CITY OF SAN LUIS OBISPO

INITIAL STUDY
ENVIRONMENTAL CHECKLIST FORM

For EID-0481-2022

1. Project Title:

San Luis Obispo Creek Bank Repair Project

2. Lead Agency Name and Address:

City of San Luis Obispo
919 Palm Street
San Luis Obispo, CA 93401

3. Contact Person and Phone Number:

Wyatt Banker-Hix, Engineer III
805-783-7859

4. Project Location:

The Project Site is located near the intersection of Johnson Avenue and Pismo Street in the City of San Luis Obispo (City), San Luis Obispo County (County), California (Figure 1). The Project Site is located within Township 30S, Range 12E, Section 26, Mount Diablo Meridian.

The Project Site includes an approximately 180-linear foot stretch of San Luis Obispo Creek downstream from the Johnson Avenue Bridge. The site also includes the adjacent creek banks, portions of Johnson Avenue and Pismo Street, and a staging and laydown area along the northwest side of Pismo Street (Figure 2). The approximately 0.35-acre Project Site includes portions of Assessor's Parcel Numbers (APNs) 002-341-007 and 002-341-016. The approximate center of the Project Site is located at latitude 35.281432°N and longitude 120.654748°W (WGS-84 datum). Photos of the Project Site are provided in Figure 3.

5. Project Sponsor's Name and Address:

City of San Luis Obispo
919 Palm Street
San Luis Obispo, CA 93401

Cannon Corporation
Contact: John W. Evans, P.E.
1050 Southwood Drive
San Luis Obispo, California 93401

6. General Plan Designations:

Medium Density Residential (12 dwelling units/acre); Office

7. Zoning:

Medium Density Residential (R-2) and Office (O); Public Right-of-Way

8. Description of the Project:

The Project would repair drainage control infrastructure along the banks of an approximately 180-linear foot stretch of San Luis Obispo Creek. A segment of existing concrete slope protection (pre-1957) on the southwest bank of San Luis Obispo Creek downstream of Johnson Avenue has failed and requires repair. In addition, vegetation growth and sediment accumulation along the inner radius of the channel bend has shifted the lowest point of the channel to the toe-of-slope along the damaged embankment, removing portions of the slope protection footing and creating additional exposure to the native soil underneath. Additional failures of the underlying soils and subsequent concrete slope protection would jeopardize adjacent infrastructure (i.e., Pismo Street and the buried utilities underneath), downstream slope protection, trees and landscaping, and adjacent private property. The Project work plan is provided in Figure 4.

The existing concrete slope protection system downstream of the Johnson Avenue Bridge has been in place for over 75 years and has reached the end of its useful service life. Between 2017 and 2021 the amount of damaged area increased substantially and nearly the entire length of the concrete footing, which was designed as part of the slope protection, has been undermined and/or washed away. Existing San Luis Obispo Creek channel contours continue to move towards the toe-of-slope and erode additional material.

The Project would include the following elements:

- staged construction to remove the deteriorated concrete footing and construct a new concrete footing and soil nail wall;
- installation of the soil nail wall over the top of the deteriorating concrete slab bank protection, with soil nails installed with 4 to 6-foot on-center spacing each way, to limit the disturbance of the existing slope and to minimize the amount of work in the creek channel;
- installation of a drainage system behind the soil nail wall to intercept groundwater flowing out of the embankment;
- vegetation thinning and sediment removal as necessary;
- excavation on the westerly side of the creek to remove sediment buildup and expand creek capacity and resiliency (approximately 120 cubic yards);
- addition of 6-inch high concrete weirs connected to underlying bedrock to limit bank incision, encourage ponding, and enhance fish habitat;
- trimming the lower limbs of one sycamore tree and one alder tree, and cutting four willow trees to approximately 1 foot above existing grade, to reduce potential for future creek blockage due to fallen tree debris;[1] and
- revegetation with the use of native riparian trees and shrubs, a native hydroseed mix, and jute or coconut fiber erosion control blankets, as per the Habitat Mitigation and Monitoring Plan (HMMP) that will be prepared and implemented for the Project.

The first construction stage would require the work area at the base of the existing wall to be de-watered by diverting existing creek flows and dewatering the area until it is dry. Dewatering and creek diversion plans are described in more detail below.

[1] Five oak trees that were present when the baseline for the environmental process was established have been removed from the Project area during winter 2022 under an emergency permit. This analysis anticipates the tree removal will require 1:1 replacement for the removed trees. However, the removal of the five oak trees and associated replacement requirements is part of a separate environmental regulatory process pursuant to the requirements of the emergency permit.

The second construction stage would require the excavation of the loose soils and deteriorated concrete at the base of the existing concrete apron down to bedrock (approximately 2 to 3 feet) so a replacement footing can be added. This work would be staggered from section to section to help support uphill soil and existing concrete slope protection from sliding further down the slope.

The third stage would involve the drilling of soil nails, and the installation of prefabricated drainage materials, reinforcing steel, and shotcrete. It is likely that the soil nails would be drilled with equipment staged from above on Pismo Street and would require the pruning of several of the large trees located between the upper retaining wall along Pismo Street and the top of the slope protection (no tree removals).

The fourth stage would be to install the concrete weir structures similar to the existing weir located at the downstream end of the Project Site. The weirs would be embedded 1 to 2 feet into the underlying bedrock. Weirs would be short enough (approximately 6 inches high) to allow fish passage while also increasing ponding and enhancing fish habitat. It is anticipated that vibratory and/or impact hammers would be utilized during construction for 4 to 5 days.

The final stage would include the vegetation trimming and cutting, excavation of the secondary channel, and re-vegetation. Creek shading would be temporarily reduced with the cutting of some trees. Re-vegetation and restoration of the Project Site would replace any removed creek shading with new tree canopies that use native species that are relatively fast growing.

Timing

The Project would be constructed as a single project within an approximately five-month period. The current expected construction duration requiring the creek flow diversion is 60 calendar days. Standard resource agency permit requirements typically restrict work during the rainy season; therefore, construction is proposed to occur between June 1 and October 15 within the creek banks unless a modified timeline is approved by the resource agencies. Work outside of the creek banks may start earlier or finish later than the permit-restricted periods. Restoration monitoring would occur for approximately 3 to 5 years after construction, depending upon revegetation success and permit requirements.

Access

Access to the Project Site would be via Johnson Avenue and Pismo Street. Equipment, construction materials, and excavated materials would be raised and lowered into the San Luis Obispo Creek channel from the Johnson Avenue Bridge. Construction methods throughout all stages would prioritize options that keep large equipment out of the creek corridor and equipment would be operated from the Johnson Avenue Bridge and Pismo Street to the greatest extent feasible. Areas that cannot be reached by equipment operated from the existing bridge and adjacent streets would need to be excavated using smaller equipment, such as bobcats and mini-excavators, which would be lowered into the creek channel from the Johnson Avenue Bridge.

Dewatering and Flow Diversion

San Luis Obispo Creek is mostly a perennial creek. Therefore, it is anticipated that dewatering would be necessary for project construction. As previously mentioned, the first construction stage would require the work area at the base of the existing wall to be dewatered by diverting existing creek flows and dewatering the area until it is dry. If/when dewatering becomes necessary, the following provides a description of the type of activities required. A double check dam diversion with a by-pass gravity pipeline and backup pumping system would be utilized. Two 12-inch diameter diversion pipes, each 210 feet long, would extend from the upper check dam (inlet) to the lower check dam (outlet). The pipes would be placed adjacent to each other on the northwesterly side of the creek channel. The upper check dams would extend the entire width of the channel from wall to wall under the Johnson Avenue Bridge. An additional temporary check dam would be added just downstream of the limits of flood bench excavation within the creek channel. There would also be a sump pump placed between the two upper check dams

and connected to 200 feet of 4-inch diameter pressure pipe, which would outlet just downstream of the lower check dam. The current expected construction duration requiring the creek flow diversion is 60 calendar days.

The final dewatering and flow diversion plan providing more detail would be prepared subsequently during the permitting process and will be submitted to the National Marine Fisheries Service (NMFS) and the other regulatory agencies at least 15 days prior to the start of construction.

Equipment

Equipment, construction materials, and excavated materials would be raised and lowered from the Johnson Avenue Bridge. It is anticipated the Project would utilize the following construction equipment:

- two small rubber wheeled or rubber tracked skid steers (e.g., Bobcat, Caterpillar) for flood bench excavation within the creek channel;
- a backhoe loader (wheeled) or small excavator (tracked) with jackhammer and bucket/ grabber attachments for removal of the existing concrete footing;
- a backhoe loader (wheeled or tracked) for shuttling/transferring construction materials;
- a small drill rig (tracked) with a side boom drill for installing the soil nail wall (to be used if all drilling cannot be reached with an extended arm drill rig from Pismo Street);
- a platform attachment for a backhoe loader to be used as a man-lift for shotcrete placement and core drilling of existing slab revetment; and
- a hand operated rock drill (for anchoring into bedrock) with a compressor staged on Pismo Street for installation of new concrete weirs.

Staging

A construction staging and laydown area is planned for the northwest side of Pismo Street, from Johnson Avenue to approximately 200 feet southwest of the Johnson Avenue intersection (depicted in Figure 2).

Soil Export

Approximately 120 cubic yards of material may need to be exported during construction, as part of the excavation of sediment buildup in the creek channel. Any exported soil would be lifted from the creek channel up to the Johnson Avenue Bridge and subsequently hauled to a location that can legally accept the material (e.g., Cold Canyon Landfill).

9. Project Entitlements:

The project would require City-issued permits for grading and construction.

10. Surrounding Land Uses and Settings:

The Project Site is immediately surrounded by residences to the southwest, and residential and commercial uses to the northwest. Single family residences are to the north, south, and east, across the intersections of Johnson Avenue and Pismo Street.

11. Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code Section 21080.3.1? If so, is there a plan for consultation that includes, for example, the determination of significance of impacts to tribal cultural resources, procedures regarding confidentiality, etc.?

Native American Tribes were notified about the project consistent with City and State regulations including, but not limited to, Assembly Bill 52.

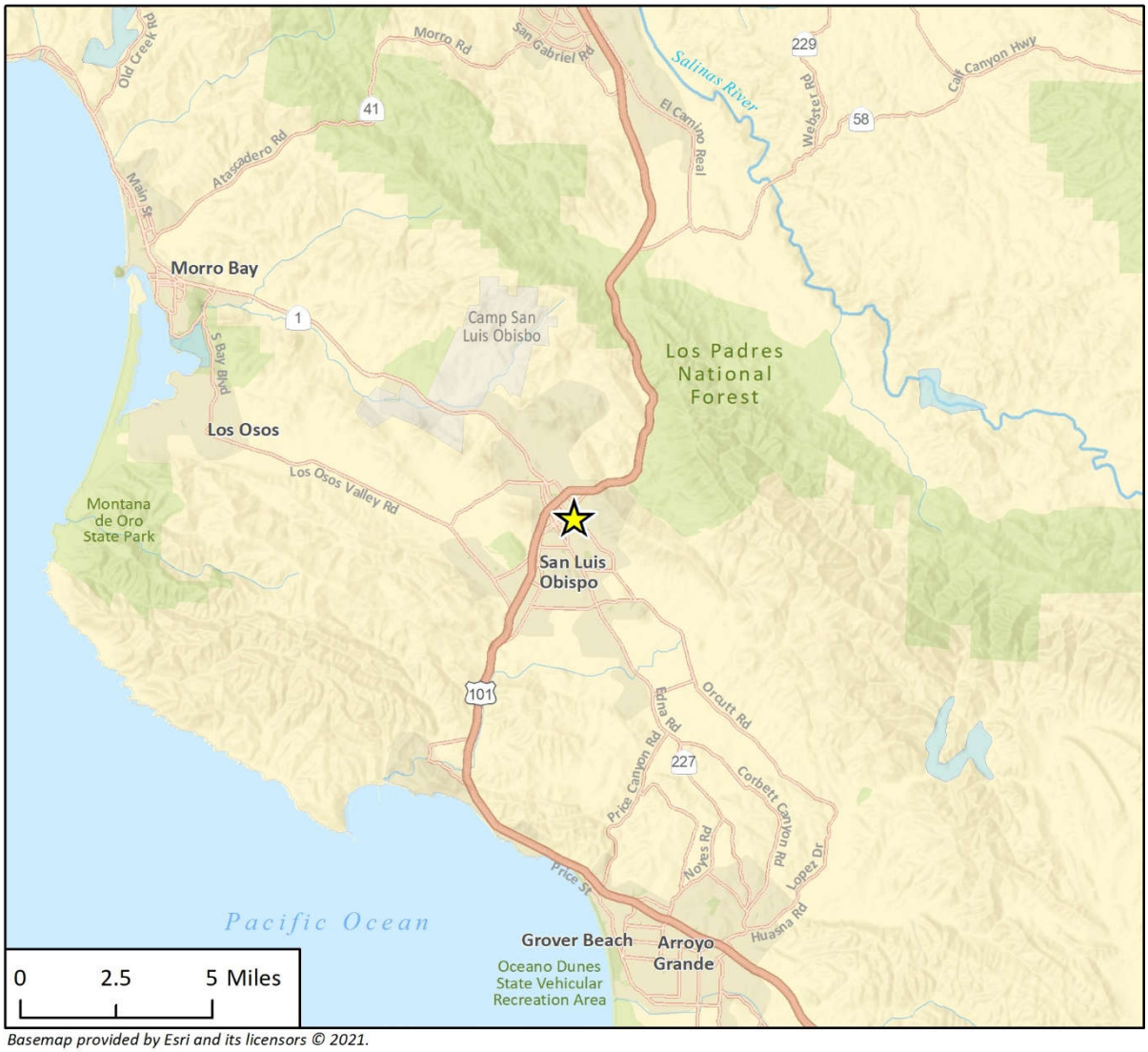
During the request for consultation window, one response was received from the Salinan Tribe of Monterey and San Luis Obispo County on August 26th, 2022 requesting a consultation meeting to discuss concerns of undiscovered cultural resources in the project area. The City has contacted the Tribe and is currently in consultation with the Tribe regarding construction management practices and monitoring of disturbed soils during project construction. Pursuant to PRC §21080.3.1 (b) the request for consultation window closed on September 30th, 2022. No other tribal agencies responded to the consultation request.

12. Other public agencies whose approval is required:

Regulatory compliance for work within San Luis Obispo Creek is expected to require permit/authorizations from the following agencies.

- U.S. Army Corps of Engineers Clean Water Act Section 404 permit for fill in waters of the U.S.
- Regional Water Quality Control Board Clean Water Act Section 401 Water Quality Certification for fill in waters of the U.S., diversion of San Luis Obispo Creek, and dewatering discharge for the lift station and open trench construction in San Luis Obispo Creek.
- California Department of Fish and Wildlife Streambed Alteration 1600 Agreement for excavation, fill, and removal of riparian vegetation.
- U.S. Fish and Wildlife Service Endangered Species Act take authorization (Biological Opinion) for potential impacts on the California red-legged frog.
- National Marine Fisheries Service Endangered Species Act take authorization (Biological Opinion) for potential impacts on central California coast steelhead.

Figure 1 Regional Location



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Project Location

N

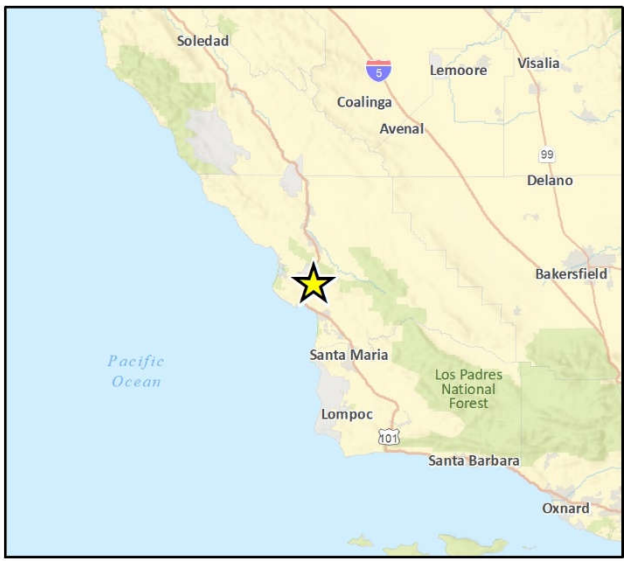


Figure 2 Project Location

Imagery provided by Microsoft Bing and its licensors © 2022.

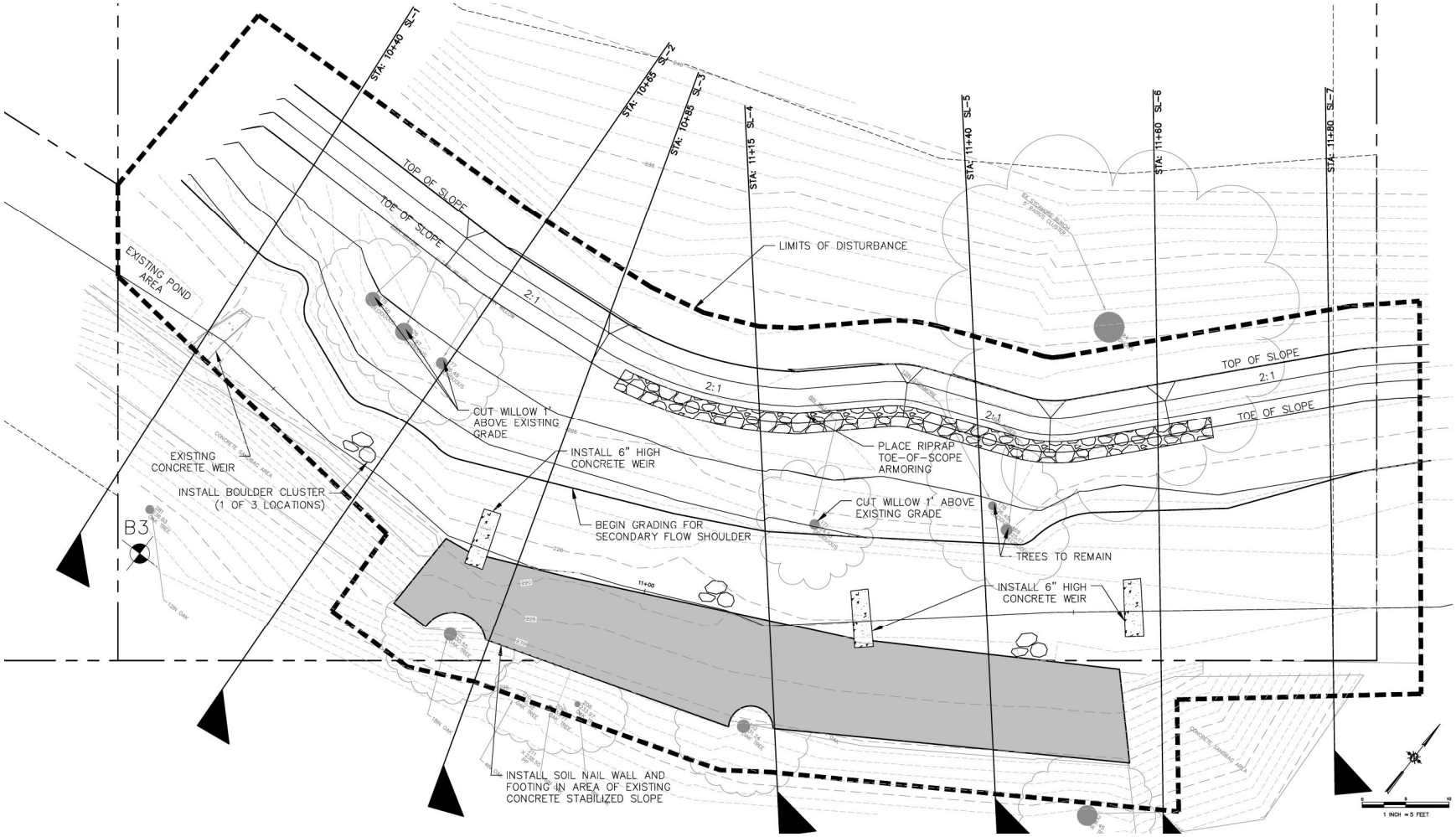
Fig 2 Project Area and Study Area

Figure 3 Site Photos

Photograph 1. View of the south bank of San Luis Obispo Creek where the concrete infrastructure has been undercut and eroded by water flow (facing south, May 3, 2022).

Photograph 2. The natural bottom culvert underneath Johnson Avenue (facing northeast, May 3, 2022).

Figure 4 Project Work Plan



ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

☒	Aesthetics	☐	Greenhouse Gas Emissions	☐	Public Services
☐	Agriculture and Forestry Resources	☐	Hazards and Hazardous Materials	☐	Recreation
☐	Air Quality	☒	Hydrology and Water Quality	☐	Transportation
☒	Biological Resources	☐	Land Use and Planning	☒	Tribal Cultural Resources
☒	Cultural Resources	☐	Mineral Resources	☐	Utilities and Service Systems
☐	Energy	☒	Noise	☐	Wildfire
☒	Geology and Soils	☐	Population and Housing	☒	Mandatory Findings of Significance

FISH AND WILDLIFE FEES

☐	The California Department of Fish and Wildlife has reviewed the CEQA document and written no effect determination request and has determined that the project will not have a potential effect on fish, wildlife, or habitat (see attached determination).
☒	The project has potential to impact fish and wildlife resources and shall be subject to the payment of Fish and Game fees pursuant to Section 711.4 of the California Fish and Game Code. This initial study has been circulated to the California Department of Fish and Wildlife for review and comment.

STATE CLEARINGHOUSE

☒	This environmental document must be submitted to the State Clearinghouse for review by one or more State agencies (e.g. Cal Trans, California Department of Fish and Wildlife, Department of Housing and Community Development). The public review period shall not be less than 30 days (CEQA Guidelines 15073(a)).

DETERMINATION (To be completed by the Lead Agency):

On the basis of this initial evaluation:

I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.	☐
I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made, by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.	☒
I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.	☐
I find that the proposed project MAY have a "potentially significant" impact(s) or "potentially significant unless mitigated" impact(s) on the environment, but at least one effect (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed	☐
I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (1) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (2) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.	☐

Shawna Scott

Signature

November 17, 2022

Date

Shawna Scott, Special Projects Manager

Printed Name

For: Michael Codron,

Community Development Director

EVALUATION OF ENVIRONMENTAL IMPACTS

1. A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g. the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g. the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

2. All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

3. Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact' is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

4. "Negative Declaration: Less Than Significant with Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from Section 19, "Earlier Analysis," as described in (5) below, may be cross-referenced).

5. Earlier analysis may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration (Section 15063 (c) (3) (D)). In this case, a brief discussion should identify the following:

   a) Earlier Analysis Used. Identify and state where they are available for review.

   b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.

   c) Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they addressed site-specific conditions for the project.

6. Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g. general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

7. Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.

8. The explanation of each issue should identify:

d) the significance criteria or threshold, if any, used to evaluate each question; and

e) the mitigation measure identified, if any, to reduce the impact to less than significance

1. AESTHETICS

Except as provided in Public Resources Code Section 21099, would the project:	Sources	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?	25	☐	☐	☐	☒
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, open space, and historic buildings within a local or state scenic highway?	9	☐	☐	☒	☐
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	13, 14	☐	☐	☒	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	14	☐	☒	☐	☐

Evaluation

The Project Site is located at San Luis Obispo Creek, within the Johnson Avenue residential neighborhoods. This area contains smaller lots from the mid-20th century, mature street trees, and occasional long-distance views of nearby hills (City of San Luis Obispo 2014a). The Project Site is surrounded by one-story residential uses, Johnson Avenue and Pismo Street to the east and south, and a commercial shopping center approximately 110 feet northwest. The nearest officially designated State Scenic Highway, State Route 1, is approximately 0.63-mile northwest of the Project Site and there is no line of sight between State Route 1 and the Project Site. United States Route 101 (U.S. 101), an Eligible Scenic Highway approximately 0.57-mile northwest of the Project Site, is also not visible from the Project Site (Caltrans 2018). The City identifies the portion Johnson Avenue that intersects the Project Site as having moderate scenic value (City of San Luis Obispo 2014a).

a) The Project Site is not located in an area with an identified scenic vista. The City designates the intersection of Johnson Avenue and Bishop Street as a scenic vista, approximately 0.68-mile southeast of the Project Site, due to the ability to view the surrounding foothills to the northeast of the scenic vista (City of San Luis Obispo 2014a). The Project Site is not visible from or located within the viewshed of the Johnson Avenue and Bishop Street scenic vista or any other designated scenic vista. Therefore, the Project would not have a substantial adverse effect on a scenic vista, and no impact would occur.

b) Riparian vegetation and surrounding development block views of the Project Site from State Route 1 and U.S. 101, which are Officially Designated and Eligible Scenic Highways, respectively. Although a portion of Johnson Avenue is identified as having moderate scenic value, temporary construction would not have a substantial adverse effect on riparian vegetation along the banks of the San Luis Obispo Creek as viewed from Johnson Avenue. The proposed repairs to drainage control infrastructure along the banks of San Luis Obispo Creek would reduce the likelihood of structural failure which could damage existing trees along the banks of the creek that serve as scenic resources. Construction would be temporary, lasting approximately five months, and all equipment would be staged at the northwest side of Pismo Street, which would minimize obstruction of trees from Johnson Avenue. The Project would not have a substantial adverse effect on any scenic resources, including, but not limited to, trees, rock outcroppings, open space, and historic buildings within a local or state scenic highway. Therefore, this impact would be less than significant.

c) The Project Site includes a portion of the San Luis Obispo Creek corridor and is surrounded by existing urban development. The Project Site is zoned Office (O) and Medium Density Residential (R-2) (City of San Luis Obispo 2022a). The City of San Luis Obispo Municipal Code (Municipal Code) does not regulate visual character within these zoning designations (City of San Luis Obispo 2022b). In addition, based on the location and nature of the Project, the

Project would not conflict with the City's Conservation and Open Space Element Policy 9.2.1 which prohibits development projects from obstructing views that can be seen from scenic roadways (City of San Luis Obispo 2014b).

Construction of the Project would involve temporary staging on the northwest side of Pismo Street, which is visible from the intersection of Johnson Avenue and Pismo Street. Although temporary staging areas and construction activities within the San Luis Obispo Creek corridor could affect existing visual character, equipment usage, staging, and site access would be temporary. Upon completion, all materials and equipment would be removed from the Project Site.

The Project would not introduce new permanent features that have the potential to substantially degrade the existing visual character or quality of the site, as Project components consist of replacement structures for existing components that have structurally failed. One sycamore tree and one alder tree within the San Luis Obispo Creek corridor would be pruned, and four willow trees would be cut which could degrade existing visual character of the Project Site. In addition, five oak trees that were present when the baseline for the environmental process was established have been removed from the Project area during winter 2022 under an emergency permit. This analysis anticipates the tree removal will require 1:1 replacement for the removed trees pursuant to the requirements of the emergency permit. However, pursuant to Municipal Code Section 12.24.150, the trimming, pruning, and cutting of trees would occur in accordance with all Society of Arboriculture standards, and in no case would more than one-third of the tree canopy be removed (City of San Luis Obispo 2022b). Adherence to Municipal Code regulations would ensure pruning would not substantially alter the aesthetic quality of riparian trees. The Project would not conflict with applicable zoning and other regulations governing scenic quality or substantially degrade existing visual character or quality. Therefore, this impact would be less than significant.

d) Project components would be located within the San Luis Obispo Creek corridor. Pursuant to Municipal Code Section 9.12.050, construction work would generally be limited to daytime hours between 7:00 a.m. and 7:00 p.m. unless discretionary approval for nighttime work is granted by the City's Community Development Department. Daytime work would not require the use of temporary flood lights or other light/glare generating sources during the day (City of San Luis Obispo 2022b). Nighttime work, if necessary, would be carried out in accordance with lighting provisions set forth by the City's Community Development Department. In the event nightwork is necessary, the project shall comply with identified mitigation requiring that any portable lighting shall be shielded and/or directed away from adjacent properties As a result, no substantial temporary sources of light or glare would be introduced to the Project Site or surrounding vicinity during construction. Once construction activities are completed, there would be no long-term sources of light or glare or new materials which have the potential to emit light or glare. The Project would not create a new source of substantial light or glare which would adversely affect day or nighttime views in the area. Therefore, this impact would be less than significant with mitigation.

Mitigation Measures

AES-1 *Nighttime Work Requirements*. In the event nighttime work is necessary during the Project construction phase, any portable lighting shall be shielded and/or directed away from adjacent properties.

Conclusion

No significant impacts to scenic vistas, scenic resources, or scenic highways would occur. With implementation of Mitigation Measure AES-1, the Project would not generate new sources of permanent light or glare.

2. AGRICULTURE AND FORESTRY RESOURCES

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:	Sources	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	3	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	3	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	3	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	3	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	3	☐	☐	☐	☒

Evaluation

The California Department of Conservation's (DOC) Farmland Mapping and Monitoring Program identifies the Project Site as Urban and Built-Up Land, which is defined as land that is occupied by structures with a building density of at least one unit to 1.5 acres (DOC 2018). The Project Site is zoned Office (O) and Medium Density Residential (R-2). The Project Site is not located within or adjacent to active agricultural uses, land zoned for agriculture, or classified forest land (City of San Luis Obispo 2014a).

a;b) The Project Site does not contain land designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance as mapped by the DOC (DOC 2018). As such, there is no potential for the Project to convert such lands to non-agricultural uses. The Project Site is not currently zoned for agriculture or held under Williamson Act or any other land conservation contract, nor is it located adjacent to property that is zoned for agriculture or under active agricultural use. The Project would not convert Farmland or conflict with existing zoning for agricultural use or a Williamson Act contract. Therefore, no impact would occur.

c;d) The Project Site does not contain land that is in current timberland production, including any lands designated as forest land or timberland. Therefore, the Project would not conflict with existing zoning for forest land, timberland, or timberland

zoned Timberland Production, or result in the loss of forest land or conversion of forest land to non-forest use. No impact would occur.

e) The Project Site does not contain any agricultural land, forest land, or timberland. The Project would not result in the conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use. No impact would occur.

Mitigation Measures

No mitigation measures are required.

Conclusion

The Project Site does not contain any agricultural land, forest land, or timberland, and no mitigation would be required.

3. AIR QUALITY

Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:	Sources	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	44	☐	☐	☒	☐
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	42	☐	☒	☐	☐
c) Expose sensitive receptors to substantial pollutant concentrations?	42	☐	☒	☐	☐
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	38	☐	☒	☐	☐

Evaluation

The Project Site is located in the South Central Coast Air Basin (Basin), which covers San Luis Obispo, Santa Barbara, and Ventura counties (California Air Resources Board [CARB] 2014). The San Luis Obispo Air Pollution Control District (SLOAPCD) monitors and regulates the local air quality in San Luis Obispo County and enforces the Air Quality Management Plan (AQMP). SLOAPCD is required to monitor air pollutant levels to ensure that National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS) are met and, if they are not met, to develop strategies to meet the standards.

Depending on whether the standards are met or exceeded, the Basin is classified as being in "attainment" or "nonattainment" for air quality. SLOAPCD releases an Annual Air Quality Report that describes NAAQS and CAAQS attainment statuses for the Basin. The Basin is in nonattainment for the federal standards for precursors to ozone (reactive organic gasses (ROG) and nitrous oxide (NO_X), and the State standards for ozone and particulate matter 10 microns or less in diameter (PM_{10}) (SLOAPCD 2022a). The Basin is designated in attainment for all other federal and State standards. The Project Site is located in the northern portion of the Basin, which has moderate variability in temperature, tempered by coastal processes. Air quality in the Basin is influenced by a wide range of emissions sources, such as dense population centers, heavy vehicular traffic, industry, and weather.

Under State law, SLOAPCD is required to prepare a plan for air quality improvement for pollutants for which its jurisdiction is in nonattainment. Because the Basin is currently designated nonattainment for federal and State standards for ozone precursors, and State standards for PM_{10}, SLOAPCD is required to implement strategies that would reduce pollutant levels to recognized acceptable standards. SLOAPCD adopted the Clean Air Plan in 2001 which evaluates long-term emissions and establishes programs to reach acceptable air quality levels (SLOAPCD 2001). SLOAPCD has also adopted the Particulate Matter Report to identify strategies to reduce public exposure to particulate matter, and the Ozone Emergency Episode Plan which provides the basis for taking action when ambient ozone concentrations reach a level that poses a threat to public health in the County (SLOAPCD 2005; SLOAPCD 2020a).

SLOAPCD provides numerical thresholds to analyze the significance of a project's construction and operational emissions impacts on regional air quality. These thresholds, listed in Table 1, are designed such that a project with estimated emissions that do not exceed the thresholds would not have an individually or cumulatively significant impact to the Basin's air quality.

Table 1: SLOAPCD Air Quality Significance Thresholds

Pollutant	Maximum Daily Thresholds Construction (pounds/day)	Operation (pounds/day)
Reactive Organic Gases (ROG) + Nitrous Oxide (NO_x) (combined)	137	25
Diesel Particulate Matter ($DPM_{2.5}$)	7	1.25
Fugitive Particulate Matter (PM_{10})	–	25
Source: SLOAPCD 2022b		

Sensitive receptors typically include residences, schools, healthcare facilities, and other live-in housing facilities such as prisons or dormitories. The closest sensitive receptors to the Project Site are residential properties located approximately 12 feet southwest from the Project Site's eastern boundary and 20 feet north of the Project's northern boundary.

a) A project may be inconsistent with the Clean Air Plan if it would generate population growth exceeding the forecasts used in development of the Clean Air Plan, generate an increase in vehicle trips and miles traveled beyond the rate of population growth, or would not include applicable land use and transportation control measures from the Clean Air Plan to the extent feasible (SLOAPCD 2001). The Project does not include the development of new housing or businesses, and long-term maintenance of the Project would not require new personnel or additional vehicle trips to the Project Site. Furthermore, the Project would be required to comply with applicable measures from the Clean Air Plan, such as only using construction vehicles that are consistent with emissions limits for gasoline and diesel-powered vehicles set by the United States Environmental Protection Agency (U.S. EPA). Therefore, the Project would not conflict with or obstruct implementation of the applicable air quality plan, and this impact would be less than significant.

b) The Project would not generate criteria pollutant emissions associated with long-term operations and maintenance because it would not require new personnel or additional vehicle trips to the Project Site beyond existing conditions, and no Project component would result in the generation of criteria air pollutant emissions. Therefore, no operational air quality impact would occur.

   The Project would involve temporary construction activities that would result in short-term criteria pollutant emissions. Project construction would generate temporary emissions associated with fugitive dust and exhaust emissions from heavy vehicles and worker vehicles. SLOAPCD utilizes screening emissions rates for construction operations, based on the volume of soil moved and the area disturbed (SLOAPCD 2012). These values can be used to calculate a project's construction-related air quality impacts. The screening criteria are shown in Table 2 below.

Table 2: SLOAPCD Screening Emissions Rates for Construction

Pollutant	Grams/Cubic Yard of Material Moved	Pounds/Cubic Yard of Material Moved
$DPM_{2.5}$	2.2	0.0049
ROG	9.2	0.0203
NO_x	42.4	0.0935
PM_{10}	0.75 tons/acre/month of construction activity (assuming 22 days of operation per month)	
Source: SLOAPCD 2012		

Project activities would disturb approximately 120 cubic yards of soil. Based on the rates presented in Table 2, disturbance from Project would result in the following criteria pollutant emissions during project construction:

Table 3: Short-Term Criteria Pollutant Emissions

Pollutant	Project Emissions (total)	SLOAPCD Screening Levels	Exceeds Threshold?
ROG + NO_x	14 lbs	137 lbs/day	**No**
DPM	0.6 lbs	7 lbs/day	**No**
PM_{10}	0.3 tons/per acre/per month	–	**No**
ROG and NO_x combined - 120 x 0.1138 = 13.656 total lbs Diesel Particulate Matter – 120 x 0.0049 = 0.588 total lbs PM_{10} – 0.75 tons x 0.35 acres = -.2625 tons/acre/per month Source: SLOAPCD 2012			

The estimated Project construction emissions would not exceed SLOAPCD air quality significance thresholds for ROG, NO_X, DPM, or PM_{10} shown in Table 1.

In addition to the criteria pollutant emissions shown in Table 3, Project activities could generate fugitive dust which has the potential to exceed the SLOAPCD 20 percent opacity limit for fugitive dust. To minimize fugitive dust and associated nuisance impacts, the project would be required to implement SLOAPCD dust and emissions reduction measures in compliance with SLOAPCD Rule 401 and 402, which are described in Mitigation Measure AQ-1. The Project would be required to implement standard SLOAPCD requirements which would minimize temporary construction emissions. Therefore, with Implementation of Mitigation Measure AQ-1 would ensure the Project would adhere to the requirements set forth by SLOAPCD to minimize temporary construction emissions. As a result, the Project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard. Therefore, this impact would be less than significant with required mitigation incorporated.

c) The closest sensitive receptors to the Project Site are residential properties located immediately to the north and west. Construction activities such as excavation and vegetation removal would result in temporary construction emissions and fugitive dust that may affect nearby sensitive receptors. As described under criterion (b), the Project would be required to implement Mitigation Measure AQ-1 which describes standard SLOAPCD fugitive dust control measures to enforce Rules 401 and 402, which would reduce sensitive receptor exposure to fugitive dust. The use and idling of construction vehicles could result in temporary criteria pollutant emissions, which would be a potentially significant impact. Mitigation Measure AQ-2 would implement standard SLOAPCD equipment idling restrictions near sensitive receptors pursuant to California Code of Regulations Title 13, Section 2485. Implementation of Mitigation Measure AQ-2 would reduce exposure of sensitive receptors to adverse construction vehicle emissions.

Naturally occurring asbestos (NOA) has been identified by CARB as a toxic air contaminant. Serpentinite and ultramafic rocks are common throughout San Luis Obispo and may contain naturally occurring asbestos (SLOAPCD 2012). Under CARB's Air Toxic Control Measures (ATCM) related to construction and grading, a geologic evaluation is required to determine of NOA is present prior to any grading activities at the Project Site. If NOA is found at the site, requirements outlined in CARB's ATCM would be enforced. Mitigation Measures AQ-3 and AQ-4 would require Project Site disturbance activities in full compliance with applicable federal, State, and local regulations associated with NOA, minimizing the chance of sensitive receptor exposure to NOA.

With implementation of Mitigation Measures AQ-2 through AQ-4, sensitive receptors would not be exposed to substantial pollutant concentrations. This impact would be less than significant with required mitigation incorporated.

d) The Project would not involve operation of any land uses listed by SLOAPCD as facilities and operations that may generate significant odors, such as asphalt batch plants, oil fields, sanitary landfills, or wastewater treatment plants (SLOAPCD 2022b).

Project construction activities would generate temporary odors associated with diesel exhaust emitted by operation of diesel-

powered construction equipment. However, these odors would be localized to the area immediately surrounding the on-site activity and restricted to the duration of equipment use, which would be temporary and infrequent in nature. Since the project is within 1,000 feet of identified sensitive receptors (approximately 12 feet southwest from the Project Site's eastern boundary and 20 feet north of the Project's northern boundary), contractors would be required to comply with the provisions of Mitigation Measure AQ-2, which limits diesel-fueled commercial motor vehicles and off-road diesel vehicles from idling for more than five minutes, thereby reducing exposure of people to diesel odors. Consequently, with implementation of Mitigation Measure AQ-2, the Project would not result in other emissions, such as those leading to odors, adversely affecting a substantial number of people. This impact would be less than significant with mitigation incorporated.

Mitigation Measures

AQ-1 *Fugitive Dust Reduction*. Throughout the construction phase of the project, the project proponent/contractor shall implement the following fugitive dust reduction measures to minimize impacts to sensitive receptors. These fugitive dust reduction measures shall be shown on grading plans:

- Reduce the amount of the disturbed area where possible;
- Use of water trucks or sprinkler systems in sufficient quantities to prevent airborne dust from leaving the site and from exceeding the APCD's limit of 20% opacity for greater than 3 minutes in any 60-minute period. Increased watering frequency would be required whenever wind speeds exceed 15 mph. Reclaimed (non-potable) water should be used whenever possible. When drought conditions exist and water use is a concern, the contractor or builder should consider use of a dust suppressant that is effective for the specific site conditions to reduce the amount of water used for dust control;
- All dirt stockpile areas should be sprayed daily and covered with tarps or other dust barriers as needed;
- All roadways, driveways, sidewalks, etc. to be paved should be completed as soon as possible, and building pads should be laid as soon as possible after grading unless seeding, soil binders or other dust controls are used;
- All trucks hauling dirt, sand, soil, or other loose materials are to be covered or should maintain at least two feet of freeboard (minimum vertical distance between top of load and top of trailer) or otherwise comply with California Vehicle Code (CVC) Section 23114;
- "Track-Out" is defined as sand or soil that adheres to and/or agglomerates on the exterior surfaces of motor vehicles and/or equipment (including tires) that may then fall onto any highway or street as described in CVC Section 23113 and California Water Code 13304. To prevent 'track out', designate access points and require all employees, subcontractors, and others to use them. Install and operate a 'track-out prevention device' where vehicles enter and exit unpaved roads onto paved streets. The 'track-out prevention device' can be any device or combination of devices that are effective at preventing track out, located at the point of intersection of an unpaved area and a paved road. Rumble strips or steel plate devices need periodic cleaning to be effective. If paved roadways accumulate tracked out soils, the track-out prevention device may need to be modified;
- All fugitive dust mitigation measures shall be shown on grading plans;
- The contractor or builder shall designate a person or persons whose responsibility is to ensure any fugitive dust emissions do not result in a nuisance and to enhance the implementation of the mitigation measures as necessary to minimize dust complaints and reduce visible emissions below the APCD's limit of 20% opacity for greater than 3 minutes in any 60-minute period. Their duties shall include holidays and weekend periods when work may not be in progress (for example, wind-blown dust could be generated on an open dirt lot). The name and telephone number of such persons shall be provided to the APCD Compliance Division prior to the start of any grading, earthwork or demolition (Contact the Compliance Division at 805- 781-5912).
- Permanent dust control measures identified in the approved project revegetation and landscape plans should be implemented as soon as possible, following completion of any soil disturbing activities;
- Exposed ground areas that are planned to be reworked at dates greater than one month after initial grading should be sown with a fast germinating, non-invasive grass seed and watered until vegetation is established;
- All disturbed soil areas not subject to revegetation should be stabilized using approved chemical soil binders, jute netting, or other methods approved in advance by the APCD;
- Vehicle speed for all construction vehicles shall not exceed 15 mph on any unpaved surface at the construction site;

- Sweep streets at the end of each day if visible soil material is carried onto adjacent paved roads. Water sweepers shall be used with reclaimed water where feasible. Roads shall be pre-wetted prior to sweeping when feasible;
- Take additional measures as needed to ensure dust from the Project Site is not impacting areas outside the project boundary

AQ-2 *Equipment Idling Restrictions.* Throughout the construction phase of the project, the project proponent/contractor shall implement the following idling restrictions to minimize impacts to sensitive receptors. These idling restrictions shall be shown on grading and construction plans:

a. Idling Restrictions Near Sensitive Receptors for Both On- and Off-Road Equipment
   1. Staging and queuing areas shall be located at the greatest distance feasible from sensitive receptor locations;
   2. Diesel idling while equipment is not in use is not permitted;
   3. Use of alternative-fueled equipment is recommended whenever possible; and
   4. Signs that specify the no-idling requirements shall be posted and enforced at the construction site.

b. Idling Restrictions for On-Road Vehicles. Section 2485 of California Code of Regulations Title 13 limits diesel-fueled commercial motor vehicles that operate in the State of California with gross vehicular weight ratings of greater than 10,000 pounds and licensed for operation on highways. It applies to California- and non-California-based vehicles. In general, the regulation specifies that drivers of said vehicles:
   1. Shall not idle the vehicle's primary diesel engine while vehicle is not in use, except as noted in Subsection (d) of the regulations; and
   2. Shall not operate a diesel-fueled auxiliary power system (APS) to power a heated, air conditioner, or any ancillary equipment on that vehicle during sleeping or resting in a sleeper berth for greater than five minutes at any location when within 100 feet of a restricted area, except as noted in Subsection (d) of the regulation.

c. Idling Restrictions for Off-Road Equipment. Off-road diesel equipment shall comply with the no-idling requirement. Signs shall be posted at the construction site to remind off-road equipment operators of the no-idling requirement.

AQ-3 *Naturally Occurring Asbestos Evaluation.* Prior to initiation of ground-disturbing activities, the applicant shall retain a registered geologist to conduct a geologic evaluation of the property, including sampling and testing for naturally occurring asbestos in full compliance with SLOAPCD requirements and the CARB ATCM for Construction, Grading, Quarrying, and Surface Mining Operations (17 California Code of Regulations 93105). This geologic evaluation shall be submitted to the City Community Development Department upon completion. If the geologic evaluation determines that the project would not have the potential to disturb asbestos containing materials, the applicant must file an Asbestos ATCM exemption request with the SLOAPCD.

AQ-4 *Minimization of Asbestos-Related Impacts.* If asbestos containing materials are present on-site, proposed earthwork, demolition, and construction activities shall be conducted in full compliance with the various regulatory jurisdictions regarding asbestos containing materials, including the CARB ATCM for Construction, Grading, Quarrying, and Surface Mining Operations (17 California Code of Regulations 93105) and requirements stipulated in the National Emission Standard for Hazardous Air Pollutants (NESHAP; 40 Code of Federal Regulations Section 61, Subpart M – Asbestos). These requirements include, but are not limited to, the following:

- Written notification, within at least 10 business days of activities commencing, to the SLOAPCD;
- Preparation of an asbestos survey conducted by a Certified Asbestos Consultant; and
- Implementation of applicable removal and disposal protocol and requirements for identified ACM.

Conclusion

With implementation of Mitigation Measures AQ-1 through AQ-4, Project impacts to air quality would be reduced to a less-than-significant level.

4. BIOLOGICAL RESOURCES

Would the project:	Sources	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	52, 53, 54, 56	☐	☒	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	52, 53, 54,	☐	☒	☐	☐
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	59, 66	☐	☐	☒	☐
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	52, 53, 54, 67	☐	☒	☐	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	65, 66	☐	☐	☒	☐
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	64, 65, 66	☐	☐	☐	☒

Evaluation

Regulatory authority over biological resources is shared by federal, State, and local authorities under a variety of statutes and guidelines. The California Department of Fish and Wildlife (CDFW) is a trustee agency for biological resources throughout the State under CEQA and also has direct jurisdiction under the California Fish and Game Code (CFGC). Under the California and federal Endangered Species Acts (CESA/ESA), the CDFW and the United States Fish and Wildlife Service (USFWS) also have direct regulatory authority over species formally listed as threatened or endangered and species protected by the Migratory Bird Treaty Act (MBTA). The United States Army Corp of Engineers (USACE) asserts jurisdiction under Section 404 of the Clean Water Act (CWA) over stream, lake, and wetland features with a surface connection to navigable waters of the United States. The Regional Water Quality Control Board (RWQCB) also has jurisdiction over waters of the U.S. and waters of the State under Section 401 of the CWA and the Porter-Cologne Water Quality Control Act.

Rincon Consultants, Inc. (Rincon) prepared a Biological Resources Assessment (BRA) in June 2022. The BRA is included as Attachment A. The BRA documents existing site conditions based on literature review and a field reconnaissance survey, and evaluation for the potential presence of special-status biological resources, including plant and wildlife species, plant communities, jurisdictional waters and wetlands, and habitat for nesting birds. The study area for the BRA included a 50-foot buffer surrounding the Project Site, which includes approximately 180-linear-foot reach of the San Luis Obispo Creek downstream from the Johnson Avenue bridge, the adjacent creek banks, portions of Johnson Avenue and Pismo Street, and the staging area along the northwest side of Pismo Street.

a) *Special-Status Plant Species*. Two special-status plant species have a low potential to occur within the Project Site. These species are listed in Table 4 below.

Table 4: Special-status Plant Species with Potential to Occur in the Project Site

Scientific Name	Common Name	Status	Potential to Occur
Arenaria paludicola	marsh sandwort	FE/SE/CRPR 1B.1	Low Potential
Sanicula maritima	adobe sanicle	SR/CRPR/1B.1	Low Potential

FE = Federally Endangered; SE = State Endangered; SR = State Rare; CRPR = California Rare Plant Rank
1B = Rare, Threatened, or Endangered in California and elsewhere
.1 = Seriously endangered in California (more than 80 percent of occurrences threatened/high degree and immediacy of threat)
Source: Biological Resources Assessment, Rincon Consultants, June 2022 (Attachment A)

Marginally suitable habitat for the marsh sandwort occurs along the sandy margins of the San Luis Obispo Creek within the Project Site. Marginally suitable habitat for the adobe sanicle occurs along the banks of the San Luis Obispo Creek. Although these special-status plant species have a low potential to occur within the Project Site, if these plants are present at the Project Site during the commencement of Project activities, the Project has the potential to result in direct and indirect impacts to these plant species, by means of the removal of the individual plant itself or removal of suitable habitat for the species. The potential to impact special-status plant species, directly and indirectly, is a potentially significant impact.

Mitigation Measures BIO-1 through BIO-5 require worker environmental awareness training, mandatory Project Site delineation to protect sensitive resources, standard procedures for invasive species management, preconstruction surveys to identify the presence, if any, of special-status plant species within the Project Site, and compensatory mitigation and performance standards if a special-status plant species is identified and cannot be avoided. Implementation of Mitigation Measures BIO-1 through BIO-5 would reduce potential impacts to special-status plant species to a less-than-significant level.

Special-Status Animal Species. Thirteen special-status wildlife species have varying potential to occur within the Project Site. These species are listed in Table 5 below.

