on computer </td> <td style="width: 50%;"> <input checked="" type="checkbox"/> GPS <input type="checkbox"/> Other: </td> </tr> </table> 			<input checked="" type="checkbox"/> Mapping on aerial photograph <input type="checkbox"/> Digitized on computer	<input checked="" type="checkbox"/> GPS <input type="checkbox"/> Other:		
<input checked="" type="checkbox"/> Mapping on aerial photograph <input type="checkbox"/> Digitized on computer	<input checked="" type="checkbox"/> GPS <input type="checkbox"/> Other:					

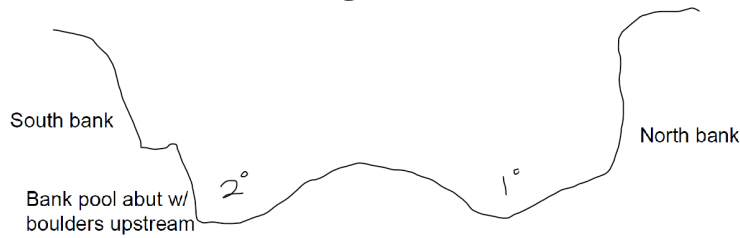
Project ID: 2948

Cross section ID: 1

Date: 3/27/2024

Time: 3:00pm

Cross section drawing:



OHWM 32' wide

OHWM

GPS point: 35.611500 N, -120.675111 W

Indicators:

- ☒ Change in average sediment texture
☐ Change in vegetation species
☐ Change in vegetation cover

- ☒ Break in bank slope
☐ Other: _____
☐ Other: _____

Comments:

Only about 2' deep as water pools, gravel bar mid channel.

Floodplain unit:

☐ Low-Flow Channel

☒ Active Floodplain

☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Gravel/cobble 3-6 cm

Total veg cover: 6 % Tree: 0 % Shrub: 5 % Herb: 1 %

Community successional stage:

- ☐ NA
☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
☐ Late (herbaceous, shrubs, mature trees)

Indicators:

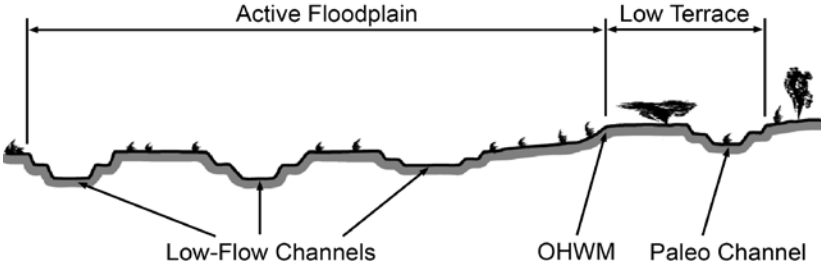
- ☐ Mudcracks
☐ Ripples
☐ Drift and/or debris
☒ Presence of bed and bank
☒ Benches

- ☐ Soil development
☐ Surface relief
☐ Other: _____
☐ Other: _____
☐ Other: _____

Comments:

Coyote brush along gravel bar.
Annual grasses/ no canopy

Arid West Ephemeral and Intermittent Streams OHW M Datasheet

Project: Franklin Creek exposed sewer Project Number: 2948 Stream: Unnamed tributary to Salinas River Investigator(s): V. Mattos, L. Althouse	Date: 3/27/2024 Town: Paso Robles Photo begin file#:	Time: 2:30pm State: CA Photo end file#:				
Y <input checked="" type="checkbox"/> / N <input type="checkbox"/> Do normal circumstances exist on the site? Y <input type="checkbox"/> / N <input type="checkbox"/> Is the site significantly disturbed?	Location Details: <table style="width: 100%;"> <tr> <td style="width: 50%;">Projection:</td> <td style="width: 50%;">Datum:</td> </tr> <tr> <td colspan="2">Coordinates:</td> </tr> </table>		Projection:	Datum:	Coordinates:	
Projection:	Datum:					
Coordinates:						
Potential anthropogenic influences on the channel system: Urban setting, below an elementary school						
Brief site description: Seasonal creek, incised channel with boulders and large cobble, pools after last week's rain.						
Checklist of resources (if available): <div style="display: flex; flex-wrap: wrap;"> <div style="width: 50%;"> <input checked="" type="checkbox"/> Aerial photography Dates: <input checked="" type="checkbox"/> Topographic maps <input type="checkbox"/> Geologic maps <input type="checkbox"/> Vegetation maps <input type="checkbox"/> Soils maps <input type="checkbox"/> Rainfall/precipitation maps <input type="checkbox"/> Existing delineation(s) for site <input checked="" type="checkbox"/> Global positioning system (GPS) <input type="checkbox"/> Other studies </div> <div style="width: 50%;"> <input type="checkbox"/> Stream gage data Gage number: Period of record: <input type="checkbox"/> History of recent effective discharges <input type="checkbox"/> Results of flood frequency analysis <input type="checkbox"/> Most recent shift-adjusted rating <input type="checkbox"/> Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event </div> </div>						
Hydrogeomorphic Floodplain Units 						
Procedure for identifying and characterizing the floodplain units to assist in identifying the OHW M: <ol style="list-style-type: none"> 1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site. 2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units. 3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units. <ol style="list-style-type: none"> a) Record the floodplain unit and GPS position. b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit. c) Identify any indicators present at the location. 4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section. 5. Identify the OHW M and record the indicators. Record the OHW M position via: <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div> <input checked="" type="checkbox"/> Mapping on aerial photograph <input type="checkbox"/> Digitized on computer </div> <div> <input checked="" type="checkbox"/> GPS <input type="checkbox"/> Other: </div> </div> 						