Table 5: Special-status Wildlife Species with Potential to Occur within the Project Site

Scientific Name	Common Name	Status	Potential to Occur
Invertebrates			
Danaus plexippus pop.1	Monarch butterfly	FC	High Potential
Fish			
Entosphenus tridentatus	Pacific lamprey	SSC	Present
Oncorhynchus mykiss irideus	South-central California coast DPS steelhead	FT	Present
Amphibians			
Batrachoseps minor	Lesser slender salamander	SSC	Low Potential
Rana draytonii	California red-legged frog	FT/SSC	High Potential
Taricha torosa	Coast range newt	SSC	High Potential
Reptiles			
Actinemys pallida	southwestern pond turtle	SSC	Moderate Potential
Birds			
Accipiter cooperii	Cooper's hawk	WL	High Potential
Elanus leucurus	white-tailed kite	FP	Moderate Potential
Falco columbarius	merlin	WL	Low Potential
Setophaga petechia	yellow warbler	SSC	High Potential
Mammals			
Antrozous pallidus	pallid bat	SSC	Low Potential
Corynorhinus townsendii	Townsend's big-eared bat	SSC	Low Potential

FT = Federally Threatened; FC = Federal Candidate; SE = State Endangered; SSC = CDFW Species of Special Concern; FP = State Fully Protected; WL = CDFW Watch List
Source: Biological Resources Assessment, Rincon Consultants, June 2022 (Attachment A)

Although the pallid bat and Townsend's big-eared bat are special-status wildlife species listed with a potential to occur within the Project Site, these species are not State or federally listed, and have a low potential to occur on site (Attachment A). Nonetheless, Mitigation Measures BIO-1 and BIO-11 require worker environmental awareness training, pre-construction surveys which would include nesting birds and bats, and on-site biological monitoring of construction activities that may impact sensitive biological resources. Implementation of Mitigation Measures BIO-1 and BIO-11 would ensure potential impacts to special-status animal species including pallid bat and Townsend's big-eared bat would be less than significant with mitigation.

Monarch Butterfly

The Project Site does not contain suitable roosting or overwintering habitat for the monarch butterfly. However, a small stand of blue gum eucalyptus trees along the southern bank of San Luis Obispo Creek approximately 50 feet west of the Project Site could provide suitable habitat for monarchs to roost in these trees. As such, monarch butterflies have a high potential to move through the Project Site. If monarch butterflies are present within the Project Site during construction activities, direct impacts could occur including the injury or mortality of individuals. As such, impacts to monarch butterflies would be potentially significant.

Mitigation Measures BIO-1 and BIO-11 require worker environmental awareness training and on-site biological monitoring during Project activities. Based on implementation of these measures, potential impacts would be less than significant with mitigation.

Pacific Lamprey

A 2018 assessment conducted by the USFWS concluded Pacific lamprey were present within the San Luis Obispo Creek. Although no habitat known to contain larvae is present within the Project Site, the confirmed presence of Pacific lamprey within the San Luis Obispo Creek strengthens the possibility individuals could be present within the Project Site during construction activities, which have the potential to directly or indirectly result in injury or mortality to individuals due to equipment use, streambed disturbance, vegetation disturbance, and changes to water quality. In addition, dewatering could result in the temporary loss of aquatic habitat and invertebrate food sources for the Pacific lamprey. As such, impacts to the Pacific lamprey would be potentially significant.

Mitigation Measures BIO-1, BIO-2, BIO-3, BIO-4, BIO-6, BIO-11, and BIO-12 require worker environmental awareness training, Project Site delineation to protect sensitive resources, implementation of best management practices (BMPs) to protect water quality, standard procedures for invasive species management, avoidance and minimization measures for the Pacific lamprey, on-site biological monitoring during Project activities, and implementation of a HMMP. Based on implementation of these measures, potential impacts would be less than significant with mitigation.

South-Central California Coast Steelhead DPS

Critical habitat for South-Central California Coast Steelhead DPS (steelhead) exists within the San Luis Obispo Creek, and deep pools in the creek are known to support steelhead. If steelhead are present within the Project Site during dewatering or construction, activities including equipment use, noise generated by vibratory hammers (i.e., jackhammer), and temporary loss of aquatic habitat and invertebrate food sources could directly impact steelhead. Other potential impacts, such as the disturbance of the streambed, changes to water quality, disturbance of streamside vegetation, and removal of existing cement structures could result in indirect impacts to steelhead. Therefore, impacts to steelhead would be potentially significant.

Mitigation Measures BIO-1, BIO-2, BIO-3, BIO-4, BIO-7, BIO-11, and BIO-12 require worker environmental awareness training, Project Site delineation to protect sensitive resources, implementation of BMPs to protect water quality, procedures for invasive species management, avoidance and minimization measures for steelhead, on-site biological monitoring during Project activities, and implementation of a HMMP. Based on implementation of these measures, potential impacts would be less than significant with mitigation.

California Red-legged Frog

The Project Site falls within federally designated critical habitat for California red-legged frog (Attachment A). The Project Site contains suitable riparian habitat and undercut banks preferred by the species, as well as permanent water resources that can be used for larval development. California red-legged frog is known to occur in San Luis Obispo Creek, including sixteen documented occurrences within five miles noted by CDFW's California Natural Diversity Database (CNDDB) (Attachment A). Therefore, California red-legged frog has a high potential to occur within the Project Site. Construction activities could result in the injury or mortality of individuals, as well as disruption of foraging, migration, or breeding habitat, which is a potentially significant impact.

Mitigation Measures BIO-1, BIO-2, BIO-3, BIO-4, BIO-8, BIO-11, and BIO-12 require worker environmental awareness training, Project Site delineation to protect sensitive resources, implementation of BMPs to protect water quality, procedures for invasive species management, avoidance and minimization measures for the California red-legged frog, on-site biological monitoring during Project activities, and implementation of a HMMP. Based on implementation of these measures, potential impacts would be less than significant with mitigation.

Coast Range Newt and Lesser Slender Salamander

The Project site contains slow-moving water within San Luis Obispo Creek that provides suitable breeding habitat and terrestrial habitat for the coast range newt. There are four occurrences of the species documented in the CNDDB within five miles of the Project Site (Attachment A). As such, the coast range newt has a high potential to occur within the Project Site (Attachment A). The lesser slender salamander has a low potential to be present at the Project Site. However, if present, construction activities such as excavation and vegetation removal could result in direct and indirect impacts to these species from potential injury, mortality, construction-related noise, and general disturbance. Therefore, Project impacts to these species would be potentially significant.

Mitigation Measures BIO-1, BIO-2, BIO-3, BIO-4, BIO-9, BIO-11, and BIO-12 require worker environmental awareness training, Project Site delineation to protect sensitive resources, implementation of BMPs to protect water quality, procedures for invasive species management, avoidance and minimization measures for special-status amphibians and reptiles, on-site biological monitoring during Project activities, and implementation of a HMMP. Based on implementation of these measures, potential impacts would be less than significant with mitigation.

Southwestern Pond Turtle

The Project Site includes suitable southwestern pond turtle habitat along the banks of the creek, limited to open basking sites. The species was not observed during reconnaissance surveys (Attachment A). There are three documented occurrences of the species within a five-mile radius noted in the CNDBB. However, these occurrences were documented approximately 30 years ago within the same area northwest of the Project Site. In addition, multiple occurrences of the species have been documented within a five-mile radius in iNaturalist, a web-based application that allows people to photograph and identify plant and wildlife species, in the past decade. Therefore, moderate potential exists for the southwestern pond turtle to be present within the Project Site (Attachment A). Direct impacts to this species could occur if they are present in the construction area during activities such as excavation and vegetation removal. Project Site disturbance could also result in the disruption of foraging, basking, migration, or breeding habitat. Therefore, impacts to the southwestern pond turtle are potentially significant.

Mitigation Measures BIO-1, BIO-2, BIO-3, BIO-4, BIO-9, BIO-11, and BIO-12 require worker environmental awareness training, Project Site delineation to protect sensitive resources, implementation of BMPs to protect water quality, procedures for invasive species management, avoidance and minimization measures for special-status amphibians and reptiles, on-site biological monitoring during Project activities, and implementation of a HMMP. Based on implementation of these measures, potential impacts would be less than significant with mitigation.

Cooper's Hawk, Yellow Warbler, White-Tailed Kite, and Merlin

Suitable foraging habitat and nesting habitat for Cooper's hawk exists at the Project Site. Multiple occurrences of Cooper's hawk have been documented in and near the Project Site (Attachment A). Suitable nesting habitat for yellow warbler exists

at the Project Site, and there have been multiple occurrences documented of yellow warbler within one mile of the Project Site (Attachment A). White-tailed kite has been documented within one mile of the Project Site, and three occurrences of white-tailed kit have been documented in the CNDDB within five miles of the Project Site. However, suitable foraging habitat for white-tailed kite is not present at the Project Site, but the species has a moderate potential to fly over or roost in trees at the Project Site. There is a low potential for merlin to be present at the Project Site (Attachment A). If any of these species are present at the Project Site, construction activities could result in altered nesting behavior or nest abandonment. The loss of a nest due to construction activities would be in violation of the Migratory Bird Treaty Act and California Fish and Game Code Section 3503, resulting in a potentially significant impact.

Mitigation Measures BIO-1, BIO-2, BIO-3, BIO-4, BIO-10, BIO-11, and BIO-12 require worker environmental awareness training, Project Site delineation to protect sensitive resources, implementation of BMPs to protect water quality, procedures for invasive species management, preconstruction surveys for special-status and other nesting birds, on-site biological monitoring during Project activities, and implementation of a HMMP. Based on implementation of these measures, potential impacts would be less than significant with mitigation.

Other Migratory and Nesting Birds

Migratory birds protected under the Migratory Bird Treaty Act and nesting birds and raptors protected under California Fish and Game Code Section 3503 have the potential to breed and forage throughout the Project Site. Nesting habitat for a variety of bird species exists, including trees (sycamore, alder, coast live oak), willows, other vegetation, human-made structures (i.e., bridges), and the ground surface. As previously stated, if any of these species are present at the Project Site during construction activities could result in altered nesting behavior or nest abandonment. The loss of a nest due to construction activities would be in violation of the Migratory Bird Treaty Act and California Fish and Game Code Section 3503, resulting in a potentially significant impact.

Mitigation Measures BIO-1, BIO-2, BIO-3, BIO-4, BIO-10, BIO-11, and BIO-12 require worker environmental awareness training, Project Site delineation to protect sensitive resources, implementation of BMPs to protect water quality, standard procedures for invasive species management, preconstruction surveys for special-status and other nesting birds, on-site biological monitoring during Project activities, and implementation of a HMMP. Based on implementation of these measures, potential impacts would be less than significant with mitigation.

With implementation of Mitigation Measures BIO-1 through BIO-12, impacts to candidate, sensitive, and special status species would be reduced to a less-than-significant level, through adequate survey procedures to determine presence for these species, workers environmental awareness trainings, and proper procedures for work activities in the Project Site related to buffering and established work limits. With mitigation incorporated, the Project would not have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS.

Long term effects of the Project would be positive for many of the species included in this analysis. Stabilized banks and stream channel would result in improved migratory conditions for steelhead and Pacific lamprey as well as potential higher quality spawning habitat. Dispersal habitat would be of higher quality for California red-legged frog and other species that utilize riparian corridors. Additionally, stabilized banks would promote a healthy riparian corridor that would provide shade and cover for aquatic species and high quality nesting habitat for nesting birds. Overall, impacts to candidate, sensitive, and special status species would be less than significant with mitigation incorporated.

b) The Mixed Riparian Hardwood Community that occurs within the Project Site is a sensitive natural community (Attachment A). The Project would impact this sensitive natural community through activities including trimming understory vegetation with limbs and/or trunks that are less than four inches in diameter at breast height, cutting four willow trees located within the creek channel to one foot above the existing grade, trimming the branches of six coast live oak, and possibly trimming the lower limbs of one sycamore tree and one alder tree located within the creek channel. In addition, five oak trees that were present when the baseline for the environmental process was established have been removed from the Project area during winter 2022 under an emergency permit. This analysis anticipates the tree removal will require 1:1 replacement for the removed trees pursuant to the requirements of the emergency permit. Any trimming or cutting of riparian vegetation would be regulated by the CDFW Streambed Alteration Agreement obtained for the Project.

As discussed in criterion (a), San Luis Obispo Creek includes critical habitat for steelhead within the Project Site up to the Ordinary High Water Mark (OHWM) (Attachment A). The OHWM is the line on the shore established by the normal fluctuations of water which shows where the presence and action of waters are so common, usual, and ongoing. Temporary impacts to steelhead migration, spawning, rearing, and/or foraging habitat could occur due to Project activities. Critical habitat for the California red-legged frog also occurs within the Project Site. Temporary to California red-legged frog migration, breeding, and foraging habitat could occur due to Project activities. Therefore, the project would result in a potentially significant impact on riparian habitats, including sensitive natural communities regulated by CDFW and USFWS.

Implementation of Mitigation Measures BIO-1, BIO-2, BIO-3, and BIO 4, BIO-7, and BIO-8 require worker environmental awareness training, Project Site delineation to protect sensitive resources, implementation of BMPs to protect water quality, and procedures for invasive species management. These mitigation measures would reduce potential impacts on riparian communities. Implementation of an HMMP, as outlined in Mitigation Measure BIO-12, would require compensatory mitigation for temporary or permanent impacts to this sensitive natural community, as well as temporary or permanent impacts to Steelhead and California red-legged frog critical habitat. The Project would repair drainage control infrastructure along the banks of an approximately 180-linear foot stretch of San Luis Obispo Creek. As a result, the Project would result in long-term beneficial impacts to steelhead habitat within the Project Site, as bank stabilization would reduce the risk of future erosion and sedimentation. Adherence to resource agency permit conditions would also ensure that no permanent negative impacts to critical habitat occur.

As a result of regulatory compliance and implementation of required mitigation measures the Project would not have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFW or USFWS. These impacts would be less than significant with mitigation incorporated.

c) The Project Site is within and adjacent to San Luis Obispo Creek and is subject to the jurisdictions of the USACE, RWQCB, and CDFW. As previously stated, regulatory compliance for work within the San Luis Obispo Creek would require permits and authorizations including a USACE Section 404 permit for fill in waters of the United States, a RWQCB Section 401 Water Quality Certification for fill in waters of the U.S. and diversion of the San Luis Obispo Creek, and a CDFW Streambed Alteration Agreement for excavation activities. Consequently, Project activities, such as excavation and dewatering, would be regulated by the USACE, RWQCB, and CDFW such that substantial hydrological interruption would not occur. A jurisdictional delineation report prepared by Rincon in July 2022 for the Project Site determined that no federal or State wetland waters are present within the Project Site; only non-wetland waters or riverine/streambed habitat occur onsite (Attachment B). Therefore, the Project would have a less than significant impact to State or federally protected wetlands. In addition, implementation of Mitigation Measure BIO-12 would further reduce impacts.

d) There are no large, natural habitat blocks that support native biodiversity (Natural Landscape Blocks) or areas essential for ecological connectivity between them (Essential Connectivity Areas) mapped within the Project Site (Attachment A). The riparian corridor within the Project Site could serve as a local wildlife movement corridor, particularly for disturbance-tolerant species, such as racoons, skunks, and coyotes. The Project Site is small relative to the amount of riparian habitat and open space in the region and Project activities are not expected to substantially interfere with existing terrestrial wildlife movement or with established terrestrial resident or migratory wildlife corridors (Attachment A). Additionally, long term effects will be positive for many of the species included in this analysis. Stabilized banks will result in better migratory and dispersal conditions for species utilizing the healthy and stable riparian corridor.

San Luis Obispo Creek serves as a migration corridor for Pacific lamprey, steelhead, and other fish species. Fish migration may be temporarily disrupted during installation and removal of the creek diversion. Once the diversion is in place, it would allow for the downstream migration of steelhead, lamprey, and other fishes to continue during Project construction. However, upstream migration may be disrupted for the duration of the creek diversion, which would be a potentially significant impact. Long term effects would be positive for the aquatic species included in this analysis. Stabilized banks would result in better migratory conditions for steelhead and Pacific lamprey as well as potential higher quality spawning habitat. Additionally, stabilized banks would promote a healthy riparian corridor which provides shade and cover for aquatic species.

Mitigation Measures BIO-6 and BIO-7 prohibit Project activities from occurring in flowing or standing water (with the exception of creek diversion activities), require biological monitoring, and implement procedures for capture and relocation, among other requirements. Therefore, implementation of Mitigation Measures BIO-6 and BIO-7 would ensure that the

Project would not interfere substantially with the movement of any resident or migratory fish species. This impact would be less than significant with mitigation incorporated.

e) Disturbed portions of the San Luis Obispo Creek would be restored after construction activities cease. The Project would not interfere with the long-term natural function of the Project Site habitat. Rather, the Project would carry out a necessary repair of damaged infrastructure which, if compromised further, could result in failure and subsequent destruction of trees and other biological habitat. The Project would, therefore, be consistent with the City's policies to protect natural communities and avoid habitat disturbance pursuant to the Conservation and Open Space Element of the General Plan (City of San Luis Obispo 2014b; Attachment A). As such, the Project would not conflict with any local polices or ordinances protecting biological resources. This impact would be less than significant.

f) The Project Site is not located in any applicable adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan (Attachment A). Therefore, no impact would occur.

Mitigation Measures

BIO-1 *Worker Environmental Awareness Program.* Prior to initiation of construction activities (including staging and mobilization), all personnel associated with Project construction shall attend Worker Environmental Awareness Program (WEAP) training, conducted by a qualified biologist, to aid workers in recognizing special-status species (e.g., California red-legged frog and steelhead), nesting birds, and other biological resources that have the potential to occur in the Project Site. The specifics of this program shall include identification of special-status species with potential to occur, a description of their regulatory status and habitat requirements, general ecological characteristics of any other sensitive resources, and a review of the limits of construction and mitigation measures required to reduce impacts to biological resources within the Project Site. A fact sheet conveying this information shall also be prepared for distribution to all contractors, their employers, and other personnel involved with construction. All employees shall sign a form provided by the trainer indicating they have attended the WEAP and understand the information presented to them. A WEAP training recorded by a qualified biologist specifically for the Project may be utilized if in-person trainings are restricted due to COVID-19 or if the construction schedule makes it infeasible for a biologist to train each new crew member in person. The crew foreman shall be responsible to ensure crew members are aware of project boundaries and adhere to the guidelines and restrictions designed to avoid or minimize effects to California red-legged frog, Steelhead, nesting birds, and other sensitive species and biological resources.

BIO-2 *Project Delineation, Staging Areas, Materials Storage, and Waste Management.* Prior to the start of any Project activities (including any vegetation clearing), sturdy, high-visibility fencing shall be installed to protect jurisdictional areas and sensitive resource areas adjacent to the Project Site. This fencing shall be placed so that unnecessary impacts to adjacent habitat are avoided. No Project activities (including storage of materials) shall occur outside of the "Project Limits". The required fencing shall remain in place during the entire construction period and be maintained as needed by the construction contractor.

Areas of temporary disturbance shall be minimized to the extent practicable. Staging and laydown areas shall be limited to sites that are unvegetated and previously disturbed (e.g., existing paved roads). Materials shall be stored on impervious surfaces or plastic ground covers to prevent any spills or leakage. Material storage shall be as far from San Luis Obispo Creek as is feasible. Construction materials and spoils shall be protected from stormwater runoff using temporary perimeter sediment barriers such as fiber rolls, sand/gravel bags, and straw bale barriers, as appropriate.

All trash shall be properly contained and regularly disposed of such that it does not leave the Project Site, enter the San Luis Obispo Creek channel, or attract wildlife. Following Project completion, all trash and construction debris shall be removed from the work and laydown areas.

BIO-3 *Best Management Practices to Protect Water Quality.* All vehicles and equipment shall be in good working condition and checked daily for leaks. The construction contractor shall prevent petroleum products, or any other pollutant, from contaminating the soil or entering the San Luis Obispo Creek channel (dry or otherwise). When vehicles or equipment are not in use, mats or drip pans shall be placed below vehicles to contain fluid leaks.

Project activities shall occur between June 1 and October 15, to the maximum extent possible, to avoid working in the creek channel during the rainy season. Work during times of precipitation shall be avoided to the maximum extent possible. The City or their contractor(s) or representative(s) shall utilize Best Management Practices (BMPs), including (but not limited to): berms, burlap-wrapped fiber rolls, jute netting, sand/gravel bags, and straw bale barriers to stabilize work areas and prevent any sediment or pollutants from entering the creek.

To further protect water quality and sensitive habitat areas, no refueling, cleaning, or maintenance of equipment or vehicles shall occur within the creek channel. Spill kits shall be kept on the Project Site and readily available at all times. Should a spill occur in the work area, clean-up shall be conducted immediately, the contaminant(s) removed to the greatest extent feasible, and any contaminated materials disposed of properly. The Project foreman or other designated liaison shall immediately notify the biological monitor and the City following any project spills. Additionally, the off-site tracking of loose construction and landscape materials shall be prevented and/or cleaned up daily, with street sweeping, vacuuming, and/or rumble plates, as appropriate.

BIO-4 *Invasive Species Management.* Prior to construction, Project plans and specifications shall clearly identify methodology for removal and disposal of invasive exotic species found within the Project Site. Invasive vegetation removed within the Project Site shall be properly disposed of at an off-site location. All construction materials (including jute netting, fiber rolls, and straw bales) brought into the Project Site shall be free from invasive plant material. All revegetation efforts (e.g., hydroseeding, planting container stock or cuttings) within the Project Site shall include only native, riparian plant species appropriate for the Project Site. Invasive wildlife species, including bullfrog (*Rana catesbeiana*), and signal and red swamp crayfish (*Pacifasticus leniusculus*; *Procambarus clarkii*), shall be removed from the Project Site by a qualified biologist using methodologies approved by the USFWS, NMFS, and/or CDFW.

BIO-5 *Preconstruction Survey for Special-Status Plant Species.* A preconstruction survey for special-status plant species shall be conducted by a qualified botanist within the Project Site prior to any site disturbance and during the bloom period of marsh sandwort and adobe sanicle. If these, or any other special-status plant species, are observed within the Project Site, the location(s) of individual plants or group(s) of plants shall be clearly flagged by the qualified botanist and avoided during Project construction. If impacts to special-status plant species cannot be avoided, then compensatory mitigation would be required by the regulatory agencies and/or lead CEQA agency (i.e., the City) through the required Habitat Mitigation and Monitoring Plan (Mitigation Measure BIO-12).

BIO-6 *Avoidance and Minimization Measures for Pacific Lamprey.* No project activities shall occur in flowing or standing water within San Luis Obispo Creek, with the exception of the installation and removal of the temporary creek diversion. Capture and relocation surveys for Pacific lamprey shall be conducted by qualified and/or CDFW-approved biologists prior to the commencement of diversion construction, as well as during dewatering of the work areas. A second capture and relocation survey shall be conducted prior to the removal of the diversion. Pacific lamprey (adults, macropthalmia, or ammocoetes) found within the Project Site prior to or during dewatering shall be captured using seine nets or dip nets and relocated to a predetermined relocation site (with appropriate habitat features) within San Luis Obispo Creek. Lamprey shall be placed in aerated 5-gallon buckets and held no more than 20 minutes before relocation. These capture and relocation efforts can be conducted concurrently with the Steelhead capture and relocation efforts described in BIO-7, though lamprey shall be held in separate buckets to avoid predation.

BIO-7 *Steelhead Capture and Relocation:* No Project activities shall occur in flowing or standing water in San Luis Obispo Creek, with the exception of the installation and removal of the temporary creek diversion. Project activities within the San Luis Obispo Creek channel are proposed to occur between June 1 and October 15, outside of the steelhead migration season. If work extends into the migration season, approval must be obtained from the appropriate resource agencies. If approved, at a minimum, additional requirements typically include fish passage around the work area and additional winter water quality and bank stabilization measures. Flow conditions during this time are variable and can range from a summer low flow condition to a dry condition. Project components that require surface water diversion (detailed below) shall also require the capture and relocation of aquatic species, including steelhead, in the reach that will become dewatered. A qualified biologist approved by NMFS to handle steelhead shall be present during all dewatering, as well as all stages of the installation and removal of surface water diversions. To minimize effects to steelhead, the qualified biologist with qualified biological assistants shall conduct steelhead capture and relocation surveys prior to the commencement of diversion construction, as well as during dewatering of the diverted areas and removal of the diversion. Block nets shall be erected upstream and downstream of the Project Site and steelhead shall be removed from

the block-netted area by seine, dipnets, or electrofishing due to substantial obstacles in the creek potentially making netting ineffective and relocated to an approved relocation site within San Luis Obispo Creek that contains suitable habitat that would not be affected by Project activities. Block nets shall remain in place until the diversion is functional, at which time the downstream and upstream block nets shall be removed. Fish shall be placed in aerated 5-gallon buckets and held no more than 20 minutes before relocation. Smaller fish, including steelhead young of the year, shall be placed in separate aerated buckets to avoid predation. Non-native fishes and invertebrates shall be removed from the creek by qualified biologists.

If it is anticipated that surface flow may soon become discontinuous at the diversion site, a block net shall be deployed just upstream of the diversion to block fish from entering the diversion from upstream. No block net shall be deployed downstream to allow fish located within the diversion area to exit downstream. Once surface flows become discontinuous, the qualified biologist with qualified biological assistants shall conduct steelhead capture and relocation surveys within any isolated pools/habitats. Stranded fish shall be relocated to the original approved relocation site.

A surface water diversion plan shall be prepared by the construction contractor and shall include the various structures and measures that would divert creek flow upstream of the Project Site, divert flow around or through the work area, and discharge downstream, while avoiding water quality and special-status species impacts. This plan shall be prepared by a licensed and qualified engineer in consultation with a licensed and qualified biologist. The plan shall include such components as predicted diversion flow rates, pump capacities, pump screen mesh size, material to be used, contingency plans, a removal and restoration plan, as well as design accommodations for special-status species including fish passage requirements. A qualified biologist shall be present during dewatering and during the installation and removal of surface water diversions. A detailed diversion plan shall be submitted to the NMFS, RWQCB, USACE, and CDFW for approval at least 15 days prior to the construction of the diversion.

A relocation site shall be identified by a qualified biologist and a relocation site memo shall first be submitted to the City biologist for review and then be submitted to NMFS for approval at least 15 days prior to the construction of the first diversion. The relocation site shall be in a known perennial location in San Luis Obispo Creek, preferably upstream of the Project Site. The relocation site shall provide adequate depth in the form of scour (>1 foot) with instream cover. Overhead canopy cover shall also be present, if possible. Water temperature within the relocation site shall be well within published steelhead tolerances. Other water quality parameters, including (but not limited to) dissolved oxygen, pH, and turbidity shall also be within steelhead tolerances.

A qualified biological monitor shall be on site full-time during all Project activities that involve creek dewatering and/or the installation or removal of surface water diversions. Once the work area is completely blocked from the creek and dewatered, and if work conditions and/or prolonged Project activities are conducted outside of the active San Luis Obispo Creek channel, the monitor shall be on site for no less than one day per week.

Any worker(s) who inadvertently injure(s) or kill(s) a steelhead (or any other special-status species) or find(s) one dead or injured, shall immediately report the incident to the biological monitor. The monitor or environmental Project manager shall then immediately notify the City. The City will then provide verbal notification, as appropriate, to the USFWS Endangered Species Office in Ventura, California; NMFS in Long Beach, California; and the local CDFW contact, within three working days. The Project proponents shall provide written notification of the incident to the USFWS, NMFS, and CDFW within five working days.

Although this measure was developed based on years of experience capturing and relocation fish including steelhead, this measure may be adjusted to include any additional mitigation elements or modifications to existing mitigation elements included in project permits.

BIO-8 *Avoidance and Minimization Measures for California Red-legged Frog.* A USFWS-approved biologist shall survey the Project Site no more than 48 hours before the onset of work activities. If the biologist finds any life stage of the California red-legged frog and these individuals are likely to be killed or injured by work activities, the biologist shall be allowed sufficient time to relocate them from the Project Site before work begins. The biologist shall relocate the California red-legged frog the shortest distance possible to a predetermined location within San Luis Obispo Creek that contains suitable habitat and that would not be affected by Project activities.

A USFWS-approved biologist shall be present during installation and removal of the creek diversion, and during all vegetation removal and initial ground disturbance. After this time, the USFWS-approved biologist can designate another qualified biologist to monitor on-site compliance with all mitigation measures. Diversion intakes shall be screened with wire mesh not larger than 0.2 inch to prevent any California red-legged frogs not initially detected, and juvenile steelhead from entering the pump system.

To ensure that diseases are not conveyed between sites, the USFWS-approved biologist, shall follow the fieldwork code of practice developed by the Declining Amphibian Populations Task Force at all times.

Project activities shall occur between June 1 and October 15, to the maximum extent feasible, in order to avoid the California red-legged frog breeding season.

BIO-9 *Avoidance and Minimization Measures for Other Special-Status Amphibians and Reptiles.* A preconstruction survey for special-status amphibians and reptiles (e.g., lesser slender salamander, southwestern pond turtle, and coast range newt) shall be conducted within the Project Site by a qualified biologist no more than 48 hours before the onset of work activities. This survey can be conducted concurrently with the preconstruction survey for the California red-legged frog. If any special-status amphibian or reptile species are found in areas where they are likely to be killed or injured by work activities, then a qualified biologist shall be allowed sufficient time to relocate them from the Project Site before work begins. A qualified biologist shall also be on site during any vegetation removal or initial ground disturbing activities. If any special-status species be encountered within the Project Site prior to or during these activities, work shall be halted until the biologist has sufficient time to move any individuals from the site.

BIO-10 *Preconstruction Survey for Special-Status Birds and Other Nesting Birds.* A preconstruction nesting bird survey shall be conducted by a qualified biologist no more than 14 days prior to initiation of Project activities. The survey shall be conducted within the Project Site and include a 50-foot buffer for passerines and a 500-foot buffer for raptors. Portions of the buffer areas that may be inaccessible due to private property constraints shall be surveyed from the Project Site and/or public roads using binoculars. The survey shall be conducted by a biologist familiar with the identification of avian species known to occur in the region and shall focus on trees, vegetated areas, and other potential nesting within the vicinity of the Project Site. If nests are found, an appropriate avoidance buffer (typically 50 feet for passerine species and 500 feet for raptors) shall be determined and demarcated by the biologist with high visibility material located within or adjacent to the Project Site.

All Project personnel shall be notified as to the existence of the buffer zones and to avoid entering buffer zones during the nesting season. No Project activities shall occur within the buffer until the avian biologist has confirmed that breeding/nesting is complete, and the young have fledged the nest. Encroachment into the buffer shall occur only at the discretion of the qualified biologist.

BIO-11 *Onsite Biological Monitoring.* A qualified biologist shall be onsite during all vegetation removal, initial ground disturbing activities, and/or during any construction activities that may impact sensitive biological resources, such as dewatering and diversion installation or removal. The biologist shall have the authority to temporarily halt or redirect work to avoid impacts to special-status species or other protected biological resources. Once the diversion has been installed and vegetation removal and initial ground-disturbing activities have been completed, the biological monitor shall be onsite for no less than two days per week, for a minimum two-hour period per day. A Biological Monitoring Plan shall be created for the project, which shall include species-specific details regarding preconstruction surveys and on-site monitoring. The Monitoring Plan shall be approved by the City Biologist prior to the initiation of construction activities.

BIO-12 *Habitat Mitigation and Monitoring Plan.* Project impacts to habitat within the San Luis Obispo Creek corridor shall be mitigated through implementation of a Habitat Mitigation and Monitoring Plan (HMMP). The HMMP shall be prepared by a qualified biologist/restoration ecologist and approved by each of the regulatory agencies (i.e., the NMFS, USACE, RWQCB, and CDFW) prior to the initiation of construction activities. The HMMP shall include details on the restoration of portions of San Luis Obispo Creek that will be disturbed by the Project, including jurisdictional features, sensitive natural communities (i.e., Mixed Riparian Hardwood), and associated riparian and stream habitats. If any Project impacts to listed plant species be unavoidable, then the HMMP shall also include details on the compensatory

mitigation required for impacts to these species. For impacts to jurisdictional waters and riparian habitat, the HMMP would be required to include the following minimum compensatory mitigation ratios:

- On-site mitigation for permanent impacts to jurisdictional/sensitive areas implemented at a minimum ratio of 2:1; and
- On-site mitigation for temporary impacts to jurisdictional/sensitive areas implemented at a minimum ratio of 1:1.

Final mitigation ratios required by the regulatory agencies during the permitting process may differ but shall be confirmed prior to the initiation of applicable construction activities.

At a minimum, the HMMP shall include the following:

- A description of the jurisdictional waters, sensitive plant communities, riparian and stream habitat, and/or sensitive plant species disturbed by the project, and how the mitigation method (e.g., restoration, invasive species removal, enhancement) will achieve the necessary mitigation goal/s;
- a plant palette and methods of salvaging, propagating, seeding, and/or planting the site to be restored;
- methods of soil preparation;
- type(s) and method(s) of instream habitat enhancement (e.g., installation of downed woody debris);
- a schedule for restoration activities including weed abatement, propagating and planting, soil preparation, erosion control, qualitative and quantitative monitoring, and reporting;
- identification measurable performance standards for each objective to evaluate the success of the compensatory mitigation (at a minimum, 80% absolute cover of vegetation by end of year 3 with less than 10% comprised of non-native vegetation);
- maintenance and monitoring necessary to confirm the mitigation area meets the success criteria; and
- Identification of contingency and adaptive management measures to address unforeseen changes in site conditions or other components of the mitigation project.

Where feasible, mitigation would be required occur on-site and may include hydroseeding with a native riparian seed mix, installing native riparian container stock, and/or removal of invasive plant species (e.g., tree of heaven, elmleaf blackberry). If on-site mitigation is found to be infeasible by the qualified biologist/restoration ecologist, off-site mitigation shall occur within the San Luis Obispo Creek corridor as close to the site as is feasible, based on the professional judgment of the qualified biologist/restoration ecologist.

Conclusion

With implementation of Mitigation Measures BIO-1 through BIO-12, Project impacts to biological resources would be reduced to a less-than-significant level.

5. CULTURAL RESOURCES

Would the project:	Sources	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historic resource pursuant to §15064.5?	26	☐	☐	☒	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	26	☐	☒	☐	☐
c) Disturb any human remains, including those interred outside of formal cemeteries?	26	☐	☒	☐	☐

Evaluation

This section provides an analysis of the project's impacts on cultural resources, including historical and archaeological resources as well as human remains. CEQA requires a lead agency determine whether a project may have a significant effect on historical resources (Public Resources Code [PRC] Section 21084.1). A historical resource is a resource listed in, or determined to be eligible for listing in, the California Register of Historical Resources (CRHR); a resource included in a local register of historical resources; or any object, building, structure, site, area, place, record, or manuscript a lead agency determines to be historically significant (CEQA Guidelines Section 15064.5[a][1-3]). A resource shall be considered historically significant if it:

1. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
2. Is associated with the lives of persons important in our past;
3. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
4. Has yielded, or may be likely to yield, information important in prehistory or history.

In addition, if it can be demonstrated that a project would cause damage to a unique archaeological resource, the lead agency may require reasonable efforts be made to permit any or all of these resources to be preserved in place or left in an undisturbed state. To the extent that resources cannot be left undisturbed, mitigation measures are required (PRC Section 21083.2[a-b]). PRC Section 21083.2(g) defines a unique archaeological resource as an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it:

1. Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information;
2. Has a special and particular quality such as being the oldest of its type or the best available example of its type; or
3. Is directly associated with a scientifically recognized important prehistoric or historic event or person.

Rincon prepared a Cultural Resources Assessment Report for the Project Site and staging area in June 2022. Rincon completed background and archival research from sources including, but not limited to, historical maps, aerial photographs, and written histories of the area. On January 12, 2022, Rincon received records search results (Records Search Number: 21-313) from the California Historical Resources Information System (CHRIS) located at the Central Coast Information Center (CCIC) (Attachment C). Rincon also reviewed the National Register of Historic Places (NRHR), CRHR, California Historical Landmarks list, and Built Environment Resources Directory, as well as its predecessor the California State Historic Property Data File. Additionally, Rincon reviewed the Archaeological Determination of Eligibility list. The results of the searches documented no historic resources were previously identified. The bridge at Johnson Avenue over San Luis Obispo Creek is included in the Caltrans historic bridge inventory list. Caltrans designated this bridge as a Category Five bridge, a status which means it is ineligible for listing in the NRHP (Attachment C).

A pedestrian survey of the Project Site and staging area was conducted on January 27, 2022. Exposed ground surfaces were examined for artifacts (e.g., flaked stone tools, tool-making debris, stone milling tools), ecofacts (marine shell and bone), soil discoloration that might indicate the presence of a cultural midden, historic debris (e.g., metal, glass, ceramics), and features indicative of the former presence of structures or buildings (e.g., standing exterior walls, postholes, foundations). Burrows and drainages allowed the visual inspection of subsurface soils. No archaeological resources were observed during the survey (Attachment C).

Rincon contacted the Native American Heritage Commission (NAHC) on December 17, 2021, to request a Sacred Lands File (SLF) search for tribal heritage resources and a contact list of Native Americans culturally affiliated with the project vicinity. SLF searches are conducted by using USGS quadrangle maps, each of which covers an approximately 50- to 70-square-mile area, and the NAHC does not provide the specific location of tribal heritage resources. On March 11, 2022, the NAHC responded to Rincon's request, stating that the results of the SLF search were positive (Attachment C).

a) The Project Site encompasses the Johnson Avenue Bridge. Caltrans has designated this bridge as a Category Five bridge, which making it ineligible for NRHP listing (Attachment C). The Project would not modify the bridge, and Project activities in the immediate vicinity of the bridge would be reconstructed in a manner that is consistent with existing conditions as it is repairing existing, damaged infrastructure. Therefore, the Project would not cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5. This impact would be less than significant.

b) No archaeological resources were identified within the Project Site (Attachment C). However, ten recorded archaeological sites are within a 0.5-mile radius of the Project Site. These archaeological sites include one prehistoric site, one historic-period site, and six historic-aged archaeological resources. Due to the presence of prehistoric and historic archaeological resources within the vicinity, the Project Site and staging area are considered sensitive for the presence of archaeological resources. The potential exists for Project construction activities that would disturb native soils to impact previously unidentified archaeological resources, which would be a potentially significant impact. Mitigation Measures CR-1 and CR-2 would implement a worker environmental awareness program and standard procedures for the unanticipated discovery of cultural resources. Implementation of Mitigation Measures CR-1 and CR-2 would minimize potential impacts to previously unidentified archaeological resources, and ensure the Project would not cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5. Therefore, potential impacts would be less than significant with incorporation of identified mitigation.

c) No human remains are known to be present within the Project Site (Attachment C). However, the Project Site is partially located within a Burial Sensitivity Area as identified by the City (City of San Luis Obispo 2014b). The unanticipated discovery of unknown human remains a possibility during ground-disturbing activities. Pursuant to California Health and Safety Code Section 7050.5, if human remains are found, the County Coroner must be notified immediately, and no further disturbance would occur until the County Coroner has made a determination of origin and disposition pursuant to California Public Resources Code Section 5097.98. If the human remains are determined to be of Native American origin, the County Coroner will notify the NAHC, which will determine and notify a Most Likely Descendant (MLD). The MLD has 48 hours from being granted site access to make recommendations for the disposition of the remains. If the MLD does not make recommendations within 48 hours, the landowner shall reinter the remains in a location that would not be affected by future ground-disturbing activities. The Project would be required comply with the provisions set forth pursuant to California Health and Safety Code Section 7050.5. Therefore, the potential exists for ground-disturbing activities related to project construction to disturb human remains. California Health and Safety Code Section 7050.5 sets forth adequate procedures related to the potential discovery of human remains. To enforce the procedural requirements of California Health and Safety Code Section 7050.5, Mitigation Measure CR-3 is required. Thus, this impact would be less than significant with incorporation of mitigation.

Mitigation Measures

CR-1 *Worker Environmental Awareness Program.* A qualified archaeologist shall conduct a Worker Environmental Awareness Program training on archaeological sensitivity for all construction personnel prior to the commencement of any ground-disturbing activities within the Project Site. The training shall be developed by an archaeologist who meets or exceeds the Secretary of Interior's Professional Qualification Standards for archaeology (National Park Service [NPS] 1983). Archaeological sensitivity training shall include a description of the types of cultural materials that may

be encountered, cultural sensitivity issues, regulatory issues, and the proper protocol for treatment of the materials in the event of a find.

CR-2 *Unanticipated Discovery of Cultural Resources.* In the event cultural resources are encountered during ground-disturbing activities, work within 50 feet of the find shall halt and a City-qualified archaeologist shall be contacted immediately to evaluate the find, pursuant to *CEQA Guidelines* Section 15064.5(f). If the archaeologist determines further information is needed to evaluate significance, a testing plan shall be prepared and implemented prior to resuming project activities. If the find is determined to be significant by the qualified archaeologist, the qualified archaeologist shall implement a data recovery plan designed to obtain information about the discovery. Recovery of significant cultural resources described in the data recovery plan, if necessary, shall include but not be limited to, manual or mechanical excavations, monitoring, soils testing, photography, mapping, or drawing to adequately recover the scientifically consequential information from and about the archaeological resource. Further treatment may be required, including site recordation, excavation, site evaluation, and data recovery. Any artifacts uncovered shall be recorded and removed for storage at a location to be determined by the archaeologist. The data recovery plan shall be approved by the City prior to the implementation of data recovery activities. Once approved, the qualified archaeologist shall carry out data recovery in conformance with the data recovery plan. All cultural resource work shall follow accepted professional standards in recording any find including submittal of standard Department of Parks and Recreation Primary Record forms (DPR Form 523) and location information to the appropriate California Historical Resources Information System office for the Project Site. If the find is prehistoric, then a native American representative shall also be contacted to participate in the evaluation of the find.

CR-3 *Discovery* of *Human Remains.* If human remains are discovered during construction activities, work shall immediately stop within the immediate vicinity of the area where the remains were discovered. The County coroner shall immediately be notified of the find, and a date and time for the County coroner to evaluate the find shall be determined by the applicant, City, and County coroner. The County coroner shall make a determination of the origin and disposition of the remains. If the County coroner determines the remains are prehistoric, the County coroner shall notify the NAHC which will determine a Most Likely Descendant (MLD). The MLD shall perform site inspection of the site within 48 hours of being granted site access and may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials. The applicant, City, County coroner, and MLD, if applicable, shall jointly decide on a date, time, and method of removal of remains. Removal shall be carried out prior construction resuming within the vicinity.

Conclusion

With implementation of Mitigation Measures CR-1, CR-2, and CR-3. Project impacts associated with cultural resources would be reduced to a less-than-significant level.

6. ENERGY

Would the project:	Sources	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	21, 26	☐	☐	☒	☐
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	21, 26	☐	☐	☒	☐

Evaluation

Energy consumption is directly related to environmental quality in that the consumption of nonrenewable energy resources releases criteria air pollutant and greenhouse gas (GHG) emissions into the atmosphere. Energy use during construction work would be in the form of fuel consumption (e.g., gasoline and diesel fuel) to operate construction equipment. The City's Conservation and Open Space Element and Climate Action Plan contain goals and policies primarily related to reducing operational energy, including introduction of solar power, implementation of energy conservation features in buildings, and implementation of carbon-sequestration measures (City of San Luis Obispo 2014b; City of San Luis Obispo 2020a).

The environmental impacts of air pollutant and GHG emissions associated with the project's energy consumption are discussed in detail in Section 3, *Air Quality,* and Section 8*, Greenhouse Gas Emissions*, respectively.

a;b) The Project would not include new structures that would require long-term energy use beyond the completion of the proposed construction phase. Energy use during construction would last approximately five months, and equipment used would be typical of construction projects within and surrounding the Project Site. In addition, contractors would be required to comply with the provisions of Title 13 California Code of Regulations Sections 2449 and 2485, which prohibit diesel-fueled commercial motor vehicles and off-road diesel vehicles from idling for more than five minutes. Heavy equipment would be subject to the U.S. EPA Construction Equipment Fuel Efficiency Standard, which would also minimize inefficient, wasteful, or unnecessary fuel consumption. The City's energy-related goals and policies within the Conservation and Open Space Element and Climate Action Plan have limited applicability to the Project as they focus primarily on energy conservation in buildings, solar design, achieving carbon-free electricity, and carbon sequestration (City of San Luis Obispo 2014b; City of San Luis Obispo 2020a). However, Project construction activities would comply with federal and State requirements to reduce wasteful energy consumption. Furthermore, in the interest of cost efficiency, construction contractors would not reasonably be expected to utilize fuel in a manner that is wasteful or unnecessary. Therefore, the Project would not result in the wasteful, inefficient, or unnecessary consumption of energy resources, or conflict with or obstruct a state or local plan for renewable energy. This impact would be less than significant.

Mitigation Measures

No mitigation measures are required.

Conclusion

No significant impacts related to energy would occur. Therefore, no mitigation would be required.

7. GEOLOGY AND SOILS

Would the project:	Sources	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury or death involving:					
i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	12	☐	☐	☒	☐
ii. Strong seismic ground shaking?	12	☐	☐	☒	☐
iii. Seismic-related ground failure, including liquefaction?	26	☐	☐	☒	☐
iv. Landslides?	26	☐	☐	☒	☐
b) Result in substantial soil erosion or the loss of topsoil?	14	☐	☒	☐	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	25	☐	☐	☒	☐
d) Be located on expansive soil, as defined in Table 1802.3.2 of the California Building Code (2013), creating substantial direct or indirect risks to life or property?	n/a	☐	☒	☐	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	n/a	☐	☐	☐	☒
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	47	☐	☐	☒	☐

Evaluation

The Project Site is located within the southern Coast Range geomorphic province. The Coast Range province is comprised of sub-parallel northwest-southeast trending faults, folds, and mountain ranges (City of San Luis Obispo 2014a). According to the California Geological Survey (CGS) the Project Site is not located within an Alquist-Priolo Fault Zone. There are no active earthquake faults present on the Project Site, and the closest active fault to the Project Site is the Los Osos Fault Zone, located approximately 2.97 miles southwest (CGS 2021). The Safety Element of the City's General Plan recognizes the Project Site as an area having high liquefaction potential (City of San Luis Obispo 2014b). The Project Site is not within a landslide hazard zone (City of San Luis Obispo 2014a). The Project Site is underlain by Concepcion loam soil with two to five percent slopes (United States Department of Agriculture [USDA] 2022). A Geotechnical Engineering Report prepared by Earth Systems Pacific in December 2021 indicated the Project Site's underlying geology is composed of Franciscan Mélange sandstone (Attachment D).

a.i; a.ii) The Project Site does not partially or fully intersect any Alquist-Priolo Fault Zone (CGS 2021). Project excavation activities would be limited to approximately 120 cubic yards of surface soil excavation, and thus would not create conditions that would exacerbate unstable seismic conditions or stresses in the Earth's crust. Therefore, the Project would not directly or indirectly cause the risk of loss, injury, or death involving rupture of a known earthquake fault. Although the Project Site is located near seismically active areas such as the Los Osos Fault Zone, it would conform with standards of the California Building Code (CBC), which provides earthquake design requirements, including earthquake loading specifications for design and construction to resist effects of earthquake motions in accordance

with the American Society of Engineers Standard 7-05. The Project would be required to comply with CBC standards regulating procedures for soil preparation, including, but not limited to: excavation, grading and earthwork, fills and embankments, expansive soils, foundation investigations, liquefaction potential, and soil strength loss. Through compliance with CBC regulations, the Project would not cause the risk of loss, injury, or death involving strong seismic ground shaking. This impact would be less than significant.

a.iii; aiv) As identified by the City, the Project Site is in an area that exhibits high liquefaction potential, but is not within a landslide hazard zone (City of San Luis Obispo 2014b). The Project Site does not contain steep slope conditions necessary for a landslide to occur. Construction workers could be present at the Project Site during a seismic or liquefaction event. Although there is potential for seismic ground shaking at the Project Site during rupture of a nearby fault, Project construction would not increase the risk of an earthquake occurring and thus would not increase the risk of liquefaction or landslide. Therefore, impacts would be less than significant.

b) The Geotechnical Engineering Report prepared for the Project Site indicates that on-site soils are considered erodible. Construction activities would involve the excavation of approximate 120 cubic years of soil. Construction activities would take place during the dry season and the Project Site would be dewatered during construction activities to remove water from the active work area, which would reduce risk of erosion in the San Luis Obispo Creek. The Project would also be constructed in compliance with the requirements of the Clean Water Act Section 401 Water Quality Certification and Section 404 permit for fill activities associated with the Project. Furthermore, pursuant to Municipal Code Section 12.08.260, construction sites with inadequate erosion and sediment controls installed are subject to a notice of violation and restriction of site work until erosion controls are in place (City of San Luis Obispo 2022b). Additionally, implementation of the Project would minimize the potential for future scour of the south-easterly facing slope embankment. Thus, the Project would not result in substantial soil erosion and the loss of topsoil. This impact would be less than significant.

c) The Project Site is not within a landslide hazard zone but does have high liquefaction potential (City of San Luis Obispo 2014a). The Project would repair drainage control infrastructure along the banks of an approximately 180-linear foot stretch of San Luis Obispo Creek. The replaced drainage control infrastructure would prevent future scour; improve slope protection; and protect the retaining wall. As a result, the Project would lessen the potential for the Project Site to result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse. This impact would be less than significant.

d) An expansion index test performed on soils from the Project Site produced an expansion index value of 39 (Attachment D). Pursuant to Section 1803.5.3 of the CBC, the Project Site soils are considered to be expansive with "low" expansion potentials. Expansive soils swell with increases in soils moisture and shrink as soil moisture decreases. As noted in the Geotechnical Engineering Report, the upper three to five feet of soils is the zone most affected by seasonal fluctuations in soil moisture (Attachment D). The volumetric changes that Project Site soils undergo could damage drainage infrastructure improvements, which would be a potentially significant impact.

Mitigation Measure GEO-1 would ensure recommendations made in the Geotechnical Engineering Report, which include, but are not limited to, moisture conditioning, placement of non-expansive fill, retaining wall parameters, and deepening foundations, are implemented in Project design. With implementation of Mitigation Measure GEO-1, the Project's effects from expansive soils would be reduced to a less than significant level.

e) The Project would not include or require the use of septic tanks or alternative wastewater disposal systems. On-site portable restroom facilities would be provided by the construction contractor for workers operating at the site. No impact would occur.

f) Paleontological resources, or fossils, are the evidence of once-living organisms preserved in the rock record. Such resources include both the fossilized remains of ancient plants and animals and the traces of such remains. Paleontological resources are not found in "soil" but are rather found in the geologic deposits or bedrock that underlies the soil layer. Typically, fossils are greater than 5,000 years old (i.e., older than middle Holocene in age) and preserved in sedimentary rocks. Although rare, fossils can also be preserved in volcanic rocks or low-grade metamorphic rocks under certain conditions (Society of Vertebrate Paleontology [SVP] 2010). Fossils often occur in an unpredictable distribution within some sedimentary units.

According to the Geotechnical Engineering Report and mapping by Jennings (1958) the Project Site is underlain by Mesozoic-age Franciscan Mélange with low to moderate fossil-bearing potential (Attachment D; Jennings 1958). Ground disturbance required for the Project would be limited to surficial vehicle travel by construction equipment over the ground surface, excavation of approximately 120 cubic yards of soil, and use of hand tools during construction activities. Ground disturbing activities are not anticipated to reach depths where older, potentially more sensitive sediments could be encountered. Therefore, the Project's potential to directly or indirectly destroy a unique paleontological resource or site or unique geologic feature would be less than significant.

Mitigation Measures

GEO-1 *Implementation of Geotechnical Design Features.* Prior to the issuance of grading permits, the construction contractor shall retain a qualified geotechnical engineer to incorporate all applicable geotechnical recommendations made in the Project specific Geotechnical Engineering Report for the purpose of reducing impacts related to soil expansion. Such recommendations include, but are not limited to, retaining wall foundation design, deepening foundations, and moisture conditioning soil. Geotechnical recommendations shall be noted on site plans and provided to the City for approval prior to the issuance of grading permits. The qualified geotechnical engineer shall be retained throughout construction to provide observation during grading and backfill, wall construction, and oversight of soil special inspection, as detailed in the Geotechnical Engineering Report. At the completion of construction, the qualified geotechnical engineer shall provide written confirmation to the City that all applicable geotechnical recommendations were followed.

Conclusion

With implementation of Mitigation Measure GEO-1, Project impacts associated with geology and soils would be reduced to a less-than-significant level.

8. GREENHOUSE GAS EMISSIONS

Would the project:	Sources	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	21	☐	☐	☒	☐
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	21	☐	☐	☒	☐

Evaluation

In response to climate change, California implemented Assembly Bill (AB) 32, the "California Global Warming Solutions Act of 2006." AB 32 required the reduction of statewide GHG emissions to 1990 emissions levels (essentially a 15 percent reduction below 2005 emission levels) by 2020 and the adoption of rules and regulations to achieve the maximum technologically feasible and cost-effective GHG emissions reductions. On September 8, 2016, the Governor signed Senate Bill 32 into law, extending AB 32 by requiring the State to further reduce GHG emissions to 40 percent below 1990 levels by 2030 (the other provisions of AB 32 remain unchanged). On December 14, 2017, CARB adopted the 2017 Scoping Plan, which provides a framework for achieving the 2030 target. The 2017 Scoping Plan relies on the continuation and expansion of existing policies and regulations, such as the Cap-and-Trade Program and the Low Carbon Fuel Standard, and implementation of recently adopted policies and legislation, such as Senate Bill 1383 (aimed at reducing short-lived climate pollutants including methane, hydrofluorocarbon gases, and anthropogenic black carbon) and Senate Bill 100. The 2017 Scoping Plan does not provide project-level thresholds for land use development. Instead, it recommends local governments adopt policies and locally appropriate quantitative thresholds consistent with a statewide per capita goal of six metric tons (MT) of CO2e by 2030 and two MT of CO2e by 2050 (CARB 2017).

The City adopted a Climate Action Plan which establishes 2030 GHG emissions targets and a communitywide goal of carbon neutrality by 2035 (City of San Luis Obispo 2020a). The City adopted project-specific CEQA GHG emissions thresholds for residential, nonresidential, and mixed-use development. In addition, the City has adopted a GHG Emissions Compliance Checklist which is designed to assist with determining a project's consistency with the Climate Action Plan and other applicable regulations and provide a streamlined review process subject to CEQA (City of San Luis Obispo 2020b).

a; b) Project construction would generate temporary GHG emissions as a result of the operation of construction equipment on site as well as from vehicles transporting construction workers and material deliveries. Pursuant to CEQA Guidelines Section 15183.5, the significance of project emissions is determined by evaluating project consistency with the GHG emission reduction goals and policies of the City's Climate Action Plan. Table 6 summarizes the Project's consistency with the City's Climate Action Plan, evaluated through the GHG Emissions Compliance Checklist measures that are applicable to the proposed Project (City of San Luis Obispo 2020a). As shown therein, the Project would be consistent with the applicable goals and policies of the Climate Action Plan. Therefore, the Project would not generate GHG emissions that would have a significant impact on the environment or conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing emissions of greenhouse gas. This impact would be less than significant.

Table 6: Project Consistency with the Climate Action Plan

Climate Action Plan Measures	Project Consistency
Pillar 4: Connected Community	
6a. Is the estimated Project/Plan-generated Vehicle Miles Traveled (VMT) within the City's adopted thresholds, as confirmed by the City's Transportation Division?	**Consistent.** Trips associated with the Project would be limited during construction activities, not exceeding the City's threshold of significance (110 trips per day). For more information, refer to Section 17, *Transportation*.

7. Does the Project/Plan demonstrate consistency with the City's Bicycle Transportation Plan?	**Consistent.** The construction contractor would be required to provide adequate width to allow bike lane travel adjacent to Pismo Street or provide clear posting that the bicycle lane is closed, pursuant to the Traffic Control Plan that would be submitted for the Project. Construction would be temporary and would not substantially disrupt bicycle circulation.
Pillar 6: Natural Solutions	
9. Does the Project/Plan comply with Municipal Code requirements for trees?	**Consistent.** The cutting of four willow trees would occur in compliance with Municipal Code Chapter 12.24. In addition, five oak trees that were present when the baseline for the environmental process was established have been removed from the Project area during winter 2022 under an emergency permit. This analysis anticipates the tree removal will require 1:1 replacement for the removed trees pursuant to the requirements of the emergency permit.
Source: City of San Luis Obispo 2020a	

Mitigation Measures

No mitigation measures are required.

Conclusion

No significant impacts regarding greenhouse gasses would occur. Therefore, no mitigation would be required.

9. HAZARDS AND HAZARDOUS MATERIALS

Would the project:	Sources	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	n/a	☐	☐	☒	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	n/a	☐	☐	☒	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	n/a	☐	☐	☒	☐
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	8, 48, 51	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	25	☐	☐	☐	☒
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	23	☐	☐	☒	☐
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?	6	☐	☐	☒	☐

Evaluation

The following databases were reviewed in July 2022 for known hazardous material contamination at the Project Site:

- The State Water Resource Control Board's (SWRCB) Geotracker database
- The California Department of Toxic Substances Control's (DTSC) EnviroStor database
- The Superfund Enterprise Management System (SEMS) database

The Project Site does not appear on any hazardous material site list compiled pursuant to Government Code Section 65962.5 (DTSC 2022; SWRCB 2022; U.S. EPA 2022). The closest hazardous material sites include a case-closed Leaking Underground Storage Tank (LUST) site located approximately 315 feet southeast and an active case State Response site located approximately 1,322 feet west of the Project Site (DTSC 2022; SWRCB 2022). The Project Site is not located within any adopted airport land use plan. There is one school, San Luis Obispo High School, located within 0.25-mile of the Project Site.

a;b;c) The Project would not involve the routine use or disposal of hazardous materials, as Project activities would only last the duration of the construction phase (approximately five months), and no permanent Project features would involve the operational use or disposal of hazardous materials. San Luis Obispo High School is located approximately 0.12-mile east of the Project Site, separated from the Project Site by residential and commercial properties and roadways.

During construction, the presence of construction equipment would require the use of diesel fuel, gasoline, motor oil, and other similar materials. Such materials would be property handled and disposed of in accordance with applicable regulations. Reasonably foreseeable conditions that could lead to a release of hazardous materials during Project activities include accidents during construction or refueling activities, such as the overturning of a backhoe on a sloped embankment. Construction personnel would be required to have the necessary training and/or certifications to operate equipment used during Project activities, minimizing the risk of accidental release of hazardous materials due to equipment failure. The Project would not increase, encourage, or otherwise facilitate the transportation of hazardous materials above existing conditions. The amount of fuels and oil to power construction equipment would be typical of similar projects, and such minimal use of fuels would not adversely affect San Luis Obispo High School. No long-term operational impacts related to the routine transport, handling, or disposal of hazardous materials would result from the Project. Therefore, the Project would not create a significant hazard to the public or environment through the routine transport, use, or disposal of hazardous materials, or through reasonably foreseeable upset and accident conditions involving the release of hazardous materials. These impacts would be less than significant.

d) The Project Site is not included on any lists of hazardous materials compiled pursuant to Government Code Section 65962.5 (DTSC 2022; SWRCB 2022; U.S. EPA 2022). Therefore, the Project would not create a significant hazard to the public or environment due to being located on a hazardous materials site compiled pursuant to Government Code Section 65962.5. No impact would occur.

e) The closest airport to the Project Site is the San Luis Obispo County Regional Airport, approximately 2.97 miles southeast of the Project Site. The Project Site is not located within any adopted airport land use plan. As such, the Project would not result in a safety hazard or excessive noise for working at the Project Site. No impact would occur.

f) Pursuant to the City's Specifications and Engineering Standards, the construction contractor would be required to create a temporary traffic control plan that adheres to standards for emergency access in order to allow the construction staging area encroach into Pismo Street (City of San Luis Obispo 2020c). The traffic control plan would address required equipment, barricading, flagmen, use of pilot vehicles, signing, tapers, and other components required to maintain traffic circulation. The traffic control plan is required to address how traffic would be routed, including traffic from cross streets, alleys, and private driveways. The traffic control plan would be subject to the approval of the City Engineer prior to the start of construction activities. Thus, the project would not interfere with traffic management such that it would conflict with City emergency response or evacuation plans. The project would not conflict with adopted emergency response plan or emergency evacuation plan. This impact would be less than significant.

g) The Project Site is located within a Local Responsibility Area and is not within a Very High Fire Hazard Severity Zone, as defined by the California Department of Forestry and Fire Protection (CAL FIRE) (CAL FIRE 2022). California Public Resources Code Section 4442 mandates the use of spark arrestors, which prevent the emission of flammable debris from exhaust on earth-moving and portable construction equipment with internal combustion engines that are operating on any forest-covered, brush-covered, or grass-covered land. California Public Resources Code Section 4428 requires construction contractors to maintain fire suppression equipment during the highest fire danger period (April 1st to December 1st) when operating on or near any forest-covered, brush-covered, or grass-covered land. Therefore, through regulatory compliance, the Project would not expose people or structures, directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires. This impact would be less than significant.

Mitigation Measures

No mitigation measures are required.

Conclusion

No significant impacts regarding hazards and hazardous materials would occur. Therefore, no mitigation would be required.

10. HYDROLOGY AND WATER QUALITY

Would the project:	Sources	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	n/a	☐	☒	☐	☐
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	10	☐	☐	☒	☐
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:					
i. Result in substantial erosion or siltation on or off site;	n/a	☐	☒	☐	☐
ii. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	n/a	☐	☐	☒	☐
iii. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	n/a	☐	☒	☐	☐
iv. Impede or redirect flood flows?	n/a	☐	☒	☐	☐
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	27, 32	☐	☐	☒	☐
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	10	☐	☐	☐	☒

Evaluation

The San Luis Obispo Creek watershed is an approximately 53,271-acre coastal basin in southern San Luis Obispo County, which rises to an elevation of about 2,500 feet above sea level in the Santa Lucia Range. San Luis Obispo Creek flows to the Pacific Ocean and has six major tributary basins: Stenner Creek, Prefumo Creek, Laguna Lake, East Branch San Luis Obispo Creek, Davenport Creek, and See Canyon. The creek flows through the City and empties into the Pacific Ocean just west of Avila Beach.

USACE regulatory jurisdiction under Section 404 of the CWA extends to work in, over, and under waters of the United States that results in a discharge of dredged or fill materials within USACE jurisdiction. San Luis Obispo Creek is considered jurisdictional waters of the United States by the USACE. Section 401 of the CWA functions to ensure that federally permitted activities comply with the federal CWA and other state-mandated water quality laws. Section 401 is implemented through a review process that is conducted by the RWQCB and is typically triggered by the Section 404 permitting process. The RWQCB issues a Water Quality Certification via the Section 401 process that ensures a proposed project complies with applicable effluent limitations, water quality standards, and other conditions of state law. Evaluating the effects of the project on both water quality and quantity (runoff) falls under the jurisdiction of the RWQCB.

Under the Porter-Cologne Act, "waters of the State" fall under the jurisdiction of the SWRCB and RWQCBs. The RWQCBs must prepare and periodically update water quality control basin plans. Each basin plan sets forth water quality standards for surface water and groundwater, as well as actions to control non-point and point sources of pollution to achieve and maintain

these standards. In most cases, the RWQCBs seek to protect these beneficial uses by requiring the integration of water quality control measures into projects that would result in discharge into waters of the State.

The San Luis Obispo Creek Watershed Enhancement Plan was prepared to guide local restoration partners and provide recommendations for continued enhancement projects within the San Luis Obispo Creek watershed. This plan also identifies critical issues facing the watershed such as degradation of steelhead trout instream habitat and prevalence of migration barriers, low-quality riparian vegetation buffers, and surface water quality, and identifies recommendations to address them. Lastly, the plan identifies specific restoration and enhancement projects based on the critical issues identified (The Land Conservancy of San Luis Obispo County 2002).

Based on Federal Emergency Management Agency (FEMA) National Flood Hazard Layer (NFHL) Viewer, the Project Site is within a 100-year flood zone (FEMA 2012). The FEMA 100-year flood zone identifies areas that would be subject to inundation in a 100-year storm event, or a storm with a 1% chance of occurring in any given year.

In 2015, the state legislature approved the Sustainable Groundwater Management Act (SGMA). SGMA requires governments and water agencies of high and medium priority basins to halt overdraft and bring groundwater basins into balanced levels of pumping and recharge. Under SGMA, these basins should reach sustainability within 20 years of implementing their sustainability plans. The project is located within the San Luis Obispo Valley Groundwater Basin, which has been designated by the California Department of Water Resources (DWR) as a high-priority basin (DWR 2022). The County and City formed Groundwater Sustainability Agencies (GSAs) within their respective jurisdictions to ensure full compliance with SGMA throughout the entire San Luis Obispo Valley Groundwater Basin. The City is the GSA with jurisdiction over the Project Site (City of San Luis Obispo Department of Public Works 2022).

a;c.iii;c.iv) Construction activities within the San Luis Obispo Creek banks would occur between June 1st and October 15th, concurrent with the dry season, which reduces the risk of erosion and spills occurring during construction activities. The Project requires dewatering and diverting the existing San Luis Obispo Creek flows at the active work area by piping water from upstream to downstream of active construction activities which would temporarily redirect flows during construction. Although the Project would repair drainage control infrastructure which would minimize the likelihood of additional polluted runoff due to failure, construction activities could introduce pollutants into the San Luis Obispo Creek, which would be a potentially significant impact.

As described in Section 4, *Biological Resources*, the Project would be required to implement BMPs consistent with Mitigation Measure BIO-3. These BMPs include, but are not limited to, checking vehicles daily for leaks; use of mats and drip pans to contain leaks; use of berms, burlap-wrapped fiber rolls, jute netting, sand/gravel bags, or other method of stabilization to prevent sediment entering the creek; prohibiting refueling, cleaning, or maintenance of equipment or vehicles within the creek channel; retention of spill kits; and cleaning of off-site loose construction and landscape materials. Furthermore, implementation of Mitigation Measure BIO-3 would preclude stream diversion activities from occurring during the wet season during which flood flows may occur, which would reduce the potential for inundation from flooding during construction activities. Diversion pipes would be removed during the winter when construction activities would not be occurring within the creek channel. Implementation of Mitigation Measure BIO-3 would ensure Project construction activities would not violate water quality standards or waste discharge requirements or otherwise substantially degrade surface or water quality, provide substantial additional polluted runoff, or impede or redirect flood flows. At the completion of construction, modifications to the Project Site would not cause an increase in water quality degradation beyond existing operational conditions. Therefore, impacts would be less than significant with mitigation incorporated.

b) The Project would repair drainage control infrastructure along the banks of an approximately 180-linear foot stretch of San Luis Obispo Creek. No groundwater supplies would be required for the Project, and no additional impervious surfaces would be installed. Therefore, the Project would not substantially decrease groundwater supplies or substantially interfere with groundwater recharge such that the project would impede sustainable groundwater management of the basin. This impact would be less than significant.

c.i) Based on historic creek flow data, San Luis Obispo Creek is a perennial creek which may have water flowing through the channel during the five-month construction schedule (Creek Lands Conservation 2019). Diversion during construction would be provided by two 12-inch diameter diversion pipes, each 210 feet long, which would extend from

the upper check dam to the lower check dam. The upper check dams would extend the entire width of the channel from wall to wall under the Johnson Avenue Bridge. An additional temporary check dam would be added within the Project Site just downstream of the limits of flood bench excavation within the creek channel. A sump pump placed between the two upper check dams and connected to 200 feet of 4-inch diameter pressure pipe, which would outlet just downstream of the lower check dam. Proposed Project construction in the San Luis Obispo Creek channel may result in substantial erosion or siltation on or off site, which would be a potentially significant impact.

The Project would be required implement BMPs consistent with Mitigation Measure BIO-3 that would reduce impacts to water quality, including the risk of soil erosion. Furthermore, as stated in Section 4, *Biological Resources*, and Section 7, *Geology and Soils*, the Project would be constructed in compliance with the requirements of the Clean Water Act Section 401 Water Quality Certification and Section 404 permit for fill activities associated with the Project, and would include implementation of adequate erosion and sediment controls pursuant to Municipal Code Section 12.08.260. Adherence to these statutes and Mitigation Measure BIO-3 would ensure the Project would not result in substantial erosion or siltation on- or off-site. Therefore, this impact would be less than significant with mitigation incorporated.

c.ii) During construction, the Project would temporarily divert surface water within San Luis Obispo Creek through a double check dam diversion system. Once complete, the Project would not introduce new impervious surfaces that would substantially alter the existing drainage pattern of the site. The Project would be constructed during the dry season, which would reduce the potential for inundation from flooding during construction activities. In addition, Project activities would include the excavation of sediment buildup which would expand creek capacity. In turn, this would reduce the long-term potential for on- and off-site flooding. As a result, the Project would improve flood capacity and would not substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site. This impact would be less than significant.

d) The City of San Luis Obispo is not subject to inundation from tsunami or seiche (City of San Luis Obispo 2014c). The Project Site is within a 100-year flood zone (FEMA 2012). Facilities or construction activities that use or store large quantities of hazardous materials could harm the environment if inundated by a flood resulting from a storm event or dam failure. As discussed in Section 9, *Hazards and Hazardous Materials*, the Project would not involve the routine use or disposal of hazardous materials beyond the construction period, as Project activities would only last the duration of construction (approximately five months), and no permanent features would be constructed that would involve the use or disposal of hazardous materials. The Project would be constructed during the dry season, which would reduce the risk of inundation from flooding. Operation of the project would not introduce new pollutants to the project site or result in a change to the existing flood patterns, as the Project Site would have improved flood capacity compared to existing conditions once construction activities have concluded. The Project would also reduce risk of release of pollutants resulting from erosion within the San Luis Obispo Creek by repairing drainage control infrastructure along the banks of an approximately 180-linear foot stretch of the creek. As a result, risk of pollutant release due to project inundation in a flood hazard would be less than significant.

e) The Project would not require the use of groundwater supplies or interfere with groundwater recharge. Therefore, the Project would not conflict with or obstruct implementation of a sustainable groundwater management plan. No impact would occur.

Mitigation Measures

Implement Mitigation Measure BIO-3.

Conclusion

With implementation of Mitigation Measure BIO-3, Project impacts to hydrology and water quality would be reduced to a less-than-significant level.

11. LAND USE AND PLANNING

Would the project:	Sources	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Physically divide an established community?	23	☐	☐	☐	☒
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	14	☐	☒	☐	☐

Evaluation

The 0.35-acre Project Site is located on portions of APNs 002-341-007 and 002-341-016, which total approximately 0.73-acre (City of San Luis Obispo 2022a). APN 002-341-007 is zoned Office (O) while APN 002-341-016 is zoned as Medium Density Residential (R-2). The Project Site is surrounded by residential properties to the southwest, and residential and commercial uses to the northwest. Single family residences are located to the north, south, and east, across the intersections of Johnson Avenue and Pismo Street.

a) Construction staging would occur at the northwest side of Pismo Street, from Johnson Avenue to approximately 200 feet southwest of the Johnson Avenue intersection. Construction staging would maintain local access for residents near the Project Site to the extent practicable throughout construction of the Project in compliance with temporary traffic control measures specified within the City's Standard Specifications & Engineering Standards (City of San Luis Obispo 2020c). In addition, construction would be temporary, lasting approximately five months. Project components would not have the potential to physically divide an established community because the Project would be located within the San Luis Obispo Creek, and thus traverse adjacent to and beneath existing residential and commercial uses. Therefore, no impact would occur.

b) Pursuant to Municipal Code Section 16.18.155, creeks and their corridors are to be preserved as open space, and creek corridors are to be maintained in essentially a natural state to protection the community's water quality, wildlife diversity, and aesthetic value (City of San Luis Obispo 2022b). The Project would repair drainage control infrastructure along the banks of an approximately 180-linear foot stretch of San Luis Obispo Creek which, if left as-is would continue to result in impaired drainage control, exposure of native soil, and could lead to impaired water quality within the San Luis Obispo Creek. The Project would allow for the necessary repair of existing concrete slope protection which would maintain the quality of the San Luis Obispo Creek, pursuant to San Luis Obispo Municipal Code Section 16.18.155. Implementation of Mitigation Measures BIO-4, BIO-11, and BIO-12 require invasive species management, onsite biological monitoring, and implementation of an HMMP. Implementation of these required mitigation measures would protect creek habitat and its waters, pursuant to applicable federal, State, and local regulations, as well as City General Plan goals and policies. Therefore, with incorporation of Mitigation Measures BIO-4, BIO-11, and BIO-12, the Project would not conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. This impact would be less than significant with mitigation incorporated.

Mitigation Measures

Implement Mitigation Measures BIO-4, BIO-11, and BIO-12.

Conclusion

With implementation of Mitigation Measures BIO-4, BIO-11, and BIO-12, Project impacts associated with land use and planning would be reduced to a less-than-significant level.

12. MINERAL RESOURCES

Would the project:	Sources	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	4	☐	☐	☐	☒
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	4	☐	☐	☐	☒

Evaluation

Pursuant to Policy 6.5.1 of the Conservation and Open Space Element of the City's General Plan, mineral extraction is prohibited within City limits (City of San Luis Obispo 2014b).

a;b) The Project Site is on land classified as a Mineral Resources Zone-3, a classification where mineral resources of unknown significance exist (DOC 1989). The Project Site is within an existing urbanized area of the City and the Conservation and Open Space Element of the City's General Plan prohibits mineral extraction at the Project Site. As such, the Project would not result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan. Therefore, no impacts would occur.

Mitigation Measures

No mitigation measures are required.

Conclusion

No significant impacts to mineral resources would occur. Therefore, no mitigation measures are required.

13. NOISE

Would the project result in:	Sources	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	25	☐	☒	☐	☐
b) Generation of excessive groundborne vibration or groundborne noise levels?	25	☐	☐	☒	☐
c) For a project located within the vicinity of a private airstrip or an airport land use plan, or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	25	☐	☐	☐	☒

Evaluation

Sound is a vibratory disturbance created by a moving or vibrating source, which is capable of being detected by the hearing organs. Noise is defined as sound that is loud, unpleasant, unexpected, or undesired and may therefore be classified as a more specific group of sounds. The effects of noise on people can include general annoyance, interference with speech communication, sleep disturbance, and, in the extreme, hearing impairment (Caltrans 2013). Noise levels are commonly measured in decibels (dB) using the A-weighted sound pressure level (dBA). The A-weighting scale is an adjustment to the actual sound pressure levels so that they are consistent with the human hearing response. Decibels are measured on a logarithmic scale that quantifies sound intensity. Groundborne vibration of concern in environmental analysis consists of the oscillatory waves that move from a source through the ground to adjacent buildings or structures and vibration energy may propagate through the buildings or structures. Vibration may be felt, may manifest as an audible low-frequency rumbling noise (referred to as groundborne noise), and may cause windows, items on shelves, and pictures on walls to rattle. Although groundborne vibration is sometimes noticeable in outdoor environments, it is almost never annoying to people who are outdoors. The primary concern from vibration is that it can be intrusive and annoying to building occupants at vibration-sensitive land uses and may cause structural damage.

The City Municipal Code Chapter 9.12 - Noise Control, mandates that operating tools or equipment used for construction activities between weekday hours of 7:00 p.m. and 7:00 a.m. or any time on Sundays or holidays is strictly prohibited, except for emergency works of public service utilities or by exception issued by the City Community Development Department. The Municipal Code also states that construction activities shall be conducted in such a manner, where technically and economically feasible, that the maximum noise levels at affected properties shall not exceed 75 dBA at single-family residences, 80 dBA at multi-family residences, and 85 dBA at mixed residential/commercial uses. The Municipal Code prohibits operating any device that creates ground vibration above the vibration perception threshold of an individual at or beyond 150 feet from the source on a public space or right-of-way (City of San Luis Obispo 2022b).

Noise exposure for various types of land uses reflect the varying noise sensitivities associated with those uses. Sensitive receptors typically include residences, schools, healthcare facilities, and other live-in housing facilities such as prisons or dormitories. The closest sensitive receptors to the Project Site are residential properties located approximately 12 feet southwest from the Project Site's eastern terminus and 20 feet north of the Project's northern boundary. According to the City, ambient noise levels are approximately 65 dB at the Project Site from the roadway centerline of Johnson Avenue (City of San Luis Obispo 2014a). With regard to human perception, vibration levels would begin to be perceptible at levels of 0.04 inches per second peak particle velocity (in/sec ppv) for continuous events and 0.25 in/sec ppv for transient events.

a) *Short-Term Construction Noise*. The Project Site is located within the vicinity of existing residences on Pismo Street and Johnson Avenue. During construction, noise from construction equipment, site disturbance, and other Project activities may

temporarily and intermittently dominate the noise environment in the immediate area. Typical noise levels produced by common construction equipment are provided in Table 7 below.

Table 7: Typical Noise Levels for Construction Equipment

Equipment Type	Typical Noise Level (dBA) 50 Feet from Source
Backhoe	80
Concrete Mixer	85
Concrete Pump	82
Crane, Mobile	83
Dozer	85
Heavy Truck	84
Jack Hammer	88
Paver	85
Pneumatic Tool	85
Scraper	85
Source: City of San Luis Obispo 2014a	

The nearest residential properties would be exposed to intermittent and temporary construction noise levels that exceed Municipal Code noise standards for construction near single-family residential properties. As such, there would be a potentially significant temporary impact to surrounding residences.

Mitigation Measures N-1 and N-2 require implementation of standard noise BMPs, such as the use of electric or hydraulically powered impact tools wherever feasible, and requirements for signs and briefing of construction employees regarding all noise control measures to be implemented throughout the construction phase. The Municipal Code states, where technically and economically feasible, construction activities shall be conducted in such a manner that the maximum noise levels at affected properties will not exceed listed thresholds. Mitigation Measures N-1 and N-2 serve as mitigation that would lower temporary and intermittent noise levels to the extent technically and economically feasible. Upon implementation of Mitigation Measures N-1 and N-2, Project construction activities would not result in a generation of a substantial increase in ambient noise levels in exceedance of applicable regulatory thresholds. Therefore, impacts concerning construction noise would be less than significant with mitigation incorporated.

Long-Term Operational Noise. The Project would not introduce any long-term operational noise sources. Project components would replace existing damaged infrastructure and would be similar to existing equipment. No impact concerning long-term operational noise would occur.

b) Use of heavy equipment, such as the jackhammer, would generate temporary and intermittent groundborne noise or groundborne vibration during construction. These construction activities would be periodic, limited in duration, and consistent with other standard construction activities. Vibration levels would begin to be perceptible at levels of 0.04 in/sec ppv for continuous events and 0.25 in/sec ppv for transient events. Groundborne vibration levels associated with representative construction equipment are summarized in Table 8 below.

Table 8: Representative Vibration Source Levels for Construction Equipment

Equipment	Peak Particle Velocity at 25 Feet (inches/second)
Loaded trucks	0.076
Jackhammer	0.035
Small Bulldozers	0.0003
Source: City of San Luis Obispo 2014a	

As shown in Table 8, equipment that would be used intermittently during temporary Project construction activities lasting approximately five months would be well below the 0.25 in/sec ppv threshold for transient groundborne vibration levels perceptible to humans. Therefore, the Project would not generate excessive groundborne vibration or groundborne noise levels. This impact would be less than significant.

c) The Project Site is not located within the vicinity of any airport land use plan or within two miles of a private airport. The closest airport is the San Luis Obispo County Regional Airport, approximately 2.97 miles southeast of the Project Site. The Project would not add new residents to the Project Site, and given the distance to the nearest airport, the Project would not expose construction workers to excessive noise levels associated with airport operations. Therefore, no impact would occur.

Mitigation Measures

N-1 *Noise-Reducing Best Management Practices.* For the entire duration of the construction phase of the project, the following BMPs related to the reduction of construction noise shall be adhered to:

- Stationary construction equipment that generates noise that exceeds 60 dBA at the project boundaries shall be shielded with the most modern noise control devises (i.e. mufflers, lagging, and/or motor enclosures).
- Impact tools (e.g., jack hammers, pavement breakers, rock drills, etc.) used for project construction shall be hydraulically or electrically powered wherever possible to avoid noise associated with compressed-air exhaust from pneumatically powered tools.
- Where use of pneumatic tools is unavoidable, an exhaust muffler on the compressed-air exhaust shall be used.
- All construction equipment shall have the manufacturers' recommended noise abatement methods installed, such as mufflers, engine enclosures, and engine vibration insulators, intact and operational.
- All construction equipment shall undergo inspection at periodic intervals to ensure proper maintenance and presence of noise control devices (e.g., mufflers, shrouding, etc.).
- Plan noisier operations and activities during times less sensitive to nearby receptors.
- Maintain good public relations with surrounding community members and provide frequent activity updates of all construction activities. Let all surrounding community members know that all noise-related complaints shall be directed to the City Public Works Department.

N-2 *City Approval and Personnel Briefing*. Construction plans shall note construction hours, truck routes, and all construction noise BMPs, and shall be reviewed and approved by the City Community Development Department prior to issuance of grading/building permits. The City shall provide and post signs stating these restrictions at construction entry sites prior to commencement of construction and maintained throughout the construction phase of the project. All construction workers shall be briefed at a preconstruction meeting on construction hour limitations and how, why, and where BMP measures are to be implemented. Noise-related complaints shall be directed to the City Public Works Department.

Conclusion

With implementation of Mitigation Measures N-1 and N-2, noise impacts would be reduced to a less-than-significant level.

14. POPULATION AND HOUSING

Would the project:	Sources	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	n/a	☐	☐	☐	☒
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	14	☐	☐	☐	☒

Evaluation

As of January 1, 2022, San Luis Obispo County's population was 280,721 with 264,529 households. As of January 1, 2022, the City's population was 47,653 persons, with 46,318 households (California Department of Finance [DOF] 2022).

a;b) The Project would not result in the construction of habitable structures or commercial/industrial uses, and would not induce population growth. The Project would utilize a minor number of temporary construction personnel over the course of the approximate five-month construction period. Construction equipment would be staged on the northwest side of Pismo Street which would not interfere with existing residences. Once completed, the Project would not involve ongoing operational uses that would result in new employment opportunities. The Project would not induce substantial unplanned population growth in an area, either directly or indirectly, or require the displacement of existing people or housing. No impact would occur.

Mitigation Measures

No mitigation measures are required.

Conclusion

No significant impacts to population and housing would occur. Therefore, no mitigation would be required.

15. PUBLIC SERVICES

Would the project:	Sources	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:					
Fire protection?	45	☐	☐	☐	☒
Police protection?	46	☐	☐	☐	☒
Schools?	36	☐	☐	☐	☒
Parks?	20	☐	☐	☐	☒
Other public facilities?	29	☐	☐	☐	☒

Evaluation

The San Luis Obispo Fire Department (SLOFD) provides fire protection services for the City. The nearest fire station to the Project Site, Station 1, is located at 2160 Santa Barbara Avenue, approximately 0.80-mile northeast of the Project Site. In 2021, SLOFD maintained an average travel time of three minutes and 34 seconds, and 68 percent of responses were under seven minutes total response time (SLOFD 2022).

The San Luis Obispo Police Department (SLOPD) provides public safety services for the City. SLOPD's Operation Bureau provides 24-hours emergency and non-emergency response, traffic enforcement, and neighborhood outreach (SLOPD 2022). The SLOPD operates out of one police station located at 1042 Walnut Street, which is approximately 0.57-mile southeast of the Project Site.

The Project Site is located within the service area of the San Luis Coastal Unified School District (San Luis Coastal Unified School District 2022). There are 28 total City parks and 15 recreational facilities within the city, of which Mitchell Park is located closest to the Project Site, approximately 0.21-mile northeast (City of San Luis Obispo 2021). The nearest library, the San Luis Obispo Library, located at 995 Palm Street approximately 0.42-mile southeast of the Project Site, offers books, magazines, newspapers, government publications, and access to computer technology (County of San Luis Obispo Public Libraries 2022).

a) The Project would not induce population growth, either directly or indirectly, or include any actions that would have the potential to increase demand for fire protection, police protection, schools, libraries or other public services such that new or physically altered public facilities would be warranted. Project activities would be temporary and would not be located in an area that would interfere with the existing use of parks or recreational facilities. Therefore, the Project would not result in substantial physical impacts associated with the provision of new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for fire protection services, police protection services, schools, parks, or other public facilities. No impacts would occur.

Mitigation Measures

Mitigation measures are not required.

Conclusion

No significant impacts to public services would occur. Therefore, no mitigation would be required.

16. RECREATION

Would the project:	Sources	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	20	☐	☐	☐	☒
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	20	☐	☐	☐	☒

Evaluation

There are 28 City parks and 15 recreational facilities within the City including a golf course, sports complex, stadium, swim center, community center, skate park, senior center, and community gardens. The City also owns and manages 13 open spaces and recreational trails that cover approximately 4,050 acres (City of San Luis Obispo 2021).

a;b) The Project would not induce population growth, either directly or indirectly, that would have the potential to increase the demand for parks or other recreational facilities. Temporary construction activities over an approximate five-month period would not interfere with or prohibit the use of existing neighborhood or regional parks or other recreational facilities such that other parks or recreational facilities would be utilized more frequently, and substantial physical deterioration of the facility would occur or be accelerated. The Project does not include construction of recreational facilities and would not require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment. Therefore, no impacts would occur.

Mitigation Measures

No mitigation measures are required.

Conclusion

No significant impacts to recreation would occur. Therefore, no mitigation would be required.

17. TRANSPORTATION

Would the project:	Sources	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	23	☐	☐	☒	☐
b) Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	24	☐	☐	☒	☐
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment)?	25	☐	☐	☒	☐
d) Result in inadequate emergency access?	23	☐	☐	☒	☐

Evaluation

Regional access to the Project Site is available via Johnson Avenue and Pismo Street. Existing bicycle facilities located in the vicinity of the Project Site include two Class II bicycle lanes, one of which is located on Pismo Street and spans the distance from the intersection of Pismo Street southwest to Santa Rosa Street, and the other of which is on Johnson Avenue and spans from Laurel Lane to Monterey Street and California Boulevard (City of San Luis Obispo 2022f). Public transit in the City is provided by SLO Transit. SLO Transit Routes 1A and 1B travel on Johnson Avenue through the Pismo Street intersection. The nearest bus stop to the Project Site is located at the intersection of Johnson Avenue and Marsh Street approximately 0.10-mile northwest of the Project Site (City of San Luis Obispo 2022g).

a) Trips associated with Project activities would be limited to worker trips to and from the Project Site, delivery trips for heavy equipment and construction tools, and trips to dispose of soil and other construction debris. Construction-related vehicle trips would be temporary and would cease once construction is complete. The construction contractor would be required to comply with the temporary traffic control provisions set forth in the City's Standard Specifications and Engineering Standards (City of San Luis Obispo 2020c). This document provides guidelines for traffic control during construction, including maintaining traffic, specifications for flagging, pavement delineation, among other topics. In addition, a Traffic Control Plan, compliant with the provisions set forth in the Caltrans Manual on Uniform Traffic Control Devices would be required to be submitted and approved by the City Engineer prior to the start of construction activities. All traffic coordination undertaken by the Project would require the City Engineer's approval no fewer than three days prior to implementation of traffic coordination activities (City of San Luis Obispo 2020c). Compliance with these existing standards and measures would ensure that the Project would not conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities. This impact would be less than significant.

b) CEQA Guidelines Section 15064.3 describes specific considerations for evaluating a project's transportation impacts. Specifically, the guidelines state VMT exceeding an applicable threshold of significance may indicate a significant impact. Pursuant to CEQA Guidelines Section 15064.3(b)(3), a lead agency may include a qualitative analysis of project-related traffic.

The City has adopted VMT thresholds consistent with the thresholds and methodologies contained in the California Governor's Office of Planning and Research's (OPR) *Technical Advisory on Evaluating Transportation Impacts in CEQA* (City of San Luis Obispo 2020d). Per OPR guidance, the City states that projects anticipated to generate fewer than 110 daily vehicle trips may be assumed to result in a less-than-significant impact, unless substantial evidence indicates that a project would generate a potentially significant level of VMT or conflict with the San Luis Obispo Council of Government's Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) (City of San Luis Obispo 2020d). Trips associated with Project activities would be limited to worker trips to and from the Project Site, delivery trips for heavy equipment and construction tools, and trips to dispose of soil and other construction debris. The anticipated vehicle trips necessary to support project construction would not exceed 110 trips per day. Minimal construction personnel would

generate low VMT due to temporary and intermittent vehicle trips to the Project Site. Construction-related trips would cease once the construction period is complete. The Project would not change existing roadways, increase commercial or residential development in the area, generate growth, or create an increase in traffic such that inconsistencies with the RTP/SCS would occur. Therefore, the Project would not conflict or be inconsistent with CEQA Guidelines Section 15064.3(b), and this impact would be less than significant.

c) The Project would not alter or affect the existing street and intersection network in its vicinity. Construction equipment, vehicles, and machinery would be utilized within the Project Site and staging area. As discussed under criterion (a), traffic control measures would be implemented to maintain traffic control and public safety during construction activities, including transportation of necessary equipment to the Project Site. In addition, the staging area on the northwest side of Pismo Street would be clearly delineated outside of existing travel lanes, such that it would not present a significant hazard. At the completion of the construction phase, equipment would be removed, and the Project Site would not have any new geometric design features or incompatible uses that would increase hazards for vehicular and pedestrian traffic. Therefore, the Project would not substantially increase hazards due to a geometric design feature or incompatible uses. This impact would be less than significant.

d) Traffic impacts during Project construction would primarily be associated with minor roadway delays during construction, vehicle and equipment staging, and truck deliveries to the Project Site. Construction staging on the northwest end of Pismo Street would occur, necessitating the temporary rerouting of traffic heading west on Pismo Street at this intersection during construction activities. Vehicular traffic would be rerouted around Pismo Street during construction. This traffic obstruction would be temporary, ending once construction is completed. Pursuant to the City's Standard Specifications and Engineering Standards, the construction contractor would be required to provide advanced notification of traffic delays to local emergency responders (City of San Luis Obispo 2020c). As discussed under criterion (a), the Project would be required to create a temporary traffic control plan that adheres to standards for emergency access, among other requirements. Furthermore, temporary closure of Pismo Street, a one-lane one-way street, would not substantially impact emergency access as access can be provided through numerous other streets in the urbanized area such as Marsh Street and Johnson Avenue. Therefore, the Project would not result in inadequate emergency access. This impact would be less than significant.

Mitigation Measures

No mitigation measures are required.

Conclusion

No significant transportation related impacts would occur. Therefore, no mitigation would be required.

18. TRIBAL CULTURAL RESOURCES

Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, or cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:	Sources	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k)?	n/a	☐	☒	☐	☐
b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1? In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	n/a	☐	☒	☐	☐

Evaluation

As of July 1, 2015, California Assembly Bill 52 of 2014 (AB 52) was enacted and expands CEQA by defining a new resource category, "tribal cultural resources." AB 52 establishes that "a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment" (PRC Section 21084.2). It further states that the lead agency shall establish measures to avoid impacts that would alter the significant characteristics of a tribal cultural resource, when feasible (PRC Section 21084.3).

PRC Section 21074 (a)(1)(A-B) defines tribal cultural resources as "sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe" and are:

1. Listed or eligible for listing in the CRHR, or in a local register of historical resources as defined in PRC Section 5020.1(k), or
2. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in PRC Section 5024.1(c). In applying these criteria, the lead agency shall consider the significance of the resource to a California Native American tribe.

The City sent notification letters to listed tribal contacts in the region on August 16, 2022, which included the Santa Ynez Band of Mission Indians, the Barbareno/Ventureno Band of Mission Indians, the Salinan Tribe of Monterey and San Luis Obispo County, the Xolon-Salian Tribe, Yak Tityu Tityu – Northern Chumash Tribe, the Northern Chumash Tribal Council, the Torres Martinez Desert Cahuilla Indians, the Chumash Council of Bakersfield, the Coastal Band of the Chumash Nation, and the San Luis Obispo County Chumash Council. One response was received from the Salinan Tribe of Monterey and San Luis Obispo County on August 26th, 2022 requesting a consultation meeting to discuss concerns of undiscovered cultural resources in the project area. The City has contacted the Tribe and is currently in consultation with the Tribe regarding construction management practices and monitoring of disturbed soils during project construction. Pursuant to PRC §21080.3.1 (b) the request for consultation window concluded September 30th, 2022.

a;b) During preparation of the Cultural Resources Assessment, Rincon contacted the NAHC on December 17, 2021, requesting an SLF search for traditional cultural resources. The NAHC responded on March 11, 2022, indicating the results of the SLF search was positive, meaning traditional cultural resources are present within the SLF search area. The NAHC provided a consultation list of 14 Native American groups within traditional lands or cultural places located within the SLF search area (Attachment C).

SLF searches are conducted by using USGS quadrangle maps, each of which covers an approximately 50- to 70-square-mile area, and the NAHC does not provide the specific location of tribal heritage resources (Attachment C). Consequently,

a positive SLF search does not explicitly indicate the presence of tribal cultural resources on the Project Site. However, based on the positive results of the SLF search, the Project Site could have the potential to contain tribal cultural resources that could be eligible for listing in the CRHR or local register, or considered to be a tribal cultural resource under CEQA. As discussed in Section 5, *Cultural Resources*, the potential to encounter archaeological resources during ground-disturbing activities exists. If encountered, previously undiscovered cultural resources could potentially be considered eligible for listing in the CRHR or a local register or be considered tribal cultural resources. As such, impacts to tribal cultural resources would be potentially significant.

Mitigation Measures CR-1, CR-2, and CR-3 would implement a worker's environmental awareness program, standard procedures for the unanticipated discovery of cultural resources, require a Native American representative to participate in the evaluation of unanticipated cultural resources discovered during construction activities, and enforce procedures for Native American consultation in the event human remains are discovered. Upon implementation of Mitigation Measures CR-1, CR-2, the Project would not cause a substantial adverse change in the significance of a tribal cultural resource.

Mitigation Measures

Mitigation Measures CR-1, CR-2, and CR-3 would implement a worker's environmental awareness program, standard procedures for the unanticipated discovery of cultural resources, require a Native American representative to participate in the evaluation of unanticipated cultural resources discovered during construction activities, and enforce procedures for Native American consultation in the event human remains are discovered. In addition to these measures, Mitigation Measure TCR-1 is required:

TCR-1 *Archaeological Monitoring.* Construction-related ground disturbances shall be monitored by a qualified archaeologist and a Native American representative. Prior to ground disturbance, a Construction Monitoring Treatment Plan shall be approved by the City and implemented during construction. The Construction Monitoring Treatment Plan shall provide the following:

a. Parameters for monitoring, including identified activities that will require the presence of the qualified archaeological monitor and Native American representative

b. Procedures for notifying the City and other involved or interested parties in case of an unanticipated discovery. In the event that archaeological resources are encountered during construction, City of San Luis Obispo staff shall be notified and all work within 50 feet of the find shall be halted until the find is evaluated by a qualified archaeologist and appropriate mitigation, if necessary, is implemented. The qualified archaeologist and/or Native American observer shall have the authority to temporarily halt or redirect construction in the vicinity of any potentially significant discovery to allow for adequate recordation and evaluation.

c. Preparation and approval of a plan that identifies procedures that shall be used to record, evaluate, and mitigate unanticipated discoveries with a minimum of delay

d. Procedures that shall be followed in case of discovery of human remains. In the event that isolated human remains are encountered, consultation with the most likely Native American descendant, pursuant to Public Resources Code section 5097.97 and 5097.98, shall apply.

e. Results of the monitoring program shall be documented in a technical report after completion of all ground disturbances.

Conclusion

With implementation of Mitigation Measures CR-1, CR-2, CR-3, and TCR-1, Project impacts associated with tribal cultural resources would be reduced to a less-than-significant level.

19. UTILITIES AND SERVICE SYSTEMS

Would the project:	Sources	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	n/a	☐	☐	☒	☐
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?	n/a	☐	☐	☒	☐
c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	n/a	☐	☐	☒	☐
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	14	☐	☐	☒	☐
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	14	☐	☐	☒	☐

Evaluation

The City's Utilities Department provides water and wastewater services to the City (City of San Luis Obispo 2022c). Wastewater generated within the City, California Polytechnic State University, San Luis Obispo, and the County airport is treated at the Water Resource Recovery Facility (WRRF). The WRRF treats approximately 4.5 million gallons of wastewater daily (City of San Luis Obispo 2022d). The City's Utilities Department is also responsible for administering an agreement with the San Luis Garbage Company for waste collection services (City of San Luis Obispo 2014a). There are three solid waste disposal facilities within the County, and most solid waste collected in the City is disposed of at the Cold Canyon Landfill (City of San Luis Obispo 2014a). Cold Canyon Landfill has a maximum permitted capacity of 1,650 tons per day. (California Department of Resources, Recycling, and Recovery [CalRecycle] 2020). As of 2020, the landfill's estimated remaining capacity was 13,000,000 cubic yards with an estimated closure date of December 2040 (CalRecycle 2020). Electricity services are provided by Pacific Gas & Electric Company and natural gas services are provided by the Southern California Gas Company (City of San Luis Obispo 2022e).

a;b;c) As described under Section 10, *Hydrology and Water Quality*, construction activities would require minimum amounts of water for dust suppression. Adequate water supplies would be available to meet the needs of the Project for dust suppression purposes. In accordance with Municipal Code Section 13.07.070(c), potable City water would not be used for major construction activities, such as grading and dust control, and would not be used to wash down sidewalks, driveways, or parking areas except to alleviate immediate fire or sanitation hazards. Consequently, the Project would not use the City's drinking water for dust suppression. No buildings would be constructed that would result in new long-term water demand. Minimal wastewater would be generated during temporary construction activities lasting approximately five months that would be served by on-site portable restroom facilities. The Project would not include any use that would require long-term wastewater discharge. Operation of the Project would not involve any activities that would increase water demand. Therefore, the Project would have sufficient water supplies available, would not require or result in relocation or construction of new or expanded water facilities, and would not exceed wastewater treatment demand beyond existing conditions.

The repair of damaged infrastructure along the banks of an approximately 180-linear foot stretch of San Luis Obispo Creek would assist in the prevention of additional failures of underlying soils and concrete slope prevention. This

preventative measure would reduce the potential for adjacent infrastructure, including adjacent properties and buried utilities, to be jeopardized due to soil or concrete failure. Thus, the Project would reduce the likelihood of stormwater runoff due to structural failure. Furthermore, the Project would not substantially increase the amount of impervious surfaces at or near the Project Site, nor would the Project increase the amount of stormwater runoff on-site. Therefore, the Project would not require additional wastewater treatment or stormwater drainage facilities.

As discussed in Section 6, *Energy*, the Project would require minimal, temporary energy use throughout construction, and construction equipment used would be typical of similar-sized construction projects in the region. Project operation would not increase the demand for additional electric power or natural gas as compared to existing conditions. Therefore, the Project would not require or result in additional electric power or natural gas facilities. Similarly, the Project would not require the need for additional telecommunications facilities.

Overall, the Project would not require relocation or construction of new or expanded utilities facilities, increase water demand, or result in inadequate wastewater treatment capacity. These impacts would be less than significant.

d;e) Project construction activities would generate construction waste. Cold Canyon Landfill has sufficient permitted capacity to accommodate the Project's temporary solid waste disposal needs associated with construction activities. Pursuant to Assembly Bill 939 and Municipal Code Chapter 8.04, recoverable materials generated during construction would be separated and recycled to minimize construction and waste exportation from the site, resulting in limited demand on the landfills within the County (City of San Luis Obispo 2022b). Operation of the Project would not generate solid waste. Therefore, the Project would not generate solid waste in excess of State or local standards, or in the excess of capacity of local infrastructure, and the Project would comply with federal, state, and local management reduction statues and regulations related to solid waste. These impacts would be less than significant.

Mitigation Measures

No mitigation measures are required.

Conclusion

No significant impacts to utilities and services systems would occur. Therefore, no mitigation would be required.