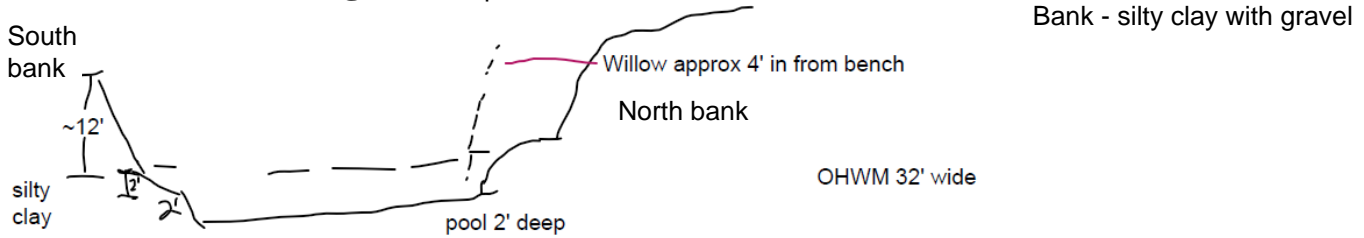
Project ID: 2948

Cross section ID: 2

Date: 3/27/2024

Time: 2:30pm

Cross section drawing: View upstream



OHWM

GPS point: 35.611500 N, -120.675111 W

Indicators:

- | | |
|--|---|
| <input checked="" type="checkbox"/> Change in average sediment texture | <input checked="" type="checkbox"/> Break in bank slope |
| <input type="checkbox"/> Change in vegetation species | <input type="checkbox"/> Other: _____ |
| <input type="checkbox"/> Change in vegetation cover | <input type="checkbox"/> Other: _____ |

Comments:

OHWM visible from sand/silt in bottom to 2-3 cm gravel on the OHWM bench.

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Gravel

Total veg cover: <10 % Tree: _____ % Shrub: 10 % Herb: _____ %

Community successional stage: willow

- | | |
|---|---|
| <input type="checkbox"/> NA | <input type="checkbox"/> Mid (herbaceous, shrubs, saplings) |
| <input type="checkbox"/> Early (herbaceous & seedlings) | <input checked="" type="checkbox"/> Late (herbaceous, shrubs, mature trees) |

Indicators:

- | | |
|--|---|
| <input type="checkbox"/> Mudcracks | <input type="checkbox"/> Soil development |
| <input type="checkbox"/> Ripples | <input type="checkbox"/> Surface relief |
| <input type="checkbox"/> Drift and/or debris | <input type="checkbox"/> Other: _____ |
| <input checked="" type="checkbox"/> Presence of bed and bank | <input type="checkbox"/> Other: _____ |
| <input checked="" type="checkbox"/> Benches | <input type="checkbox"/> Other: _____ |

Comments:

Change in gravel silt and obvious benches.

Concrete is approximately 3' thick. Most of east toe to willow trunk is 23', ~ 10' more narrow than below and above.

**ATTACHMENT H. HYBRID STREAMBANK REVETMENTS: VEGETATED ROCK SLOPE PROTECTION
(PAGES 38-46; DOT 2014)**

All grading for the hybrid revetment will be performed by the civil engineer. Grading is discussed in *Section 72-2.03A General* of the *Standard Specifications*, and its payment is included in cost per cubic yard or ton of RSP.