20. WILDFIRE

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:	Sources	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	6	☐	☐	☒	☐
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	6	☐	☐	☒	☐
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	6	☐	☐	☒	☐
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	6	☐	☐	☒	☐

Evaluation

The central coast of California is prone to wildfire due to a warm, dry climate and expansive coverage of ignitable vegetation. However, the Project Site is not within a State Responsibility Area or a Very High Fire Hazard Severity Zone as defined by CAL FIRE (CALFIRE 2022). The closest Fire Hazard Severity Zone is located approximately 0.45-mile east at the foothills immediately east of San Luis Obispo High School.

a-d) The Project Site is not within a State Responsibility Area or a Very High Fire Hazard Severity Zone (CAL FIRE 2022). The Project would involve the movement of construction equipment, hauling of construction equipment, and transportation of construction personnel which could temporarily increase traffic on roadways, particularly Pismo Street and Johnson Avenue, which could possibly delay emergency vehicles. However, any minor delays during Project construction would be temporary in nature and would not impair an adopted emergency response plan or emergency evacuation plan. The Project would be required to comply with the City's Standard Specifications and Engineering Standards and implement a traffic control plan that adheres to City standards for emergency access. Therefore, the Project would not substantially impair an adopted emergency response plan or emergency evacuation plan.

Heavy duty equipment used during construction that may produce sparks that could ignite vegetation would be limited through regulatory compliance. California Public Resources Code Section 4442 mandates the use of spark arrestors, which prevent the emission of flammable debris from exhaust on earth-moving and portable construction equipment with internal combustion engines that are operating on any forest-covered, brush-covered, or grass-covered land. PRC Section 4428 requires construction contractors to maintain fire suppression equipment during the highest fire danger period (April 1 to December 1) when operating on or near any forest-covered, brush-covered, or grass-covered land. These regulations would minimize the risk of fire resulting from Project construction activities. No roads, fuel breaks, emergency water sources, or power lines would be installed. In addition, the Project would not result in additional housing and would not accommodate occupants. Thus, the Project would not expose project occupants to pollutant concentrations from a wildfire, exacerbate fire risk due to installation or maintenance of associated infrastructure, or expose people or structures to significant risks as a result of runoff, post-fire slope instability, or drainage changes. These impacts would be less than significant.

Mitigation Measures

No mitigation measures are required.

Conclusion

No significant impacts to wildfire would occur. Therefore, no mitigation would be required.

21. MANDATORY FINDINGS OF SIGNIFICANCE

	Sources	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?		☐	☒	☐	☐
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?		☐	☒	☐	☐
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?		☐	☒	☐	☐

Evaluation

a) As discussed in Section 4, *Biological Resources*, two special-status plant species and 13 special-status wildlife species have potential to occur within the Project Site. Critical habitat for steelhead and the California red-legged frog occurs within the Project Site. In addition, the Mixed Riparian Hardwood Community that occurs within the Project Site is a sensitive natural community. Mitigation Measures BIO-1, BIO-2, BIO-3, BIO-4, BIO-5, BIO-6, BIO-7, BIO-8, BIO-10, BIO-11, and BIO-12 require habitat restoration, environmental monitoring, species relocation, and additional protections to sensitive resources. Furthermore, the Project would repair drainage control infrastructure along the banks of an approximately 180-linear foot stretch of San Luis Obispo Creek, preventing the potential failure of drainage infrastructure and underlying soils which could lead to impaired water quality and habitat loss. Therefore, the Project would serve a beneficial purpose and assist in reducing the chance that habitat would be reduced.

The Project Site does not contain important examples of the major periods of California history or prehistory. Therefore, the Project would not have a substantial effect on these resources. As discussed in Section 5, *Cultural Resources* and Section 18, *Tribal Cultural Resources*, Mitigation Measures CR-1, CR-2, and CR-3 would minimize potential effects on cultural and tribal cultural resources at the Project Site.

All mitigation measures identified in this Initial Study would be included in the required Mitigation Monitoring and Reporting Program. Therefore, the Project's potential impacts would be reduced below applicable thresholds of significance with mitigation incorporated.

b) As described in the discussion of Sections 1 through 20, with respect to all environmental issues, the Project's potential impacts associated with project construction activities would be either less than significant or reduced to a less than significant level with implementation of required mitigation. This is because project construction would be temporary, and project operation would not result in adverse effects on the environmental baseline conditions.

Cumulatively considerable impacts could occur if the construction of other projects occurs at the same time as the Project and in the same vicinity, such that the effects of similar impacts of multiple projects combine to expose a resource to greater levels of impact than would occur under the Project. Certain resource areas (e.g., Geology and Soils, Hazards and Hazardous Materials) are by their nature specific to a project location, such that impacts at one location do not add to impacts at other locations. Other resource areas inherently address cumulative impacts. As noted in Section 3, *Air Quality*, and Section 8, *Greenhouse Gas Emissions*, the Project would comply with SLOAPCD's Clean Air Plan and the City's Climate Action

Plan, along with other regulations that would reduce the Project's air quality impacts and greenhouse gas emissions to less-than-significance levels. The Clean Air Plan establishes thresholds and the Climate Action Plan contains a consistency checklist, both of which that are designed such that a project that demonstrates compliance with these items would not have an individually or cumulatively significant impact. As stated above, the Project would be consistent with the Clean Air Plan and Climate Action Plan. Furthermore, implementation of Mitigation Measures AQ-1 through AQ-4 would minimize Project-generated fugitive dust, diesel emissions, and naturally occurring asbestos such that less-than-significant impacts would occur. Consequently, the Project would not generate a cumulatively considerable impacts to air quality or greenhouse gas emissions.

Cumulative projects that may be developed within and near the San Luis Obispo Creek corridor would be subject to similar regulatory requirements as the Project. These include, but are not limited to, the federal Endangered Species Act, California Endangered Species Act, and Migratory Bird Treaty Act. These regulations are designed to protect individual species and their habitats. Cumulative projects would be required to abide by the provisions of these regulations and subject to review from agencies including, but not limited to, CDFW and USFWS, to ensure potential impacts to species or habitat are minimized. However, existing regulatory requirements alone cannot guarantee species loss, habitat loss, or other impact to biological resources due to cumulative development. The Project may temporarily impact habitat utilized by special status species, but the Project would incorporate mitigation measures, such as biological monitoring and special status species relocation or avoidance, and after construction the Project Site would be restored to provide similar habitat value to baseline conditions. In addition, the Project would repair drainage control infrastructure along the banks of an approximately 180-linear foot stretch of San Luis Obispo Creek which would serve as a benefit limiting the potential destruction of habitat due to structural failure.

Anticipated Project impacts are temporary, localized effects that would occur during construction. Once operational, the project would not have significant long-term adverse environmental impacts or induce development in the area that could combine with other projects' effects to create cumulatively significant impacts. All environmental impacts that could occur as a result of the Project would be reduced to a less-than-significant level through compliance with existing regulations and implementation of mitigation measures for biological resources, cultural resources, geology and soils, hydrology and water quality, land use and planning, noise, and tribal cultural resources. These required mitigation measures would similarly ensure that the Project's contribution to cumulative species loss, habitat loss, or other regional environmental effects, would not be cumulatively considerable. Therefore, the proposed project would not result in a cumulatively considerable contribution to a significant cumulative impact.

c) Adverse effects on human beings are typically associated with air quality, hazards and hazardous materials, and noise impacts. These impacts are addressed in Section 3, *Air Quality*, Section 8, *Hazards and Hazardous Materials*, and Section 12, *Noise*. As discussed in detail in these sections, the Project would not result in substantial adverse effects to humans due to exposure to hazards and hazardous materials or air quality criteria pollutants in excess of established regulatory thresholds set by SLOAPCD. Mitigation Measures AQ-1 through AQ-4 would enforce SLOAPCD measures to minimize fugitive dust, diesel emissions, and the release of naturally occurring asbestos. Mitigation Measures N-1 and N-2 would reduce the potential Project impacts associated with a temporary increase in ambient noise levels by requiring BMPs to implemented to reduce noise levels and training to be administered to construction personnel. With incorporation of these mitigation measures, potential effects on humans would be reduced to a less-than-significant impact. Therefore, the Project would not have environmental effects which would cause substantial adverse effects on human beings. This impact would be less than significant with mitigation incorporated.

22. EARLIER ANALYSES

Earlier analysis may be used where, pursuant to the tiering, program EIR, or other CEQA process, one or more effects have been adequately analyzed in an earlier EIR or Negative Declaration. Section 15063 (c) (3) (D). In this case a discussion should identify the following items:
a) **Earlier analysis used.** Identify earlier analyses and state where they are available for review.
Not applicable.
b) **Impacts adequately addressed.** Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
Not applicable.
c) **Mitigation measures.** For effects that are "Less than Significant with Mitigation Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions of the project.
Not applicable.

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Attachments

A. San Luis Obispo Creek Bank Stabilization Project Biological Resources Assessment. Rincon Consultants, Inc., June 2022

B. Jurisdictional Delineation for the San Luis Obispo Creek Bank Stabilization Project near Johnson Avenue, City of San Luis Obispo, San Luis Obispo County California. Rincon Consultants, Inc., July 2022

C. San Luis Obispo Creek Bank Stabilization Project Cultural Resources Assessment Report. Rincon Consultants, Inc., June 2022. (Note: this report is not included in the public release Draft IS-MND because it includes confidential information related to the locations of sensitive resources. The report is on file with the City.)

D. Geotechnical Engineering Report San Luis Obispo Creek Bank Stabilization Pismo Street San Luis Obispo, California. Earth Systems Pacific. December 30, 2021.

REQUIRED MITIGATION AND MONITORING PROGRAMS

Aesthetics

AES-1 *Nighttime Work Requirements*. In the event nighttime work is necessary during the Project construction phase, any portable lighting shall be shielded and/or directed away from adjacent properties.

Monitoring Program: All mitigation measures shall be shown on construction plans. The Public Works Department shall verify compliance prior to issuance of construction permits. Nighttime Work Requirements shall be identified on any prepared and submitted Night Work Permits. The Public Works Department shall inspect the site to ensure construction activities are completed in accordance with approved plans, permits, and mitigation measures.

Air Quality

AQ-1 *Fugitive Dust Reduction*. Throughout the construction phase of the project, the project proponent/contractor shall implement the following fugitive dust reduction measures to minimize impacts to sensitive receptors. These fugitive dust reduction measures shall be shown on grading plans:

- Reduce the amount of the disturbed area where possible;
- Use of water trucks or sprinkler systems in sufficient quantities to prevent airborne dust from leaving the site and from exceeding the APCD's limit of 20% opacity for greater than 3 minutes in any 60-minute period. Increased watering frequency would be required whenever wind speeds exceed 15 mph. Reclaimed (non-potable) water should be used whenever possible. When drought conditions exist and water use is a concern, the contractor or builder should consider use of a dust suppressant that is effective for the specific site conditions to reduce the amount of water used for dust control;
- All dirt stockpile areas should be sprayed daily and covered with tarps or other dust barriers as needed;
- All roadways, driveways, sidewalks, etc. to be paved should be completed as soon as possible, and building pads should be laid as soon as possible after grading unless seeding, soil binders or other dust controls are used;
- All trucks hauling dirt, sand, soil, or other loose materials are to be covered or should maintain at least two feet of freeboard (minimum vertical distance between top of load and top of trailer) or otherwise comply with California Vehicle Code (CVC) Section 23114;
- "Track-Out" is defined as sand or soil that adheres to and/or agglomerates on the exterior surfaces of motor vehicles and/or equipment (including tires) that may then fall onto any highway or street as described in CVC Section 23113 and California Water Code 13304. To prevent 'track out', designate access points and require all employees, subcontractors, and others to use them. Install and operate a 'track-out prevention device' where vehicles enter and exit unpaved roads onto paved streets. The 'track-out prevention device' can be any device or combination of devices that are effective at preventing track out, located at the point of intersection of an unpaved area and a paved road. Rumble strips or steel plate devices need periodic cleaning to be effective. If paved roadways accumulate tracked out soils, the track-out prevention device may need to be modified;
- All fugitive dust mitigation measures shall be shown on grading plans;
- The contractor or builder shall designate a person or persons whose responsibility is to ensure any fugitive dust emissions do not result in a nuisance and to enhance the implementation of the mitigation measures as necessary to minimize dust complaints and reduce visible emissions below the APCD's limit of 20% opacity for greater than 3 minutes in any 60-minute period. Their duties shall include holidays and weekend periods when work may not be in progress (for example, wind-blown dust could be generated on an open dirt lot). The name and telephone number of such persons shall be provided to the APCD Compliance Division prior to the start of any grading, earthwork or demolition (Contact the Compliance Division at 805- 781-5912).
- Permanent dust control measures identified in the approved project revegetation and landscape plans should be implemented as soon as possible, following completion of any soil disturbing activities;

- Exposed ground areas that are planned to be reworked at dates greater than one month after initial grading should be sown with a fast germinating, non-invasive grass seed and watered until vegetation is established;
- All disturbed soil areas not subject to revegetation should be stabilized using approved chemical soil binders, jute netting, or other methods approved in advance by the APCD;
- Vehicle speed for all construction vehicles shall not exceed 15 mph on any unpaved surface at the construction site;
- Sweep streets at the end of each day if visible soil material is carried onto adjacent paved roads. Water sweepers shall be used with reclaimed water where feasible. Roads shall be pre-wetted prior to sweeping when feasible;
- Take additional measures as needed to ensure dust from the Project Site is not impacting areas outside the project boundary

Monitoring Program: All mitigation measures shall be shown on construction plans. The Public Works Department shall verify compliance prior to issuance of construction permits. The Public Works Department shall inspect the site to ensure construction activities are completed in accordance with approved plans, permits, and mitigation measures.

AQ-2 *Equipment Idling Restrictions.* Throughout the construction phase of the project, the project proponent/contractor shall implement the following idling restrictions to minimize impacts to sensitive receptors. These idling restrictions shall be shown on grading and construction plans:

d. Idling Restrictions Near Sensitive Receptors for Both On- and Off-Road Equipment
   5. Staging and queuing areas shall be located at the greatest distance feasible from sensitive receptor locations;
   6. Diesel idling while equipment is not in use is not permitted;
   7. Use of alternative-fueled equipment is recommended whenever possible; and
   8. Signs that specify the no-idling requirements shall be posted and enforced at the construction site.

e. Idling Restrictions for On-Road Vehicles. Section 2485 of California Code of Regulations Title 13 limits diesel-fueled commercial motor vehicles that operate in the State of California with gross vehicular weight ratings of greater than 10,000 pounds and licensed for operation on highways. It applies to California- and non-California-based vehicles. In general, the regulation specifies that drivers of said vehicles:
   3. Shall not idle the vehicle's primary diesel engine while vehicle is not in use, except as noted in Subsection (d) of the regulations; and
   4. Shall not operate a diesel-fueled auxiliary power system (APS) to power a heated, air conditioner, or any ancillary equipment on that vehicle during sleeping or resting in a sleeper berth for greater than five minutes at any location when within 100 feet of a restricted area, except as noted in Subsection (d) of the regulation.

f. Idling Restrictions for Off-Road Equipment. Off-road diesel equipment shall comply with the no-idling requirement. Signs shall be posted at the construction site to remind off-road equipment operators of the no-idling requirement.

Monitoring Program: All mitigation measures shall be shown on construction plans. The Public Works Department shall verify compliance prior to issuance of grading/construction permits. The contractor or builder shall designate a person or persons to monitor fugitive dust emissions as necessary during construction to minimize dust complaints, reduce visible emissions below 20 percent opacity, and to prevent transport of dust offsite. Their duties shall include holidays and weekend periods when work may not be in progress. The name and telephone number of such persons shall be provided to the SLOAPCD Compliance Division prior to the start of any grading or earthwork. The Public Works Department shall site inspect to ensure construction activities are completed in accordance with approved plans, permits, and mitigation measures.

AQ-3 *Naturally Occurring Asbestos Evaluation.* Prior to initiation of ground-disturbing activities, the applicant shall retain a registered geologist to conduct a geologic evaluation of the property, including sampling and testing for naturally occurring asbestos in full compliance with SLOAPCD requirements and the CARB ATCM for Construction, Grading, Quarrying, and Surface Mining Operations (17 California Code of Regulations 93105). This geologic evaluation shall be submitted to the City Community Development Department upon completion. If the geologic evaluation determines

that the project would not have the potential to disturb asbestos containing materials, the applicant must file an Asbestos ATCM exemption request with the SLOAPCD.

Monitoring Program: All mitigation measures shall be shown on construction plans. The Public Works Department, or their designee, shall submit the exemption request form and geologic evaluation to SLOAPCD for review prior to the issuance of grading/construction permits. The City Public Works Department, or their designee, shall verify compliance with the requirements of the NOA ATCM by confirming SLOAPCD receipt of the exemption request and SLOAPCD's concurrence with the exemption or any subsequent SLOAPCD requirements resulting from the exemption request.

AQ-4 *Minimization of Asbestos-Related Impacts.* If asbestos containing materials are present on-site, proposed earthwork, demolition, and construction activities shall be conducted in full compliance with the various regulatory jurisdictions regarding asbestos containing materials, including the CARB ATCM for Construction, Grading, Quarrying, and Surface Mining Operations (17 California Code of Regulations 93105) and requirements stipulated in the National Emission Standard for Hazardous Air Pollutants (NESHAP; 40 Code of Federal Regulations Section 61, Subpart M – Asbestos). These requirements include, but are not limited to, the following:

- Written notification, within at least 10 business days of activities commencing, to the SLOAPCD;
- Preparation of an asbestos survey conducted by a Certified Asbestos Consultant; and
- Implementation of applicable removal and disposal protocol and requirements for identified ACM.

Monitoring Program: Any subsequent requirements identified by SLOAPCD that would be required to be implemented during project construction (e.g., dust mitigation or air monitoring) shall be printed on all construction plans.

Biological Resources

BIO-1 *Worker Environmental Awareness Program.* Prior to initiation of construction activities (including staging and mobilization), all personnel associated with Project construction shall attend Worker Environmental Awareness Program (WEAP) training, conducted by a qualified biologist, to aid workers in recognizing special-status species (e.g., California red-legged frog and steelhead), nesting birds, and other biological resources that have the potential to occur in the Project Site. The specifics of this program shall include identification of special-status species with potential to occur, a description of their regulatory status and habitat requirements, general ecological characteristics of any other sensitive resources, and a review of the limits of construction and mitigation measures required to reduce impacts to biological resources within the Project Site. A fact sheet conveying this information shall also be prepared for distribution to all contractors, their employers, and other personnel involved with construction. All employees shall sign a form provided by the trainer indicating they have attended the WEAP and understand the information presented to them. A WEAP training recorded by a qualified biologist specifically for the Project may be utilized if in-person trainings are restricted due to COVID-19 or if the construction schedule makes it infeasible for a biologist to train each new crew member in person. The crew foreman shall be responsible to ensure crew members are aware of project boundaries and adhere to the guidelines and restrictions designed to avoid or minimize effects to California red-legged frog, Steelhead, nesting birds, and other sensitive species and biological resources.

Monitoring Program: All mitigation measures shall be shown on construction plans. The qualified biologist or Environmental Monitor shall monitor environmental compliance of the construction activities throughout the construction period or as stipulated in the species- or resource-specific mitigation measure and provide monitoring reports to the City.

BIO-2 *Project Delineation, Staging Areas, Materials Storage, and Waste Management.* Prior to the start of any Project activities (including any vegetation clearing), sturdy, high-visibility fencing shall be installed to protect jurisdictional areas and sensitive resource areas adjacent to the Project Site. This fencing shall be placed so that unnecessary impacts to adjacent habitat are avoided. No Project activities (including storage of materials) shall occur outside of the "Project Limits". The required fencing shall remain in place during the entire construction period and be maintained as needed by the construction contractor.

Areas of temporary disturbance shall be minimized to the extent practicable. Staging and laydown areas shall be limited to sites that are unvegetated and previously disturbed (e.g., existing paved roads). Materials shall be stored on impervious surfaces or plastic ground covers to prevent any spills or leakage. Material storage shall be as far from San

Luis Obispo Creek as is feasible. Construction materials and spoils shall be protected from stormwater runoff using temporary perimeter sediment barriers such as fiber rolls, sand/gravel bags, and straw bale barriers, as appropriate.

All trash shall be properly contained and regularly disposed of such that it does not leave the Project Site, enter the San Luis Obispo Creek channel, or attract wildlife. Following Project completion, all trash and construction debris shall be removed from the work and laydown areas.

Monitoring Program: All mitigation measures shall be shown on construction plans. The Environmental Monitor shall monitor environmental compliance of the construction activities throughout the construction period or as stipulated in the Mitigation and Monitoring Plan and provide monitoring reports to the City.

BIO-3 *Best Management Practices to Protect Water Quality.* All vehicles and equipment shall be in good working condition and checked daily for leaks. The construction contractor shall prevent petroleum products, or any other pollutant, from contaminating the soil or entering the San Luis Obispo Creek channel (dry or otherwise). When vehicles or equipment are not in use, mats or drip pans shall be placed below vehicles to contain fluid leaks.

Project activities shall occur between June 1 and October 15, to the maximum extent possible, to avoid working in the creek channel during the rainy season. Work during times of precipitation shall be avoided to the maximum extent possible. The City or their contractor(s) or representative(s) shall utilize Best Management Practices (BMPs), including (but not limited to): berms, burlap-wrapped fiber rolls, jute netting, sand/gravel bags, and straw bale barriers to stabilize work areas and prevent any sediment or pollutants from entering the creek.

To further protect water quality and sensitive habitat areas, no refueling, cleaning, or maintenance of equipment or vehicles shall occur within the creek channel. Spill kits shall be kept on the Project Site and readily available at all times. Should a spill occur in the work area, clean-up shall be conducted immediately, the contaminant(s) removed to the greatest extent feasible, and any contaminated materials disposed of properly. The Project foreman or other designated liaison shall immediately notify the biological monitor and the City following any project spills. Additionally, the off-site tracking of loose construction and landscape materials shall be prevented and/or cleaned up daily, with street sweeping, vacuuming, and/or rumble plates, as appropriate.

Monitoring Program: All mitigation measures shall be shown on construction plans. The Environmental Monitor shall monitor environmental compliance of the construction activities throughout the construction period or as stipulated in the Mitigation and Monitoring Plan and provide monitoring reports to the City.

BIO-4 *Invasive Species Management.* Prior to construction, Project plans and specifications shall clearly identify methodology for removal and disposal of invasive exotic species found within the Project Site. Invasive vegetation removed within the Project Site shall be properly disposed of at an off-site location. All construction materials (including jute netting, fiber rolls, and straw bales) brought into the Project Site shall be free from invasive plant material. All revegetation efforts (e.g., hydroseeding, planting container stock or cuttings) within the Project Site shall include only native, riparian plant species appropriate for the Project Site. Invasive wildlife species, including bullfrog (*Rana catesbeiana*), and signal and red swamp crayfish (*Pacifasticus leniusculus*; *Procambarus clarkii*), shall be removed from the Project Site by a qualified biologist using methodologies approved by the USFWS, NMFS, and/or CDFW.

Monitoring Program: All mitigation measures shall be shown on construction plans. The Environmental Monitor shall monitor environmental compliance of the construction activities throughout the construction period or as stipulated in the Mitigation and Monitoring Plan and provide monitoring reports to the City. Any required permits shall be obtained from the state and federal agencies prior to issuance of grading permits.

BIO-5 *Preconstruction Survey for Special-Status Plant Species.* A preconstruction survey for special-status plant species shall be conducted by a qualified botanist within the Project Site prior to any site disturbance and during the bloom period of marsh sandwort and adobe sanicle. If these, or any other special-status plant species, are observed within the Project Site, the location(s) of individual plants or group(s) of plants shall be clearly flagged by the qualified botanist and avoided during Project construction. If impacts to special-status plant species cannot be avoided, then

compensatory mitigation would be required by the regulatory agencies and/or lead CEQA agency (i.e., the City) through the required Habitat Mitigation and Monitoring Plan (Mitigation Measure BIO-12).

Monitoring Program: Special status species protection plans and surveys shall be submitted to for review and approval by the City Public Works Department and City Biologist prior to the approval and issuance of grading and construction permits. Any required permits shall be obtained from the state and federal agencies prior to issuance of grading/construction permits.

BIO-6 *Avoidance and Minimization Measures for Pacific Lamprey.* No project activities shall occur in flowing or standing water within San Luis Obispo Creek, with the exception of the installation and removal of the temporary creek diversion. Capture and relocation surveys for Pacific lamprey shall be conducted by qualified and/or CDFW-approved biologists prior to the commencement of diversion construction, as well as during dewatering of the work areas. A second capture and relocation survey shall be conducted prior to the removal of the diversion. Pacific lamprey (adults, macropthalmia, or ammocoetes) found within the Project Site prior to or during dewatering shall be captured using seine nets or dip nets and relocated to a predetermined relocation site (with appropriate habitat features) within San Luis Obispo Creek. Lamprey shall be placed in aerated 5-gallon buckets and held no more than 20 minutes before relocation. These capture and relocation efforts can be conducted concurrently with the Steelhead capture and relocation efforts described in BIO-7, though lamprey shall be held in separate buckets to avoid predation.

Monitoring Program: All mitigation measures shall be shown on construction plans. Any required permits shall be obtained from the state and federal agencies prior to issuance of grading permits. The Environmental Monitor shall monitor environmental compliance of the construction activities throughout the construction period or as stipulated in the species- or resource-specific mitigation measure and provide monitoring reports to the City.

BIO-7 *Steelhead Capture and Relocation:* No Project activities shall occur in flowing or standing water in San Luis Obispo Creek, with the exception of the installation and removal of the temporary creek diversion. Project activities within the San Luis Obispo Creek channel are proposed to occur between June 1 and October 15, outside of the steelhead migration season. If work extends into the migration season, approval must be obtained from the appropriate resource agencies. If approved, at a minimum, additional requirements typically include fish passage around the work area and additional winter water quality and bank stabilization measures. Flow conditions during this time are variable and can range from a summer low flow condition to a dry condition. Project components that require surface water diversion (detailed below) shall also require the capture and relocation of aquatic species, including steelhead, in the reach that will become dewatered. A qualified biologist approved by NMFS to handle steelhead shall be present during all dewatering, as well as all stages of the installation and removal of surface water diversions. To minimize effects to steelhead, the qualified biologist with qualified biological assistants shall conduct steelhead capture and relocation surveys prior to the commencement of diversion construction, as well as during dewatering of the diverted areas and removal of the diversion. Block nets shall be erected upstream and downstream of the Project Site and steelhead shall be removed from the block-netted area by seine, dipnets, or electrofishing due to substantial obstacles in the creek potentially making netting ineffective and relocated to an approved relocation site within San Luis Obispo Creek that contains suitable habitat that would not be affected by Project activities. Block nets shall remain in place until the diversion is functional, at which time the downstream and upstream block nets shall be removed. Fish shall be placed in aerated 5-gallon buckets and held no more than 20 minutes before relocation. Smaller fish, including steelhead young of the year, shall be placed in separate aerated buckets to avoid predation. Non-native fishes and invertebrates shall be removed from the creek by qualified biologists.

If it is anticipated that surface flow may soon become discontinuous at the diversion site, a block net shall be deployed just upstream of the diversion to block fish from entering the diversion from upstream. No block net shall be deployed downstream to allow fish located within the diversion area to exit downstream. Once surface flows become discontinuous, the qualified biologist with qualified biological assistants shall conduct steelhead capture and relocation surveys within any isolated pools/habitats. Stranded fish shall be relocated to the original approved relocation site.

A surface water diversion plan shall be prepared by the construction contractor and shall include the various structures and measures that would divert creek flow upstream of the Project Site, divert flow around or through the work area, and discharge downstream, while avoiding water quality and special-status species impacts. This plan shall be prepared by a licensed and qualified engineer in consultation with a licensed and qualified biologist. The plan shall include such components as predicted diversion flow rates, pump capacities, pump screen mesh size, material to be used, contingency plans, a removal and restoration plan, as well as design accommodations for special-status species

including fish passage requirements. A qualified biologist shall be present during dewatering and during the installation and removal of surface water diversions. A detailed diversion plan shall be submitted to the NMFS, RWQCB, USACE, and CDFW for approval at least 15 days prior to the construction of the diversion.

A relocation site shall be identified by a qualified biologist and a relocation site memo shall first be submitted to the City biologist for review and then be submitted to NMFS for approval at least 15 days prior to the construction of the first diversion. The relocation site shall be in a known perennial location in San Luis Obispo Creek, preferably upstream of the Project Site. The relocation site shall provide adequate depth in the form of scour (>1 foot) with instream cover. Overhead canopy cover shall also be present, if possible. Water temperature within the relocation site shall be well within published steelhead tolerances. Other water quality parameters, including (but not limited to) dissolved oxygen, pH, and turbidity shall also be within steelhead tolerances.

A qualified biological monitor shall be on site full-time during all Project activities that involve creek dewatering and/or the installation or removal of surface water diversions. Once the work area is completely blocked from the creek and dewatered, and if work conditions and/or prolonged Project activities are conducted outside of the active San Luis Obispo Creek channel, the monitor shall be on site for no less than one day per week.

Any worker(s) who inadvertently injure(s) or kill(s) a steelhead (or any other special-status species) or find(s) one dead or injured, shall immediately report the incident to the biological monitor. The monitor or environmental Project manager shall then immediately notify the City. The City will then provide verbal notification, as appropriate, to the USFWS Endangered Species Office in Ventura, California; NMFS in Long Beach, California; and the local CDFW contact, within three working days. The Project proponents shall provide written notification of the incident to the USFWS, NMFS, and CDFW within five working days.

Although this measure was developed based on years of experience capturing and relocation fish including steelhead, this measure may be adjusted to include any additional mitigation elements or modifications to existing mitigation elements included in project permits.

Monitoring Program: All mitigation measures shall be shown on construction plans. Any required permits shall be obtained from the state and federal agencies prior to issuance of grading permits. The Environmental Monitor shall monitor environmental compliance of the construction activities throughout the construction period or as stipulated in the species- or resource-specific mitigation measure and provide monitoring reports to the City.

BIO-8 *Avoidance and Minimization Measures for California Red-legged Frog.* A USFWS-approved biologist shall survey the Project Site no more than 48 hours before the onset of work activities. If the biologist finds any life stage of the California red-legged frog and these individuals are likely to be killed or injured by work activities, the biologist shall be allowed sufficient time to relocate them from the Project Site before work begins. The biologist shall relocate the California red-legged frog the shortest distance possible to a predetermined location within San Luis Obispo Creek that contains suitable habitat and that would not be affected by Project activities.

A USFWS-approved biologist shall be present during installation and removal of the creek diversion, and during all vegetation removal and initial ground disturbance. After this time, the USFWS-approved biologist can designate another qualified biologist to monitor on-site compliance with all mitigation measures. Diversion intakes shall be screened with wire mesh not larger than 0.2 inch to prevent any California red-legged frogs not initially detected, and juvenile steelhead from entering the pump system.

To ensure that diseases are not conveyed between sites, the USFWS-approved biologist, shall follow the fieldwork code of practice developed by the Declining Amphibian Populations Task Force at all times.

Project activities shall occur between June 1 and October 15, to the maximum extent feasible, in order to avoid the California red-legged frog breeding season.

Monitoring Program: All mitigation measures shall be shown on construction plans. Any required permits shall be obtained from the state and federal agencies prior to issuance of grading permits. The USFWS-approved biologist shall submit a report documenting the findings of the survey to the City Public Works Department and City Biologist for review and

approval. The Environmental Monitor shall monitor environmental compliance of the construction activities throughout the construction period or as stipulated in the species- or resource-specific mitigation measure and provide monitoring reports to the City.

BIO-9 *Avoidance and Minimization Measures for Other Special-Status Amphibians and Reptiles.* A preconstruction survey for special-status amphibians and reptiles (e.g., lesser slender salamander, southwestern pond turtle, and coast range newt) shall be conducted within the Project Site by a qualified biologist no more than 48 hours before the onset of work activities. This survey can be conducted concurrently with the preconstruction survey for the California red-legged frog. If any special-status amphibian or reptile species are found in areas where they are likely to be killed or injured by work activities, then a qualified biologist shall be allowed sufficient time to relocate them from the Project Site before work begins. A qualified biologist shall also be on site during any vegetation removal or initial ground disturbing activities. If any special-status species be encountered within the Project Site prior to or during these activities, work shall be halted until the biologist has sufficient time to move any individuals from the site.

Monitoring Program: All mitigation measures shall be shown on construction plans. The approved biologist or Environmental Monitor shall submit a report documenting the findings of the survey to the City Public Works Department and City Biologist for review and approval. Any required permits shall be obtained from the state and federal agencies prior to issuance of grading permits. The Environmental Monitor shall monitor environmental compliance of the construction activities throughout the construction period or as stipulated in the species- or resource-specific mitigation measure and provide monitoring reports to the City.

BIO-10 *Preconstruction Survey for Special-Status Birds and Other Nesting Birds.* A preconstruction nesting bird survey shall be conducted by a qualified biologist no more than 14 days prior to initiation of Project activities. The survey shall be conducted within the Project Site and include a 50-foot buffer for passerines and a 500-foot buffer for raptors. Portions of the buffer areas that may be inaccessible due to private property constraints shall be surveyed from the Project Site and/or public roads using binoculars. The survey shall be conducted by a biologist familiar with the identification of avian species known to occur in the region and shall focus on trees, vegetated areas, and other potential nesting within the vicinity of the Project Site. If nests are found, an appropriate avoidance buffer (typically 50 feet for passerine species and 500 feet for raptors) shall be determined and demarcated by the biologist with high visibility material located within or adjacent to the Project Site.

All Project personnel shall be notified as to the existence of the buffer zones and to avoid entering buffer zones during the nesting season. No Project activities shall occur within the buffer until the avian biologist has confirmed that breeding/nesting is complete, and the young have fledged the nest. Encroachment into the buffer shall occur only at the discretion of the qualified biologist.

Monitoring Program: All mitigation measures shall be shown on construction plans. The approved biologist or Environmental Monitor shall submit a report documenting the findings of the survey to the City Public Works Department and City Biologist for review and approval. Any required permits shall be obtained from the state and federal agencies prior to issuance of grading permits. The Environmental Monitor shall monitor environmental compliance of the construction activities throughout the construction period or as stipulated in the species- or resource-specific mitigation measure and provide monitoring reports to the City.

BIO-11 *Onsite Biological Monitoring.* A qualified biologist shall be onsite during all vegetation removal, initial ground disturbing activities, and/or during any construction activities that may impact sensitive biological resources, such as dewatering and diversion installation or removal. The biologist shall have the authority to temporarily halt or redirect work to avoid impacts to special-status species or other protected biological resources. Once the diversion has been installed and vegetation removal and initial ground-disturbing activities have been completed, the biological monitor shall be onsite for no less than two days per week, for a minimum two-hour period per day. A Biological Monitoring Plan shall be created for the project, which shall include species-specific details regarding preconstruction surveys and on-site monitoring. The Monitoring Plan shall be approved by the City Biologist prior to the initiation of construction activities.

Monitoring Program: All mitigation measures shall be shown on construction plans. Any required permits shall be obtained from the state and federal agencies prior to issuance of grading permits. The Environmental Monitor shall monitor

environmental compliance of the construction activities throughout the construction period or as stipulated in the species- or resource-specific mitigation measure and provide monitoring reports to the City.

BIO-12 *Habitat Mitigation and Monitoring Plan.* Project impacts to habitat within the San Luis Obispo Creek corridor shall be mitigated through implementation of a Habitat Mitigation and Monitoring Plan (HMMP). The HMMP shall be prepared by a qualified biologist/restoration ecologist and approved by each of the regulatory agencies (i.e., the NMFS, USACE, RWQCB, and CDFW) prior to the initiation of construction activities. The HMMP shall include details on the restoration of portions of San Luis Obispo Creek that will be disturbed by the Project, including jurisdictional features, sensitive natural communities (i.e., Mixed Riparian Hardwood), and associated riparian and stream habitats. If any Project impacts to listed plant species be unavoidable, then the HMMP shall also include details on the compensatory mitigation required for impacts to these species. For impacts to jurisdictional waters and riparian habitat, the HMMP would be required to include the following minimum compensatory mitigation ratios:

- On-site mitigation for permanent impacts to jurisdictional/sensitive areas implemented at a minimum ratio of 2:1; and
- On-site mitigation for temporary impacts to jurisdictional/sensitive areas implemented at a minimum ratio of 1:1.

Final mitigation ratios required by the regulatory agencies during the permitting process may differ but shall be confirmed prior to the initiation of applicable construction activities.

At a minimum, the HMMP shall include the following:

- A description of the jurisdictional waters, sensitive plant communities, riparian and stream habitat, and/or sensitive plant species disturbed by the project, and how the mitigation method (e.g., restoration, invasive species removal, enhancement) will achieve the necessary mitigation goal/s;
- a plant palette and methods of salvaging, propagating, seeding, and/or planting the site to be restored;
- methods of soil preparation;
- type(s) and method(s) of instream habitat enhancement (e.g., installation of downed woody debris);
- a schedule for restoration activities including weed abatement, propagating and planting, soil preparation, erosion control, qualitative and quantitative monitoring, and reporting;
- identification measurable performance standards for each objective to evaluate the success of the compensatory mitigation (at a minimum, 80% absolute cover of vegetation by end of year 3 with less than 10% comprised of non-native vegetation);
- maintenance and monitoring necessary to confirm the mitigation area meets the success criteria; and
- Identification of contingency and adaptive management measures to address unforeseen changes in site conditions or other components of the mitigation project.

Where feasible, mitigation would be required occur on-site and may include hydroseeding with a native riparian seed mix, installing native riparian container stock, and/or removal of invasive plant species (e.g., tree of heaven, elmleaf blackberry). If on-site mitigation is found to be infeasible by the qualified biologist/restoration ecologist, off-site mitigation shall occur within the San Luis Obispo Creek corridor as close to the site as is feasible, based on the professional judgment of the qualified biologist/restoration ecologist.

Monitoring Program: All mitigation measures shall be shown on construction plans. The City Public Works Department and City Biologist shall review and approve the HMMP for compliance prior to issuance of the grading permits and onset of construction.

Cultural Resources

CR-1 *Worker Environmental Awareness Program.* A qualified archaeologist shall conduct a Worker Environmental Awareness Program training on archaeological sensitivity for all construction personnel prior to the commencement

of any ground-disturbing activities within the Project Site. The training shall be developed by an archaeologist who meets or exceeds the Secretary of Interior's Professional Qualification Standards for archaeology (National Park Service [NPS] 1983). Archaeological sensitivity training shall include a description of the types of cultural materials that may be encountered, cultural sensitivity issues, regulatory issues, and the proper protocol for treatment of the materials in the event of a find.

Monitoring Program: All mitigation measures shall be shown on construction plans. The qualified archaeologist shall conduct the Program training and provide documentation of compliance to the City Public Works Department.

CR-2 *Unanticipated Discovery of Cultural Resources.* In the event cultural resources are encountered during ground-disturbing activities, work within 50 feet of the find shall halt and a City-qualified archaeologist shall be contacted immediately to evaluate the find, pursuant to *CEQA Guidelines* Section 15064.5(f). If the archaeologist determines further information is needed to evaluate significance, a testing plan shall be prepared and implemented prior to resuming project activities. If the find is determined to be significant by the qualified archaeologist, the qualified archaeologist shall implement a data recovery plan designed to obtain information about the discovery. Recovery of significant cultural resources described in the data recovery plan, if necessary, shall include but not be limited to, manual or mechanical excavations, monitoring, soils testing, photography, mapping, or drawing to adequately recover the scientifically consequential information from and about the archaeological resource. Further treatment may be required, including site recordation, excavation, site evaluation, and data recovery. Any artifacts uncovered shall be recorded and removed for storage at a location to be determined by the archaeologist. The data recovery plan shall be approved by the City prior to the implementation of data recovery activities. Once approved, the qualified archaeologist shall carry out data recovery in conformance with the data recovery plan. All cultural resource work shall follow accepted professional standards in recording any find including submittal of standard Department of Parks and Recreation Primary Record forms (DPR Form 523) and location information to the appropriate California Historical Resources Information System office for the Project Site. If the find is prehistoric, then a native American representative shall also be contacted to participate in the evaluation of the find.

Monitoring Program: All mitigation measures shall be shown on construction plans. In the event of unanticipated discovery, the qualified archaeologist shall submit an evaluation report for review and approval by the City Public Works Department and Community Development Department. Compliance with any required subsequent actions shall be ensured by the City.

CR-3 *Discovery* of *Human Remains.* If human remains are discovered during construction activities, work shall immediately stop within the immediate vicinity of the area where the remains were discovered. The County coroner shall immediately be notified of the find, and a date and time for the County coroner to evaluate the find shall be determined by the applicant, City, and County coroner. The County coroner shall make a determination of the origin and disposition of the remains. If the County coroner determines the remains are prehistoric, the County coroner shall notify the NAHC which will determine a Most Likely Descendant (MLD). The MLD shall perform site inspection of the site within 48 hours of being granted site access and may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials. The applicant, City, County coroner, and MLD, if applicable, shall jointly decide on a date, time, and method of removal of remains. Removal shall be carried out prior construction resuming within the vicinity.

Monitoring Program: All mitigation measures shall be shown on construction plans. In the event of unanticipated discovery, the qualified archaeologist shall submit an evaluation report for review and approval by the City Public Works Department and Community Development Department. Compliance with any required subsequent actions shall be ensured by the City.

Geology and Soils

GEO-1 *Implementation of Geotechnical Design Features.* Prior to the issuance of grading permits, the construction contractor shall retain a qualified geotechnical engineer to incorporate all applicable geotechnical recommendations made in the Project specific Geotechnical Engineering Report for the purpose of reducing impacts related to soil expansion. Such recommendations include, but are not limited to, retaining wall foundation design, deepening foundations, and moisture conditioning soil. Geotechnical recommendations shall be noted on site plans and provided to the City for

approval prior to the issuance of grading permits. The qualified geotechnical engineer shall be retained throughout construction to provide observation during grading and backfill, wall construction, and oversight of soil special inspection, as detailed in the Geotechnical Engineering Report. At the completion of construction, the qualified geotechnical engineer shall provide written confirmation to the City that all applicable geotechnical recommendations were followed.

Monitoring Program: The Public Works Department shall verify compliance prior to issuance of grading permits and throughout implementation of the Project.

Hydrology and Water Quality

Implement Mitigation Measure BIO-3.

Land Use and Planning

Implement Mitigation Measures BIO-4, BIO-11, and BIO-12.

Noise

N-1 *Noise-Reducing Best Management Practices.* For the entire duration of the construction phase of the project, the following BMPs related to the reduction of construction noise shall be adhered to:

- Stationary construction equipment that generates noise that exceeds 60 dBA at the project boundaries shall be shielded with the most modern noise control devises (i.e. mufflers, lagging, and/or motor enclosures).
- Impact tools (e.g., jack hammers, pavement breakers, rock drills, etc.) used for project construction shall be hydraulically or electrically powered wherever possible to avoid noise associated with compressed-air exhaust from pneumatically powered tools.
- Where use of pneumatic tools is unavoidable, an exhaust muffler on the compressed-air exhaust shall be used.
- All construction equipment shall have the manufacturers' recommended noise abatement methods installed, such as mufflers, engine enclosures, and engine vibration insulators, intact and operational.
- All construction equipment shall undergo inspection at periodic intervals to ensure proper maintenance and presence of noise control devices (e.g., mufflers, shrouding, etc.).
- Plan noisier operations and activities during times less sensitive to nearby receptors.
- Maintain good public relations with surrounding community members and provide frequent activity updates of all construction activities. Let all surrounding community members know that all noise-related complaints shall be directed to the City Public Works Department.

Monitoring Program: All mitigation measures shall be shown on construction plans. The City Public Works Department or their designee shall ensure compliance throughout construction. Permit compliance staff shall periodically inspect the site for compliance with activity schedules and respond to complaints.

N-2 *City Approval and Personnel Briefing*. Construction plans shall note construction hours, truck routes, and all construction noise BMPs, and shall be reviewed and approved by the City Community Development Department prior to issuance of grading/building permits. The City shall provide and post signs stating these restrictions at construction entry sites prior to commencement of construction and maintained throughout the construction phase of the project. All construction workers shall be briefed at a preconstruction meeting on construction hour limitations and how, why, and where BMP measures are to be implemented. Noise-related complaints shall be directed to the City Public Works Department.

Monitoring Program: All mitigation measures shall be shown on construction plans. The City Public Works Department or their designee shall ensure compliance throughout construction. Permit compliance staff shall periodically inspect the site for compliance with activity schedules and respond to complaints.

Tribal Cultural Resources

TCR-1 *Archaeological Monitoring.* Construction-related ground disturbances shall be monitored by a qualified archaeologist and a Native American representative. Prior to ground disturbance, a Construction Monitoring Treatment Plan shall be approved by the City and implemented during construction. The Construction Monitoring Treatment Plan shall provide the following:

a. Parameters for monitoring, including identified activities that will require the presence of the qualified archaeological monitor and Native American representative

b. Procedures for notifying the City and other involved or interested parties in case of an unanticipated discovery. In the event that archaeological resources are encountered during construction, City of San Luis Obispo staff shall be notified and all work within 50 feet of the find shall be halted until the find is evaluated by a qualified archaeologist and appropriate mitigation, if necessary, is implemented. The qualified archaeologist and/or Native American observer shall have the authority to temporarily halt or redirect construction in the vicinity of any potentially significant discovery to allow for adequate recordation and evaluation.

c. Preparation and approval of a plan that identifies procedures that shall be used to record, evaluate, and mitigate unanticipated discoveries with a minimum of delay

d. Procedures that shall be followed in case of discovery of human remains. In the event that isolated human remains are encountered, consultation with the most likely Native American descendant, pursuant to Public Resources Code section 5097.97 and 5097.98, shall apply.

e. Results of the monitoring program shall be documented in a technical report after completion of all ground disturbances.

Monitoring Program: All mitigation measures shall be shown on construction plans. The Construction Monitoring Treatment Plan shall be prepared in consultation with the Native American representative(s) and submitted to for review and approval by the City Public Works Department and Community Development Department prior to the approval of grading and construction permits. The City Public Works Department shall ensure compliance with this measure. The qualified archaeologist shall submit the monitoring program report to the City Public Works Department and Community Development Department for review and approval.

ATTACHMENT A

San Luis Obispo Creek Bank Stabilization Project Biological Resources Assessment. Rincon Consultants, Inc., June 2022

San Luis Obispo Creek Bank Stabilization Project

Biological Resources Assessment

prepared for

Cannon Corporation
1050 Southwood Drive
San Luis Obispo, California 93401
Contact: John W. Evans, P.E.

City of San Luis Obispo
Public Works Department
919 Palm Street
San Luis Obispo, California 93401
Contact: Wyatt Banker-Hix

prepared by

Rincon Consultants, Inc.
1530 Monterey Street, Suite D
San Luis Obispo, California 93401

June 2022

RINCON CONSULTANTS, INC.
Environmental Scientists | Planners | Engineers
rinconconsultants.com

Table of Contents

Tables

Figures

Appendices

Executive Summary

This document provides the findings of a Biological Resources Assessment prepared by Rincon Consultants, Inc. for the San Luis Obispo Creek Bank Stabilization Project (Project). This report documents existing conditions at the Project site and provides an assessment of potential impacts to sensitive biological resources based upon current Project plans. This report is intended to support California Environmental Quality Act compliance and regulatory permitting for the Project.

The Project site is located near the intersection of Johnson Avenue and Pismo Street in the City of San Luis Obispo, San Luis Obispo County, California. The Project will repair drainage control infrastructure along the banks of an approximately 180-linear-foot reach of San Luis Obispo Creek. The Project Area includes the approximately 180-linear-foot reach of San Luis Obispo Creek downstream from the Johnson Avenue bridge, the adjacent creek banks, portions of Johnson Avenue and Pismo Street, and a staging and laydown area along the northwest side of Pismo Street. The Study Area for this analysis includes the Project Area plus a 50-foot buffer.

Rincon assessed the potential for 152 special-status species (114 plant species and 38 wildlife species) to occur within the Study Area. Two special-status plant species have a low potential to occur on site: marsh sandwort (*Arenaria paludicola*, federally endangered [FE]) and adobe sanicle (*Sanicula maritimai*, state rare). Thirteen special-status wildlife species have some potential to occur within the Study Area. The lesser slender salamander (*Batrachoseps minor*, state species of special concern [SSC]), merlin (*Falco columbarius*, state watchlist species [WL]), pallid bat (*Antrozous pallidus*, SSC), and Townsend's big-eared bat (*Corynorhinus townsendii*, SSC) all have a low potential to occur. The southwestern pond turtle (*Actinemys pallida*, SSC) and white-tailed kite (*Elanus leucurus*, state fully protected) have a moderate potential to occur. The monarch butterfly (*Danaus plexippus*, federal candidate), coast range newt (*Taricha torosa*, SSC), Cooper's hawk (*Accipiter cooperii*, WL), yellow warbler (*Setophaga petechia*, SSC), and California red-legged frog (*Rana draytonii*, FT) all have a high potential to occur. The Pacific lamprey (*Entosphenus tridentatus*, SSC) and the south-central California coast Distinct Population Segment of steelhead (*Oncorhynchus mykiss irideus*, federally threatened [FT]) are present within the Study Area. Nesting special-status bird species, as well as migratory and nesting birds protected under the Migratory Bird Treaty Act and California Fish and Game Code also have potential to occur throughout the Study Area during the nesting season (February 1 through September 15).

As a result of implementation of the Project, special-status species (including nesting birds) within the Project Area could be impacted by the loss of/injury to individuals, disturbance of breeding activities, disturbance to habitat, and/or construction noise and other human disturbances. These impacts are potentially significant but can be reduced to less than significant through implementation of recommended avoidance and minimization measures. Additional measures may also be required by resource agency permits and agreements.

One sensitive plant community occurs within the Study Area, Mixed Riparian Hardwood. Impacts to this community will include vegetation trimming required for construction. Implementation of recommended avoidance and minimization measures would reduce any other potential impacts to this sensitive plant community to less than significant. A Habitat Mitigation and Monitoring Plan will be prepared for the project and will ensure that necessary mitigation is installed to compensate for any temporary or permanent impacts to this sensitive plant community.

Federally designated critical habitat for both steelhead and California red-legged frog occurs within the Project Area. Temporary and permanent impacts to migration, breeding, and foraging habitat could occur due to Project activities. Implementation of recommended avoidance and minimization measures, including the Habitat Mitigation and Monitoring Plan prepared for the project, will ensure that impacts are reduced to less than significant or that necessary mitigation is installed to compensate for any unavoidable impacts to critical habitat. Adherence to resource agency permit conditions will also ensure that no permanent negative impacts to critical habitat occur.

San Luis Obispo Creek occurs within the Project Area. Potential impacts to the creek could include changes to water quality, sediment disturbance, and/or the introduction of sediment or pollutants. These impacts are potentially significant but can be reduced to less than significant through implementation of recommended avoidance and minimization measures. Other impacts to jurisdictional areas will include installation of the replacement bank stabilization infrastructure, temporary creek diversion, and vegetation trimming within the riparian habitat surrounding San Luis Obispo Creek. Implementation of the Habitat Mitigation and Monitoring Plan prepared for the project will ensure that necessary mitigation is installed to compensate for any temporary or permanent impacts to jurisdictional areas.

Project implementation would not interfere with the provisions of any applicable adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

1 Introduction

Rincon Consultants, Inc. (Rincon) has prepared this Biological Resources Assessment (BRA) on behalf of Cannon Corporation (Cannon) and the City of San Luis Obispo (City) for the San Luis Obispo Creek Bank Stabilization Project (Project). This report presents information on existing conditions, including biological resources, jurisdictional waters, and locally protected resources. The biological evaluation herein includes the results of a background literature review and reconnaissance-level field survey conducted by Rincon and provides an assessment of potential impacts to sensitive biological resources that could result from Project activities. This report is intended to support California Environmental Quality Act (CEQA) compliance and regulatory permitting for the Project.

1.1 Project Location and Study Area

The Project is located near the intersection of Johnson Avenue and Pismo Street in the City of San Luis Obispo (City), San Luis Obispo County (County), California (Figure 1). The Project is depicted on the *San Luis Obispo, California* United States Geological Survey (USGS) 7.5-minute topographic quadrangle map and is located within Township 30S, Range 12E, Section 26, Mount Diablo Meridian.

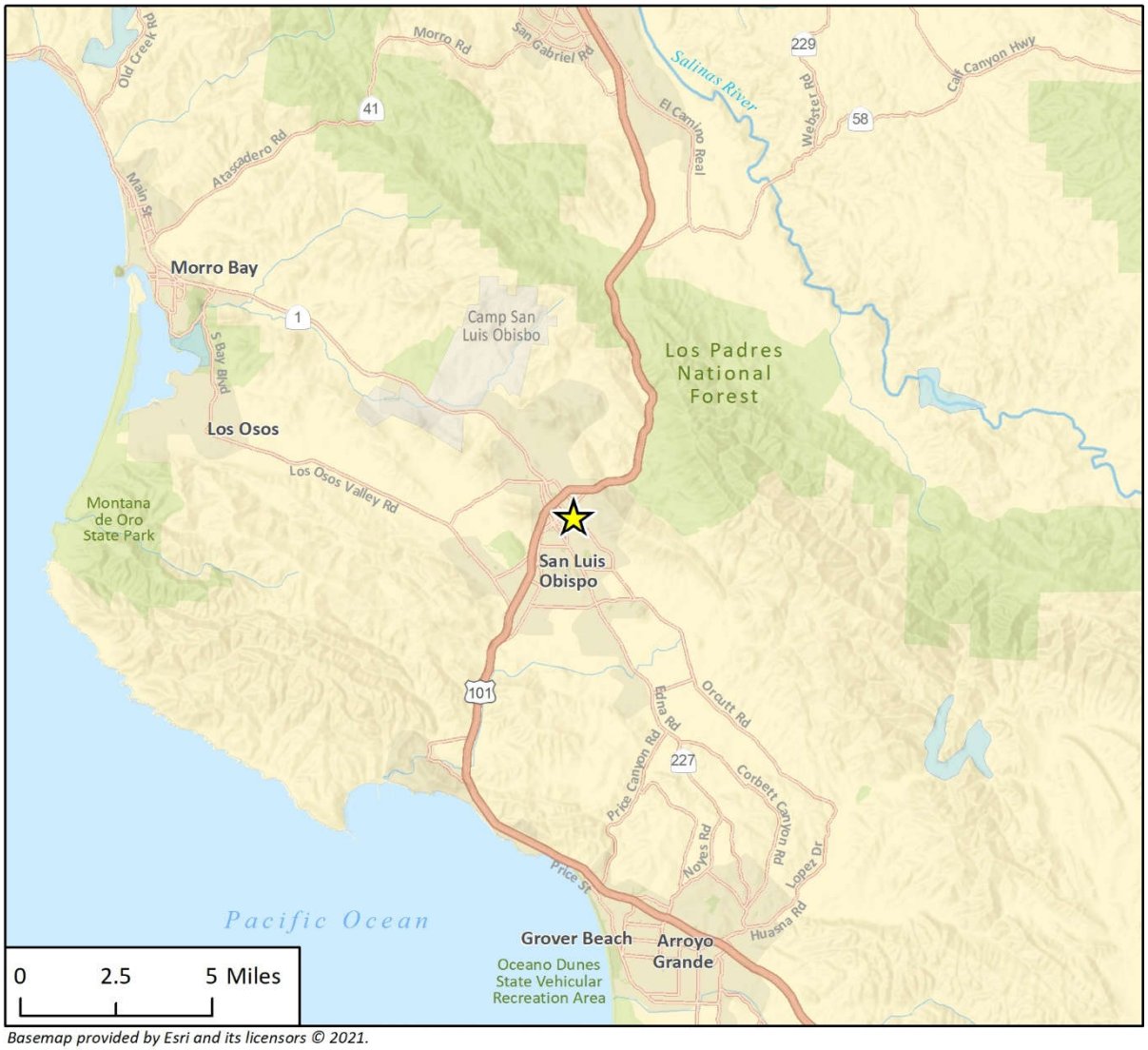
The Project Area includes an approximately 180-linear-foot reach of San Luis Obispo Creek downstream from the Johnson Avenue bridge, the adjacent creek banks, portions of Johnson Avenue and Pismo Street, and a staging and laydown area along the northwest side of Pismo Street (Figure 2). The approximately 0.35-acre Project Area includes portions of Assessor's Parcel Numbers (APNs) 002-341-007 and 002-341-016. The approximate center of the Project Area is located at latitude 35.281432°N and longitude 120.654748°W (WGS-84 datum). The Project Area is surrounded by a residential neighborhood and several commercial buildings. The Study Area for this assessment consists of the approximately 0.35-acre Project Area, plus a 50-foot buffer (Figure 2).[1]

1.2 Project Description

The Project will repair drainage control infrastructure along the banks of an approximately 180-linear-foot reach of San Luis Obispo Creek. A segment of existing concrete slope protection (circa pre-1957) on the southeast bank of San Luis Obispo Creek downstream of Johnson Avenue has failed and is in urgent need of repair. In addition, vegetative growth and the accumulation of sediment on the inner-radius of the channel bend has shifted the thalweg to the toe-of-slope along the damaged embankment, removing portions of the slope protection footing and creating additional exposure to the native soil underneath. Additional failures of the underlying soils and subsequent concrete slope protection will jeopardize adjacent infrastructure (i.e., Pismo Street and the buried utilities underneath), downstream slope protection, trees and landscaping, and adjacent private property. The existing concrete slope protection system downstream of the Johnson Avenue bridge has been in place for over 75 years and has reached the end of its useful service life. Between 2017 and 2021, the amount of damaged area increased significantly and nearly the entire length of the concrete footing, which was designed as part of the slope protection, has been undermined and/or washed away. Existing San Luis Obispo Creek channel contours continue to morph towards the toe-of-slope, undercutting the creek bank and eroding additional material.

[1] Species-specific buffers were also surveyed during the reconnaissance-level field survey, as described in Section 2.3.

Figure 1 Regional Location



Basemap provided by Esri and its licensors © 2021.

Project Location

N

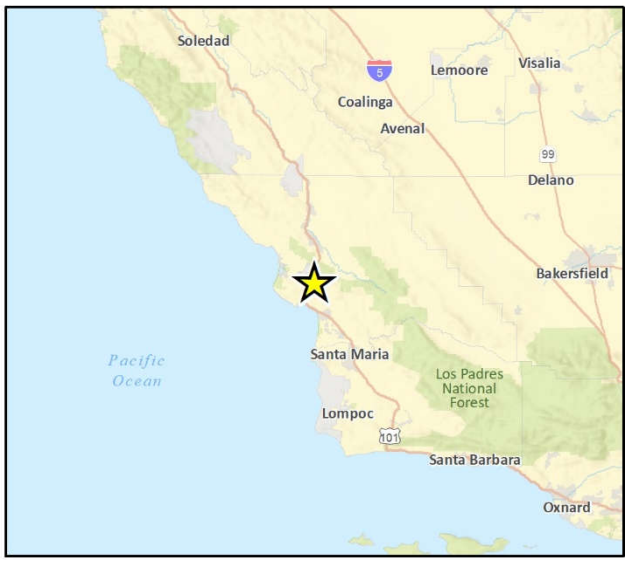


Figure 2 Project Area and Study Area

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Fig 2 Project Area and Study Area

The Project will work within the following constraints:

- prevent future scour of the south-easterly facing slope embankment (currently at a 1:1 slope);
- improve slope protection up to the Johnson Avenue bridge wingwall on the upstream side and far enough downstream to properly key into the existing sacked concrete revetment;
- protect the retaining wall, surface improvements, and buried utilities in Pismo Street;
- maintain or improve flow capacity of San Luis Obispo Creek;
- minimize disturbance of the primary creek channel; and
- protect the large trees and their root systems along the top-of-slope adjacent to Pismo Street.

The Project will include the following elements:

- staged construction to remove the deteriorated concrete footing and construct a new concrete footing and soil nail wall;
- installation of the soil nail wall over the top of the deteriorating concrete slab bank protection, with soil nails installed 4 to 6-foot on-center spacing each way, to limit the disturbance of the existing slope and to minimize work done in the creek channel;
- installation of a drainage system behind the soil nail wall to intercept groundwater flowing out of the embankment;
- vegetation grubbing within the riparian understory (approximately 2,760 square feet);
- excavation of the flood bench on the westerly side of the creek to remove sediment buildup and expand creek capacity and resiliency (approximately 125 cubic yards of sediment will be removed and hauled off site);
- addition of 6-inch-high concrete weirs connected to underlying bedrock to limit bank incision, encourage ponding, and enhance fish habitat;
- cutting four willow trees to approximately one foot above existing grade to mitigate future creek blockage due to fallen tree debris, trimming six oak trees adjacent to Pismo Street for construction access, and possibly trimming the lower limbs of one sycamore tree and one alder tree within the creek channel; and
- revegetation with the use of native riparian trees and shrubs, a native hydroseed mix, and jute or coconut fiber erosion control blankets, as per the Habitat Mitigation and Monitoring Plan (HMMP) developed for the Project.

Equipment, construction materials, and excavated materials will be raised and lowered from the Johnson Avenue Bridge. The Project will likely utilize the following construction equipment within the San Luis Obispo Creek channel:

- two small wheeled or tracked skid steers (e.g., Bobcat, Caterpillar) for flood bench excavation within the creek channel
- a backhoe loader (wheeled) or small excavator (tracked) with jackhammer and bucket/ grabber attachments for removal of the existing concrete footing;
- a backhoe loader (wheeled or tracked) for shuttling/transferring construction materials;
- a small drill rig (tracked) with a side boom drill for installing the soil nail wall (to be used if all drilling cannot be reached with an extended arm drill rig from Pismo Street);
- a platform attachment for a backhoe loader to be used as a man-lift for shotcrete placement and core drilling of existing slab revetment; and

- a hand operated rock drill (for anchoring into bedrock) with a compressor staged on Pismo Street for installation of new concrete weirs.

The first construction stage will require the work area at the base of the existing wall to be de-watered by diverting existing creek flows and dewatering the area until it is dry. A double check dam diversion with a by-pass gravity pipeline and backup pumping system will be utilized. Two 12-inch diameter diversion pipes, each 210 feet long, will extend from the upper check dam (inlet) to the lower check dam (outlet). The pipes will be placed adjacent to each other on the northwesterly side of the creek channel. The upper check dams will extend the entire width of the channel from wall to wall under the Johnson Avenue Bridge. An additional temporary check dam will be added just downstream of the limits of the flood bench excavation within the creek channel. There will also be a sump pump placed between the two upper check dams and connected to 200 feet of 4-inch diameter pressure pipe, which will outlet just downstream of the lower check dam. The current expected construction duration requiring the creek flow diversion is 60 calendar days.

The second construction stage will require the excavation of the loose soils and deteriorated concrete at the base of the existing concrete apron down to bedrock (approximately 2 to 3 feet) so that a replacement footing can be added. This work will be staggered from section to section so that it helps support uphill soil and existing concrete slope protection from sliding further down the slope.

The third stage will involve the drilling of soil nails, and the installation of prefabricated drainage materials, reinforcing steel, and shotcrete. It is likely that the soil nails will be drilled with equipment staged from above on Pismo Street and will require trimming of six coast live oak trees located between the upper retaining wall along Pismo Street and the top of the slope protection.

The fourth stage of the repair will be to install the concrete weir structures similar to the existing weir located at the downstream end of the Project Area. The weirs will be embedded 1 to 2 feet into the underlying bedrock. Weirs will be short enough (approximately 6 inches high) to allow fish passage while also increasing ponding and enhancing fish habitat. It is anticipated that vibratory and/or impact hammers will be utilized during construction for 4 to 5 days.

The final stage will include the cutting of willow trees, excavation of the flood bench, and re-vegetation. Creek shading will be temporarily reduced with the cutting of some willow trees. Re-vegetation and restoration of the Project site will replace any removed creek shading with new tree canopies consisting of native riparian species, such as white alder (*Alnus rhombifolia*) and California sycamore (*Platanus racemosa*)[2].

Construction methods that keep large equipment out of the creek corridor will be prioritized through all stages of the Project. Areas that cannot be reached by equipment operated from the existing bridge and adjacent streets will need to be excavated using smaller equipment, such as bobcats and mini-excavators, lowered into the creek area from the bridge, as previously described. The use of small equipment, rather than the sole use of hand tools, will contribute to a shorter construction period within the creek channel.

[2] Specific native riparian species installed during restoration of the Project site will be determined during the development of the Habitat Mitigation and Monitoring Plan for the Project and will require approval from regulatory agencies.

2 Methodology

2.1 Regulatory Overview

Regulated or sensitive resources studied and analyzed herein include special-status plant and wildlife species, nesting birds and raptors, sensitive plant communities, jurisdictional waters and wetlands, wildlife movement, and locally protected resources, such as protected trees. Regulatory authority over biological resources is shared by federal, State, and local authorities. Primary authority for regulation of general biological resources lies within the land use control and planning authority of local jurisdictions (in this instance, the City of San Luis Obispo).

2.1.1 Definition of Special-status Species

For the purposes of this report, special-status species include those:

- Listed as threatened or endangered under the federal Endangered Species Act (FESA) by the U.S. Fish and Wildlife Service (USFWS or National Marine Fisheries Service (NMFS); species that are under review may be included if there is a reasonable expectation of listing within the life of the Project;
- Listed as candidate, threatened, or endangered under the California Endangered Species Act (CESA) by the California Department of Fish and Wildlife (CDFW);
- Designated as Fully Protected, Species of Special Concern, or Watch List by the CDFW;
- Designated as locally important by the local agency and/or otherwise protected through local ordinance or policy;
- Plants listed as rare under the California Native Plant Protection Act by the CDFW; and/or
- Plants designated by the California Native Plant Society (CNPS) as California Rare Plant Rank (CRPR) 1 or 2, per the following definitions:
    - **Rank 1A** = Presumed extirpated in California and rare or extinct elsewhere
    - **Rank 1B** = Rare, threatened, or endangered in California and elsewhere
    - **Rank 2A** = Presumed extirpated in California but common elsewhere
    - **Rank 2B** = Rare, threatened or endangered in California, but common elsewhere
    - **Rank 3** = Needs review (necessary information to assign or reject a CRPR is lacking)
    - **Rank 4** = Uncommon in California (a watchlist for plants of limited distribution)

CRPR 1 and 2 plant species are typically regarded as rare, threatened, or endangered under CEQA by lead CEQA agencies and were considered as such in this document. CRPR 3 and 4 plant species are typically not considered for analysis under CEQA except where they are designated as rare or otherwise protected by local governments, or where cumulative impacts could result in population-level effects. The City does provides additional protection for CRPR 3 and 4 plants (City of San Luis Obispo 2014) and these plant species were therefore considered in this analysis.

Special-status species are ranked globally (G) and subnationally (S) based on NatureServe (2010) methodologies, as follows:

- **G1 or S1** - Critically Imperiled Globally or State-wide

- **G2 or S2** - Imperiled Globally or State-wide
- **G3 or S3** - Vulnerable to extirpation or extinction Globally or State-wide

2.1.2 Environmental Statutes

For the purpose of this report, potential impacts to biological resources were analyzed based on the following statutes (Appendix A):

- California Environmental Quality Act
- Federal and State Endangered Species Acts
- California Native Plant Protection Act
- Federal Clean Water Act
- California Fish and Game Code
- Migratory Bird Treaty Act
- The Bald and Golden Eagle Protection Act
- Porter-Cologne Water Quality Control Act
- City of San Luis Obispo General Plan

2.1.3 Guidelines for Determining CEQA Significance

The following threshold criteria, as defined by the CEQA Guidelines Appendix G Initial Study Checklist, were used to evaluate potential environmental effects. Based on these criteria, the proposed Project would have a significant effect on biological resources if it would:

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

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

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

d) *Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites.*

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

f) *Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional or state habitat conservation plan.*

2.2 Literature Review

Prior to conducting the reconnaissance-level field survey, Rincon reviewed the CDFW California Natural Diversity Database (CNDDB; CDFW 2022b) and the CNPS Online Inventory of Rare and Endangered Plants of California (CNPS 2022) for special-status species with documented occurrences within the *San Luis Obispo, California* USGS 7.5-minute quadrangle and surrounding eight quadrangles (*Santa Margarita, Pismo Beach, Arroyo Grande NE, Lopez Mtn., Atascadero, Port San Luis, Morro Bay South,* and *Morro Bay North*). In addition, Rincon reviewed the Biogeographic Information and Observation System (BIOS, CDFW 2022a), the USFWS Information for Planning and Consultation (IPaC, USFWS 2022b), and the USFWS Critical Habitat Portal (USFWS 2022a) for the Study Area and regional vicinity.

Rincon also reviewed the following documents and websites for information on sensitive biological resources with the potential to occur within the Project Area: the San Luis Obispo County General Plan (County of San Luis Obispo 2010), the San Luis Obispo General Plan (City of San Luis Obispo 2014), the CDFW Special Animals List (CDFW 2022c), the CDFW Special Vascular Plants, Bryophytes, and Lichens List (CDFW 2022d), the CDFW Wildlife Habitat Relationship System (Zeiner et al. 1988), All About Birds (Cornell Lab of Ornithology 2022a) and eBird (Cornell Lab of Ornithology 2022b). Additionally, Rincon reviewed the following databases for information on existing conditions within the Study Area: United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Web Soil Survey (2022a) and USFWS National Wetlands Inventory (NWI) Mapper (2022c).

The review also included peer-reviewed journal articles, previous biological studies conducted in the vicinity of the Study Area (e.g., Rincon 2021; County of San Luis Obispo 2017 and 2010b; Cleveland 1996), standard reference materials (e.g., Bowers et al. 2004; Sawyer et al. 2009; Stebbins 2003), and agency and public databases. Aerial photographs, topographic maps, soil survey maps, geologic maps, and climatic data for the Study Area were also reviewed. Preliminary desktop mapping of land cover types was completed based on the review of background literature and aerial imagery and was verified during the field reconnaissance surveys.

Rincon compiled the results of the literature review and database queries into a preliminary list of special-status species with potential to occur within the Study Area, which was then reviewed by Rincon's regional biological experts for accuracy and completeness. The list of special-status biological resources evaluated as part of the BRA was determined based on documented occurrences in the nine-USGS quadrangle search area, results from the reconnaissance-level field survey, and species known to occur in the region based on the expert opinions of local biologists. The results and analysis of the database queries were compiled into a table presented as Appendix D and are discussed in detail in this report.

2.3 Reconnaissance-level Field Survey

Rincon Biologist Heather Price Curran conducted a reconnaissance-level field survey of the Study Area on December 20, 2021 between the hours of 1000 and 1400. Ms. Curran conducted a pedestrian survey of all accessible portions of the Study Area, including San Luis Obispo Creek and its banks. Any suitable nesting habitat for passerine birds within 250 feet of the Project Area was documented, and any suitable nesting habitat for raptors within 500 feet of the Project Area was documented. The survey was conducted to evaluate existing conditions, to assess the habitat suitability for special-status flora and fauna, and to document all plant and wildlife species

observed. A complete list of all plant and wildlife species observed during the field reconnaissance survey is included as Appendix C. Binoculars (10 X 42) were used to aid in identification and to achieve visual coverage of the entire Study Area.

Photographs were taken to document existing conditions, aquatic habitat, vegetation communities, species sign, or other notable biological resource observations. Representative site photographs are included in Appendix B.

3 Existing Conditions

3.1 Reconnaissance-level Field Survey Results

The reconnaissance-level field survey was conducted between the hours of 1000 and 1400 on December 20, 2021. Weather conditions were cool and cloudy, with temperatures ranging from 53 to 55 degrees Fahrenheit (°F), 4 to 5 mile per hour southeast winds, and 75 to 100 percent cloud cover.

No special-status wildlife species were observed, though suitable habitat for multiple special-status species, including California red-legged frog (*Rana draytonii*), south-central California coast DPS steelhead (*Oncorhynchus mykiss irideus*), and nesting birds, is present within the Study Area. Wildlife species observed include western grey squirrel (*Sciurus griseus*), California scrub-jay (*Aphelocoma californica*), yellow-rumped warbler (*Setophaga coronata*), and hermit thrush (*Catharus guttatus*).

Native tree species present within the Study Area include arroyo willow, California sycamore, and coast live oak (*Quercus agrifolia*). The riparian understory is dominated by a mixture of native and non-native herbs and shrubs. However, this survey was not a protocol-level botanical survey and was not conducted during the bloom periods of most special-status plant species.

Section 4.1 describes all special-status plant and wildlife species with potential to occur on-site. Appendix B includes representative site photographs taken during the survey. Appendix C includes a complete list of all plant and wildlife species observed during the survey. Appendix D includes an analysis of the potential for regionally occurring special-status species to be present within the Study Area.

3.2 Physical Characteristics

The Study Area is located within the Central Coast geographic subregion of California (Baldwin et al. 2012), approximately eight miles northeast of the Pacific Ocean and approximately two miles west of the Santa Lucia Range. San Luis Obispo Creek flows through the Study Area and has been heavily impacted by urban development within the City. Within the Study Area, the creek passes beneath the Johnson Avenue bridge and runs southwest of a commercial shopping center before passing beneath the Toro Street bridge. The creek banks within this area are heavily modified with existing erosion and flood control infrastructure. The Study Area is surrounded by a residential neighborhood and commercial development. Open space with connectivity to Reservoir Canyon and the Santa Lucia Range lies approximately 0.4 mile east and one mile north of the Study Area.

The climate in this region is characterized as Mediterranean with warm, dry summers and cool, wet winters. The average high temperature during summer months (June through September) is 75.6°F and the average low temperature is 51.2°F. The average high temperature during the winter months (December through March) is 63.5°F and the average low temperature is 42.5°F. Average annual precipitation is 22.40 inches, with the majority of rainfall occurring during November through March (Western Regional Climate Center 2022). Topography within the Study Area is variable, with steep banks leading down to relatively level areas along the creek. Elevation within the Study Area ranges from approximately 230 to 310 feet above mean sea level (msl).

3.2.1 Hydrology

San Luis Obispo Creek flows through the Study Area. The creek drains from its headwaters in the Santa Lucia Range at approximately 2,500 feet above msl and extends southward to its mouth at the Pacific Ocean. The creek flows through agricultural, residential, and commercial areas, but is primarily surrounded by rangeland and open space. San Luis Obispo Creek has six major tributaries: Stenner Creek, Prefumo Creek, Laguna Lake, East Branch San Luis Obispo Creek, Davenport Creek, and See Canyon. The County of San Luis Obispo, City of San Luis Obispo, Town of Avila Beach, and the Port San Luis Harbor each hold jurisdiction over various portions of the San Luis Obispo Creek Watershed (Coastal San Luis Resource Conservation District [CSLRCD] 2014).

The Study Area falls within the Upper San Luis Obispo Creek subwatershed (Hydrologic Unit Code [HUC]: 180600060701) (United States Environmental Protection Agency [US EPA] 2022) and is located within Reach 11 of San Luis Obispo Creek, as defined by the Waterway Management Plan (WMP, City of San Luis Obispo 2003). Reach 11 extends from the confluence of Stenner Creek to the California Street Bridge at San Luis Drive. Reach 11 is approximately 8,100 feet long and is mostly developed, with many sections that pass beneath tunnels, closed bridges, and culverts, and banks primarily lined with stacked concrete, gabions, and rock walls. However, riparian habitat is present throughout the reach and is dominated by California sycamore, arroyo willow, and eucalyptus (*Eucalyptus globulus*). Approximately 93 percent of the stream within this reach is classified as flatwater habitat, with pools comprising one percent, and riffles comprising six percent of the remaining habitat. The pool frequency ratio within this reach is 2.4 pools per kilometer, which represents the second lowest within the watershed (City of San Luis Obispo 2003).

Water quality is classified as good[3] in the portion of San Luis Obispo Creek upstream of Osos Street in the City, which includes the Study Area. However, water quality within the creek downstream of Osos Street is listed as impaired by bacteria and other microbes, degraded aquatic life, low oxygen, nitrogen and/or phosphorus, and salts on the 303(d) list of impaired water bodies by the State Water Resources Control Board (US EPA 2022).

San Luis Obispo Creek is classified as a riverine system with a contained channel and surrounding wetlands. The NWI classifies the creek as R3UBH (Riverine [R], Upper Perennial [3], Unconsolidated Bottom [UB], and Permanently Flooded [H]) (USFWS 2022c). Further information about San Luis Obispo Creek is provided in Section 4.3.

3.2.2 Soils

The USDA NRCS Web Soil Survey identifies Concepcion loam, 2 to 5 percent slopes as the only soil map unit within the Project Area. Concepcion loam soils are derived from alluvium and form on toe slope terraces between elevations of 10 to 800 feet. The depth of the water table is more than 80 inches, the frequency of flooding and ponding is none, the available water supply is very low (about 3.2 inches), the soils are moderately well drained and are categorized as a very high runoff class. Concepcion loam is not included on the NRCS list of hydric soils (USDA NRCS 2022).

[3] Water quality is monitored by the EPA for physical, chemical, and biological factors. The assessment of the water quality is analyzed against EPA-approved water standards or thresholds, and water quality can either be categorized as good or impaired.

3.2.3 Vegetation Communities/Land Cover Types

Vegetation community characterizations for this analysis were based on the classification systems presented in *A Manual of California Vegetation, Second Edition* (MCV2) (Sawyer et al. 2009) but have been modified slightly to most accurately reflect existing site conditions. *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986) is still used for reference and historical perspective, though its classifications are no longer supported by the State of California and have been superseded by Sawyer et al. 2009. Plant species nomenclature and taxonomy used for this BRA follow the treatments within the second edition of *The Jepson Manual* (Baldwin et al. 2012).

The Study Area includes riparian habitat associated with San Luis Obispo Creek, as well as developed areas. The following vegetation communities and land cover types exist within the Study Area: Mixed Riparian Hardwood, Landscaped, and Developed (Figure 3). Each of these communities is described in detail below.

Mixed Riparian Hardwood

Riparian vegetation occurs throughout the Study Area within and around San Luis Obispo Creek. This vegetation community is similar to the California Sycamore – Coast Live Oak Riparian Woodlands (*Platanus racemosa – Quercus agrifolia* Woodland Alliance) described in MCV2 and ranked as S3/G3 (Sawyer et al. 2009). However, the mixed riparian hardwood community within the Study Area differs from the MCV2 description in that it has a dense understory. Within the Study Area, this community covers approximately 0.50 acre and is dominated by California sycamore with coast live oak, arroyo willow, and white alder codominant. Native plant species in the understory of this community include toyon (*Heteromeles arbutifolia*), poison oak (*Toxicodendron diversilobum*), seep monkeyflower (*Erythranthe guttata*), horsetail (*Equisetum arvense*), and rushes (*Juncus* spp.). Non-native species in the understory include tree of heaven (*Ailanthus altissima*), elmleaf blackberry (*Rubus ulmifolius*), smilo grass (*Stipa miliacea*), bigleaf periwinkle (*Vinca major*), cape ivy (*Delairea odorata*), milk cotoneaster (*Cotoneaster lacteus*), and French broom (*Genista monspessulana*). The California Sycamore – Coast Live Oak Riparian Woodland community is listed on the CDFW Sensitive Natural Communities List (CDFW 2021c).

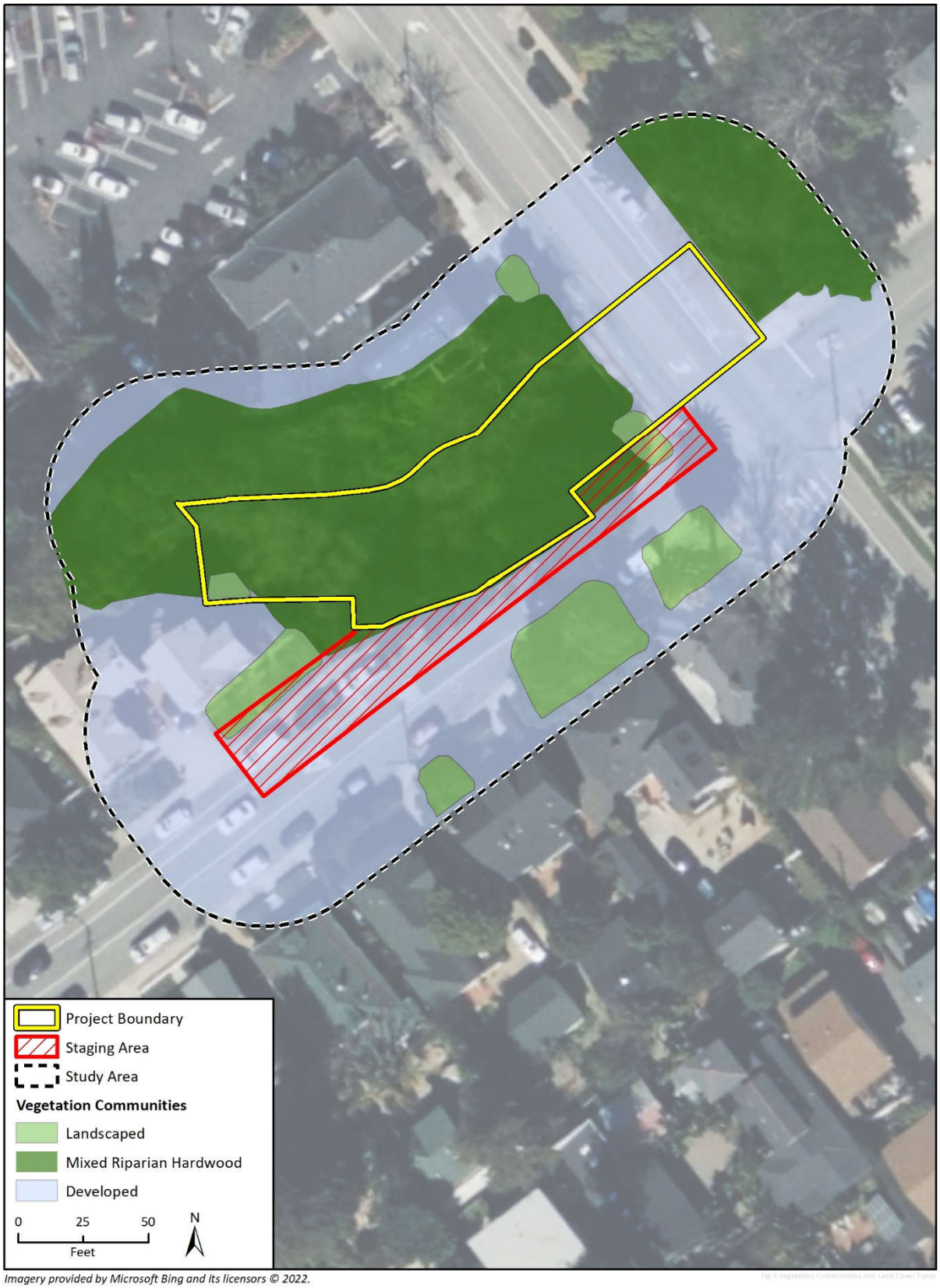
Landscaped

Landscaped areas are not naturally occurring and are not described in the Holland (1986) or MCV2 (Sawyer et al. 2009) classification systems. Landscaped areas within the Study Area cover approximately 0.10 acre and consist of residential yards along Pismo Street, as well as city-maintained landscaping along Johnson Avenue. Landscaped species within the Study Area include golden wattle (*Acacia longifolia*), jacaranda (*Jacaranda mimosifolia*), boxwood (*Buxus* sp.), date palm (*Phoenix* sp.), mission cactus (*Opuntia ficus-indica*), oleander (*Nerium oleander*), and Jupiter's beard (*Centranthus ruber*).

Developed

Developed areas are not naturally occurring and are not described in the Holland (1986) or MCV2 (Sawyer et al. 2009) classification systems. Developed portions of the Study Area cover approximately 0.74 acre and include Johnson Avenue, Pismo Street, the Johnson Avenue bridge, and residential homes.

Figure 3 Vegetation Communities and Land Cover Types



Imagery provided by Microsoft Bing and its licensors © 2022.

4 Sensitive Biological Resources

Local, State, and federal agencies regulate special-status species and other sensitive biological resources. This section discusses the special-status species and sensitive biological resources observed within the Study Area and/or evaluated as having the potential to occur in the Study Area based on the methods described in Section 2. The potential for each special-status species to occur within the Study Area was evaluated according to the following criteria:

- **Not Expected.** Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime), and species would have been identifiable on the site if present (e.g., oak trees). Protocol surveys (if conducted) did not detect species.
- **Low Potential.** Few of the habitat components (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime) meeting the species requirements are present, and/or the majority of habitat on and adjacent to the site is unsuitable or of very poor quality. The species is not likely to be found on the site. Protocol surveys (if conducted) did not detect species.
- **Moderate Potential**. Some of the habitat components (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime) meeting the species requirements are present, and/or only some of the habitat on or adjacent to the site is unsuitable. The species has a moderate probability of being found on the site.
- **High Potential.** All the habitat components (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime) meeting the species requirements are present and/or most of the habitat on or adjacent to the site is highly suitable. The species has a high probability of being found on the site.
- **Present.** Species is observed on the site or has been recorded (e.g., CNDDB, other reports) on the site recently (within the last 5 years).

4.1 Special-status Species

Rincon evaluated 114 special-status plant species and 38 special-status wildlife species for their potential to occur within the Study Area (Appendix D). A list of all plant and wildlife species observed during the biological surveys can be found in Appendix C.

4.1.1 Special-status Plant Species

One hundred and fourteen special-status plant species were evaluated for their potential to occur within the Study Area (Appendix D). Two of these species have a low potential to occur within the Study Area (Table 1). The remaining 112 special-status plant species are not expected to occur within the Study Area based on the absence of suitable habitat and/or soils and the generally developed and disturbed nature of the site. Special-status plant species with potential to occur on site are discussed in further detail below.

Table 1 Special-status Plant Species with Potential to Occur within the Study Area

Scientific Name	Common Name	Status	Potential to Occur
Arenaria paludicola	marsh sandwort	FE/SE/CRPR 1B.1	Low Potential
Sanicula maritima	adobe sanicle	SR/CRPR 1B.1	Low Potential

FE = Federally Endangered SE = State Endangered SR= State Rare

CRPR = California Rare Plant Rank

1B = Rare, Threatened, or Endangered in California and elsewhere

.1 = Seriously endangered in California (>80% of occurrences threatened/ high degree and immediacy of threat)

.2 = Moderately threatened in California (20-80% of occurrences threatened/moderate degree and immediacy of threat)

Marsh Sandwort

Marsh sandwort is a federally and State endangered species and has a CRPR of 1B.1. The species occurs in sandy substrates and openings within freshwater or brackish marshes and swamps. It typically blooms between May and August and occurs at elevations ranging from 10 to 560 feet.

Marginally suitable habitat for the species occurs along the sandy margins of San Luis Obispo Creek within the Study Area. However, both the riparian canopy and understory within this reach of the creek are relatively dense and there are not many openings along the creek. Furthermore, there are no documented occurrences of the species within five miles of the Study Area (Calflora 2022, CDFW 2022b). Marsh sandwort has a low potential to occur within sandy portions of the Study Area.

Adobe Sanicle

Adobe sanicle is a State rare species and has a CRPR of 1B.1. The species occurs in chaparral, coastal prairie, meadows and seeps, and valley and foothill grassland habitats. The species typically prefers moist clay or ultramafic soils, occurs at elevations of 98 to 790 feet, and blooms between February and May.

No chaparral, coastal prairie, or valley and foothill grassland habitats occur within the Study Area, nor do any meadows or seeps. However, the species can also occur in ravines, and some marginally suitable habitat occurs along the banks of San Luis Obispo Creek. There are four occurrences of the species documented in the CNDDB within five miles of the Study Area (CDFW 2022b). There are also multiple occurrences of the species documented within five miles of the Study Area in Calflora, including three occurrences from 2016 approximately one mile from the Study Area. Adobe sanicle has a low potential to occur within the Study Area.

4.1.2 Special-status Wildlife Species

Rincon evaluated 38 special-status wildlife species for their potential to occur within the Project Area (Appendix D), 13 of which have some potential to occur on site. Table 2 lists each of these species, their status, and their potential to occur within the Study Area.

Table 2 Special-status Wildlife Species with Potential to Occur within the Study Area

Scientific Name	Common Name	Status	Potential to Occur
Invertebrates			
Danaus plexippus pop. 1	monarch butterfly	FC	High Potential
Fish			
Entosphenus tridentatus	Pacific lamprey	SSC	Present
Oncorhynchus mykiss irideus	south-central California coast DPS steelhead	FT	Present
Amphibians			
Batrachoseps minor	lesser slender salamander	SSC	Low Potential
Rana draytonii	California red-legged frog	FT, SSC	High Potential
Taricha torosa	coast range newt	SSC	High Potential
Reptiles			
Actinemys pallida	southwestern pond turtle	SSC	Moderate Potential
Birds			
Accipiter cooperii	Cooper's hawk	WL	High Potential
Elanus leucurus	white-tailed kite	FP	Moderate Potential
Falco columbarius	merlin	WL	Low Potential
Setophaga petechia	yellow warbler	SSC	High Potential
Mammals			
Antrozous pallidus	pallid bat	SSC	Low Potential
Corynorhinus townsendii	Townsend's big-eared bat	SSC	Low Potential

FT = Federally Threatened; FC = Federal Candidate; SE = State Endangered
SSC = CDFW Species of Special Concern; FP = State Fully Protected; WL = CDFW Watch List

The remaining 25 species are not expected to occur in the Study Area based on the absence of grassland, woodland, chaparral, coastal scrub, vernal pool, or other suitable natural habitats or vegetation communities, and/or because the known range of the species does not overlap with the Study Area. Special-status wildlife species that have a moderate or high potential to occur, or are present on site, are discussed in further detail below. State and/or federally listed species with a low potential to occur on-site will also be discussed in further detail. For the purposes of CEQA analysis, special-status species that are not State or federally listed and have a low potential to occur will not be addressed further in this section.

Monarch Butterfly

The monarch butterfly is a candidate species for federal listing. Monarchs overwinter in roost sites that extend along the Pacific coast from northern Mendocino County to Baja California, Mexico. Roosts are located in wind-protected tree groves (typically eucalyptus, Monterey pine, or Monterey cypress), with nectar and water sources nearby (Xerces 2022).

The Study Area does not contain suitable roosting or overwintering habitat for the species. A small stand of blue gum eucalyptus trees occurs approximately 50 feet downstream of the Study Area, along the southern bank of San Luis Obispo Creek. This stand is not a documented overwintering site (Xerces 2022), but there is potential for monarchs to roost in these trees. There are six occurrences of the species documented in the CNDDB within five miles of the Study Area (CDFW 2022b). Monarch butterflies have a high potential to transit through the Study Area.

Pacific Lamprey

The Pacific lamprey is a CDFW SSC that historically occurred in freshwater systems from Alaska to northern Baja California. The species is anadromous and requires adequate flows for migration, suitable gravel substrate for spawning, and adequate cover for pre-spawning holding. Larvae (ammocoetes) spend an extended period of time (between three and seven years) rearing while burrowed in sediments and filter feeding on organic material. Ammocoetes require suitable cover, flow, foraging conditions, and cool temperatures. Ammocoetes then transform into juvenile macropthalmia and eventually migrate to the ocean. Emigration to the ocean requires suitable water temperature, depth, velocity, and dissolved oxygen conditions for passage. Adults spend one to three years in the ocean, feeding parasitically on live marine hosts, before returning to freshwater to spawn. Nests (redds) are dug out in gravel substrate and eggs are laid within them. The eggs then hatch into ammocoete larvae after approximately 19 days. Pacific lampreys are semelparous, and spawn once before dying and releasing marine nutrients into the stream (CDFW 2022f).

The Pacific lamprey is known to occur in San Luis Obispo Creek. A healthy lamprey population was observed in San Luis Obispo Creek during a survey conducted by USFWS and Western Fishes in 2004. However, no lamprey were observed during a similar survey conducted in 2011, and it was concluded that the species had been extirpated within the creek. The cause of extirpation was determined to be the 2006 installation of a tidal weir approximately 1.2 miles upstream of the creek mouth at San Luis Bay. The weir was intended to enhance passage for steelhead, but its design resulted in a complete barrier for lamprey. In 2013, a “lamp ramp” (a specifically designed, curved piece of metal placed over the weir) was installed. By 2017, local observers reported adult Pacific lamprey building nests in the creek, indicating that the population had recolonized without the need of human facilitated reintroduction. A 2018 assessment conducted by the USFWS and Western Fishes concluded that Pacific lamprey had successfully recolonized San Luis Obispo Creek (National Fish Habitat Partnership 2020). No ammocoete habitat is present within the Study Area. However, Pacific lamprey are present in San Luis Obispo Creek and are therefore considered present within the Study Area.

Steelhead

The south-central California coast steelhead DPS (steelhead) refers to runs of steelhead in coastal basins from the Pajaro River south to, but not including, the Santa Maria River, which are all federally threatened. Steelhead are the anadromous (ocean-going) form of rainbow trout (*Oncorhynchus mykiss*). They occur in freshwater systems and require adequate water conditions (i.e., adequate flow, high dissolved oxygen levels within the surface water, and cool water temperature) and suitable substrate (i.e., gravels) for spawning. Adults spawn in freshwater and juveniles rear in freshwater before migrating to the ocean to grow and sexually mature prior to returning as adults to reproduce in freshwater, often in their natal stream. Steelhead populations along the West Coast of North America have experienced substantial declines as a result of human activities, including water development, flood control programs, forestry practices, agricultural activities, mining, and urbanization that have degraded, or fragmented aquatic and riparian habitats (NMFS 2013).

Steelhead are known to occur in San Luis Obispo Creek. According to a 1975 CDFW (previously known as the California Department of Fish and Game [CDFG]) study report, an estimated total of 1,005 steelhead emigrated from San Luis Obispo Creek to the ocean annually (CDFG 1975). While numbers have since decreased, steelhead have been documented in San Luis Obispo Creek in

multiple studies over the past few decades (e.g., Cleveland 1996, Payne 2004), and three occurrences of the species are documented in San Luis Obispo Creek in the CNDDB (CDFW 2022a). Many observations have also been made by experienced local biologists, including City biologist Freddy Otte. According to Mr. Otte, two adult steelhead were observed in Mission Plaza (approximately 0.6 mile downstream of the Study Area) in 2014 and adult steelhead and redds have been observed closer to the creek mouth (in the vicinity of San Luis Bay Drive) during the past two winters (pers. comm. Freddy Otte 2022).

Although sections of the creek go dry during the summer, deep pools are present that could support over-summer rearing in a normal winter rainfall regime (County of San Luis Obispo 2017, Rincon Consultants 2021). Critical habitat for steelhead exists within San Luis Obispo Creek up to the Ordinary High Water Mark (OHWM) (NMFS 2005, 2022). Steelhead are present within San Luis Obispo Creek and are therefore considered present within the Study Area.

California Red-legged Frog

The California red-legged frog (CRLF) is a federally threatened species that occurs in lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation. It typically inhabits quiet pools of streams, marshes, and ponds. All life history stages are most likely to be encountered in and around breeding sites, which include coastal lagoons, marshes, springs, permanent and semi-permanent natural ponds, and ponded and backwater portions of streams, as well as artificial impoundments such as stock ponds, irrigation ponds, and siltation ponds. Eggs are typically deposited in permanent pools, attached to emergent vegetation. This species typically requires 11 to 20 weeks of permanent water for larval development and must have access to estivation habitat. Suitable upland habitat must provide sufficient moisture to prevent desiccation and sufficient cover to provide protection from predators. Typical upland habitat consists of densely vegetated areas, downed woody vegetation, leaf litter, small mammal burrows, and human-made structures (i.e., culverts, livestock troughs, spring-boxes, abandoned sheds) (USFWS 2002).

The entire Study Area falls within federally designated critical habitat for the California red-legged frog (USFWS 2022a). The Project site contains suitable riparian habitat and undercut banks preferred by the species, though no individuals were observed during the daytime reconnaissance-level field survey. The Study Area also contains permanent water resources that can be used for larval development. The species is known to occur within San Luis Obispo Creek and there are sixteen documented occurrences in the CNDDB within five miles of the Study Area (CDFW 2022b), as well as multiple recent occurrences of the species documented in iNaturalist (iNaturalist 2022). The CRLF is therefore considered present within San Luis Obispo Creek and has a high potential to occur within the Study Area.

Coast Range Newt

The coast range newt is a CDFW SSC that occupies a variety of terrestrial habitats during non-breeding months, including wet forests, oak forests, chaparral, rolling grasslands and abandoned animal burrows. Newts may be found underneath areas of woody debris, moist leaf litter, or rock crevices. The species is known to live in terrestrial habitats and will migrate over one kilometer to breed. Adults enter water for reproduction. Breeding sites include ponds, reservoirs, or slow-moving pools within creeks and streams with suitable water quality. Newts have been documented as far as two miles away from suitable breeding habitat and have been noted as being instinctual by returning to the same breeding pools year after year. Breeding typically occurs from December to

February but may extend past February during years of late or extended annual rainfall. Females lay egg masses just below the surface of the water under the protection of submerged rocks, vegetation, and branches. Incubation lasts anywhere from 14 to 52 days with the larval development extending into the summer or fall. Sub-adults leave the water and return to terrestrial environments, where they feed on worms, snails, slugs, and insects. Endemic to California, coast range newts are found along the coast and Coast Range Mountains from Mendocino County south to San Diego County. Adults are toxic and not commonly preyed upon. Predators such as crayfish, mosquito fish, and bullfrog prey on the non-poisonous larvae and egg masses (Nafis 2022).

The Study Area contains slow-moving water within the creek that provides suitable breeding habitat, as well as terrestrial habitat that is suitable for the species. There are four occurrences of the species documented in the CNDDB within five miles of the Study Area (CDFW 2022b). The coast range newt has a high potential to occur within the Study Area in San Luis Obispo Creek.

Southwestern Pond Turtle

The southwestern pond turtle (*Actinemys pallida*) is a CDFW SSC that occurs in ponds, marshes, rivers, streams, and irrigation ditches with aquatic and riparian vegetation. Logs, rocks, cattail mats and/or exposed banks are required for basking. Adults do not reproduce until approximately eight to ten years of age, and mating occurs in April and May. Nests are typically dug along stream or pond margins in areas with full sunlight. Diet includes aquatic plants, invertebrates, worms, frog and salamander eggs and larvae, and occasionally adult fish and frogs (Nafis 2022).

The Study Area has some suitable southwestern pond turtle habitat present within and along the banks of the creek, though there are limited open basking sites and no sandy banks or grassy open fields within the Study Area. There are three documented occurrences in the CNDDB within five miles of the Study Area. However, each of these occurrences was documented approximately 30 years ago within the same area northwest of the Study Area (CDFW 2022b). The species was not observed during the reconnaissance-level field survey. However, multiple occurrences of the species have been documented within two miles of the Study Area within the past decade in iNaturalist. There is a moderate potential for the species to be present within the Study Area.

Cooper's Hawk

The Cooper's hawk is a CDFW watchlist species that typically inhabits woodlands and forest edges but can also be found in urban parks and neighborhoods where trees are present. Nests are constructed 25 to 50 feet high in a variety of tree species, including pines, oaks, beeches, and spruces. Nests are made of sticks and are often lined with bark flakes and green twigs. Cooper's hawks are aerial predators that feed primarily on medium-sized birds, such as mourning dove (*Zenaida macroura*), American robin (*Turdus migratorius*), California quail (*Callipepla californica*), and European starling (*Sturnus vulgaris*). In addition to preying on adult birds, Cooper's hawks will also occasionally rob nests and hunt rabbits, rodents, and bats (Cornell Lab of Ornithology 2022a).

Suitable foraging habitat for the species is present throughout the Study Area, and suitable nesting habitat for the species exists within California sycamores, arroyo willows, alders, and other trees present nearby the Study Area. Multiple occurrences of the species are documented within and around the Study Area in eBird (Cornell Lab of Ornithology 2022b). The Cooper's hawk has a high potential to forage and nest within the Study Area.