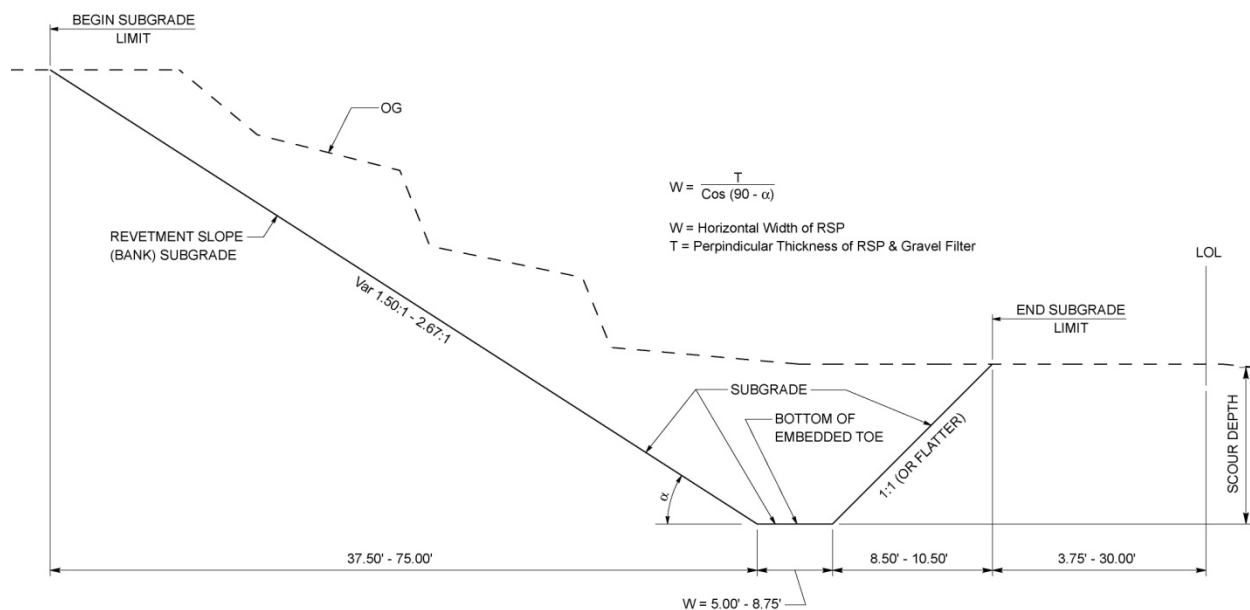


Figure 15- Subgrade Cross Section

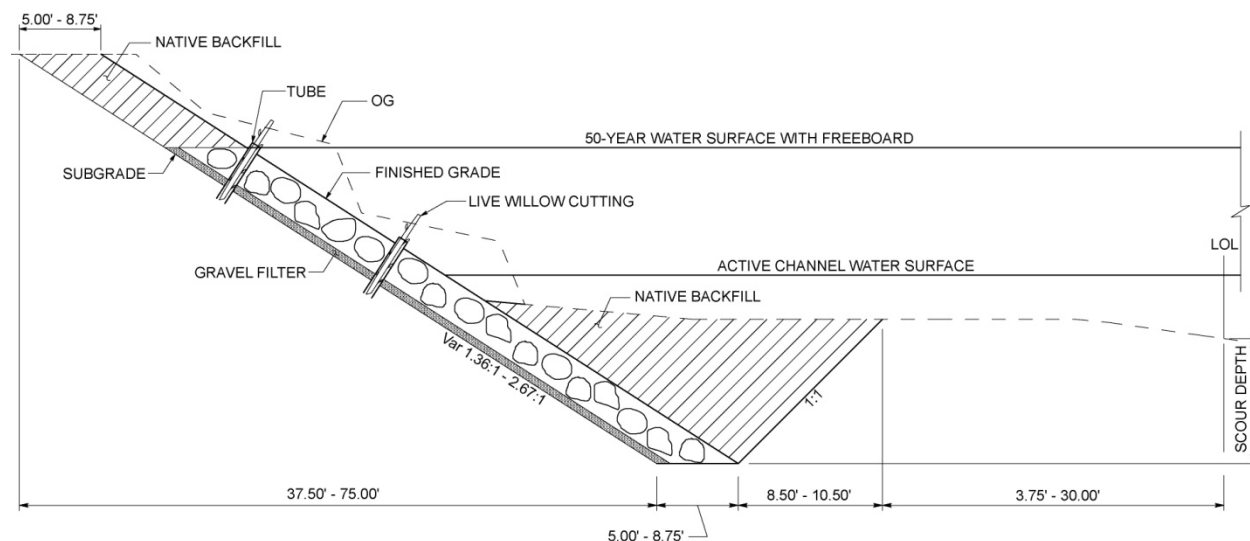


Figure 16- Hybrid Revetment Cross Section

7.1.4 VEGETATION

Among the many species of woody riparian vegetation, the willow species has one of the most consistent rooting success rates in streambanks ranging from 40% to 100% (NRCS 2008). Cuttings from willows are a popular choice to establish vegetation in streambanks because they contain root buds along their entire stem and have the ability to root regardless of the stem orientation with a bank. In addition, willow cuttings develop strong fibrous root systems that grow quickly (NRCS 2008). The cutting end that is contact with the soil will sprout roots, while the other end will sprout leaves and stems when in contact with the air (NRCS 2008). Given

their success rate, ease of harvesting and planting, as well as their vast availability, willow cuttings have been chosen to be the vegetation component in hybrid revetments. The predominant species of willow within a 5 to 7 mile radius of the project site should be used as the source for the cuttings. For areas where willows may not be prolific and plentiful, such as in arid climates, the landscape architect may recommend comparable vegetation alternatives to the civil engineer. See Figures 17 and 18 for an example of live willow cuttings incorporated into RSP in an effort to protect a streambank.