White-tailed Kite

The white-tailed kite is a State fully protected species that occurs in open grasslands, meadows, open woodlands, marshes, and cultivated areas. Nests are built near the top of dense-topped trees. Diet consists primarily of small mammals, and the species hunts by facing into the wind and hovering (or "kiting") while scanning the ground for movement (Cornell Lab of Ornithology 2022a).

Multiple occurrences of the species are documented in eBird within one mile of the Study Area (Cornell Lab of Ornithology 2022b) and three occurrences of the species are documented in the CNDDB within five miles of the Study Area (CDFW 2022b). Suitable open foraging habitat is not present within the Study Area, though the species has a moderate potential to fly over or roost within trees in the Study Area. There is also a low potential for the species to nest in trees within the Study Area.

Yellow Warbler

The yellow warbler is a CDFW SSC that inhabits riparian plant communities and is typically found in close proximity to water. The species frequently nests and forages in willow shrubs and thickets, and can also be found in other riparian trees, including cottonwoods, sycamores, ash, and alders. The yellow warbler also nests in montane shrubbery in open conifer forests in the Cascades and Sierra Nevada range. Diet consists primarily of insects picked from foliage or captured mid-air and can include midges, caterpillars, beetles, and wasps. Nests are built from grasses, bark, and broad leaves and are usually found in vertical forks of bushes and small trees about ten feet above ground. Clutch size is typically one to seven eggs, which are incubated for 10-13 days prior to a 9-12 day nestling period. Yellow warblers are still numerous, but their populations decreased by approximately 25% between 1966 and 2014, likely due to habitat loss (Cornell Lab of Ornithology 2021a).

Suitable nesting habitat for the species occurs within the Study Area and there are multiple occurrences documented in eBird within one mile (Cornell Lab of Ornithology 2022a). The yellow warbler has a high potential to forage, transit, and/or nest within the Study Area.

Migratory and Nesting Birds

Migratory birds protected under the MBTA and nesting birds and raptors protected under CFGC Section 3503 have the potential to breed and forage throughout the Study Area. Nesting habitat for a variety of bird species exists within the riparian corridor and could include sycamore, alder, coast live oak, willows, other vegetation, human-made structures (e.g., bridges), and the ground surface. Suitable nesting habitat for multiple raptor species occurs within trees throughout the Study Area.

4.2 Sensitive Plant Communities and Critical Habitats

Plant communities are considered sensitive biological resources if they have limited distributions, have high wildlife value, include sensitive species, or are particularly susceptible to disturbance. Vegetation rarity ranking is based on a rank calculator developed by NatureServe. According to the CDFW Vegetation Program, alliances with State ranks of S1-S3, as well as certain additional associations specifically noted as sensitive in the California Sensitive Natural Communities List (CDFW 2021), are considered to be imperiled, and thus, potentially of special concern.

The Mixed Riparian Hardwood Community that occurs within the Study Area closely resembles California Sycamore – Coast Live Oak Riparian Woodland (*Platanus racemosa – Quercus agrifolia* Woodland Alliance) and is considered a sensitive natural community, S3/G3 (CDFW 2021c).

The entire Study Area falls within federally designated critical habitat for the California red-legged frog (USFWS 2022a). Critical habitat for steelhead exists within San Luis Obispo Creek up to the OHWM (NMFS 2005, 2022).

4.3 Jurisdictional Waters and Wetlands

The United States Army Corp of Engineers (USACE) asserts jurisdiction under Section 404 of the Clean Water Act (CWA) over stream, lake, and wetland features with a surface connection to navigable waters of the U.S. Jurisdiction extends to the OHWM, and to the edge of those wetlands exhibiting all three criteria defining federal wetlands: hydric soils, hydrophytic vegetation, and wetland hydrology. The CDFW has regulatory authority over activities that divert, obstruct, or alter the channel, bed, or bank of any river, stream or lake under Section 1600 et seq. of the CFGC. Therefore, perennial, intermittent, and ephemeral streams and associated riparian vegetation fall under the jurisdiction of the CDFW. The Regional Water Quality Control Board (RWQCB) also has jurisdiction over waters of the U.S. and waters of the State under Section 401 of the CWA and the Porter-Cologne Water Quality Control Act.

San Luis Obispo Creek flows through the Study Area. The creek typically has constant flow throughout the year and is therefore considered a Relatively Permanent Water (RPW). The creek also has direct connectivity with the Pacific Ocean in San Luis Bay, which is a Traditional Navigable Water (TNW). The USACE therefore has jurisdiction over San Luis Obispo Creek up to the OHWM. San Luis Obispo Creek is also considered Waters of the State and both the CDFW and Central Coast RWQCB have jurisdiction over the entire creek and its banks, as well as all associated riparian vegetation.

4.4 Wildlife Movement

Wildlife movement corridors, or habitat linkages, are generally defined as connections between areas of suitable habitat that allow for physical and genetic exchange between otherwise isolated wildlife populations. Such linkages may serve a local purpose, such as providing a linkage between foraging and denning areas, or they may be regional in nature. Some habitat linkages may serve as migration corridors, wherein wildlife periodically move away from an area and then subsequently return. Others may be important as dispersal corridors for young wildlife. A group of habitat linkages in an area can form a wildlife corridor network. The California Essential Habitat Connectivity Project, commissioned by the California Department of Transportation (Caltrans) and CDFW, identifies “Natural Landscape Blocks” which support native biodiversity and the “Essential Connectivity Areas” which link them (Spencer et al. 2010).

The riparian corridor within the Study Area could serve as local wildlife movement corridor, particularly for disturbance-tolerant species, such as racoons, skunks, and coyotes. San Luis Obispo Creek also serves as a migration corridor for Pacific lamprey and steelhead. The Study Area occurs approximately 600 feet west of a mapped Essential Connectivity Area. The nearest Natural Landscape Block is mapped approximately four miles east of the Study Area (Spencer et al. 2010).

4.5 Local Policies and Ordinances

The Project is located in the City of San Luis Obispo and is subject to all policies and ordinances within the City’s General Plan, which includes relevant policies in *Chapter 6: Conservation and Open*

Space and *Chapter 8: Water and Wastewater*. Relevant policies are addressed through the following goals, programs, and objectives outlined within *Chapter 6: Conservation and Open Space; Objective 7 Natural Communities, Objective 8 Open Space, Objective 10 Water,* and *Chapter 8: Water and Wastewater; A. Water Resource Availability, A. Siltation,* and *B. Collection.* Each of the pertinent policies is outlined in Appendix A.

4.6 Adopted or Approved Plans

The Study Area does not occur within any Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan. A City Conservation Plan has been in place since 2012, but this plan only applies to open space lands within the City and does not include the Study Area (City of San Luis Obispo 2012).

5 Impact Analysis and Avoidance and Minimization Measures

This section discusses the potential impacts and effects to special-status species and sensitive biological resources that may occur from implementation of the Project and provides recommended avoidance and minimization measures that would reduce those impacts where applicable. The analysis and recommendations are based on the CEQA Guidelines Appendix G Initial Study Checklist; therefore, Section 5 is organized according to the threshold criteria therein.

5.1 Special-status Species

The Project would have a significant effect on biological resources if it would:

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

5.1.1 Special-status Plant Species

Two special-status plant species have a low potential to occur within the Study Area: marsh sandwort (FE, SE, CRPR 1B.1) and adobe sanicle (SR, CRPR 1B.1). Should either of these plants be present within the Project Area, impacts could include removal of individuals and/or disturbance of habitat. Implementation of avoidance and minimization measures (AMMs) BIO-1, BIO-2, BIO-4, and BIO 5 will likely reduce any potential impacts to less than significant. Should any Project impacts to these or other special-status plant species be unavoidable through implementation of BIO-1, BIO-2, BIO-4, and BIO 5, compensatory mitigation will be implemented per the requirements of the project HMMP, as outlined in BIO-12.

5.1.2 Special-status Wildlife Species

Thirteen special-status wildlife species have potential to occur within the Project Area. The lesser slender salamander (SSC), merlin (WL), pallid bat (SSC), and Townsend's big-eared bat (SSC) have low potential to occur. The southwestern pond turtle (SSC) and white-tailed kite (FP) have a moderate potential to occur. The monarch butterfly (FC), coast range newt (SSC), Cooper's hawk (WL), and yellow warbler (SSC) have a high potential to occur. Pacific lamprey (SSC), steelhead (FT), and California red-legged frog (FT, SSC) are known to occur within San Luis Obispo Creek. Nesting birds protected under the MBTA and CFGC have potential to occur throughout the Project Area during the nesting season (February 1 to September 15).

Potential impacts from Project activities to each of these special-status wildlife species are described below. Recommended measures for avoiding and minimizing potential impacts to less than significant, as necessary, are also provided. Adherence to agency permits and/or agreements that will be required for Project implementation will also ensure that any potential impacts to special-status species are reduced to less than significant.

Monarch Butterfly

The monarch butterfly has a high potential to transit through the Project Area. Should monarchs be present within the Project Area during construction, direct impacts could include injury or mortality of individuals. No suitable roosting habitat for the species occurs within the Project Area, and no impacts to monarch overwintering habitat are anticipated. Impacts to the species are therefore anticipated to be less than significant. Implementation of AMMs BIO-1 and BIO-11 would further reduce any potential impacts to individuals.

Pacific Lamprey

The Pacific lamprey is known to occur in San Luis Obispo Creek. Should individuals be present within the Project Area during dewatering or construction activities, direct impacts could include injury or mortality due to stranding or equipment strikes. Dewatering the Project Area could result in temporary impacts to lamprey behavior (i.e., foraging, migration) and cause temporary loss of aquatic habitat and invertebrate food sources within the dewatered work area. Other potential impacts to Pacific lamprey habitat could include disturbance of the streambed, changes to water quality, and disturbance of streamside vegetation. Implementation of AMMs BIO-1 through BIO-4, BIO-6, BIO-11, and BIO-12 would reduce potential impacts to less than significant.

Steelhead

Steelhead are also known to occur in San Luis Obispo Creek. Should individuals be present within the Project Area during dewatering or construction activities, direct impacts could include injury or mortality due to stranding or equipment strikes. Noise generated by vibratory and impact hammers being operated in or near the creek channel could also result in injury or mortality to steelhead individuals. Dewatering the Project Area could result in temporary impacts to steelhead behavior (i.e., rearing, migration) and cause temporary loss of aquatic habitat and invertebrate food sources within the dewatered work area. Other potential impacts to steelhead habitat could include disturbance of the streambed, changes to water quality, disturbance of streamside vegetation, and removal of existing cement structures that currently provide shade and shelter within the creek. Implementation of AMMs BIO-1 through BIO-4, BIO-7, BIO-11, and BIO-12 will ensure that any potential impacts to steelhead are reduced to less than significant. The Project will require a Biological Opinion and associated Incidental Take Statement from the NMFS, which will likely include further AMMs.

California Red-legged Frog

The CRLF has a high potential to occur within the Study Area. Should any CRLF be present within the Project Area during construction, direct impacts could include injury or mortality of individuals. Other potential impacts could include disruption of foraging, migration, or breeding habitat. Implementation of AMMs BIO-1 through BIO-4, BIO-8, BIO-11, and BIO-12 would reduce any potential impacts to less than significant. The Project may require a Biological Opinion[4] and Incidental Take Statement from USFWS, which would likely include further AMMs.

[4] A Programmatic Biological Opinion for CRLF (08EVEN00-2020-F-0226 ; 08EVEN00-2020-I-0292) might be utilized for this Project.

Other Special-status Amphibians

The coast range newt has a high potential to occur within the Study Area. The lesser slender salamander has a low potential to occur within the Study Area. Should individuals be present within the Project Area during construction, direct impacts could include injury or mortality. Other potential impacts could include disruption of foraging, migration, or breeding habitat. Implementation of AMMs BIO-1 through BIO-4, BIO-9, BIO-11, and BIO-12 would reduce any potential impacts to less than significant.

Southwestern Pond Turtle

The southwestern pond turtle has a moderate potential to occur within the Study Area. Should individuals be present within the Project Area during construction, direct impacts could include injury or mortality. Other potential impacts could include disruption of foraging, basking, migration, or breeding habitat. Implementation of AMMs BIO-1 through BIO-4, BIO-9, BIO-11, and BIO-12 would reduce any potential impacts to less than significant.

Special-status Bird Species

The Cooper's hawk and yellow warbler both have a high potential to occur within the Study Area. The white-tailed kite has a moderate potential to occur within the Study Area and the merlin has a low potential to occur. Should these species occur within the Project Area, potential Project impacts could include injury or mortality to individuals. Should these species nest within the vicinity of the Project Area, Project activities could result in altered nesting behavior or nest abandonment. The loss of a nest due to construction activities would be a violation of the MBTA and CFGC Section 3503. Implementation of AMMs BIO-1 through BIO-4, BIO-10, BIO-11, and BIO-12 would reduce potential impacts to special-status bird species to less than significant.

Migratory and Nesting Birds

Migratory birds protected under the MBTA and nesting birds and raptors protected under CFGC Section 3503 have the potential to breed throughout the Project Area during the nesting season (February 1 to September 15). Potential nesting habitat includes trees, shrubs, other vegetation, human-made structures (e.g., bridges), and the ground surface.

Should any birds nest on or near the Project Area, Project activities could directly impact breeding by destroying the nest, or through disruption of normal biological behaviors during construction of the Project resulting in nest failure. Indirect impacts could include disturbance of breeding habitat. The loss of a nest or disturbance of nesting habitat due to construction activities would be a violation of the MBTA and CFGC Section 3503. Implementation of AMMs BIO-1 through BIO-4, BIO-10, BIO-11, and BIO-12 would reduce potential impacts to nesting birds to less than significant.

5.2 Sensitive Plant Communities and Critical Habitat

The proposed Project would have a significant effect on biological resources if it would:

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

The Mixed Riparian Hardwood Community that occurs within the Project Area closely resembles California Sycamore – Coast Live Oak Riparian Woodland (*Platanus racemosa – Quercus agrifolia* Woodland Alliance) and is considered a sensitive natural community (S3/G3). Impacts to this community from Project activities will include: trimming understory vegetation with limbs and/or trunks that are less than 4 inches in diameter at breast height (dbh); cutting four willow trees located within the creek channel to one foot above the existing grade, trimming the branches of six coast live oak trees adjacent to Pismo Street, and possibly trimming the lower branches of one sycamore tree and one alder tree located within the creek channel. Any trimming or cutting of riparian vegetation will be regulated by the CDFW Streambed Alteration Agreement (SAA) obtained for the Project. Implementation of AMMs BIO-1 through BIO-4 would reduce any other potential impacts to this sensitive plant community to less than significant. Implementation of the HMMP, as outlined in BIO-12, will ensure that necessary mitigation is installed to compensate for any temporary or permanent impacts to this sensitive plant community.

Critical habitat for steelhead occurs within all portions of San Luis Obispo Creek within the Project Area up to the OHWM. As previously mentioned, temporary and permanent impacts to steelhead migration, spawning, rearing, and/or foraging habitat could occur due to Project activities. Implementation of the HMMP, as outlined in BIO-12, will ensure that necessary mitigation is installed to compensate for any temporary or permanent impacts to steelhead critical habitat. Implementation of AMMs BIO-1 through BIO-4 and BIO-7 will ensure that any additional adverse impacts to steelhead habitat are reduced to less than significant. Adherence to resource agency permit conditions will also ensure that no permanent negative impacts (i.e., adverse modification) to critical habitat occur. The Project will likely result in long-term beneficial impacts to steelhead habitat within the Project Area, as bank stabilization would reduce the risk of future erosion and sedimentation.

Critical habitat for CRLF also occurs within the entire Project Area. Temporary and permanent impacts to CRLF migration, breeding, and foraging habitat could occur due to Project activities. Implementation of the HMMP, as outlined in BIO-12, will ensure that necessary mitigation is installed to compensate for any temporary or permanent impacts to CRLF critical habitat. Implementation of AMMs BIO-1 through BIO-4, BIO-8, and BIO-12 will ensure that any additional adverse impacts to CRLF habitat are reduced to less than significant. Adherence to resource agency permit conditions will also ensure that no permanent negative impacts to critical habitat occur.

5.3 Jurisdictional Waters and Wetlands

The proposed Project would have a significant effect on biological resources if it would:

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

San Luis Obispo Creek flows through the Project Area. The USACE has jurisdiction over San Luis Obispo Creek up to the OHWM. The CDFW and Central Coast RWQCB jurisdictions extend to the top of bank or edge of adjacent riparian habitat, whichever is greater. Temporary impacts to San Luis Obispo Creek and the associated riparian corridor will include temporary creek diversion (approximately 0.038 acre, 212 linear feet) and trimming of riparian vegetation with limbs and/or trunks that are less than four inches in diameter (approximately 0.070 acre; understory species, one coast live oak, and possibly one California sycamore and one white alder). Permanent impacts to San Luis Obispo Creek and the associated riparian corridor will include construction of a

replacement bank stabilization structure (approximately 0.021 acre, approximately 87 linear feet), secondary channel excavation (approximately 125 cubic yards of sediment to be hauled off site), and trimming of riparian vegetation with limbs and/or trunks that are greater than four inches in diameter (approximately 0.009 acre; five coast live oaks, four arroyo willows). Any impacts to jurisdictional areas will be regulated by the resource agency permits obtained for the Project. Any required mitigation for impacts to jurisdictional waters, wetlands, and riparian habitat will be outlined in the HMMP developed for the Project, as described in BIO-12.

Potential adverse impacts to water quality could also occur were sediment or pollutants allowed to enter the waterway during construction. Implementation of AMMs BIO-1 through BIO-3 would reduce any potential impacts to water quality to less than significant.

5.4 Wildlife Movement

The proposed Project would have a significant effect on biological resources if it would:

d) Interfere substantially with the movement of any resident or migratory fish or wildlife species or with established resident or migratory wildlife corridors or impede the use of wildlife nursery sites.

There are no Natural Landscape Blocks or Essential Connectivity Areas mapped within the Project Area (Spencer et al. 2010). The riparian corridor within the Project Area could serve as a local wildlife movement corridor, particularly for disturbance-tolerant species, such as racoons, skunks, and coyotes. The Project Area is small relative to the amount of riparian habitat and open space in the region and Project activities are not expected to substantially interfere with existing terrestrial wildlife movement or with established terrestrial resident or migratory wildlife corridors. Therefore, no additional measures are recommended for terrestrial wildlife movement.

San Luis Obispo Creek serves as a migration corridor for Pacific lamprey, steelhead, and other fishes. Fish migration may be temporarily disrupted during installation and removal of the creek diversion. Once the diversion is in place, it will allow for the downstream migration of steelhead, lamprey, and other fishes to continue during Project construction. However, upstream migration may be disrupted for the duration of the creek diversion. Implementation of AMMs BIO-6 and BIO-7 would further reduce any potential impacts to fish movement to less than significant.

5.5 Local Policies and Ordinances

The proposed Project would have a significant effect on biological resources if it would:

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

The Project will be in alignment with the goals and policies of the City General Plan, and implementation of all recommended AMMs will ensure that the Project does not conflict with any local policies or ordinances.

5.6 Adopted or Approved Plans

The proposed Project would have a significant effect on biological resources if it would:

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Conservation Community Plan, or other approved local, regional, or state habitat conservation plan.

The Project Area is not included in any adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plans. Therefore, no additional measures are recommended.

5.7 Recommended Avoidance and Minimization Measures

BIO-1 Worker Environmental Awareness Program

Prior to initiation of construction activities (including staging and mobilization), all personnel associated with Project construction shall attend Worker Environmental Awareness Program (WEAP) training, conducted by a qualified biologist, to aid workers in recognizing special-status species (e.g., CRLF and steelhead), nesting birds, and other biological resources that may occur in the Project Area. The specifics of this program will include identification of special-status species with potential to occur, a description of their regulatory status and habitat requirements, general ecological characteristics of any other sensitive resources, and a review of the limits of construction and mitigation measures required to reduce impacts to biological resources within the Project Area. A fact sheet conveying this information will also be prepared for distribution to all contractors, their employers, and other personnel involved with construction. All employees shall sign a form provided by the trainer indicating they have attended the WEAP and understand the information presented to them. A WEAP training recorded by a qualified biologist specifically for the Project may be utilized if in-person trainings are restricted due to COVID-19 or if the construction schedule makes it infeasible for a biologist to train each new crew member in person. The crew foreman will be responsible to ensure crew members are aware of project boundaries and adhere to the guidelines and restrictions designed to avoid or minimize effects to CRLF, steelhead, nesting birds, and other sensitive species and biological resources.

BIO-2 Project Delineation, Staging Areas, Materials Storage, and Waste Management

Prior to the start of any Project activities (including any vegetation clearing), sturdy, high-visibility fencing shall be installed to protect jurisdictional areas and sensitive resource areas adjacent to the Project Area. This fencing shall be placed so that unnecessary impacts to adjacent habitat are avoided. No Project activities (including storage of materials) shall occur outside of the "Project Limits". The required fencing shall remain in place during the entire construction period and be maintained as needed by the contractor.

Areas of temporary disturbance shall be minimized to the extent practicable. Staging and laydown areas shall be limited to sites that are unvegetated and previously disturbed (e.g., existing paved roads). Materials shall be stored on impervious surfaces or plastic ground covers to prevent any spills or leakage. Material storage shall be as far from San Luis Obispo Creek as is feasible. Construction materials and spoils shall be protected from stormwater runoff using temporary perimeter sediment barriers such as fiber rolls, sand/gravel bags, and straw bale barriers, as appropriate.

All trash shall be properly contained and regularly disposed of such that it does not leave the Project site, enter the San Luis Obispo Creek channel, or attract wildlife. Following Project completion, all trash and construction debris will be removed from the work and laydown areas.

BIO-3 Best Management Practices to Protect Water Quality

All vehicles and equipment shall be in good working condition and checked daily for leaks. The contractor shall prevent petroleum products, or any other pollutant, from contaminating the soil or entering the San Luis Obispo Creek channel (dry or otherwise). When vehicles or equipment are not in use, mats or drip pans shall be placed below vehicles to contain fluid leaks.

Project activities will occur between June 1 and October 15, to the maximum extent possible, to avoid working in the creek channel during the rainy season. Work during times of precipitation shall be avoided to the maximum extent possible. The City or their contractor(s) or representative(s) shall utilize Best Management Practices (BMPs), including (but not limited to): berms, burlap-wrapped fiber rolls, jute netting, sand/gravel bags, and straw bale barriers to stabilize work areas and prevent any sediment or pollutants from entering the creek.

To further protect water quality and sensitive habitat areas, no refueling, cleaning, or maintenance of equipment or vehicles shall occur within the creek channel. Spill kits must be kept on the project site and readily available at all times. Should a spill occur in the work area, clean-up shall be conducted immediately, the contaminant(s) removed to the greatest extent feasible, and any contaminated materials disposed of properly. The project foreman or other designated liaison shall immediately notify the biological monitor and the City following any project spills. Additionally, the off-site tracking of loose construction and landscape materials shall be prevented and/or cleaned up daily, with street sweeping, vacuuming, and/or rumble plates, as appropriate.

These measures may be superseded or added to by resource agency permits. A Stormwater Pollution Prevention Plan may be prepared for the Project, if required by resource agencies.

BIO-4 Invasive Species Management

Prior to construction, Project plans will clearly identify methodology for removal and disposal of invasive exotic species found within the Project Area. Invasive vegetation removed within the Project Area shall be properly disposed of at an off-site location. All construction materials (including jute netting, fiber rolls, and straw bales) brought into the Project Area shall be free from invasive plant material. All revegetation efforts (e.g., hydroseeding, planting container stock or cuttings) within the Project Area shall include only native, riparian plant species appropriate for the Project site. Invasive wildlife species, including bullfrog (*Rana catesbeiana*), and signal and red swamp crayfish (*Pacifasticus leniusculus*; *Procambarus clarkii),* shall be removed from the Project Area by a qualified biologist using methodologies approved by the USFWS, NMFS, and/or CDFW.

BIO-5 Preconstruction Survey for Special-status Plant Species

A preconstruction survey for special-status plant species shall be conducted by a qualified botanist within the Project Area during the bloom period of marsh sandwort and adobe sanicle (likely in May 2023). Should these, or any other special-status plant species, be observed within the Project Area, the location(s) of individual plants or group(s) of plants shall be clearly flagged by the qualified botanist and avoided during Project construction. Should impacts to special-status plant species be unavoidable, then compensatory mitigation would likely be required by the regulatory agencies and/or lead CEQA agency (i.e., the City).

BIO-6 Avoidance and Minimization Measures for Pacific Lamprey

No project activities shall occur in flowing or standing water within San Luis Obispo Creek, with the exception of the installation and removal of the temporary creek diversion. Capture and relocation surveys for Pacific lamprey shall be conducted by qualified and/or CDFW-approved biologists prior to the commencement of diversion construction, as well as during dewatering of the work areas. A second capture and relocation survey shall be conducted prior to the removal of the diversion. Pacific lamprey (adults, macropthalmia, or ammocoetes) found within the Project Area prior to or during dewatering will be captured using seine nets or dip nets and relocated to a predetermined relocation site (with appropriate habitat features) within San Luis Obispo Creek. Lamprey will be placed in aerated 5-gallon buckets and held no more than 20 minutes before relocation. These capture and relocation efforts can be conducted concurrently with the steelhead capture and relocation efforts described in BIO-7, though lamprey will be held in separate buckets to avoid predation.

BIO-7 Avoidance and Minimization Measures for Steelhead

Steelhead Capture and Relocation

No Project activities shall occur in flowing or standing water in San Luis Obispo Creek, with the exception of the installation and removal of the temporary creek diversion. Project activities within the San Luis Obispo Creek channel are proposed to occur between June 1 and October 15, outside of the steelhead migration season. Flow conditions during this time are variable and can range from a summer low flow condition to a dry condition. Project components that require surface water diversion (detailed below) shall also require the capture and relocation of aquatic species, including steelhead, in the reach that will become dewatered. A qualified biologist approved by NMFS to handle steelhead shall be present during all dewatering, as well as all stages of the installation and removal of surface water diversions. To minimize effects to steelhead, the qualified biologist with qualified biological assistants shall conduct steelhead capture and relocation surveys prior to the commencement of diversion construction, as well as during dewatering of the diverted areas and removal of the diversion. Block nets will be erected upstream and downstream of the Project site and steelhead will be removed from the block-netted area by seine, dipnets, or electrofishing due to substantial obstacles in the creek potentially making netting ineffective and relocated to an approved relocation site within San Luis Obispo Creek that contains suitable habitat that will not be affected by Project activities. Block nets shall remain in place until the diversion is functional, at which time the downstream and upstream block nets will be removed. Fish will be placed in aerated 5-gallon buckets and held no more than 20 minutes before relocation. Smaller fish, including steelhead young of the year, will be placed in separate aerated buckets to avoid predation. Non-native fishes and invertebrates will be removed from the creek by qualified biologists.

If it is anticipated that surface flow may soon become discontinuous at the diversion site, a block net will be deployed just upstream of the diversion to block fish from entering the diversion from upstream. No block net will be deployed downstream to allow fish located within the diversion area to exit downstream. Once surface flows become discontinuous, the qualified biologist with qualified biological assistants shall conduct steelhead capture and relocation surveys within any isolated pools/habitats. Stranded fish will be relocated to the original approved relocation site.

Surface Water Diversion Plan

The surface water diversion plan will be created by the City's contractor and will include the various structures and measures that will divert creek flow upstream of the Project site, divert flow around or through the work area, and discharge downstream, while avoiding water quality and special-status species impacts. This plan will be prepared by Project engineers in consultation with Project biologists. This plan will include such components as predicted diversion flow rates, pump capacities, pump screen mesh size, material to be used, contingency plans, a removal and restoration plan, as well as design accommodations for special-status species including fish passage requirements. A qualified biologist will be present during dewatering and during the installation and removal of surface water diversions. A detailed diversion plan will be submitted to the NMFS, RWQCB, USACE, and CDFW for approval at least 15 days prior to the construction of the diversion.

Relocation Site

A relocation site will be identified by a qualified biologist and a relocation site memo will be submitted to NMFS for approval at least 15 days prior to the construction of the first diversion. The relocation site will be in a known perennial location in San Luis Obispo Creek, preferably upstream of the Project site. The relocation site shall provide adequate depth in the form of scour (>1 foot) with instream cover. Overhead canopy cover shall also be present, if possible. Water temperature within the relocation site shall be well within published steelhead tolerances. Other water quality parameters, including (but not limited to) dissolved oxygen, pH, and turbidity shall also be within steelhead tolerances.

On-site Biological Monitoring

A qualified biological monitor will be on site full-time during all Project activities that involve creek dewatering and/or the installation or removal of surface water diversions. Once the work area is completely blocked from the creek and dewatered, and if work conditions and/or prolonged Project activities are conducted outside of the active San Luis Obispo Creek channel, the monitor will be on site for no less than one day per week.

Reporting

Any worker(s) who inadvertently injure(s) or kill(s) a steelhead (or any other special-status species) or find(s) one dead or injured, shall immediately report the incident to the biological monitor. The monitor or environmental Project manager shall then immediately notify the City. The City will then provide verbal notification, as appropriate, to the USFWS Endangered Species Office in Ventura, California; NMFS in Long Beach, California; and the local CDFW contact, within three working days. The Project proponents shall provide written notification of the incident to the USFWS, NMFS, and CDFW within five working days.

These measures may be superseded or added to by resource agency permits and incidental take authorizations.

BIO-8 Avoidance and Minimization Measures for California Red-legged Frog

Preconstruction Survey, Capture, and Relocation

A USFWS-approved biologist shall survey the Project Area no more than 48 hours before the onset of work activities. If the biologist finds any life stage of the CRLF and these individuals are likely to be killed or injured by work activities, the biologist will be allowed sufficient time to relocate them from the Project Area before work begins. The biologist will relocate the CRLF the shortest distance possible to a predetermined location within San Luis Obispo Creek that contains suitable habitat and that will not be affected by Project activities.

On-site Biological Monitoring

A USFWS-approved biologist will be present during installation and removal of the creek diversion, and during all vegetation removal and initial ground disturbance. After this time, the USFWS-approved biologist can designate another qualified biologist to monitor on-site compliance with all AMMs.

Diversion Intake Screens

Diversion intakes shall be screened with wire mesh not larger than 0.2 inch to prevent any California red-legged frogs not initially detected, and juvenile steelhead from entering the pump system.

Amphibian Disease Spread Prevention

To ensure that diseases are not conveyed between sites, the USFWS-approved biologist, will follow the fieldwork code of practice developed by the Declining Amphibian Populations Task Force at all times.

Project Schedule

Project activities will occur between June 1 and October 15, to the maximum extent possible, in order to avoid the CRLF breeding season.

These measures may be superseded or added to by resource agency permits and incidental take authorizations.

BIO-9 Avoidance and Minimization Measures for Other Special-status Amphibians and Reptiles

A preconstruction survey for special-status amphibians and reptiles (e.g., lesser slender salamander, southwestern pond turtle, and coast range newt) shall be conducted within the Project Area by a qualified biologist no more than 48 hours before the onset of work activities. This survey can be conducted concurrently with the preconstruction survey for CRLF. If any special-status amphibian or reptile species are found in areas where they are likely to be killed or injured by work activities, then a qualified biologist will be allowed sufficient time to relocate them from the Project Area before work begins. A qualified biologist will also be on site during any vegetation removal or initial ground disturbing activities. Shall any special-status species be encountered within the Project Area prior to or during these activities, work shall be halted until the biologist has sufficient time to move any individuals from the site.

BIO-10 Preconstruction Survey for Special-status Birds and Other Nesting Birds

Project activities will likely occur during the nesting bird season (February 1 to September 15). As such, the following mitigation measures are recommended to reduce impacts to protected species (including merlin, white-tailed kite, Cooper's hawk, and yellow warbler) and other nesting birds protected by CFGC and the MBTA.

- A preconstruction nesting bird survey shall be conducted by a qualified biologist no more than 14 days prior to initiation of Project activities. The survey shall be conducted within the Project Area and include a 50-foot buffer for passerines and a 500-foot buffer for raptors. Portions of the buffer areas that may be inaccessible due to private property constraints will be surveyed from the Project Area and/or public roads using binoculars. The survey shall be conducted by a biologist familiar with the identification of avian species known to occur in the region and shall focus on trees, vegetated areas, and other potential nesting within the vicinity of the Project Area. If nests are found, an appropriate avoidance buffer (typically 50 feet for passerine species and 500 feet for raptors) will be determined and demarcated by the biologist with high visibility material located within or adjacent to the Project Area.
- All Project personnel shall be notified as to the existence of the buffer zones and to avoid entering buffer zones during the nesting season. No Project activities shall occur within the buffer until the avian biologist has confirmed that breeding/nesting is complete, and the young have fledged the nest. Encroachment into the buffer shall occur only at the discretion of the qualified biologist.

BIO-11 On Site Biological Monitoring

A qualified biologist shall be onsite during all vegetation removal, initial ground disturbing activities, and/or during any construction activities that may impact sensitive biological resources, such as dewatering and diversion installation or removal. The biologist will have the authority to temporarily halt or redirect work to avoid impacts to special-status species or other protected biological resources. Once the diversion has been installed and vegetation removal and initial ground-disturbing activities have been completed, the biological monitor will be onsite for no less than two days per week, for a minimum two-hour period per day. A Biological Monitoring Plan will be created for the project, which will include species-specific details regarding preconstruction surveys and on-site monitoring. The Monitoring Plan will be approved by the City biologist prior to the initiation of construction activities.

BIO-12 Habitat Restoration

Project impacts to habitat within the San Luis Obispo Creek corridor will be mitigated through implementation of a Habitat Mitigation and Monitoring Plan (HMMP). The HMMP shall be prepared by a qualified biologist/restoration ecologist and approved by each of the regulatory agencies (i.e., the NMFS, USACE, RWQCB, and CDFW) prior to the initiation of construction activities. The HMMP will include details on the restoration of portions of San Luis Obispo Creek that will be disturbed by the Project, including jurisdictional features, sensitive natural communities (i.e., Mixed Riparian Hardwood), and associated riparian and stream habitats. Should any Project impacts to listed plant species be unavoidable, then the HMMP will also include details on the compensatory mitigation required for impacts to these species (likely at a ratio of 3:1). For impacts to jurisdictional waters and riparian habitat, the HMMP will likely include the following compensatory mitigation ratios:

- On-site mitigation for permanent impacts to jurisdictional/sensitive areas implemented at a minimum ratio of 2:1; and
- On-site mitigation for temporary impacts to jurisdictional/sensitive areas implemented at a minimum ratio of 1:1.

It should be noted the final mitigation ratios required by the regulatory agencies during the permitting process may differ but will be confirmed prior to the initiation of applicable construction activities.

At a minimum, the HMMP will include the following:

- A description of the jurisdictional waters, sensitive plant communities, riparian and stream habitat, and/or sensitive plant species disturbed by the project, and how the mitigation method (e.g., restoration, invasive species removal, enhancement) will achieve the necessary mitigation goal/s;
- a plant palette and methods of salvaging, propagating, seeding, and/or planting the site to be restored;
- methods of soil preparation;
- type(s) and method(s) of instream habitat enhancement (e.g., installation of downed woody debris);
- a schedule for restoration activities including weed abatement, propagating and planting, soil preparation, erosion control, qualitative and quantitative monitoring, and reporting;
- identification of measurable performance standards for each objective to evaluate the success of the compensatory mitigation;
- maintenance and monitoring necessary to confirm the mitigation area meets the success criteria; and
- Identification of contingency and adaptive management measures to address unforeseen changes in site conditions or other components of the mitigation project.

Mitigation will likely occur on-site and may include hydroseeding with a native riparian seed mix, installing native riparian container stock, and/or removal of invasive plant species (e.g., tree of heaven, elmleaf blackberry).

6 Limitations, Assumptions, and Use Reliance

This Biological Resources Assessment has been performed in accordance with professionally accepted biological investigation practices conducted at this time and in this geographic area. The biological investigation is limited by the scope of work performed. Surveys following agency protocols for any specific species potentially occurring in the Project Area were not conducted. Reconnaissance biological surveys for certain taxa may have been conducted as part of this assessment but were not performed during a particular blooming period, nesting period, or particular portion of the season when positive identification would be expected if present, and therefore, cannot be considered definitive. The biological surveys are limited also by the environmental conditions present at the time of the surveys. In addition, general biological (or protocol) surveys do not guarantee that the organisms are not present and will not be discovered in the future within the site. In particular, mobile wildlife species could occupy the site on a transient basis or re-establish populations in the future. Our field studies were based on current industry practices, which change over time and may not be applicable in the future. No other guarantees or warranties, expressed or implied, are provided. The findings and opinions conveyed in this report are based on findings derived from the specified historical and literature sources (Section 2.2) and the field reconnaissance survey. Standard data sources relied upon during the completion of this report, such as the CNDDB, may vary with regard to accuracy and completeness. In particular, the CNDDB is compiled from research and observations reported to CDFW that may or may not have been the result of comprehensive or site-specific field surveys. Although Rincon believes the data sources are reasonably reliable, Rincon cannot and does not guarantee the authenticity or reliability of the data sources it has used. Additionally, pursuant to our contract, the data sources reviewed included only those that are practically reviewable without the need for extraordinary research and analysis.

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8 List of Preparers

Rincon Consultants, Inc.

Primary Authors

- Heather Price Curran, Biologist
- Nicole Argueta, Biologist

Technical Review

- Jaime Grunden, Senior Biologist
- Colby J. Boggs, Principal Ecologist

Graphics

- Michael Glietz, GIS Analyst
- Hannah Newby, GIS Analyst
- Chris Jackson-Joradn, GIS Analyst

Publishing

- Luis Apolinar, Publishing Specialist

Biological Survey

- Heather Price Curran, Biologist

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Appendix A

Regulatory Setting

Regulatory Setting

The following is a brief summary of the regulatory context under which biological resources are managed at the federal, State, and local levels. A number of federal and State statutes provide a regulatory structure that guides the protection of biological resources. Agencies with the responsibility for protection of biological resources within the Project site include the following:

- U.S. Army Corps of Engineers (wetlands and other waters of the United States)
- U.S. Fish and Wildlife Service (federally listed species and migratory birds)
- National Marine Fisheries Service (marine animals and anadromous fishes)
- Central Coast Regional Water Quality Control Board (waters of the State)
- California Department Fish and Wildlife (riparian areas, streambeds, and lakes; State-listed species; nesting birds, marine resources)
- County of San Luis Obispo General Plan
- City of San Luis Obispo General Plan

United States Army Corps of Engineers

The United States Army Corps of Engineers (USACE), is responsible for administering several federal programs related to ensuring the quality and navigability of the nation's waters.

Clean Water Act Section 404

Congress enacted the CWA "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." Section 404 of the Clean Water Act (CWA) authorizes the Secretary of the Army, acting through the USACE, to issue permits regulating the discharge of dredged or fill materials into the "navigable waters at specified disposal sites."

Section 502 of the CWA further defines "navigable waters" as "waters of the United States, including the territorial seas." "Waters of the United States" are broadly defined at 33 CFR Part 328.3 to include navigable waters, perennial and intermittent streams, lakes, rivers, ponds, as well as wetlands, marshes, and wet meadows. In recent years the USACE and US Environmental Protection Agency (USEPA) have undertaken several efforts to modernize their regulations defining "waters of the United States" (e.g., the 2015 Clean Water Rule and 2020 Navigable Waters Protection Rule), but these efforts have been frustrated by legal challenges which have invalidated the updated regulations. Thus, the agencies' longstanding definition of "waters of the United States," which dates from 1986, remains in effect albeit with supplemental guidance interpreting applicable court decisions as described below.

Waters of the U.S.

In summary, USACE and USEPA regulations define "waters of the United States" as follows:

1. All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;

2. All interstate waters including interstate wetlands;
3. All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce including any such waters:
    i. Which are or could be used by interstate or foreign travelers for recreational or other purposes; or
    ii. From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
    iii. Which are used or could be used for industrial purpose by industries in interstate commerce;
4. All impoundments of waters otherwise defined as waters of the United States;
5. Tributaries of waters identified in paragraphs (a)(1)-(4) of this section;
6. The territorial sea;
7. Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in items 1-6 above.

Waters of the United States do not include prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with the USEPA.

Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA are not waters of the United States.

The lateral limits of USACE jurisdiction in non-tidal waters is defined by the "ordinary high-water mark" (OHWM) unless adjacent wetlands are present. The OHWM is a line on the shore or edge of a channel established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed upon the bank, shelving, changes in the character of soil, destruction of vegetation, or the presence of debris (33 CFR 328.3(e)). As such, waters are recognized in the field by the presence of a defined watercourse with appropriate physical and topographic features. If wetlands occur within, or adjacent to, waters of the United States, the lateral limits of USACE jurisdiction extend beyond the OHWM to the outer edge of the wetlands (33 CFR 328.4 (c)). The upstream limit of jurisdiction in the absence of adjacent wetlands is the point beyond which the OHWM is no longer perceptible (33 CFR 328.4; see also 51 FR 41217.)

Wetlands

The USACE defines wetlands as “those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions” (33 CFR 328.3). The USACE’s delineation procedures identify wetlands in the field based on indicators of three wetland parameters: hydrophytic vegetation, hydric soils, and wetland hydrology. The following is a discussion of each of these parameters.

Hydrophytic Vegetation

Hydrophytic vegetation dominates areas where frequency and duration of inundation or soil saturation exerts a controlling influence on the plant species present. Plant species are assigned wetland indicator status according to the probability of their occurring in wetlands. More than fifty percent of the dominant plant species must have a wetland indicator status to meet the hydrophytic vegetation criterion. The USACE published the National Wetland Plant List (USACE 2018), which separates vascular plants into the following four basic categories based on plant species frequency of occurrence in wetlands:

- **Obligate Wetland (OBL).** Almost always occur in wetlands
- **Facultative Wetland (FACW).** Usually occur in wetlands, but occasionally found in non-wetlands
- **Facultative (FAC).** Occur in wetlands or non-wetlands
- **Facultative Upland (FACU).** Usually occur in non-wetlands, but may occur in wetlands
- **Obligate Upland (UPL).** Almost never occur in wetlands

The USACE considers OBL, FACW and FAC species to be indicators of wetlands. An area is considered to have hydrophytic vegetation when greater than 50 percent of the dominant species in each vegetative stratum (tree, shrub, and herb) fall within these categories. Any species not appearing on the United States Fish and Wildlife Service's list is assumed to be an upland species, almost never occurring in wetlands. In addition, an area needs to contain at least 5% vegetative cover to be considered as a vegetated wetland.

Hydric Soils

Hydric soils are saturated or inundated for a sufficient duration during the growing season to develop anaerobic or reducing conditions that favor the growth and regeneration of hydrophytic vegetation. Field indicators of wetland soils include observations of ponding, inundation, saturation, dark (low chroma) soil colors, bright mottles (concentrations of oxidized minerals such as iron), gleying (indicates reducing conditions by a blue-grey color), or accumulation of organic material. Additional supporting information includes documentation of soil as hydric or reference to wet conditions in the local soils survey, both of which must be verified in the field.

Wetland Hydrology

Wetland hydrology is inundation or soil saturation with a frequency and duration long enough to cause the development of hydric soils and plant communities dominated by hydrophytic vegetation. If direct observation of wetland hydrology is not possible (as in seasonal wetlands), or records of wetland hydrology are not available (such as stream gauges), assessment of wetland hydrology is frequently supported by field indicators, such as water marks, drift lines, sediment deposits, or drainage patterns in wetlands.

Applicable Case Law and Agency Guidance

The USACE's regulations defining "waters of the United States" have been subject to legal interpretation, and two influential Supreme Court decisions have narrowed the definition to exclude certain classes of waters that bear an insufficient connection to navigable waters. In *Solid Waste Agency of Northern Cook County v. Army Corps of Engineers* (2001), the United States Supreme Court stated that the USACE's CWA jurisdiction does not extend to ponds that "are not adjacent to open water." In reaching its decision, the Court concluded that the "Migratory Bird Rule," which

served as the basis for the USACE's asserted jurisdiction, was not supported by the CWA. The Migratory Bird Rule extended CWA jurisdiction to intrastate waters "which are or would be used as habitat by birds protected by Migratory Bird Treaties or which are or would be used as habitat by other migratory birds which cross state lines…" The Court was concerned that application of the Migratory Bird Rule resulted in "reading the term 'navigable waters' out of the statute. Highlighting the language of the CWA to determine the statute's jurisdictional reach, the Court stated, "the term 'navigable' has at least the import of showing us what Congress had in mind as its authority for enacting the CWA: its traditional jurisdiction over waters that were or had been navigable in fact or which could reasonably be so made." This decision stands for the proposition that non-navigable isolated, intrastate waters are not waters of the United States and thus are not jurisdictional under the CWA.

In 2006 the United States Supreme Court decided *Rapanos v. United States* and *Carabell v. United States* (collectively "Rapanos"), which were consolidated cases determining the extent of CWA jurisdiction over waters that carry only an infrequent surface flow. The court issued no majority opinion in Rapanos. Instead, the justices authored five separate opinions including the "plurality" opinion, authored by Justice Scalia (joined by three other justices), and a concurring opinion by Justice Kennedy. To guide implementation of the decision, the USACE and USEPA issued a joint guidance memorandum ("Rapanos Guidance Memorandum") in 2008 stating that "regulatory jurisdiction under the CWA exists over a water body if either the plurality's or Justice Kennedy's standard is satisfied."

According to the plurality opinion in Rapanos, "the waters of the United States include only relatively permanent, standing or flowing bodies of water" and do not include "ordinarily dry channels through which water occasionally or intermittently flows." In addition, while all wetlands that meet the USACE definition are considered adjacent wetlands, only those adjacent wetlands that have a continuous surface connection because they directly abut the tributary (e.g., they are not separated by uplands, a berm, dike, or similar feature) are considered jurisdictional under the plurality standard.

Under Justice Kennedy's opinion, "the USACE's jurisdiction over wetlands depends upon the existence of a significant nexus between the wetlands in question and navigable waters in the traditional sense. Wetlands possess the requisite nexus, and thus come within the statutory phrase 'navigable waters,' if the wetlands, either alone or in combination with similarly situated lands in the region, significantly affect the chemical, physical, and biological integrity of other covered waters more readily understood as 'navigable.' When, in contrast, wetlands' effects on water quality are speculative or insubstantial, they fall outside the zone fairly encompassed by the statutory term 'navigable waters.'" Justice Kennedy identified "pollutant trapping, flood control, and runoff storage" as some of the critical functions wetlands can perform relative to other waters. He concluded that, given wetlands' ecological role, "mere adjacency" to a non-navigable tributary was insufficient to establish CWA jurisdiction, and that "a more specific inquiry, based on the significant nexus standard, is therefore necessary."

Interpreting these decisions, and according to the Rapanos Guidance Memorandum, the USACE and USEPA will assert jurisdiction over the following waters:

- Traditional navigable waters;
- Wetlands adjacent to traditional navigable waters;

- Non-navigable tributaries of traditional navigable waters that are relatively permanent where the tributaries typically flow year-round or have continuous flow at least seasonally (e.g., typically three months); and,
- Wetlands that directly abut such tributaries.

The USACE and USEPA will decide jurisdiction over the following waters based on a fact-specific analysis to determine whether they have a significant nexus with a traditional navigable water:

- Non-navigable tributaries that are not relatively permanent;
- Wetlands adjacent to non-navigable tributaries that are not relatively permanent; and,
- Wetlands adjacent to but that do not directly abut a relatively permanent non-navigable tributary.

Where a significant nexus analysis is required, the USACE and USEPA will apply the significant nexus standard as follows:

- A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by all wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical and biological integrity of downstream traditional navigable waters; and,
- Significant nexus includes consideration of hydrologic and ecologic factors.

The USACE and USEPA generally will not assert jurisdiction over the following features:

- Swales or erosional features (e.g., gullies, small washes characterized by low volume, infrequent, or short duration flow); and,
- Ditches (including roadside ditches) excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water.

Rivers and Harbors Act Section 10

Section 10 of the Rivers and Harbors Act of 1899 requires authorization from the USACE for the construction of any structure in or over any navigable water of the United States. Structures or work outside the limits defined for navigable waters of the United States require a Section 10 permit if the structure or work affects the course, location, or condition of the water body. The law applies to any dredging or disposal of dredged materials, excavation, filling, re-channelization, or any other modification of a navigable water of the United States, and applies to all structures and work. It further includes, without limitation, any wharf, dolphin, weir, boom breakwater, jetty, groin, bank protection (e.g. riprap, revetment, bulkhead), mooring structures such as pilings, aerial or subaqueous power transmission lines, intake or outfall pipes, permanently moored floating vessel, tunnel, artificial canal, boat ramp, aids to navigation, and any other permanent, or semi-permanent obstacle or obstruction. It is important to note that Section 10 applies only to navigable waters, and thus does not apply to work in non-navigable wetlands or tributaries. In some cases, Section 10 authorization is issued by the USACE concurrently with CWA Section 404 authorization, such as when certain Nationwide Permits are used.

Regional Water Quality Control Board

The State Water Resources Control Board (SWRCB) and nine Regional Water Quality Control Boards (RWQCBs) have jurisdiction over "waters of the State," which are defined as any surface water or groundwater, including saline waters, within the boundaries of the State (California Water Code sec. 13050(e)). These agencies also have responsibilities for administering portions of the CWA.