Figure 17- Gibbson Creek, Cuttings through RSP (Right After Installation, Fall 2010)



Figure 18- Gibson Creek, Cuttings through RSP (Summer 2011)

From NRCS (2008), a common harvesting and planting method is presented for willow cuttings:

1. Collect cuttings having proper diameter and length from healthy (non-diseased) willows within project vicinity without defects, such as knots or stripped bark.
2. Remove side branches and top growth from cutting. Trim the bottom or basal end to a 45-degree angle and trim the top so it is flat. When trimming, keep in mind that at least two bud scars should be above ground when cutting is ultimately planted.
3. Soak live cuttings for fourteen days, or plant the cuttings the day they are harvested.
4. Use a rod or auger to create a pilot hole and place cutting basal end into hole. To ensure they receive sunlight, the cuttings should be placed taller than the surrounding vegetation. Plant cuttings at desired spacing and pattern.
5. Fill hole around cutting with a water and soil slurry mixture.

The willow cuttings may be planted into the streambank with either a vertical or perpendicular orientation. See Figures 19 and 20 for orientation illustration. The cuttings will be planted into the revetment subgrade and must be long enough to extend through the RSP and gravel filter layers, which are placed at a thickness perpendicular to the streambank. As seen in Figure 21, the total cutting length is the sum of the cutting embedment depth (A), the RSP layer(s) and gravel filter thickness (B), where the “B” dimension depends upon cutting orientation with streambank, and the cutting protrusion length from the RSP outer layer (C+D). Normally, the embedment depth and protrusion length are influenced by existing vegetation and soil conditions at the project site.