Clean Water Act Section 401

Section 401 of the CWA requires an applicant requesting a federal license or permit for an activity that may result in any discharge into navigable waters (such as a Section 404 Permit) to provide State certification that the proposed activity will not violate State and federal water quality standards. In California, CWA Section 401 Water Quality Certification (Section 401 Certification) is issued by the RWQCBs and by the SWRCB for multi-region Projects. The process begins when an applicant requests a pre-application meeting with the RWQCB, waits no less than 30 days, and then submits an application to the RWQCB and informs the USACE (or the applicable agency from which a license or permit was requested) that an application has been submitted. The USACE will then determine a "reasonable period of time" for the RWQCB to act on the application; this is typically 60 days for routine Projects and longer for complex Projects but may not exceed one year. Under current regulations, once initiated, the reasonable period of time cannot be stopped or paused. When the period has elapsed, if the RWQCB has not either issued or denied the application for Section 401 Certification, the USACE may determine that Certification has been waived and issue the requested permit. If a Section 401 Certification is issued it may include binding conditions, imposed either through the Certification itself or through the requested federal license or permit.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (Porter-Cologne Act) is the principal law governing water quality regulation in California. It establishes a comprehensive program to protect water quality and the beneficial uses of water. The Porter-Cologne Act applies to surface waters, wetlands, and ground water and to both point and nonpoint sources of pollution. Pursuant to the Porter-Cologne Act (California Water Code section 13000 et seq.), the policy of the State is as follows:

- The quality of all the waters of the State shall be protected
- All activities and factors affecting the quality of water shall be regulated to attain the highest water quality within reason
- The State must be prepared to exercise its full power and jurisdiction to protect the quality of water in the State from degradation

The Porter-Cologne Act established nine RWQCBs (based on watershed boundaries) and the SWRCB, which are charged with implementing its provisions and which have primary responsibility for protecting water quality in California. The SWRCB provides program guidance and oversight, allocates funds, and reviews RWQCB decisions. In addition, the SWRCB allocates rights to the use of surface water. The RWQCBs have primary responsibility for individual permitting, inspection, and enforcement actions within each of nine hydrologic regions. The SWRCB and RWQCBs have numerous nonpoint source related responsibilities, including monitoring and assessment, planning, financial assistance, and management.

Section 13260 of the Porter-Cologne Act requires any person discharging or proposing to discharge waste that could affect the quality of waters of the State to file a Report of Waste Discharge with the appropriate RWQCB. The RWQCB may then authorize the discharge, subject to conditions, by issuing Waste Discharge Requirements (WDRs). While this requirement was historically applied primarily to outfalls and similar point source discharges, the SWRCB's *State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State*, effective May 2020, make it clear that the agency will apply the Porter-Cologne Act's requirements to discharges of dredge and fill material as well. The *Procedures* state that they are to be used in issuing CWA Section 401 Certifications and WDRs, and largely mirror the existing review requirements for CWA Section 404 Permits and Section 401 Certifications, incorporating most elements of the USEPA's *Section 404(b)(1) Guidelines*. Following issuance of the *Procedures*, the SWRCB produced a consolidated application form for dredge/fill discharges that can be used to obtain a CWA Section 401 Water Quality Certification, WDRs, or both.

Non-Wetland Waters of the State

The SWRCB and RWQCBs have not established regulations for field determinations of waters of the State except for wetlands currently. In many cases the RWQCBs interpret the limits of waters of the State to be bounded by the OHWM unless isolated conditions or ephemeral waters are present. However, in the absence of statewide guidance each RWQCB may interpret jurisdictional boundaries within their region and the SWRCB has encouraged applicants to confirm jurisdictional limits with their RWQCB before submitting applications. As determined by the RWQCB, waters of the State may include riparian areas or other locations outside the OHWM, leading to a larger jurisdictional area over a given water body compared to the USACE.

Wetland Waters of the State

Procedures for defining wetland waters of the State pursuant to the SWRCB's *State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State* went into effect May 28, 2020. The SWRCB defines an area as wetland if, under normal circumstances:

(i) the area has continuous or recurrent saturation of the upper substrate caused by groundwater, or shallow surface water, or both;

(ii) the duration of such saturation is sufficient to cause anaerobic conditions in the upper substrate; and

(iii) the area's vegetation is dominated by hydrophytes or the area lacks vegetation.

The SWRCB's *Implementation Guidance for the Wetland Definition and Procedures for Discharges of Dredge and Fill Material to Waters of the State* (2020), states that waters of the U.S. and waters of the State should be delineated using the standard USACE delineation procedures, taking into consideration that the methods shall be modified only to allow for the fact that a lack of vegetation does not preclude an area from meeting the definition of a wetland.

United States Fish and Wildlife Service

The United States Fish and Wildlife Service (USFWS) implements several laws protecting the Nation's fish and wildlife resources, including the Endangered Species Act (ESA; 16 United States Code [USC] Sections 153 et seq.), the Migratory Bird Treaty Act (MBTA; 16 USC Sections 703-711) and the Bald and Golden Eagle Protection Act (16 USC Section 668).

Endangered Species Act

The USFWS and National Marine Fisheries Service (NMFS) share responsibility for implementing the ESA. Generally, the USFWS implements the FESA for terrestrial and freshwater species, while the NMFS implements the FESA for marine and anadromous species. Projects that would result in "take" of any threatened or endangered animal species, or a threatened or endangered plant species if occurring on federal land, are required to obtain permits from the USFWS or NMFS through either Section 7 (interagency consultation with a federal nexus) or Section 10 (Habitat Conservation Plan) of the ESA, depending on the involvement by the federal government in funding, authorizing, or carrying out the Project. The permitting process is used to determine if a Project would jeopardize the continued existence of a listed species and what measures would be required to avoid jeopardizing the species. "Take" under federal definition means to harass, harm (which includes habitat modification), pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. Proposed or candidate species do not have the full protection of the ESA; however, the USFWS and NMFS advise Project applicants that they could be elevated to listed status at any time.

Migratory Bird Treaty Act

The MBTA of 1918 implements four international conservation treaties that the U.S. entered into with Canada in 1916, Mexico in 1936, Japan in 1972, and Russia in 1976. It is intended to ensure the sustainability of populations of all protected migratory bird species. The law has been amended with the signing of each treaty, as well as when any of the treaties were amended, such as with Mexico in 1976 and Canada in 1995. The MBTA prohibits the take (including killing, capturing, selling, trading, and transport) of protected migratory bird species without prior authorization by the USFWS.

The list of migratory bird species protected by the law, in regulations at 50 CFR Part 10.13, is primarily based on bird families and species included in the four international treaties. A migratory bird species is included on the list if it meets one or more of the following criteria:

1. It occurs in the United States or U.S. territories as the result of natural biological or ecological processes and is currently, or was previously listed as, a species or part of a family protected by one of the four international treaties or their amendments.
2. Revised taxonomy results in it being newly split from a species that was previously on the list, and the new species occurs in the United States or U.S. territories as the result of natural biological or ecological processes.
3. New evidence exists for its natural occurrence in the United States or U.S. territories resulting from natural distributional changes and the species occurs in a protected family.

In 2004, the Migratory Bird Treaty Reform Act limited the scope of the MBTA by stating the MBTA applies only to migratory bird species that are native to the United States or U.S. territories, and that a native migratory bird species is one that is present as a result of natural biological or ecological processes. The MBTRA requires the USFWS to publish a list of all nonnative, human-introduced bird species to which the MBTA does not apply, and an updated list was published in 2020. The 2020 update identifies species belonging to biological families referred to in treaties the MBTA implements but are not protected because their presence in the United States or U.S. territories is solely the result of intentional or unintentional human-assisted introductions.

Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act prohibits anyone, without a permit issued by the USFWS, from "taking" bald or golden eagles, including their parts (including feathers), nests, or eggs. The Act provides criminal penalties for persons who "take, possess, sell, purchase, barter, offer to sell, purchase or barter, transport, export or import, at any time or any manner, any bald eagle ... [or any golden eagle], alive or dead, or any part, nest, or egg thereof." The Act defines "take" as "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb."

"Disturb" means “to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, 1) injury to an eagle, 2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or 3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior."

In addition to immediate impacts, this definition also covers impacts that result from human-induced alterations initiated around a previously used nest site during a time when eagles are not present, if, upon the eagle's return, such alterations agitate or bother an eagle to a degree that interferes with or interrupts normal breeding, feeding, or sheltering habits, and causes injury, death or nest abandonment.

California Department of Fish and Wildlife

The California Department of Fish and Wildlife (CDFW) derives its authority from the Fish and Game Code of California and administers several State laws protecting fish and wildlife resources and the habitats upon which they depend.

California Endangered Species Act

The California Endangered Species Act (CESA) (Fish and Game Code Section 2050 et. seq.) prohibits take of State listed threatened or endangered. Take under CESA is defined as “Hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill” (Fish and Game Code sec. 86). This definition does not prohibit indirect harm by way of habitat modification, except where such harm is the proximate cause of death of a listed species. Where incidental take would occur during construction or other lawful activities, CESA allows the CDFW to issue an Incidental Take Permit upon finding, among other requirements, that impacts to the species have been minimized and fully mitigated. Unlike the federal ESA, CESA’s protections extend to candidate species during the period (typically one year) while the California Fish and Game Commission decides whether the species warrants CESA listing.

Native Plant Protection Act

The CDFW also has authority to administer the Native Plant Protection Act (NPPA) (Fish and Game Code Section 1900 et seq.). The NPPA requires the CDFW to establish criteria for determining if a species, subspecies, or variety of native plant is endangered or rare, and prohibits the take of listed plant species. Effective in 2015, CDFW promulgated regulations (14 CCR 786.9) under the authority of the NPPA, establishing that the CESA’s permitting procedures would be applied to plants listed under the NPPA as "Rare." With this change, there is little practical difference for the regulated public between plants listed under CESA and those listed under the NPPA.

Fully Protected Species Laws

The CDFW enforces Sections 3511, 4700, 5050, and 5515 of the Fish and Game Code, which prohibit take of species designated as Fully Protected. The CDFW is not allowed to issue an Incidental Take Permit for Fully Protected species; therefore, impacts to these species must be avoided. The exception is situations where a Natural Community Conservation Plan (NCCP) is in place that authorizes take of the fully protected species.

Avian Protection Laws

California Fish and Game Code sections 3503, 3503.5, and 3513 describe unlawful take, possession, or destruction of native birds, nests, and eggs. Section 3503.5 of the Code protects all birds-of-prey and their eggs and nests against take, possession, or destruction of nests or eggs. Section 3513 makes it a State-level offense to take any bird in violation of the federal Migratory Bird Treaty Act.

Protection of Lakes and Streambeds

California Fish and Game Code section 1602 states that it is unlawful for any person to "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" without first notifying the California Department of Fish and Wildlife (CDFW) of that activity. Thereafter, if CDFW determines and informs the entity that the activity will not substantially adversely affect any existing fish or wildlife resources, the entity may commence the activity. If, however, CDFG determines that the activity may substantially adversely affect an existing fish or wildlife resource, the entity may be required to obtain from CDFW a Streambed Alteration Agreement (SAA), which will include reasonable measures necessary to protect the affected resource(s), before the entity may conduct the activity described in the notification. Upon receiving a complete Notification of Lake/Streambed Alteration, CDFW has 60 days to present the entity with a Draft SAA. Upon review of the Draft SAA by the applicant, any problematic terms are negotiated with CDFW and a final SAA is executed.

The CDFW has not defined the term “stream” for the purposes of implementing its regulatory program under Section 1602, and the agency has not promulgated regulations directing how jurisdictional streambeds may be identified, or how their limits should be delineated. However, four relevant sources of information offer insight as to the appropriate limits of CDFW jurisdiction as discussed below.

- **The plain language of Section 1602 of CFGC** establishes the following general concepts:
  - References “river,” “stream,” and “lake”
  - References “natural flow”
  - References “bed,” “bank,” and “channel”
- **Applicable court decisions**, in particular *Rutherford v. State of California* (188 Cal App. 3d 1276 (1987), which interpreted Section 1602’s use of “stream” to be as defined in common law. The Court indicated that a “stream” is commonly understood to:
  - Have a source and a terminus
  - Have banks and a channel
  - Convey flow at least periodically, but need not flow continuously and may at times appear outwardly dry

  - Represent the depression between the banks worn by the regular and usual flow of the water
  - Include the area between the opposing banks measured from the foot of the banks from the top of the water at its ordinary stage, including intervening sand bars
  - Include the land that is covered by the water in its ordinary low stage
  - Include lands below the OHWM
- **CDFW regulations** defining "stream" for other purposes, including sport fishing (14 CCR 1.72) and streambed alterations associated with cannabis production (14 CCR 722(c)(21)), which indicate that a stream:
  - Flows at least periodically or intermittently
  - Flows through a bed or channel having banks
  - Supports fish or aquatic life
  - Can be dry for a period of time
  - Includes watercourses where surface or subsurface flow supports or has supported riparian vegetation
- **Guidance documents**, including A Field Guide to Lake and Streambed Alteration Agreements (CDFG 1994) and Methods to Describe and Delineate Episodic Stream Processes on Arid Landscapes for Permitting Utility-Scale Solar Power Plants (Brady and Vyverberg 2013), which suggest the following:
  - A stream may flow perennially or episodically
  - A stream is defined by the course in which water currently flows, or has flowed during the historic hydrologic course regime (approximately the last 200 years)
  - Width of a stream course can reasonably be identified by physical or biological indicators
  - A stream may have one or more channels (single thread vs. compound form)
  - Features such as braided channels, low-flow channels, active channels, banks associated with secondary channels, floodplains, islands, and stream-associated vegetation, are interconnected parts of the watercourse
  - Canals, aqueducts, irrigation ditches, and other means of water conveyance can be considered streams if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife
  - Biologic components of a stream may include aquatic and riparian vegetation, all aquatic animals including fish, amphibians, reptiles, invertebrates, and terrestrial species which derive benefits from the stream system
  - The lateral extent of a stream can be measured in different ways depending on the particular situation and the type of fish or wildlife resource at risk

The tenets listed above, among others, are applied to establish the boundaries of streambeds in various environments. Importance of each factor may be weighted based on site-specific considerations and the applicability of the indicators to the streambed at hand.

Local Jurisdiction

City of San Luis Obispo General Plan

Chapter 6: Conservation and Open Space

Objective 7 Natural Communities

7.2. Goal Sustainable natural populations

The City will maintain and enhance conditions necessary to enable a species to become self-sustaining. Within the San Luis Obispo planning area, the City will seek to achieve self-sustaining populations of the plants, fish and wildlife that made up the natural communities in the area when urbanization began.

7.3.1. Protect Listed Species

a. The City will identify the location, habitat and buffer needs of species listed for protection. This information will be developed by qualified people early in the planning and development review process.
b. The City will establish and maintain records on the location of listed species. The City will maintain, for public use, generalized maps showing known locations of listed species. Specific site information may be kept confidential to protect the resources.
c. The City will comply with State and Federal requirements for listed species.
d. The City will protect listed species through its actions on: land-use designations; development standards; development applications; location, design, construction and maintenance of creeks, City roads and facilities; and on land that the City owns or manages.
e. City actions that could impact listed species shall be consistent with mitigation policies in Chapter 8.25.3. Subject to the approval of agencies with jurisdiction, the City may approve a Project where mitigation requires relocation of listed species, but only if there is no practical alternative and relocation is limited to individuals or small parts of a larger population, not the entire remaining population of a species. (If an agency with jurisdiction determines that relocation of an entire population is needed for its survival regardless of a Project's development, the City will help with the relocation).
f. Species listed for protection" are:
    i. Classified by the U.S. Fish and Wildlife Service as:
        1. "Endangered" - In danger of extinction throughout all or a significant portion of its range.
        2. "Threatened" - Likely to become endangered without protection and management.
        3. "Proposed Endangered" or "Proposed Threatened" - Presently being considered for endangered status.
        4. "Candidate, category 1" - U.S. Fish and Wildlife Service has sufficient data to support listing as endangered.
        5. "Candidate, category 2" - Needs U.S. Fish and Wildlife Service further data on threats.
    ii. Classified by the California Department of Fish and Game as:

1. "Endangered" - Prospects for survival are in immediate jeopardy.
2. "Threatened" - Likely to become endangered without protection and management.
3. "Rare" - May become endangered if present environment worsens. (only refers to plants)
4. "Species of Special Concern" - Are not rare on a State scale, but are found in limited locations.

iii. Classified by the California Native Plant Society as:

1. "List 1A, Plants of Highest Priority" - Presumed extinct in California.
2. "List 1B, Plants of Highest Priority" - Plants rare and endangered in California and elsewhere.
3. "List 2" - Plants rare and endangered in California, but common elsewhere.
4. "List 3" - Plants about which more information is needed.
5. "List 4" - Plants of limited distribution (a watch list).

iv. Not listed by the U.S. Fish and Wildlife Service, the California Department of Fish and Game or the California Native Plant Society, but which can be shown to meet the criteria of the California Environmental Quality Act Guidelines, Section 15380, "Endangered, Rare or Threatened Species."

7.3.2 Species of Local Concern

The City will:

A. Maintain healthy populations of native species in the long term, even though they are not listed for protection under State or Federal laws. These "species of local concern" are at the limit of their range in San Luis Obispo, or threats to their habitat are increasing.

B. Identify the location, habitat and buffer needs of species of local concern. This information will be developed by qualified people early in the planning and development review process. (These species are listed in Appendix A, which may be revised by the City's Natural Resources Manager or other biological resource professional upon public notice. Anyone may nominate species for the list.)

C. Protect species of local concern through: its actions on land use designations, development standards, development applications; the location, design, construction and maintenance of City facilities; land that the City owns or manages.

D. Encourage individuals, organizations and other agencies to protect species of local concern within their areas of responsibility and jurisdiction.

E. Protect sensitive habitat, including creeks, from encroachment by livestock and human activities.

7.3.3 Wildlife Habitat and Corridors

Continuous wildlife habitat, including corridors free of human disruption, shall be preserved and where necessary, created by interconnecting open spaces, wildlife habitat and corridors. To accomplish this, the City will: A. Require public and private developments, including public works Projects, to evaluate animal species and their movements within and through development sites and create habitats and corridors appropriate for wildlife. B. Plan for connectivity of open spaces and wildlife habitat and corridors using specific area plans,

neighborhood plans, subdivision maps or other applicable planning processes, consistent with Open Space Guidelines. C. Coordinate with San Luis Obispo County and adjoining jurisdictions, federal and State agencies such as Caltrans to assure regional connectivity of open space and wildlife corridors. D. Preserve and expand links between open spaces and creek corridors, as shown in Figure 3.

7.4. Goal Trees and Other Plants

Protect, preserve and create the conditions that will promote the preservation of significant trees and other vegetation, particularly native California species.

7.5.1 Protection of Significant Trees

Significant trees, as determined by the City Council upon the recommendation of the Tree Committee, Planning or Architectural Review Committee, are those making substantial contributions to natural habitat or to the urban landscape due to their species, size, or rarity. Significant trees, particularly native species, shall be protected. Removal of significant trees shall be subject to the criteria and mitigation requirements in Chapter 8.6.3. Oak Woodland communities in the Greenbelt and in open space areas shall be protected.

7.5.4 Preservation of Grassland Communities and Other Habitat Types

Grassland communities and other habitat types in the Greenbelt and in designated open space areas shall be preserved.

7.5.5 Soil Conservation and Landform Modification

Public and private development Projects shall be designed to prevent soil erosion, minimize landform modifications to avoid habitat disturbance and conserve and reuse on-site soils.

7.5.6 Minimize Synthetic or Organic Environmental Toxins

7.6.1 Environmental Toxins

The City will avoid the use of synthetic organic chemicals unless there is no practical alternative, and support use of integrated pest management techniques. When the use of a synthetic organic chemical cannot be avoided, the material shall be selective (its effect limited to the target species so far as possible), and it shall be applied selectively.

7.7.1 Protect Natural Communities

The City will do the following in support of natural communities and will encourage individuals, organizations, and other agencies to take the same actions within their areas of responsibility and jurisdiction:

7.7.2 Implement the natural communities policies above

7.7.3. Participate in any area-wide planning efforts such as Habitat Conservation Plans under the U.S. Endangered Species Act

7.7.4. Participate in environmental review conducted by other agencies for Projects that could affect natural communities in the San Luis Obispo planning area

7.7.5. Develop and Maintain Current Benchmark Information on Habitat Types and Conditions

For listed species, species of local concern and California Native Plant Society listed species, develop and maintain benchmark information on the known and likely locations of populations, population number and density estimates, limiting factors, environmental threats and other pertinent information for use in planning and environmental review.

7.7.6 Replace Invasive, Non-native Vegetation with Native Vegetation

The City and private development will protect and enhance habitat by removing invasive, non-native vegetation that detracts from habitat values and by replanting it with native California plant species. The Natural Resources Manger will prioritize Projects and enlist the help of properly trained volunteers to assist in non-native vegetation removal and replanting when appropriate.

7.7.7 Preserve Ecotones

Condition or modify development approvals to ensure that "ecotones," or natural transitions along the edges of different habitat types, are preserved and enhanced because of their importance to wildlife. Natural ecotones of particular concern include those along the margins of riparian corridors, marshlands, vernal pools, and oak woodlands where they transition to grasslands and other habitat types.

7.7.8 Protect Wildlife Corridors

Condition development permits in accordance with applicable mitigation measures to ensure that important corridors for wildlife movement and dispersal are protected. Features of particular importance to wildlife include riparian corridors, wetlands, lake shorelines, and protected natural areas with cover and water. Linkages and corridors shall be provided to maintain connections between habitat areas.

7.7.9 Creek Setbacks

As further described in the Zoning Regulations, the City will maintain creek setbacks to include: an appropriate separation from the physical top of bank, the appropriate floodway as identified in the Flood Management Policy, native riparian plants or wildlife habitat and space for paths called for by any City adopted plan (Figure 4). In addition, creek setbacks should be consistent with the following:

A. The following items should be no closer to the wetland or creek than the setback line: buildings, streets, driveways, parking lots, above-ground utilities, and outdoor commercial storage or work areas.

B. Development approvals should respect the separation from creek banks and protection of floodways and natural features identified in part A above, whether or not the setback line has been established.
C. Features which normally would be outside the creek setback may be permitted to encroach where there is no practical alternative, to allow reasonable development of a parcel, consistent with the Conservation and Open Space Element.
D. Existing bridges may be replaced or widened, consistent with policies in this Element. Removal of any existing bridge or restoration of a channel to more natural conditions will provide for wildlife corridors, traffic circulation, access, utilities, and reasonable use of adjacent properties.

7.7.10 Tree Committee

The Tree Committee will help implement Natural Communities policies through expanded tree preservation and planting programs.

Objective 8: Open Space

8.2.2. Goal Open Space within the urban Area

Within the urban area, the City will secure and maintain a diverse network of open land encompassing particularly valuable natural and agricultural resources, connected with the landscape around the urban area. Particularly valuable resources are:

A. Creek corridors, including open channels with natural banks and vegetation.
B. Laguna Lake and its undeveloped margins.
C. Wetlands and vernal pools.
D. Undeveloped land within the Urban Reserve not intended for urban uses.
E. Grassland communities and woodlands.
F. Wildlife habitat and corridors for the health and mobility of individuals and of the species.
G. The habitat of species listed as threatened or endangered by the State or Federal governments.
H. Prime agricultural soils and economically viable farmland (Figure 10).
I. Groundwater recharge areas.
J. Historically open-space settings for cultural resources, native and traditional landscapes.
K. Hills, ridgelines and the Morros.
L. Scenic rock outcroppings and other significant geological features.
M. Unique plant and animal communities, including “species of local concern.”

8.6.3. Goal Required Mitigation

Loss or harm shall be mitigated to the maximum extent feasible. Mitigation must at least comply with Federal and State requirements. Mitigation shall be implemented and monitored in compliance with State and Federal requirements, by qualified professionals, and shall be funded by the Project applicant.

A. For natural habitat that is relatively limited in extent (such as riparian or wetland habitat) mitigation shall consist of creating twice the area of habitat lost, of equal quality, in the following order of preference:

i. The same kind on the same site.
ii. The same kind on a different site (the site shall be within the San Luis Obispo planning area).
iii. A similar kind (such as seasonal wetland in place of freshwater marsh) on the same site.
iv. A similar kind on a different site (the site shall be within the San Luis Obispo Planning Area).

B. Habitat created as mitigation should be located and designed to minimize the need for long-term artificial support (such as supplying wetlands from a well requiring energy and maintenance).
C. For a widespread habitat type or for farmland, mitigation shall consist of permanently protecting an equal area of equal quality, which does not already have permanent protection, within the San Luis Obispo Planning Area.
D. For Projects involving enlargement of the urban reserve, mitigation shall consist of permanently protecting an area not previously protected, that is located and that has sufficient size (generally four times the area to be developed) to secure a permanent edge to the city.
E. Individual small Projects, each with an incremental impact on an extensive resource, may provide mitigation through payment of a fee, to be used for protecting that resource within the San Luis Obispo planning area.
F. The City may establish or participate in a "mitigation bank," through which resources are protected in a consolidated location ahead of the need to mitigate impacts of individual, small Projects. The City will work with other agencies to assure successful operation of any mitigation bank that is established.
G. Any development that is allowed on a site designated as Open Space or Agriculture, or containing openspace resources, shall be designed to minimize its impacts on open space values on the site and on neighboring land.
    i. Hillside development shall comply with the standards of the Land Use Element, including minimization of grading for structures and access, and use of building forms, colors, and landscaping that are not visually intrusive. (See also Chapter 9.2.1)
    ii. Creek corridors, wetlands, grassland communities, other valuable habitat areas, archaeological resources, agricultural land, and necessary buffers should be within their own parcel, rather than divided among newly created parcels (Figure 8). Where creation of a separate parcel is not practical, the resources shall be within an easement. The easement must clearly establish allowed uses and maintenance responsibilities in furtherance of resource protection.
    iii. The City will encourage the County not to create new parcels within the greenbelt, with the exception of those permitted under the County's agriculture cluster incentive. Outside of cluster districts, allowed parcel sizes within the greenbelt should be no smaller, and the number of dwellings allowed on a parcel should be no greater than as designated in the September 2002 San Luis Obispo Area Plan and related County codes.

The City will encourage the County to adopt and implement a mandatory cluster district for appropriate areas of the Greenbelt under County jurisdiction to preserve open space qualities, consistent with this Element.

The City will encourage other agencies to follow these policies.

Objective 10 Water

10.2.1 Water Quality

The City will employ the best available practices for pollution avoidance and control, and will encourage others to do so. “Best available practices” means behavior and technologies that result in the highest water quality, considering available equipment, life-cycle costs, social and environmental side effects, and the regulations of other agencies.

Chapter 8: Water and Wastewater

A. Water Resource Availability

A 3.2.1 Basis for Planning

The City will plan for future development through the Land Use Element taking into consideration available water resources from the Salinas, Whale Rock, and Nacimiento Reservoirs and recycled water.

A. Siltation

A 4.3.1

Work cooperatively with other agencies and/or watershed management groups, including the County of San Luis Obispo and Resource Conservation Districts, implementing best management practices (BMPs) to reduce erosion and subsequent siltation consistent with other City watershed management goals and water quality objectives included in the Conservation and Open Space Element.

B. Collection System

B 4.3.5

Maintain, and revise as necessary, master plans for the extension of wastewater services to developing areas of the City and to ensure orderly replacement of aged infrastructure.

B 4.3.6

Review development proposals to ensure new development does not adversely impact existing infrastructure and that necessary infrastructure will be in place to support the development.

Appendix B

Site Photographs

Photograph 1. View of San Luis Obispo Creek and instream habitat upstream of the Johnson Avenue bridge, facing northeast (upstream).

Photograph 2. View of San Luis Obispo Creek beneath the Johnson Avenue bridge, where the temporary upstream diversion dams will be installed, facing southwest (downstream).

Photograph 3. View of the San Luis Obispo Creek channel and riparian understory just downstream of the Johnson Avenue bridge, facing northeast (upstream).

Photograph 4. View of San Luis Obispo Creek and the existing concrete slope protection infrastructure immediately downstream of the Johnson Avenue bridge, facing southwest (downstream).

Photograph 5. View of the eroded base of the existing slope protection infrastructure, facing southwest (downstream).

Photograph 6. View of the existing slope protection infrastructure approximately 100 feet downstream of the Johnson Avenue bridge, facing southeast.

Photograph 7. View of San Luis Obispo Creek and riparian understory downstream of the existing slope protection infrastructure, facing west (downstream).

Photograph 8. View of San Luis Obispo Creek, the existing slope protection infrastructure, and riparian habitat from the Johnson Avenue bridge, facing downstream.

Appendix C

Floral and Faunal Compendium

Plant Species Observed within the Study Area on December 20, 2021

Scientific Name	Common Name	Status	Native or Introduced
Ferns			
Equisetum arvense	common horsetail	None	Native
Herbs			
Arum italicum	Italian arum	None	Introduced
Centranthus ruber	Jupiter's beard	None	Introduced
Delairea odorata	cape ivy	None	Introduced, Cal-IPC: High
Erythranthe guttata	seep monkeyflower	None	Native
Equisetum arvense	common horsetail	None	Native
Hedera helix	English ivy	None	Introduced, Cal-IPC: High
Hesperocyparis macrocarpa	Monterey cypress	None	Native, Planted
Juncus sp.	rush	None	Native
Mentha aquatica	water mint	None	Introduced
Nerium oleander	oleander	None	Introduced
Oxalis pes-caprae	Bermuda buttercup	None	Introduced, Cal-IPC: Moderate
Rubus ulmifolius	elmleaf blackberry	None	Introduced
Strelitzia reginae	bird of paradise	None	Introduced
Topaeolum majus	nasturtium	None	Introduced
Toxicodendron diversilobum	poison oak	None	Native
Vinca major	bigleaf periwinkle	None	Introduced, Cal-IPC: Moderate
Grasses			
Cyperus involucratus	umbrella plant	None	Introduced
Stipa miliacea	smilo grass	None	Introduced
Trees			
Acacia longifolia	golden wattle	None	Introduced, Cal-IPC: Watchlist
Ailanthus altissima	tree of heaven	None	Introduced, Cal-IPC: Moderate
Alnus rhombifolia	white alder	None	Native
Citrus sp.	lemon tree	None	Introduced
Eucalyptus globulus	blue gum eucalyptus	None	Introduced, Cal-IPC: Limited
Jacaranda mimosifolia	jacaranda tree	None	Introduced
Phoenix sp.	date palm	None	Introduced
Pinus muricata	Bishop pine	None	Introduced
Pittosporum tobira	mock orange	None	Introduced
Platanus racemosa	California sycamore	None	Native
Quercus agrifolia	coast live oak	None	Native
Salix laevigata	red willow	None	Native
Salix lasiolepis	arroyo willow	None	Native
Schinus molle	Peruvian pepper tree	None	Introduced, Cal-IPC: Limited
Sequoia sempervirens	coast redwood	None	Native

Scientific Name	Common Name	Status	Native or Introduced
Shrubs			
Buxus sp.	boxwood	None	Introduced
Cotoneaster lacteus	milkflower cotoneaster	None	Introduced, Cal-IPC: Moderate
Genista monspessulana	French broom	None	Introduced, Cal-IPC: High
Heteromeles arbutifolia	toyon	None	Native
Opuntia ficus-indica	mission cactus	None	Introduced

CRPR = California Rare Plant Rank 4.2 = Plants of limited distribution; fairly threatened in California

Cal-IPC = California Invasive Plant Council Rank

Wildlife Species Observed Within the Study Area on December 20, 2021

Scientific Name	Common Name	Status	Native or Introduced
Birds			
Aphelocoma californica	California scrub-jay	None	Native
Calypte anna	Anna's hummingbird	None	Native
Catharus guttatus	hermit thrush	None	Native
Columba livia	rock pigeon	None	Native
Corvus brachyrhynchos	American crow	None	Native
Junco hyemalis	dark-eyed junco	None	Native
Larus occidentalis	western gull	None	Native
Poecile rufescens	chestnut-backed chickadee	None	Native
Sayornis nigricans	black phoebe	None	Native
Setophaga coronata	yellow-rumped warbler	None	Native
Spinus psaltria	lesser goldfinch	None	Native
Zonotrichia leucophrys	white-crowned sparrow	None	Native
Mammals			
Sciurus griseus	western grey squirrel	None	Native

Appendix D

Special-Status Species Potential to Occur Evaluations

Special-Status Plant Species in the Regional Vicinity of the Project Area

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur	Rationale
Plants and Lichens				
Abronia maritima red sand-verbena	None/None G4/S3? 4.2	Perennial herb. Blooms Feb-Nov. Occurs in coastal dunes of central and southern California, as well as the Channel Islands. Formerly fairly widespread, but available habitat has decreased, especially in Southern California. Occurs at elevations under 100m (330ft).	Not Expected	Suitable coastal dune habitat is not present within the Study Area.
Agrostis hooveri Hoover's bent grass	None/None G2/S2 1B.2	Usually occurs on sandy substrates within closed-cone coniferous forest, chaparral, cismontane woodland, and valley and foothill grassland. Species blooms from April to July and typically occurs at elevations ranging from 6-610 meters.	Not Expected	Closed-cone coniferous forest, chaparral, cismontane woodland, and valley and foothill grassland habitats are not present within the Study Area. There is one documented occurrence of the species reported in Calflora within five miles of the Study Area (Calflora 2022).
Arctostaphylos luciana Santa Lucia manzanita	None/None G2/S2 1B.2	Occurs on shale substrates within chaparral and cismontane woodland. This species blooms between December and March and typically occurs at elevations ranging from 100 to 800 meters.	Not Expected	Chaparral and cismontane woodland habitats are not present within the Study Area. Multiple occurrences are documented approximately five miles from the Study Area, however no manzanita species were observed during the field survey (Calflora 2022, CDFW 2022b).
Arctostaphylos morroensis Morro manzanita	FT/None G1/S1 1B.1	Occurs in baywood fine sand substrates within maritime chaparral,cismontane woodland, pre-Flandrian coastal dunes, and coastal scrub. Species blooms between December and March and typically occurs at elevations ranging from 5-205 meters.	Not Expected	Chaparral, cismontane woodland, and coastal dunes are not present within the Study Area. There is one documented occurrence within five miles of the Study Area, however this species is primarily found in more coastal habitats (Calflora 2022). No manzanita species were observed during the field survey.
Arctostaphylos obispoensis Bishop manzanita	None/None G3/S3 4.3	Occurs in chaparral, cismontane woodland, and closed-cone coniferous forest on rocky, serpentine soils. Occurs at elevations of 150-1005 meters and blooms Feb-Jun.	Not Expected	No suitable serpentine soils do not occur within the Study Area and the species occurs at higher elevations than the Study Area. No manzanita species were observed during the field survey.
Arctostaphylos osoensis Oso manzanita	None/None G1/S1 1B.2	Occurs on dacite porphyry buttes within chaparral and cismontane woodland. Species blooms between February and March, and typically occurs at elevations ranging from 95-500 meters.	Not Expected	Dacite porphyry buttes within chaparral and cismontane woodland are not present within the Study Area. No manzanita species were observed during the field survey. There are no documented occurrences of the species within five miles of the Study Area (Calflora 2022, CDFW 2022b).

Scientific Name **Common Name**	**Status**	**Habitat Requirements**	**Potential to Occur**	**Rationale**
Arctostaphylos pechoensis Pecho manzanita	None/None G2/S2 1B.2	Occurs on siliceous shale substrates within closed-cone coniferous forest, chaparral, and coastal scrub. This species blooms between November and March, and typically occurs at elevations ranging from 60-850 meters.	Not Expected	Dacite porphyry buttes within chaparral, and cismontane woodland are not present within the Study Area. No manzanita species were observed during the field survey. There is one documented occurrence of the species within five miles of the Study Area. CNDDB has two documented occurrences within five miles of the Study Area dated back to 1978 and 1970 (Calflora 2022, CDFW 2022b).
Arctostaphylos pilosula Santa Margarita manzanita	None/None G2?/S2? 1B.2	Broadleafed upland forest, Chaparral, Cismontane woodland, Closed-cone coniferous forest. Sandstone (sometimes) 75-1100m. Blooms Dec-May.	Not Expected	Suitable chaparral, cismontane woodland, closed-cone coniferous forest are not present within the Study Area. No manzanita species were observed during the field survey. There are two documented occurrence of the species within five miles of the Study Area, one of these occurrences is dated from 1972 (Calflora 2022, CDFW 2022b).
Arctostaphylos rudis Sand mesa manzanita	None/None G2/S2 1B.2	Chaparral, Coastal scrub. Sandy 25-322m. Blooms Nov-Feb.	Not Expected	Elements needed for suitable habitat are not present within the Study Area. No manzanita species were observed during the field survey. There are no documented occurrences within five miles of the Study Area (Calflora 2022, CDFW 2022b).
Arctostaphylos tomentosa ssp. daciticola Dacite manzanita	None/None G4T1/S1 1B.1	Occurs on dacite porphyry buttes within chaparral and cismontane woodland. This species blooms between March and May, and typically occurs at elevations ranging from 100-300 meters.	Not Expected	Suitable dacite porphyry buttes within chaparral and cismontane woodland habitat are not present within the Study Area. No manzanita species were observed during the field survey. There are no documented occurrences within five miles of the Study Area (Calflora 2022, CDFW 2022b).
Arenaria paludicola Marsh sandwort	FE/SE G1/S1 1B.1	Occurs in sandy substrates and openings within freshwater or brackish marshes and swamps. This species blooms between May and August, and typically occurs at elevations ranging from 3-170 meters.	Low Potential	Some marginally suitable freshwater habitat for the species occurs within the Study Area, but there are no documented occurrences within five miles of the Study Area (CDFW 2022b, Calflora 2022).
Aspidotis carlotta-halliae Carlotta Hall's lace fern	None/None G3/S3 4.2	Occurs in chaparral and cismontane woodlands, typically in serpentine soils at elevations of 100-1400 meters. Blooms January through December.	Not Expected	Suitable habitat, soils, and elevations for the species are not present within the Study Area.

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur	Rationale
Astragalus didymocarpus var. *milesianus* Miles' milk-vetch	None/None G5T2/S2 1B.2	Occurs in clay substrates within coastal scrub. This species blooms between March and June, and typically occurs at elevations ranging from 20-90 meters.	Not Expected	Suitable clay substrates within coastal scrub are not present within the Study Area. The most recent CNDDB occurrence is documented within two miles of the Study Area in a grassland habitat (CDFW 2022b). There are four additional occurrences documented in Calflora within five miles of the Study Area, three of these occurrences were documented between 1882 and 1947. The most recent Calflora occurrence was documented in 2005 (Calflora 2022).
Astragalus nuttallii var. nuttallii ocean bluff milk-vetch	None/None G4T4/S4 4.2	Occurs in coastal bluff scrub and coastal dunes from 3 to 120 meters in elevation. Blooms January to November.	Not Expected	Coastal bluff scrub and coastal dunes do not occur within the Study Area.
Atriplex coulteri Coulter's saltbush	None/None G3/S1S2 1B.2	Coastal bluff scrub, Coastal dunes, Coastal scrub, Valley and foothill grassland. Alkaline (sometimes), Clay (sometimes) 3-460m. Blooms Mar-Oct.	Not Expected	Suitable coastal bluff scrub, coastal dunes, coastal scrub, valley and foothill grassland are not present within the Study Area. There are no documented occurrences within five miles of the Study Area (Calflora 2022, CDFW 2022b).
Calandrinia breweri Brewer's calandrinia	None/None G4/S4 4.2	Occurs in chaparral, coastal scrub. burned areas, and disturbed areas, Typically occurs in sandy or loamy soils at elevations of 10-1220 meters. Blooms January through June.	Not Expected	Suitable habitat for the species is not present within the Study Area.
Calochortus clavatus var. clavatus club-haired mariposa lily	None/None G4T3/S3 4.3	Occurs in chaparral, cismontane woodland, coastal scrub, and valley and foothill grassland. Can occur in clay soils, but typically occurs in rocky, serpentine soils at elevations of 30 to 1300 meters. Blooms March through June.	Not Expected	Suitable habitat for the species is not present within the Study Area.
Calochortus obispoensis San Luis mariposa-lily	None/None G2/S2 1B.2	Chaparral, Cismontane woodland, Coastal scrub, Valley and foothill grassland. Serpentinite (often) 50-730m. Blooms May-Jul.	Not Expected	Chaparral, cismontane woodland, coastal scrub needed for suitable habitat are not present within the Study Area. Many occurrences have been documented within five miles of the Study Area, however these occurrences were reported to be outside of suburban development in grassland and chaparral habitat. One occurrence was documented within a mile of the Study Area in 2005 (Calflora 2022, CDFW 2022b).

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur	Rationale
Calochortus simulans La Panza mariposa-lily	None/None G2/S2 1B.3	Chaparral, Cismontane woodland, Lower montane coniferous forest, Valley and foothill grassland. Granitic (often), Sandy, Serpentinite (sometimes) 325-1150m. Blooms Apr-Jun.	Not Expected	Suitable Chaparral, Cismontane woodland, Lower montane coniferous forest, Valley and foothill grassland habitat are not present within the Study Area. There is one CNDDB at the five mile boundary from the Study Area located in a dry meadow habitat. Calflora has a documented occurrence from 2019 located three miles from the Study Area (Calflora 2022).
Calystegia subacaulis ssp. episcopalis Cambria morning-glory	None/None G3T2?/S2? 4.2	Usually occurs in clay substrates within chaparral, cismontane woodland, coastal prairie, and valley and foothill grassland. This species blooms between March and July, and typically occurs at elevations ranging from 5-500 meters.	Not Expected	Suitable habitat for the species is not present within the Study Area.
Camissoniopsis hardhamiae Hardham's evening-primrose	None/None G2/S2 1B.2	Occurs in sandy, decomposed carbonate, and disturbed or burned areas within chaparral and cismontane woodland. This species blooms between March and May, and typically occurs at elevations ranging from 140-945 meters.	Not Expected	Suitable sandy, decomposed carbonate, and disturbed or burned areas within chaparral and cismontane woodland are not present within the Study Area. There are no documented occurrences within five miles of the Study Area (Calflora 2022, CDFW 2022b).
Carex comosa Bristly sedge	None/None G5/S2 2B.1	Coastal prairie, Marshes and swamps, Valley and foothill grassland. Lake margins, wet places; site below sea level is on a Delta island. - 0-625m. Blooms May-Sep.	Not Expected	Suitable wet habitat occurs within the Study Area. There are no documented occurrences within five miles of the Study Area. Most recent occurrences are documented in Mendocino, Santa Cruz, Shasta, and Sonoma County (Calflora 2022, CDFW 2022b).
Carex obispoensis San Luis Obispo sedge	None/None G3?/S3? 1B.2	Chaparral, Closed-cone coniferous forest, Coastal prairie, Coastal scrub, Valley and foothill grassland. Usually in transition zone on sand, clay, serpentine, or gabbro. In seeps. 10-820 meters. Blooms Apr-Jun.	Not Expected	Chaparral, Closed-cone coniferous forest, Coastal prairie, Coastal scrub, Valley and foothill grassland are not present within the Study Area. There are a total of thirteen occurrences documented within five miles of the Study Area (Calflora 2022, CDFW 2022b), all north and or southeast of the Study Area in open spaces consisting of coastal scrub and chaparral habitat.
Castilleja densiflora var. *obispoensis* San Luis Obispo owl's-clover	None/None G5T2/S2 1B.2	Meadows and seeps, Valley and foothill grassland. Serpentinite (sometimes) 10-430 meters. Blooms Mar-May.	Not Expected	Meadows and seeps, valley and foothill grassland, and serpentinite soils do not occur in the Study Area. There are multiple documented occurrences of the species within five miles of the Study Area, but many are historic and all are within open space (Calflora 2022).
Ceanothus cuneatus var. fascicularis Lompoc ceanothus	None/None G5T4/S4 4.2	Occurs in chaparral with sandy soils at elevations of 5-400m. Blooms Feb-Apr.	Not Expected	Suitable chaparral habitat does not occur within the Study Area. No ceanothus species were observed during the field survey.

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur	Rationale
Ceanothus impressus var. *nipomensis* Nipomo Mesa ceanothus	None/None G3T2/S2 1B.2	Chaparral. Sandy 30-245m. Blooms Feb-Apr.	Not Expected	Suitable chaparral and sandy habitat are not present within Study Area. There are no documented occurrences within five miles of the Study Area (Calflora 2022, CDFW 2022b). No ceanothus species were observed during the field survey.
Ceanothus thyrsiflorus var. *obispoensis* San Luis Obispo ceanothus	None/None G5T1/S1 1B.1	Chaparral, Cismontane woodland. Dacite 140-225m. Blooms Jun.	Not Expected	Suitable chaparral, cismontane woodland habitat are not present within Study Area. There are no documented occurrences within five miles of the Study Area (Calflora 2022, CDFW 2022b). No ceanothus species were observed during the field survey.
Centromadia parryi ssp. *congdonii* Congdon's tarplant	None/None G3T1T2/S1S2 1B.1	Valley and foothill grassland. Alkaline soils, sometimes described as heavy white clay. 0-230m. Blooms May-Oct (Nov).	Not Expected	Suitable valley and foothill grassland and alkaline soils are not present within the Study Area. Several occurrences are reported in Calflora database within five miles of the Study Area, most recent in 1996 (Calflora 2022). There is one documented CNDDB occurrence from 2002. This occurrence is isolated to a drainage three miles from the Study Area (CNDDB 2022b).
Cercocarpus betuloides var. blancheae island mountain-mahogany	None/None G5T4/S4 4.3	Chaparral, Closed-cone coniferous forest. 30-600m. Blooms Feb-May.	Not Expected	Suitable chaparral and closed-cone coniferous forest habitats do not occur within the Study Area.
Cercocarpus betuloides var. *blancheae* Island mountain-mahogany	None/None G5T4/S4 4.3	Chaparral, Closed-cone coniferous forest. 30-600m. Blooms Feb-May.	Not Expected	Suitable Chaparral, Closed-cone coniferous forest are not present within the Study Area. One documented occurrence in 1965 within five miles of the Study Area (Calflora 2022).
Chenopodium littoreum Coastal goosefoot	None/None G1/S1 1B.2	Occurs in coastal dunes. Species blooms between April and August, adn typically occurs at elevations ranging from 10-30 meters.	Not Expected	Suitable coastal dunes habitat is not present within Study Area. There are no documented occurrences within five miles of the Study Area (Calflora 2022, CDFW 2022b).
Chlorogalum pomeridianum var. *minus* Dwarf soaproot	None/None G5T3/S3 1B.2	Chaparral. Serpentine. 305-1000m. Blooms May-Aug.	Not Expected	Suitable chaparral habitat and serpentine soils are not present within Study Area. There are seven documented occurrences within five miles from the Study Area, the most recent siting was reported in 2009 (Calflora 2022, CDFW 2022b).
Chloropyron maritimum ssp. *maritimum* Salt marsh bird's-beak	FE/SCE G4?T1/S1 1B.2	Occurs in coastal dunes and coastal salt marshes and swamps. This species blooms between May and October, and typically occurs at elevations ranging from 0-30 meters.	Not Expected	Suitable coastal dunes and coastal salt marshes and swamps are not present within the Study Area. There are no documented occurrences within five miles of the Study Area (Calflora 2022, CDFW 2022b).

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur	Rationale
Chorizanthe aphanantha Irish Hills spineflower	None/None G1/S1 1B.1	Chaparral, Coastal scrub. Gravelly, Rocky, Serpentinite 100-370m. Blooms Apr-Jun.	Not Expected	Suitable chaparral, coastal scrub, gravelly, rocky, serpentinite habitat are not present within the Study Area. There are thirteen occurrences reported approximately 3.5 miles from the Study Area (CDFW 2022b). All occurrences within an open space southeast of the Study Area.
Chorizanthe breweri Brewer's spineflower	None/None G3/S3 1B.3	Chaparral, Cismontane woodland, Closed-cone coniferous forest, Coastal scrub. Gravelly (sometimes), Rocky (sometimes), Serpentinite 45-800m. Blooms Apr-Aug.	Not Expected	Suitable chaparral, cismontane woodland, closed-cone coniferous forest, and coastal scrub are not present within the Study Area. There are approximately thirty occurrences that have been documented within five miles of the Study Area. However, all these occurrences are reported to be north, south, and east of the Study Area in open spaces.
Chorizanthe douglasii Douglas' spineflower	None/None G4/S4 4.3	Chaparral, Cismontane woodland, Coastal scrub, Lower montane coniferous forest, Valley and foothill grassland. Gravelly (sometimes), Sandy (sometimes) 55-1600m. Blooms Apr-Jul.	Not Expected	Suitable habitat for the species does not occur within the Study Area.
Chorizanthe leptotheca Peninsular spineflower	None/None G3/S3 4.2	Chaparral, Coastal scrub, Lower montane coniferous forest. Granitic 300-1900m. Blooms May-Aug.	Not Expected	Suitable habitat and soils for the species do not occur within the Study Area.
Chorizanthe palmeri Palmer's spineflower	None/None G4/S4 4.2	Chaparral, Cismontane woodland, Valley and foothill grassland. Rocky, Serpentinite 55-945m. Blooms Apr-Aug.	Not Expected	Suitable habitat and soils for the species do not occur within the Study Area.
Chorizanthe rectispina Straight-awned spineflower	None/None G2/S2 1B.3	Chaparral, Cismontane woodland, Coastal scrub. Often on granite in chaparral. 85-1035m. Blooms Apr-Jul.	Not Expected	Suitable Chaparral, Cismontane woodland, Coastal scrub are not present within the Study Area. There are no documented occurrences within five miles of the Study Area (Calflora 2022, CDFW 2022b).
Chorizanthe ventricosa potbellied spineflower	None/None G3/S3 4.3	Cismontane woodland, Valley and foothill grassland. Serpentinite 65-1235m. Blooms May-Sep.	Not Expected	Suitable habitat and soils for the species do not occur within the Study Area.
Cirsium fontinale var. *obispoense* Chorro Creek bog thistle	FE/SCE G2T2/S2 1B.2	Chaparral, Cismontane woodland, Coastal scrub, Valley and foothill grassland. Drainages, Seeps, Serpentinite 35-385m. Blooms Feb-Jul(Aug-Sep).	Not Expected	Suitable chaparral, woodland, coastal scrub, and grassland habitat does not occur within the Study Area. Serpentine seeps are also absent from the Study Area. Multiple occurrences have been documented in the last two years within five miles of the Study Area, but all are within open spaces with serpentine outcrops (Calflora 2022).