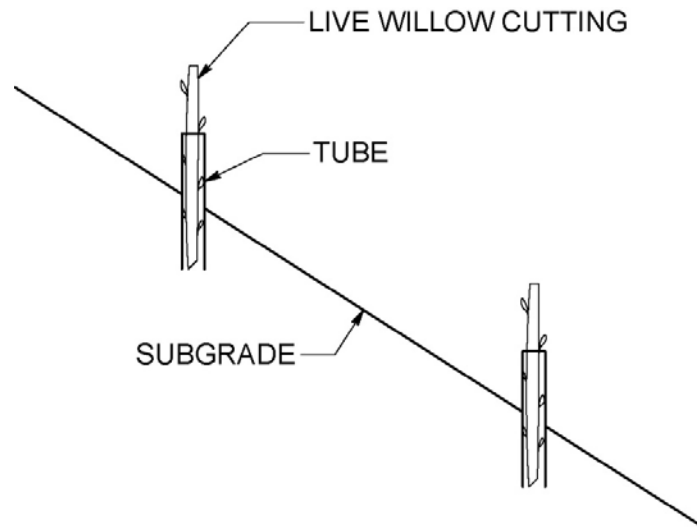


Figure 19- Live Cutting Vertical Orientation

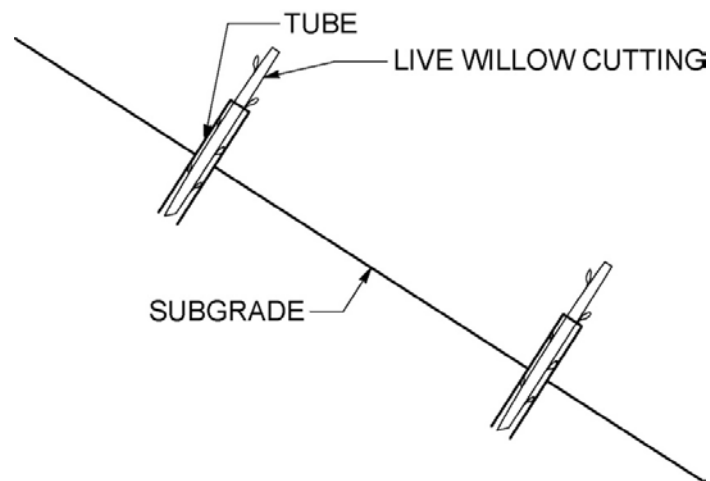


Figure 20- Live Cutting Perpendicular Orientation

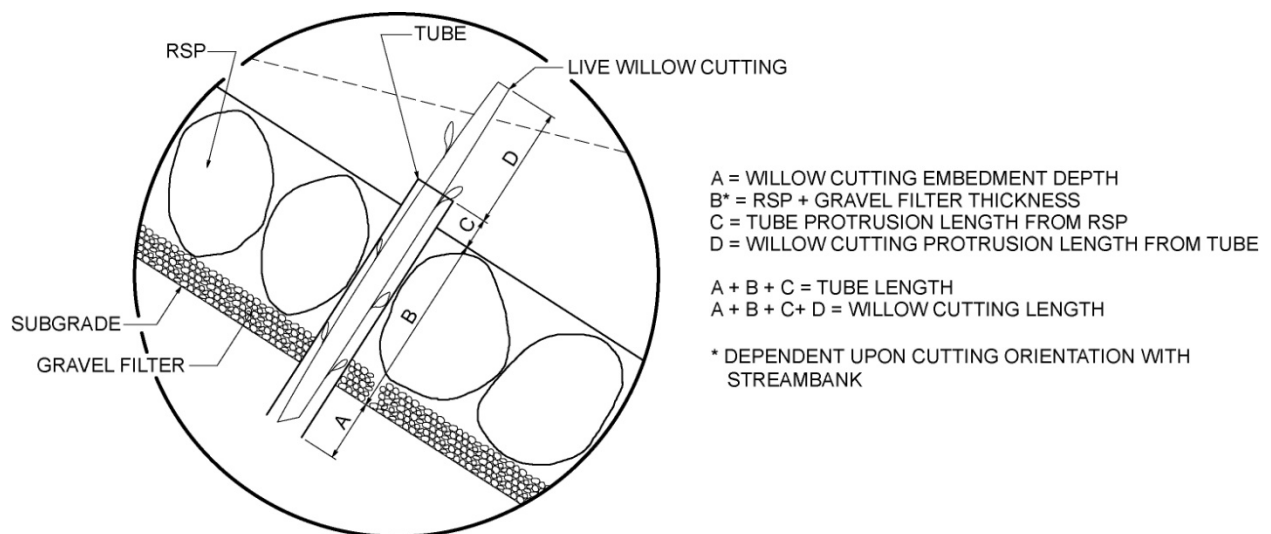


Figure 21- Live Cutting Detail

An advantage of the vertical orientation is that the amount of vegetation projection and encroachment into the main channel at maturity is minimized lessening potential stream hydraulic impacts from the perpendicular cutting orientation that would have greater tendency to project into the main channel, however a disadvantage of the vertical orientation is that the required cutting length is increased. When a cutting is placed vertically and completely through the RSP and gravel filter, the thickness dimension of these layers is skewed or lengthened because the rock and gravel are placed to their specified thickness measured perpendicular to the streambank slope. Due to the skewed thickness, the cutting length must be longer to penetrate completely through the RSP and gravel filter. For example, a 2.5:1 streambank slope receiving ½T (½Ton) (Method A Placement), Backing No. 1, and gravel filter, considering 1-foot subgrade soil embedment and 2-foot protrusion length from RSP outer layer, would require a cutting length equal to 9.4 feet having vertical orientation, while the perpendicular orientation length is 8.7 feet.

As the streambank slope steepens, this cutting length difference becomes greater. A 1.75:1 slope with the same RSP and gravel filter configuration would require a cutting length of 10 feet versus the 8.7 feet for the perpendicular orientation, again considering 1-foot embedment and 2-foot protrusion length. Similar to cutting embedment depth and protrusion length, the cutting orientation is influenced by existing vegetation and soil conditions at the project site.

In cases where average stream velocity triggers the need for large and thick RSP layers, such as 4T (4Ton) and 8T (8 Ton) RSP class revetments requiring combination inner layers (i.e. 1T (1Ton) over ¼T (¼Ton)), the willow cutting length is significant, especially if a vertical cutting orientation is specified. The largest CABS RSP revetment is 8T (8Ton) underlain by an inner layer comprised of 2T (2Ton) over ½T (½Ton) that is underlain by Backing No. 1. The total thickness of this 8 Ton revetment is around 19 feet. For a perpendicular orientation, the cutting length would have to be a minimum of 19 feet to completely penetrate the RSP layers, excluding the gravel filter thickness, embedment depth, and protrusion length, whereas a vertical orientation on a 1.5:1 streambank would yield a 23-foot minimum cutting length to completely penetrate the RSP layers.

Given these significant lengths, the cuttings will more than likely be hard to come by in the field. Also, it should be noted that the design velocity for revetments of this size will be greater than 20 feet/second that is almost twice the 12 feet/second permissible velocity for a mature willow (Fischenich 2001), which means that the willows will be regularly swept away at storm events much more frequent than the HDM suggested 50-year (2% probability) design event. Taking these factors into consideration, it is likely infeasible to use vegetation in revetments requiring 4T (4Ton) and 8T (8 Ton) outer layer rock. Therefore, it is recommended to limit the use of hybrid revetments to 2T (2Ton) RSP class or smaller.

Since the live cuttings must be planted directly into the revetment subgrade, they will need to be placed prior to the gravel filter and RSP layer(s) following subgrade excavation (see Section 10.1 for construction order of work). It would be labor-intensive, time-consuming, expensive, and therefore impractical to attempt to place the gravel filter and RSP layer(s) first on the subgrade and afterwards try to move rock accordingly to plant the willow cuttings. In order to provide some protection for the willow cuttings during rock placement, it is recommended that the cuttings be placed inside circular, perforated cardboard tubes that will also be embedded into the subgrade and protrude through and extend beyond the RSP outer layer. If nothing else, the tubes will provide better visual recognition of the cuttings for the equipment operator to avoid and

prevent damage when placing rock. An example site using tubes is shown in Figures 22 and 23 where vegetation is planted through corrugated plastic tubes within RSP. As previously stated, degradable cardboard tubes are recommended instead of plastic.



Figure 22- Weaver Creek (2012), Mature Vegetation in Plastic Tubes

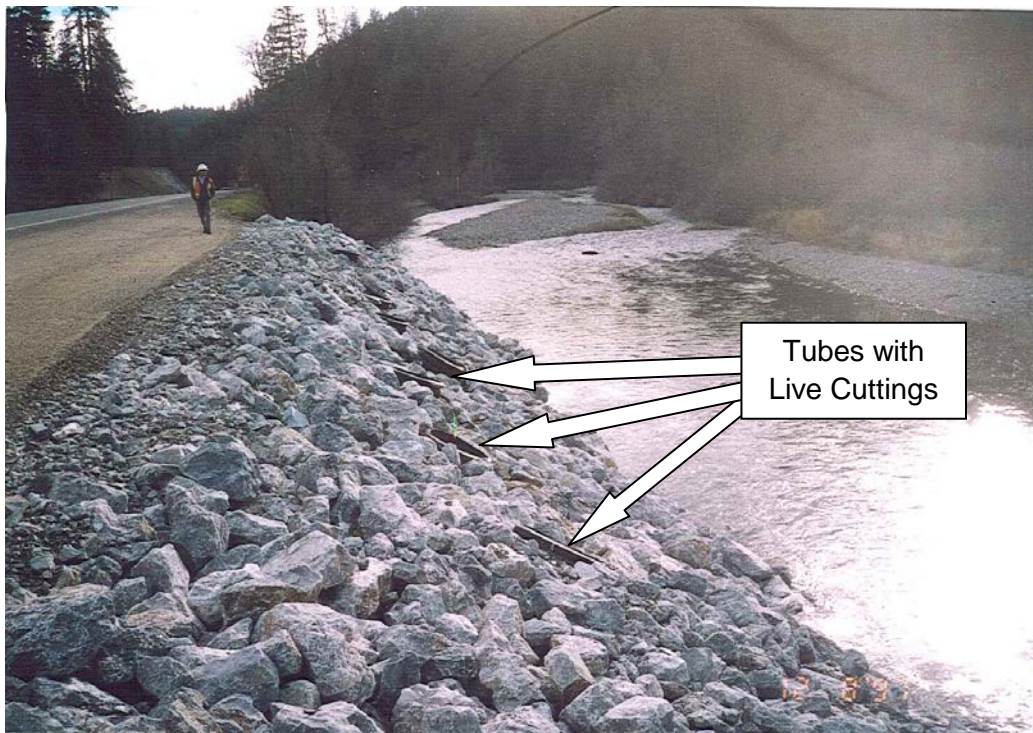
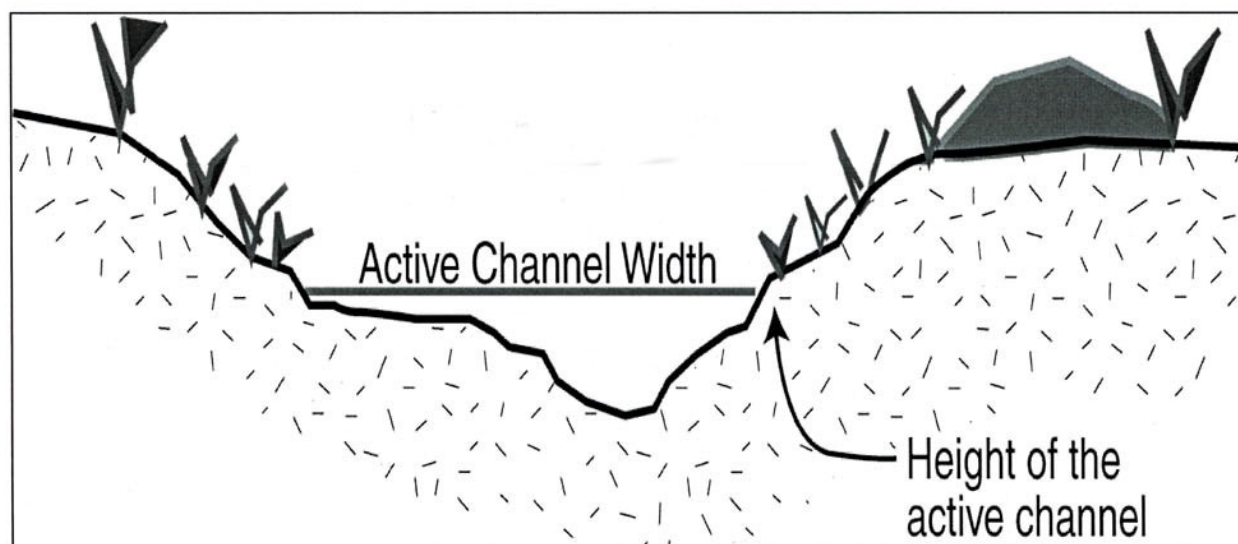


Figure 23- Weaver Creek (1997), Cuttings in Plastic Tubes Just After Installation

One such proprietary cardboard tube on the market is called SONOTUBE, but other products exist as well that will prevent sole sourcing. These tubes vary in diameter from 6 to 36 inches also with variable lengths that can be cut in the field as needed to fit the project site. After the cuttings and tubes have been placed in the subgrade, the tubes can be backfilled with either native soil mixed with water or imported topsoil mixed with water. Over time, the tubes will degrade and will not inhibit growth and expansion of the willow cuttings.

As described in Section 3.1, woody vegetation within the bank-toe zone and main channel can cause significant increase of velocity in the longitudinal direction, as well as significantly increase turbulence intensity that can lead to localized scour. In order to avoid this problem, the active channel margin is set as the lower limit of planting in the hybrid revetment. This means that willow cuttings will not be placed below the active channel water surface limit. The upper limit of the hybrid revetment is the design height, which is design high water plus freeboard. As mentioned in Section 7.1.1.3, willow cuttings will be planted to the upper limit even when the RSP portion of the hybrid revetment ends at the stream top of bank.

In Figure 24, a schematic depiction of active channel margin is shown in cross section and a stream photograph is marked with the active channel margin. CDFW (2002) defines active channel as *the ordinary high water level elevation delineating the highest water level maintained for a sufficient period of time to leave evidence on the landscape, such as the point at which cleanly scoured substrate of the stream ends and terrestrial vegetation begins*. The active channel height and limit should be located in the field by the civil engineer and plotted on the hybrid revetment typical cross section for reference.



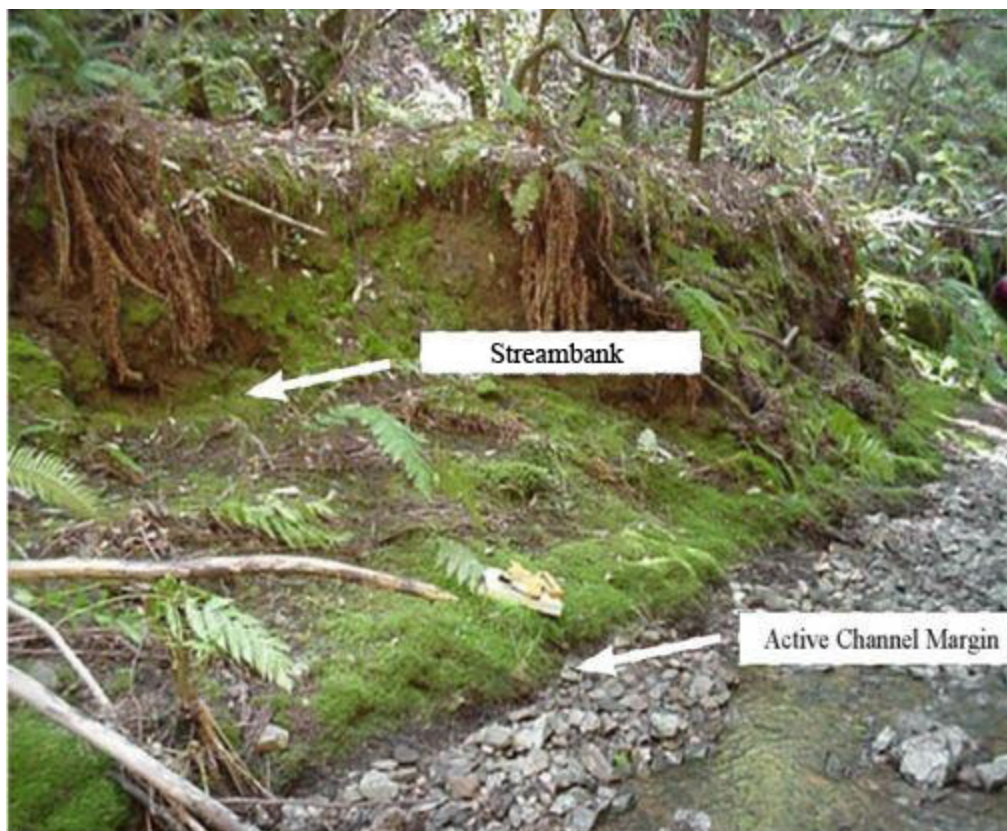


Figure 24- Active Channel Delineation (adapted from CDFW (2004))

Recognizing that survivability is an issue and excessive planting is often practiced to combat this issue, restraint needs to be practiced to prevent high plant density. By planting in a more controlled manner, the potential can be reduced for stream cross-sectional area reduction that can cause a decrease in stream capacity, increases in sediment deposition, and broadening of floodplain footprint. Also, controlled planting around culvert and bridge openings can preserve their conveyance integrity.

The goal for hybrid revetment design is to have medium woody vegetation density, realizing that the possibility for volunteer vegetation exists and may increase the intended plant density. For woody vegetation, medium density can range from mature trees or shrubs with full foliage where their canopies or outer layers have spacing between them, to mature trees or shrubs where their outer layers touch but are not interwoven. In determining cutting spacing and pattern to meet medium density goal, consideration should also be given to existing vegetation density in the project surroundings.

In the development of the hybrid revetment design, the civil engineer will request the landscape architect to provide the following willow cutting recommendations in a stamped report: longitudinal and lateral spacing in plan-view, pattern in plan-view, orientation with streambank (vertical or perpendicular), diameter range, embedment depths into subgrade for cuttings and tubes, protrusion length of tubes from RSP outer layer, protrusion length of cutting from tubes, and type of soil backfill for tubes and cuttings. Also, this report needs to include special provision(s) for cutting harvesting/installation and tube material/installation requirements, as well as pay item(s) and unit cost for the cuttings and tubes.

It is especially important for the landscape architect and civil engineer to discuss the recommended spacing and patterns of the cuttings and the predicted vegetation density in their mature state, including possible projection and encroachment of willows into the stream main channel that can cause conveyance reduction. From these discussions, the civil engineer can assess roughness values and potential cross-sectional area reduction in the post-construction condition, which will be applied to the hydraulic model. Due to floodplain and flood control liabilities, the civil engineer must approve of the landscape architect's recommendation for cutting and spacing pattern before they are implemented into the hybrid revetment design.

Because the willow cuttings are a part of a revetment with intent to stabilize a streambank, the cuttings will be shown on the civil engineer's typical cross section and drainage plan (see Appendix B for example). In the case where the RSP portion of the revetment ends at the stream top of bank, but planting continues above to the design high water plus freeboard limit, these will also be shown on the civil engineering plans. This practice will be followed for all willow cuttings within the longitudinal and vertical limits of the hybrid revetment determined and set by the civil engineer.

Vegetation may be needed outside the vertical and longitudinal limits of the hybrid revetment for purposes other than streambank stabilization. This type of planting will be shown on the landscape architect plans. It is very common for resource agencies to require plant mitigation in their permits that includes other woody riparian vegetation such as cottonwoods, alders, and sycamores. The mitigation planting can be done outside of the hybrid revetment, but the civil engineer will have responsibility for any planting at or below the 100-year base flood elevations, or 200-year within CVFPB jurisdiction, to ensure floodplain compatibility with local and Federal agency laws. If temporary irrigation for the hybrid revetment and/or the mitigation planting is needed during the plant establishment period, the landscape architect will provide its full design, plans, specifications, and estimate for the project.

~~8.1 POST-CONSTRUCTION MODELING AND ANALYSIS~~

~~After the revetment design is completed, a post-construction model will be created to predict and analyze any stream and drainage structure conveyance differences with the pre-construction model, in addition to assessing floodplain impacts. In the post-construction condition, the vegetation in the hybrid revetment is considered to be in a mature state.~~

~~8.1.1 POST-CONSTRUCTION MANNING'S N-VALUES~~

~~When determining roughness values for the post-construction model, the effects of the hybrid bank revetment(s) on the main channel n-value must be taken into account. For the portion of the stream that will contain the hybrid revetment, a weighted n-value calculation method is suggested within the main channel. The weighted n-value will be calculated by segregating the main channel into three components: the left bank, the right bank, and the stream bed. The bank(s) that will receive the hybrid revetment will require a new n-value calculation. The stream bed and possibly the other bank (if revetment is only constructed on one bank) will use the main channel n-value determined for pre-construction that may have been refined during the calibration process of the HEC-RAS pre-construction model.~~

~~Of the six parameters (n_0 , n_1 , etc.) used in determining a main channel n-value discussed previously, the n_0 (bed and bank materials), the n_1 (degree of irregularity), and the n_4 (vegetation density) parameters will be affected by the addition of a hybrid revetment on a bank. The other~~