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur	Rationale
Cirsium occidentale var. *lucianum* Cuesta Ridge thistle	None/None G3G4T2/S2 1B.2	Chaparral. Disturbed areas, Roadsides, Rocky (often), Serpentinite, Slopes (often) 500-750m. Blooms Apr-Jun.	Not Expected	Suitable chaparral and serpentine habitat is not present within the Study Area. There are four relevant occurrences reported between 2020 and 2013 that occur approximately five miles from the Study Area. All of these occurrences are located within open spaces in grassland or chaparral habitat.
Cirsium rhothophilum Surf thistle	None/SCT G1/S1 1B.2	Coastal bluff scrub, Coastal dunes. Open areas in central dune scrub; usually in coastal dunes. 3-60m. Blooms Apr-Jun.	Not Expected	Suitable Coastal bluff scrub and Coastal dunes habitat are not present within the Study Area. There are no documented occurrences within five miles of the Study Area (Calflora 2022, CDFW 2022b).
Cladonia firma Popcorn lichen	None/None G4/S1 2B.1	Coastal dunes, Coastal scrub. On soil and detritus on stabilized sand dunes, in pure stands or intermixed with other lichens and mosses forming biotic soil crusts, covering areas up to several meters. 30-75m. Blooms .	Not Expected	Suitable Coastal dunes and Coastal scrub are not present within the Study Area. There are no documented occurrences within five miles of the Study Area (Calflora 2022, CDFW 2022b).
Clarkia speciosa ssp. *immaculata* Pismo clarkia	FE/SCR G4T1/S1 1B.1	Chaparral, Cismontane woodland, Valley and foothill grassland. Sandy 25-185m. Blooms May-Jul.	Not Expected	Suitable chaparral, cismontane woodland, valley and foothill grassland habitat are not present within the Study Area. There are no documented occurrences within five miles of the Study Area (Calflora 2022, CDFW 2022b).
Clinopodium mimuloides monkey-flower savory	None/None G3/S3 4.2	Chaparral, North Coast coniferous forest. Mesic, Streambanks 305-1800m. Blooms Jun-Oct.	Not Expected	The Study Area is lower than the known elevation range of the species.
Deinandra paniculata paniculate tarplant	None/None G4/S4 4.2	Coastal scrub, Valley and foothill grassland, Vernal pools. Sandy (sometimes), Vernally Mesic (usually) 25-940m. Blooms (Mar) Apr-Nov.	Not Expected	Suitable habitat for the species does not occur within the Study Area.
Delphinium parryi ssp. *blochmaniae* Dune larkspur	None/None G4T2/S2 1B.2	Chaparral, Coastal dunes. On rocky areas and dunes. 0-200m. Blooms Apr-Jun.	Not Expected	Suitable Chaparral and Coastal dunes are not present within the Study Area. There are four occurrences within five miles of the Study Area that were sited between the years of 1882 to 1936 (Calflora 2022).
Delphinium parryi ssp. *eastwoodiae* Eastwood's larkspur	None/None G4T2/S2 1B.2	Occurs in coastal serpentinite substrates within openings in chaparral and valley and foothill grassland. This species blooms between February and March, and typically occurs at elevations ranging from 75-500 meters.	Not Expected	Suitable coastal serpentinite substrates within openings in chaparral and valley and foothill grassland are not present within the Study Area. There are multiple occurrences within five miles of the Study Area. However the species is found primarily northwest and southwest within open spaces containing serpentine habitat (Calflora 2022, CDFW 2022b).

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur	Rationale
Delphinium umbraculorum Umbrella larkspur	None/None G3/S3 1B.3	Chaparral, Cismontane woodland. Mesic sites. 400-1600m. Blooms Apr-Jun.	Not Expected	Suitable Chaparral and Cismontane woodland are not present within the Study Area. There are no documented occurrences within five miles of the Study Area (Calflora 2022, CDFW 2022b).
Dithyrea maritima Beach spectaclepod	None/SCT G1/S1 1B.1	Occurs in coastal dunes and sandy substrates within coastal scrub sand dunes and other sandy soils near the sea shore. This species blooms between March and May, and typically occurs at elevations ranging from 3-50 meters.	Not Expected	Suitable coastal dunes and sandy substrates are not present within the Study Area. There are no documented occurrences within five miles of the Study Area (Calflora 2022, CDFW 2022b).
Dudleya abramsii ssp. *bettinae* Betty's dudleya	None/None G4T2/S2 1B.2	Occurs in serpentinite and rocky substrates within chaparral, coastal scrub, and valley and foothill grassland. This species blooms between May and July, and typically occurs at elevations ranging from 20-200 meters.	Not Expected	Suitable serpentinite and rocky substrates within chaparral, coastal scrub, and valley and foothill grassland are not present within the Study Area. There are two documented occurrences approximately three miles from the Study Area reported in the years 1998 and 1994. These occurrences were reported to be found in serpentine and grassland habitat.
Dudleya abramsii ssp. *murina* Mouse-gray dudleya	None/None G4T2/S2 1B.3	Chaparral, Cismontane woodland, Valley and foothill grassland. Serpentinite 90-525m. Blooms May-Jun.	Not Expected	Suitable chaparral, cismontane woodland, valley and foothill grassland are not present within the Study Area. There are multiple occurrences in open spaces to the
Dudleya blochmaniae ssp. *blochmaniae* Blochman's dudleya	None/None G3T2/S2 1B.1	Occurs in rocky, often clay or serpentinite substrates within coastal bluff scrub, chaparral, coastal scrub, and valley and foothill grassland. This species blooms between April and June, and typically occurs at elevations ranging from 5-450 meters.	Not Expected	Suitable serpentinite substrates within coastal bluff scrub, chaparral, coastal scrub, and valley and foothill grassland are not present within the Study Area. There are multiple occurrences in coastal habitat west of the Study Area. There are two documented occurrences within one mile of the Study Area (Calflora 2022, CDFW 2022b)., However, suitable habitat is not present directly within the Study Area and no *Dudleya* species were observed during the field survey.
Eleocharis parvula small spikerush	None/None G5/S3 4.3	Marshes and swamps. Also coastal salt marshes. 1-3020 meters. Blooms (Apr)Jun-Aug(Sep).	Not Expected	Suitable marsh habitat does not occur within the Study Area and there are no documented occurrences of the species within five miles of the Study Area (Calflora 2022, CDFW 2022b).
Eriastrum luteum Yellow-flowered eriastrum	None/None G2/S2 1B.2	Broadleafed upland forest, Chaparral, Cismontane woodland. Gravelly (sometimes), Sandy (sometimes) 290-1000m. Blooms May-Jun.	Not Expected	Suitable broadleafed upland forest, chaparral, and cismontane woodland habitat are not present within the Study Area. There are no documented occurrences within five miles of the Study Area (Calflora 2022, CDFW 2022b).

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur	Rationale
Erigeron blochmaniae Blochman's leafy daisy	None/None G2/S2 1B.2	Coastal dunes, Coastal scrub. Sand dunes and hills. 3-45m. Blooms Jun-Aug.	Not Expected	Suitable Coastal dune and Coastal scrub habitat are not present within the Study Area. There are no documented occurrences within five miles of the Study Area (Calflora 2022, CDFW 2022b).
Erigeron sanctarum saints' daisy	None/None G3/S3 4.2	Chaparral, Cismontane woodland, Coastal scrub. 75-350m. Blooms Mar-Jul.	Not Expected	Suitable habitat for the species does not occur within the Study Area.
Eriodictyon altissimum Indian Knob mountainbalm	FE/SCE G1/S1 1B.1	Chaparral, Cismontane woodland, Coastal scrub. Sandstone 80-270m. Blooms Mar-Jun.	Not Expected	Suitable chaparral, cismontane woodland, and coastal scrub are not present within the Study Area. There are no documented occurrences within five miles of the Study Area (Calflora 2022, CDFW 2022b).
Eriogonum elegans elegant wild buckwheat	None/None G4G5/S4S5 4.3	Cismontane woodland, Valley and foothill grassland. Gravelly (usually), Roadsides (sometimes), Sandy (usually), Washes (often) 200-1525m. Blooms May-Nov.	Not Expected	The Study Area is outside of the known elevation range of the species.
Eryngium aristulatum var. *hooveri* Hoover's button-celery	None/None G5T1/S1 1B.1	Vernal pools. Alkaline depressions, vernal pools, roadside ditches and other wet places near the coast. 3-45m. Blooms (Jun)Jul(Aug).	Not Expected	Suitable vernal pool habitat is not present within the Study Area. Multiple occurrences reported approximately 3 miles southeast from the Study Area near a lake with surrounding grassland habitat (Calflora 2022, CDFW 2022b).
Erysimum capitatum var. lompocense San Luis Obispo wallflower	None/None G5T3/S3 4.2	Chaparral, Coastal scrub. Sandy hillsides and mesas. 60-500m. Blooms Feb-May.	Not Expected	Suitable habitat for the species does not occur within the Study Area.
Erysimum suffrutescens suffrutescent wallflower	None/None G3/S3 4.2	Chaparral, Coastal bluff scrub, Coastal dunes, Coastal scrub. Coastal dunes and bluffs. 0-150m. Blooms Jan-Jul(Aug).	Not Expected	Suitable habitat for the species does not occur within the Study Area.
Eschscholzia hypecoides San Benito poppy	None/None G4/S4 4.3	Chaparral, Cismontane woodland, Valley and foothill grassland. Serpentine clay. 200-1500m. Blooms Mar-Jun.	Not Expected	Suitable habitat for the species does not occur within the Study Area.
Extriplex joaquinana San Joaquin spearscale	None/None G2/S2 1B.2	Annual herb. Blooms April through October. Chenopod scrub, alkali meadow, playas, valley and foothill grassland. In seasonal alkali wetlands or alkali sink scrub with *Distichlis spicata, Frankenia*, etc. 1-835 m.	Not Expected	Suitable chenopod scrub, alkali meadow, playas, valley and foothill grassland are not present within the Study Area. There are no documented occurrences within five miles of the Study Area (Calflora 2022, CDFW 2022b).

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur	Rationale
Fritillaria agrestis stinkbells	None/None G3/S3 4.2	Chaparral, Cismontane woodland, Pinyon and juniper woodland, Valley and foothill grassland. Sometimes on serpentine; mostly found in nonnative grassland or in grassy openings in clay soil. 10-1555m. Blooms Mar-Jun.	Not Expected	Suitable habitat and soils do not occur within the Project Area and there are no documented occurrences of the species within five miles of the Study Area (Calflora 2022, CDFW 2022b).
Fritillaria ojaiensis Ojai fritillary	None/None G3/S3 1B.2	Broadleafed upland forest, Chaparral, Cismontane woodland, Lower montane coniferous forest. Rocky sites. Sometimes on serpentine; sometimes along roadsides. 225-998m. Blooms Feb-May.	Not Expected	Suitable broadleafed upland forest, chaparral, cismontane woodland, lower montane coniferous forest are not present within the Study Area. There are five documented occurrences east and west of the Study Area in open spaces with chaparral habitat (Calflora 2022).
Fritillaria viridea San Benito fritillary	None/None G2/S2 1B.2	Chaparral, Cismontane woodland. Serpentine slopes. Sometimes on rocky streambanks. 200-1525m. Blooms Mar-May.	Not Expected	Suitable chaparral, cismontane woodland, serpentine slopes, and rocky streambanks are not present within the Study Area. There are no documented occurrences within five miles of the Study Area (Calflora 2022, CDFW 2022b).
Galium cliftonsmithii Santa Barbara bedstraw	None/None G4/S4 4.3	Cismontane woodland. Light shade, coastal canyons, dry banks. 200-1220m. Blooms May-Jul.	Not Expected	Suitable habitat and elevations do not occur within the Study Area.
Gilia tenuiflora ssp. amplifaucalis trumpet-throated gilia	None/None G3G4T3/S3 4.3	Cismontane woodland, Valley and foothill grassland. Sandy soils. 390-900m. Blooms Mar-Apr.	Not Expected	Suitable habitat and elevations do not occur within the Study Area.
Grindelia hirsutula var. maritima San Francisco gumplant	None/None G5T1Q/S1 3.2	Coastal bluff scrub, Coastal scrub, Valley and foothill grassland. Sandy or serpentine slopes, sea bluffs. 15-400m. Blooms Jun-Sep.	Not Expected	Suitable habitat for the species does not occur within the Study Area.
Hordeum intercedens vernal barley	None/None G3G4/S3S4 3.2	Coastal dunes, Coastal scrub, Valley and foothill grassland, Vernal pools, dry, saline streambeds, alkaline flats. 5-1000m. Blooms Mar-Jun.	Not Expected	Suitable habitat for the species does not occur within the Study Area.
Horkelia cuneata var. *puberula* Mesa horkelia	None/None G4T1/S1 1B.1	Perennial herb. Blooms February to September. Chaparral, cismontane woodland, coastal scrub. Sandy or gravelly sites. 70-810m meters.	Not Expected	Suitable chaparral, cismontane woodland, and coastal scrub habitats are not present within the Study Area. There are no documented occurrences within five miles of the Study Area (Calflora 2022, CDFW 2022b).
Horkelia cuneata var. *sericea* Kellogg's horkelia	None/None G4T1?/S1? 1B.1	Chaparral, Closed-cone coniferous forest, Coastal dunes, Coastal scrub. Old dunes, coastal sandhills; openings. Sandy or gravelly soils. 10-200m. Blooms Apr-Sep.	Not Expected	Suitable chaparral, closed-cone coniferous forest, coastal dunes, and coastal scrub are not present within the Study Area. There are no documented occurrences within five miles of the Study Area (Calflora 2022, CDFW 2022b).

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur	Rationale
Horkelia yadonii Santa Lucia horkelia	None/None G3/S3 4.2	Broadleafed upland forest, Chaparral, Cismontane woodland, Meadows and seeps, Riparian woodland. Sandy meadow edges, seasonal streambeds. Granitic soils. 300-1900m. Blooms Apr-Jul.	Not Expected	Riparian woodland habitat is present on site, but the Study Area is lower than the known elevation range of the species and there are no documented occurrences of the species within five miles (CDFW 2022b, Calflora 2022).
Juncus acutus ssp. leopoldii southwestern spiny rush	None/None G5T5/S4 4.2	Coastal dunes, Marshes and swamps, Meadows and seeps. Moist saline places. 3-900m. Blooms (Mar)May-Jun.	Not Expected	Suitable coastal or saline habitat is not present within the Study Area.
Lasthenia californica ssp. *macrantha* Perennial goldfields	None/None G3T2/S2 1B.2	Coastal bluff scrub, Coastal dunes, Coastal scrub. 5-520m. Blooms Jan-Nov.	Not Expected	Suitable coastal bluff scrub, coastal dunes, and coastal scrub habitats are not present within the Study Area. There are no documented occurrences within five miles of the Study Area (Calflora 2022, CDFW 2022b).
Lasthenia glabrata ssp. *coulteri* Coulter's goldfields	None/None G4T2/S2 1B.1	Annual herb. Blooms February to June. Coastal salt marshes, playas, valley and foothill grassland, vernal pools. Usually found on alkaline soils in playas, sinks, and grasslands. 1-1400m (3-4595ft).	Not Expected	Suitable coastal salt marshes, playas, valley and foothill grassland, vernal pools, and alkaline soils are not present within the Study Area. There are no documented occurrences within five miles of the Study Area (Calflora 2022, CDFW 2022b).
Lasthenia leptalea Salinas Valley goldfields	None/None G3/S3 4.3	Cismontane woodland, Valley and foothill grassland. 60-1065m. Blooms Feb-Apr.	Not Expected	Suitable habitat for the species does not occur within the Study Area.
Layia jonesii Jones' layia	None/None G2/S2 1B.2	Chaparral, Valley and foothill grassland. Clay soils and serpentine outcrops. 5-400m. Blooms Mar-May.	Not Expected	Chaparral, valley and foothill grassland, and serpentine outcrops are not present within the Study Area. There are outdated occurrences documented within a mile of the Study Area, from 1910 and 1882. There are multiple occurrences reported west and east of the Study Area in open spaces containing grassland and chaparral habitat (Calflora 2022, CDFW 2022b).
Leptosiphon grandiflorus large-flowered leptosiphon	None/None G3G4/S3S4 4.2	Cismontane woodland, Closed-cone coniferous forest, Coastal bluff scrub, Coastal dunes, Coastal prairie, Coastal scrub, Valley and foothill grassland. Open, grassy flats, generally sandy soil. 5-1220m. Blooms Apr-Aug.	Not Expected	Suitable habitat for the species does not occur within the Study Area.
Lessingia tenuis spring lessingia	None/None G4/S4 4.3	Chaparral, Cismontane woodland, Lower montane coniferous forest. Openings. 300-2150m. Blooms May-Jul.	Not Expected	Suitable habitat and elevation for the species does not occur within the Study Area.

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur	Rationale
Linanthus californicus ssp. tomentosus fuzzy prickly-phlox	None/None G5T3/S3 4.2	Coastal dunes. 1-185m. Blooms Mar-Aug.	Not Expected	Suitable coastal dune habitat is not present within the Study Area.
Lomatium parvifolium small-leaved lomatium	None/None G3/S3 4.2	Chaparral, Closed-cone coniferous forest, Coastal scrub, Riparian woodland. On serpentine. 20-700m. Blooms Jan-Jun.	Not Expected	Suitable serpentine soil does not occur within the Study Area.
Lupinus ludovicianus San Luis Obispo County lupine	None/None G1/S1 1B.2	Chaparral, Cismontane woodland. Open areas in sandy soil, Santa Margarita formation. 50-525m. Blooms Apr-Jul.	Not Expected	Suitable chaparral and cismontane woodland habitats are not present within the Study Area. There are no documented occurrences within five miles of the Study Area (Calflora 2022, CDFW 2022b).
Malacothamnus gracilis Slender bush-mallow	None/None G1Q/S1 1B.1	Chaparral. Dry, rocky slopes. 190-575m. Blooms May-Oct.	Not Expected	Suitable chaparral habitat is not present within the Study Area. There are no documented occurrences within five miles of the Study Area (Calflora 2022, CDFW 2022b).
Malacothamnus jonesii Jones' bush-mallow	None/None G4/S4 4.3	Chaparral, Cismontane woodland. 160-1075m. Blooms (Mar)Apr-Oct.	Not Expected	Suitable chaparral and cismontane woodland habitats are not present within the Study Area. There are no documented occurrences within five miles of the Study Area (Calflora 2022, CDFW 2022b).
Malacothamnus palmeri var. *palmeri* Santa Lucia bush-mallow	None/None G3T2Q/S2 1B.2	Chaparral. Dry rocky slopes, mostly near summits, but occasionally extending down canyons to the sea. 60-360m. Blooms May-Jul.	Not Expected	Suitable chaparral habitat is not present within the Study Area. There are no documented occurrences within five miles of the Study Area (Calflora 2022, CDFW 2022b).
Mielichhoferia elongata elongate copper moss	None/None G5/S3S4 4.3	Broadleafed upland forest, Chaparral, Cismontane woodland, Coastal scrub, Lower montane coniferous forest, Meadows and seeps, Subalpine coniferous forest. Moss growing on very acidic, metamorphic rock or substrate. Often on substrates naturally enriched with heavy metals (e.g. copper) such as mine tailings. 0-1960m.	Not Expected	Suitable habitat for the species does not occur within the Study Area.
Monardella palmeri Palmer's monardella	None/None G2/S2 1B.2	Chaparral, Cismontane woodland. On serpentine, often found associated with Sargent cypress forests. 200-800m. Blooms Jun-Aug.	Not Expected	Suitable Chaparral, Cismontane woodland, and serpentine habitat are not present within the Study Area. There are six occurrences documented within five miles of the Study Area, all occurring in serpentine habitat (CDFW 2022b).
Monardella 12sinuata ssp. *12sinuata* Southern curly-leaved monardella	None/None G3T2/S2 1B.2	Chaparral, Cismontane woodland, Coastal dunes, Coastal scrub. Sandy soils. 0-300m. Blooms Apr-Sep.	Not Expected	Chaparral, cismontane woodland, coastal dunes, and coastal scrub do not occur within the Study Area. There are no documented occurrences within five miles of the Study Area (Calflora 2022, CDFW 2022b).

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur	Rationale
Monolopia gracilens Woodland woollythreads	None/None G3/S3 1B.2	Broadleafed upland forest, Chaparral, Cismontane woodland, North Coast coniferous forest, Valley and foothill grassland. Grassy sites, in openings; sandy to rocky soils. Often seen on serpentine after burns, but may have only weak affinity to serpentine. 100-1200m. Blooms (Feb)Mar-Jul.	Not Expected	Suitable broadleafed upland forest, chaparral, cismontane woodland, north coast coniferous forest, valley and foothill grassland. There are no documented occurrences within five miles of the Study Area (Calflora 2022, CDFW 2022b).
Mucronea californica California spineflower	None/None G3/S3 4.2	Chaparral, Cismontane woodland, Coastal dunes, Coastal scrub, Valley and foothill grassland. Sandy soil. 0-1400m. Blooms Mar-Jul(Aug).	Not Expected	Suitable habitat and soils do not occur within the Study Area.
Muhlenbergia utilis Aparejo grass	None/None G4/S2S3 2B.2	Chaparral, Cismontane woodland, Coastal scrub, Marshes and swamps, Meadows and seeps. Alkaline (sometimes), Serpentinite (sometimes) 25-2325m. Blooms Mar-Oct.	Not Expected	All suitable habitat requirements are not present within the Study Area. However, the most recent occurrence in 2021 was documented to be within five miles of the study area (Calflora 2022). There are no documented occurrences within five miles of the Study Area (Calflora 2022, CDFW 2022b).
Navarretia nigelliformis ssp. *radians* Shining navarretia	None/None G4T2/S2 1B.2	Cismontane woodland, Valley and foothill grassland, Vernal pools. 65-1000m. Blooms (Mar)Apr-Jul.	Not Expected	Cismontaine woodland, valley and foothill grassland are not present within the Study Area. There are no documented occurrences within five miles of the Study Area (Calflora 2022, CDFW 2022b).
Nemacaulis denudata var. *denudata* Coast woolly-heads	None/None G3G4T2/S2 1B.2	Coastal dunes. 0-100m. Blooms Apr-Sep.	Not Expected	Suitable coastal dunes habitat is not present within the Study Area. There are no documented occurrences within five miles of the Study area (Calflora 2022, CDFW 2022b). The only known occurrences in San Luis Obispo County are reported in coastal habitat approximately 12 miles west of the Study Area.
Perideridia pringlei adobe yampah	None/None G4/S4 4.3	Chaparral, Cismontane woodland, Coastal scrub, Pinyon and juniper woodland. Serpentine, clay soils. Grassland hillsides; seasonally wet sites. 300-1800m. Blooms Apr-Jun(Jul).	Not Expected	The Study Area does not contain suitable habitat, soils, nor elevations for the species.
Piperia michaelii Michael's rein orchid	None/None G3/S3 4.2	Chaparral, Cismontane woodland, Closed-cone coniferous forest, Coastal bluff scrub, Coastal scrub, Lower montane coniferous forest. Mudstone and humus, generally dry sites. 3-915m. Blooms Apr-Aug.	Not Expected	Suitable dry habitat for the species does not occur within the Study Area.

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Plagiobothrys uncinatus Hooked popcornflower	None/None G2/S2 1B.2	Chaparral, Cismontane woodland, Valley and foothill grassland. Sandstone outcrops and canyon sides; often in burned or disturbed areas. 300-760m. Blooms Apr-May.	Not Expected	Chaparral, cismontane woodland, valley and foothill grassland do not occur in the Study Area. There are no documented occurrences within five miles of the Study Area (Calflora 2022, CDFW 2022b).
Poa diaboli Diablo Canyon blue grass	None/None G2/S2 1B.2	Chaparral, Cismontane woodland, Closed-cone coniferous forest, Coastal scrub. Shale, sometimes burned areas. 120-400m. Blooms Mar-Apr.	Not Expected	There are no documented occurrences within five miles of the Study Area. There are approximately twelve documented occurrences in San Luis Obispo all located at least 10 miles from the Study Area in coastal areas (Calflora 2022, CDFW 2022b).
Prunus fasciculata var. punctata sand almond	None/None G5T4/S4 4.3	Chaparral, Cismontane woodland, Coastal dunes, Coastal scrub. Sandy flats. 15-200m. Blooms Mar-Apr.	Not Expected	Suitable habitat and soils do not occur within the Study Area.
Ribes sericeum Santa Lucia gooseberry	None/None G4/S4 4.3	Broadleafed upland forest, Cismontane woodland, Coastal bluff scrub, North Coast coniferous forest. Along streams in redwood forests and on the coastal slopes of the Santa Lucia Mtns. 305-1220m. Blooms Feb-Apr.	Not Expected	Suitable habitat and elevations do not occur within the Study Area.
Sanicula hoffmannii Hoffmann's sanicle	None/None G3/S3 4.3	Broadleafed upland forest, Chaparral, Cismontane woodland, Coastal bluff scrub, Coastal scrub, Lower montane coniferous forest. Cool slopes in deep soil, often in moist shaded serpentine soils, or in clay soils. 30-300m. Blooms Mar-May.	Not Expected	Suitable habitat for the species does not occur within the Study Area.
Sanicula maritima Adobe sanicle	None/SR G2/S2 1B.1	Chaparral, Coastal prairie, Meadows and seeps, Valley and foothill grassland, and ravines. Moist clay or ultramafic soils. 30-240m. Blooms Feb-May.	Low Potential	There are five occurrences documented in 2016 and 2019 approximately one mile from the Study Area (Calflora 2022) and four occurrences of the species documented within five miles of the Study Area in the CNDDB (CDFW 2022b). All occurrences are reported to occur in open spaces with grassland habitat. The species is known to occur in ravines, and some marginally suitable habitat occurs within the creek corridor.
Scrophularia atrata Black-flowered figwort	None/None G2?/S2? 1B.2	Chaparral, Closed-cone coniferous forest, Coastal dunes, Coastal scrub, Riparian scrub. Sand, diatomaceous shales, and soils derived from other parent material; around swales and in sand dunes. 10-500m. Blooms Mar-Jul.	Not Expected	Suitable chaparral, closed-cone coniferous forest, coastal dunes, coastal scrub, riparian scrub are not present within the Study Area. There are no documented occurrences within five miles of the Study Area (Calflora 2022, CDFW 2022b).

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur	Rationale
Senecio aphanactis Chaparral ragwort	None/None G3/S2 2B.2	Chaparral, Cismontane woodland, Coastal scrub. Drying alkaline flats. 15-800m. Blooms Jan-Apr(May).	Not Expected	Suitable chaparral, cismontane woodland, coastal scrub and drying alkaline flats are not present within the Study Area. There are four documented occurrences within five miles of the Study Area all of which are in open spaces with coastal scrub habitat (Calflora 2022, CDFW 2022b).
Senecio astephanus San Gabriel ragwort	None/None G3/S3 4.3	Chaparral, Coastal bluff scrub. Rocky slopes. 400-1500m. Blooms May-Jul.	Not Expected	Suitable habitat for the species does not occur within the Study Area.
Senecio blochmaniae Blochman's ragwort	None/None G3/S3 4.2	Coastal dunes. 0-100m. Blooms May-Oct.	Not Expected	Suitable coastal dune habitat does not occur within the Study Area.
Sidalcea hickmanii ssp. *anomala* Cuesta Pass checkerbloom	None/SCR G3T1/S1 1B.2	Chaparral, Closed-cone coniferous forest. Rocky serpentine soil; associated with Sargent cypress forest. 600-800m. Blooms May-Jun.	Not Expected	Suitable chaparral, closed-cone coniferous forest, and serpentine soils are not present in the Study Area.There are multiple occurrences documented northeast of the Study Area in open space dominated by chaparral habitat (Calflora 2022, CDFW 2022b).
Streptanthus albidus ssp. *peramoenus* Most beautiful jewelflower	None/None G2T2/S2 1B.2	Chaparral, Cismontane woodland, Valley and foothill grassland. Serpentine outcrops, on ridges and slopes. 95-1000m. Blooms (Mar)Apr-Sep(Oct).	Not Expected	Suitable chaparral, cismontane woodland, valley and foothill grassland, and serpentine outcrops are not present in the Study Area. There are multiple occurrences documented north and south of the Study Area. However, all the occurrences are reported to be in serpentine outcrops or grassland habitat (Calflora 2022, CDFW 2022b).
Suaeda californica California seablite	FE/None G1/S1 1B.1	Marshes and swamps. Margins of coastal salt marshes. 0-15m. Blooms Jul-Oct.	Not Expected	Suitable marsh and swamp habitat are not present within the Study Area. There are no documented occurrences within five miles of the Study Area (Calflora 2022, CDFW 2022b).
Sulcaria isidiifera Splitting yarn lichen	None/None G1/S1 1B.1	Coastal scrub. On branches of oaks and shrubs in old growth coastal scrub. 20-30m. Blooms .	Not Expected	Suitable coastal scrub habitat is not present within the Study Area. There are no documented occurrences within five miles of the Study Area (Calflora 2022, CDFW 2022b). There are seven CNDDB occurrences north of the Study Area, however all are documented in coastal habitat.
Sulcaria spiralifera Twisted horsehair lichen	None/None G3G4/S2 1B.2	Coastal dunes, North Coast coniferous forest. Usually on conifers. 0-90m. Blooms .	Not Expected	Suitable coastal dunes and coniferous forest are not present within the Study Area. The five documented occurrences in the county are located in coastal habitats at least ten miles from the Study Area (CNDDB 2022b).

Scientific Name **Common Name**	**Status**	**Habitat Requirements**	**Potential to Occur**	**Rationale**
Trifolium hydrophilum Saline clover	None/None G2/S2 1B.2	Marshes and swamps, Valley and foothill grassland, Vernal pools. Mesic, alkaline sites. 0-300m. Blooms Apr-Jun.	Not Expected	Suitable marshes, swamps, valley and foothill, grassland, vernal pools are not present in the Study Area. The four occurrences documented in Calflora are all within three miles of the Study Area, but are all outdated. The occurrences range between the dates of 1886 to the most recent being 1998 (Calflora 2022).

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur	Rationale
Tropidocarpum capparideum Caper-fruited tropidocarpum	None/None G1/S1 1B.1	Valley and foothill grassland. Alkaline clay. 1-455m. Blooms Mar-Apr.	Not Expected	Suitable valley and foothill grassland habitat is not present within the Study Area. There are no documented occurrences within five miles of the Study Area (Calflora 2022, CDFW 2022b).

Regional Vicinity refers to within a 9-quad search radius of site.

Status (Federal/State)

FE = Federal Endangered
FT = Federal Threatened
FPE = Federal Proposed Endangered
FPT = Federal Proposed Threatened
FD = Federal Delisted
FC = Federal Candidate
SE = State Endangered
ST = State Threatened
SCE = State Candidate Endangered
SCT = State Candidate Threatened
SR = State Rare
SD = State Delisted
SSC = CDFW Species of Special Concern
FP = CDFW Fully Protected
WL = CDFW Watch List

CRPR (CNPS California Rare Plant Rank)

1A = Presumed extirpated in California, and rare or extinct elsewhere
1B = Rare, Threatened, or Endangered in California and elsewhere
2A = Presumed extirpated in California, but common elsewhere
2B= Rare, Threatened, or Endangered in California, but more common elsewhere

CRPR Threat Code Extension

.1 = Seriously endangered in California (>80% of occurrences threatened/ high degree and immediacy of threat)
.2 = Moderately threatened in California (20-80% of occurrences threatened/ moderate degree and immediacy of threat)
.3 = Not very endangered in California (<20% of occurrences threatened/ low degree and immediacy of threat)

Other Statuses

G1 or S1 Critically Imperiled Globally or Subnationally (state)
G2 or S2 Imperiled Globally or Subnationally (state)
G3 or S3 Vulnerable to extirpation or extinction Globally or Subnationally (state)
G4/5 or S4/5 Apparently secure, common and abundant
GH or SH Possibly Extirpated – missing; known from only historical occurrences but still some hope of rediscovery

Additional notations may be provided as follows

T – Intraspecific Taxon (subspecies, varieties, and other designations below the level of species)
Q – Questionable taxonomy that may reduce conservation priority
? – Inexact numeric rank

Special-status Wildlife Species in the Regional Vicinity of the Project Area

Scientific Name **Common Name**	**Status**	**Habitat Requirements**	**Potential to Occur**	**Rationale**
Invertebrates				
Bombus occidentalis Western bumble bee	None/SCE G2G3/S1	Once common & widespread, the species has declined precipitously from Central CA to southern B.C., perhaps from disease. Occurs at elevations of 0 to 2,000 meters. Require suitable nesting sites, overwintering sites for the queens, and nectar and pollen resources throughout the spring, summer, and fall.	Not Expected	The Study Area is within the known range of the species, though suitable foraging habitat for the species does not occur within the Study Area and no occurrences are documented in the CNDDB within five miles (CDFW 2022b).
Branchinecta lynchi Vernal pool fairy shrimp	FT/None G3/S3	Endemic to the grasslands of the Central Valley, Central Coast mountains, and South Coast mountains, in astatic rain-filled pools. Inhabit small, clear-water sandstone-depression pools and grassed swale, earth slump, or basalt-flow depression pools.	Not Expected	Grasslands of the Central Valley, Central Coast Mountains, and South Coast Mountains are not present within the Study area, nor are suitable vernal pools.
Danaus plexippus pop. 1 Monarch - California overwintering population	FC/None G4T2T3/S2S3	Winter roost sites extend along the coast from northern Mendocino to Baja California, Mexico. Roosts located in wind-protected tree groves (eucalyptus, Monterey pine, cypress), with nectar and water sources nearby.	High Potential	Wind protected tree groves are present within the Study Area and there are six occurrences of the species documented in the CNDDB within five miles (CDFW 2022b). The eucalyptus grove within the Study Area is not a documented overwintering site (Xerces 2022), but there is potential for monarchs to roost in these trees.
Helminthoglypta walkeriana Morro shoulderband (=banded dune) snail	FE/None G1/S1S2	Restricted to the coastal strand in the immediate vicinity of Morro Bay. Inhabits the duff beneath *Haplopappus, Salvia, Dudleya,* and *Mesembryanthemum.*	Not Expected	Suitable coastal habitat is not present within the Study Area, nor is it within a five-mile radius of the site.

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur	Rationale
Fish				
Entosphenus tridentatus Pacific lamprey	None/None G4/S4 SSC	Occurs in freshwater systems and requires adequate flows for migration, suitable substrate (i.e., gravels) for spawning, and adequate cover for pre-spawning holding. Juveniles (called ammocoetes) spend an extended period of time (between four and ten years) rearing while burrowed in sediments filter feeding on organic material and require suitable cover, flow, foraging conditions, and cool temperatures. Juvenile migrant (called macropthalmia) emigration (i.e., outmigration to the ocean) requires water conditions suitable for migration (i.e., water velocity and water depth, dissolved oxygen levels within the surface water, and water temperature suitable for passage).	Present	The species is known to occur in San Luis Obispo Creek. A 2018 assessment conducted by USFWS and Western Fishes concluded that the species successfully recolonized the creek after a period of absence (National Fisheries Habitat Partnership 2020). However, no suitable habitat for ammocoetes occurs within the Study Area.
Eucyclogobius newberryi Tidewater goby	FE/None G3/S3	Brackish water habitats along the California coast from Agua Hedionda Lagoon, San Diego County to the mouth of the Smith River. Found in shallow lagoons and lower stream reaches, they need fairly still but not stagnant water and high oxygen levels.	Not Expected	Brackish water habitat and shallow lagoons are not present within the Study Area. All documented occurrences in San Luis Obispo County are reported in coastal habitat that are not within a five-mile radius of the site (CDFW 2022b).
Oncorhynchus mykiss irideus pop. 9 Steelhead - south-central California coast DPS	FT/None G5T2Q/S2	Federal listing refers to runs in coastal basins from the Pajaro River south to, but not including, the Santa Maria River.	Present	The species is known to occur within San Luis Obispo Creek (e.g., CDFG 1975, CEMAR 2008, pers. comm. Freddy Otte 2022). There are five occurrences of the species documented in the CNDDB within five miles of the Study Area (CDFW 2022b). San Luis Obispo Creek is also designated critical habitat for the species.
Amphibians				
Batrachoseps minor Lesser slender salamander	None/None G1/S1 SSC	South Santa Lucia Mountains in tanbark oak, coast live oak, blue oak, sycamore and laurel. Shaded slopes with abundant leaf litter.	Low Potential	Suitable tree habitat and shaded slopes are present in the Study Area. There is one occurrence of the species documented in the CNDDB within five miles of the Study Area, but was last seen in 1977 (CDFW 2022b).

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur	Rationale
Rana boylii Foothill yellow-legged frog	None/SE G3/S3 SSC	Partly-shaded, shallow streams and riffles with a rocky substrate in a variety of habitats. Needs at least some cobble-sized substrate for egg-laying. Needs at least 15 weeks to attain metamorphosis.	Not Expected	Some suitable shallow stream habitat with rocky substrate is present within the Study Area. There are two documented occurrences approximately four miles from the Study Area (CDFW 2022b). However, both occurrences were reported in 1953 and the species is now considered to be extirpated in coastal California south of Monterey County (Nafis 2022).
Rana draytonii California red-legged frog	FT/None G2G3/S2S3 SSC	Lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation. Requires 11-20 weeks of permanent water for larval development. Must have access to estivation habitat.	High Potential	Suitable riparian habitat and undercut banks are present within the Study Area. There are sixteen occurrences of the species documented in the CNDDB within five miles of the Study Area (CDFW 2022b). The entire Study Area falls within critical habitat for the species.
Spea hammondii Western spadefoot	None/None G2G3/S3 SSC	Occurs primarily in grassland habitats, but can be found in valley-foothill hardwood woodlands. Vernal pools are essential for breeding and egg-laying.	Not Expected	The Study Area does not include suitable grassland or woodland habitat and is isolated by urban development.
Taricha torosa Coast Range newt	None/None G4/S4 SSC	Coastal drainages from Mendocino County to San Diego County. Lives in terrestrial habitats and will migrate over 1 km to breed in ponds, reservoirs and slow-moving streams.	High Potential	The Study Area includes slow-moving stream habitat suitable for breeding, as well as suitable terrestrial habitat for the species. There are four occurrences documented approximately five miles north of the Study Area (CDFW 2022b).
Reptiles				
Anniella pulchra Northern California legless lizard	None/None G3/S3 SSC	Sandy or loose loamy soils under sparse vegetation. Soil moisture is essential. They prefer soils with a high moisture content.	Not Expected	Sandy soils with sparse vegetation do not occur within the Study Area. There are no occurrences of the species documented in the CNDDB within five miles (CDFW 2022b).
Actinemys pallida (Emys marmorata) Southwestern pond turtle	None/None G3G4/S3 SSC	A thoroughly aquatic turtle of ponds, marshes, rivers, streams and irrigation ditches, usually with aquatic vegetation, below 6000 ft elevation. Needs basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 0.5 km from water for egg-laying.	Moderate Potential	Some suitable habitat is present within and along the banks of San Luis Obispo Creek. The Study Area has limited basking sites and does not include sandy banks or grassy open fields.

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur	Rationale
Phrynosoma blainvillii Coast horned lizard	None/None G3G4/S3S4 SSC	Frequents a wide variety of habitats, most common in lowlands along sandy washes with scattered low bushes. Open areas for sunning, bushes for cover, patches of loose soil for burial, and abundant supply of ants and other insects.	Not Expected	Suitable sandy washes are not present within the Study Area.
Birds				
Accipiter cooperii Cooper's hawk	None/None G5/S4 WL	Woodland, chiefly of open, interrupted or marginal type. Nest sites mainly in riparian growths of deciduous trees, as in canyon bottoms on river flood-plains; also, live oaks.	High Potential	Suitable nesting and foraging habitat are present within the Study Area. There are multiple occurrences documented within one mile of the Study Area (Cornell Lab of Ornithology 2022a).
Agelaius tricolor Tricolored blackbird	None/ST G1G2/S1S2 SSC	Highly colonial species, most numerous in Central Valley and vicinity. Largely endemic to California. Requires open water, protected nesting substrate, and foraging area with insect prey within a few km of the colony.	Not Expected	Suitable nesting and foraging habitat for the species is not present within the Study Area. There are occurrences documented within 2.5 miles of the Study Area, however all these occurrences have been in open spaces near bodies of water (Cornell Lab of Ornithology 2022a).
Ammodramus savannarum Grasshopper sparrow	None/None G5/S3 SSC	Dense grasslands on rolling hills, lowland plains, in valleys and on hillsides on lower mountain slopes. Favors native grasslands with a mix of grasses, forbs and scattered shrubs. Loosely colonial when nesting.	Not Expected	Suitable grassland habitat does not occur within the Study Area. There are a few occurrences reported within three miles of the study area. All these occurrences were documented in open spaces with grassland habitat (Cornell Lab of Ornithology 2022a).
Aquila chrysaetos Golden eagle	None/None G5/S3 FP WL	Rolling foothills, mountain areas, sage-juniper flats, and desert. Cliff-walled canyons provide nesting habitat in most parts of range; also, large trees in open areas.	Not Expected	Suitable nesting habitat does not occur within the study area, nor are rolling foothills, mountain areas, sage-juniper flats, or desert present. There are several occurrences reported within open spaces within two miles of the Study Area (Cornell Lab of Ornithology 2022a).
Athene cunicularia Burrowing owl	None/None G4/S3 SSC	Open, dry annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.	Not Expected	Suitable grasslands, deserts, and scrublands are not present within the Study Area, nor are small mammal burrows. There are no documented occurrences within five miles of the Study Area (Cornell Lab of Ornithology 2022a, CDFW 2022b).

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur	Rationale
Buteo regalis Ferruginous hawk	None/None G4/S3S4 WL	Open grasslands, sagebrush flats, desert scrub, low foothills and fringes of pinyon and juniper habitats. Eats mostly, ground squirrels, and mice. Population trends may follow lagomorph population cycles.	Not Expected	Suitable open habitat for foraging is not present within the Study Area and the site is out of the species' known breeding range. There are no documented occurrences within five miles of the Study Area (Cornell Lab of Ornithology 2022a, CDFW 2022b).
Charadrius nivosus nivosus Western snowy plover	FT/None G3T3/S2 SSC	Sandy beaches, salt pond levees and shores of large alkali lakes. Needs sandy, gravelly or friable soils for nesting.	Not Expected	Suitable habitat for the species is not present within the Study Area. The site does not include sandy beaches, salt pond levees, or shores. All San Luis Obispo occurrences are documented to occur in coastal habitats (Cornell Lab of Ornithology 2022a, CDFW 2022b).
Coccyzus americanus occidentalis Western yellow-billed cuckoo	FT/SE G5T2T3/S1	Riparian forest nester, along the broad, lower flood-bottoms of larger river systems. Nests in riparian jungles of willow, often mixed with cottonwoods, with lower story of blackberry, nettles, or wild grape.	Not Expected	Some suitable riparian nesting habitat is present within the Study Area. However, the most recent occurrences were reported approximately twelve miles both northwest and southwest of Study Area (Cornell Lab of Ornithology 2022a).
Elanus leucurus White-tailed kite	None/None G5/S3S4 FP	Rolling foothills and valley margins with scattered oaks and river bottomlands or marshes next to deciduous woodland. Open grasslands, meadows, or marshes for foraging close to isolated, dense-topped trees for nesting and perching.	Moderate Potential	No suitable open foraging habitat exists within the Study Area, though the species has a moderate potential to fly over or roost within trees in the Study Area. There is a low potential for the species to nest in trees within the Study Area. The most recent occurrence of the species documented in the CNDDB within five miles of the Study Area was in 2017 (CDFW 2022b). Multiple occurrences of the species are documented within one mile of the Study Area in eBird (Cornell Lab of Ornithology 2022a).
Eremophila alpestris actia California horned lark	None/None G5T4Q/S4 WL	Coastal regions, chiefly from Sonoma County to San Diego County. Also main part of San Joaquin Valley and east to foothills. Short-grass prairie, "bald" hills, mountain meadows, open coastal plains, fallow grain fields, alkali flats.	Not Expected	Short-grass pairie, "bald" hills, mountain meadows, open coastal plains, fallow grain fields, and alkali flats are not present within the Study Area. There are no documented occurrences within five miles of the Study Area (Cornell Lab of Ornithology 2022a, CDFW 2022b).

Scientific Name **Common Name**	**Status**	**Habitat Requirements**	**Potential to Occur**	**Rationale**
Falco columbarius Merlin	None/None G5/S3S4 WL	Seacoast, tidal estuaries, open woodlands, savannahs, edges of grasslands and deserts, farms and ranches. Clumps of trees or windbreaks are required for roosting in open country.	Low Potential	Project site is not located in roosting habitat with open country. Suitable seacoast, tidal estuaries, open woodlands, savannahs, edges of grasslands and deserts, farms and ranches are not present within the Study Area. There are no documented CNDDB occurrences within five miles of the Study Area (CDFW 2022b). There are several occurrences documented within one mile of the Study Area (Cornell Lab of Ornithology 2022a). There is a low potential for the species to forage or transit within the Study Area, though the species is not expected to nest on site.
Falco mexicanus Prairie falcon	None/None G5/S4 WL	Inhabits dry, open terrain, either level or hilly. Breeding sites located on cliffs. Forages far afield, even to marshlands and ocean shores.	Not Expected	Suitable breeding sites are not present within the Study Area, nor foraging habitat far afield. There are no documented CNDDB occurrences within five miles of the Study Area (CDFW 2022b). There are three occurrences within two miles of the Study Area, however these citing's are within open terrain (Cornell Lab of Ornithology 2022a).
Lanius ludovicianus Loggerhead shrike	None/None G4/S4 SSC	Broken woodlands, savannah, pinyon-juniper, Joshua tree, and riparian woodlands, desert oases, scrub and washes. Prefers open country for hunting, with perches for scanning, and fairly dense shrubs and brush for nesting.	Not Expected	Suitable open country habitat for hunting is not present within the Study Area. Savannah, pinyon-juniper, Joshua tree, desert oases, scrub and washes are also not present within the Study Area. There is one documented CNDDB occurrence that was last seen in 1992 (CDFW 2022). Additional eBird occurrences are reported in open spaces two miles north of the Study Area (Cornell Lab of Ornithology 2022a).
Laterallus jamaicensis coturniculus California black rail	None/ST G3G4T1/S1 FP	Inhabits freshwater marshes, wet meadows and shallow margins of saltwater marshes bordering larger bays. Needs water depths of about 1 inch that do not fluctuate during the year and dense vegetation for nesting habitat.	Not Expected	Suitable freshwater marshes, wet meadows, and shallow marshes of saltwater bordering larger bays are not present within the Study Area. There are no documented occurrences within five miles of the Study Area (Cornell Lab of Ornithology 2022a, CDFW 2022b).

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur	Rationale
Progne subis Purple martin	None/None G5/S3 SSC	Inhabits woodlands, low elevation coniferous forest of Douglas-fir, ponderosa pine, and Monterey pine. Nests in old woodpecker cavities mostly; also in human-made structures. Nest often located in tall, isolated tree/snag.	Not Expected	Suitable low elevation coniferous forest of Douglas-fir, ponderosa pine, and Monterey pine are not present within the Study Area. Nesting habitat with tall, isolated tree/snag is also not present. There are no documented occurrences within five miles of the Study Area (Cornell Lab of Ornithology 2022a, CDFW 2022b).
Rallus obsoletus obsoletus California Ridgway's rail	FE/SE G3T1/S1 FP	Salt water and brackish marshes traversed by tidal sloughs in the vicinity of San Francisco Bay. Associated with abundant growths of pickleweed, but feeds away from cover on invertebrates from mud-bottomed sloughs.	Not Expected	Salt water and brackish marsh habitat does not exist within the Study Area. There are no documented occurrences within five miles of the Study Area (Cornell Lab of Ornithology 2022a, CDFW 2022b).
Yellow warbler *Setophaga petechia*	None/None G5/S3S4 SSC	Inhabits riparian plant associations in close proximity to water. Also nests in montane shrubbery in open conifer forests in Cascades and Sierra Nevada. Frequently found nesting and foraging in willow shrubs and thickets, and in other riparian plants including cottonwoods, sycamores, ash, and alders.	High Potential	Suitable nesting habitat for the species occurs within the Study Area and there are multiple occurrences documented in eBird within one mile (Cornell Lab of Ornithology 2022a).
Mammals				
Antrozous pallidus Pallid bat	None/None G4/S3 SSC	Found in a variety of habitats including deserts, grasslands, shrublands, woodlands, and forests. Most common in open, dry habitats with rocky areas for roosting. Roosts in crevices of rock outcrops, caves, mine tunnels, buildings, bridges, and hollows of live and dead trees which must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.	Low Potential	Some suitable roosting habitat is present due to tunnels, buildings, and bridges near Study Area. Study area is surrounded by urban development that would cause disturbance to roosting sites. There is one documented occurrence within five miles from the Study Area that was reported from 1995 (CDFW 2022b).
Corynorhinus townsendii Townsend's big-eared bat	None/None G4/S2 SSC	Occurs throughout California in a wide variety of habitats. Most common in mesic sites, typically coniferous or deciduous forests. Roosts in the open, hanging from walls & ceilings in caves, lava tubes, bridges, and buildings. This species is extremely sensitive to human disturbance.	Low Potential	Suitable roosting habitat in trees and tunnels is present onsite. Study area is surrounded by urban development that would cause disturbance to roosting sites. There is one documented occurrence within five miles from the Study Area that was reported from 1987 (CDFW 2022b).

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur	Rationale
Dipodomys heermanni morroensis Morro Bay kangaroo rat	FE/SE G4TH/SH FP	Coastal sage scrub on the south side of Morro Bay. Needs sandy soil, but not active dunes, prefers early seral stages.	Not Expected	Coastal sage scrub habitat is not present, and the Study Area is outside of the species' known range. There are no documented occurrences within five miles of the Study Area (CDFW 2022b).
Eumops perotis californicus Western mastiff bat	None/None G4G5T4/S3 S4 SSC	Occurs in open, semi-arid to arid habitats, including coniferous and deciduous woodlands, coastal scrub, grasslands, and chaparral. Roosts in crevices in cliff faces and caves, and buildings. Roosts typically occur high above ground.	Not Expected	Suitable habitat does not include coniferous and deciduous woodlands, coastal scrub, grassland, and chaparral. There is one documented occurrence within five miles from the Study Area that was reported from 1991 (CDFW 2022b).
Neotoma lepida intermedia San Diego desert woodrat	None/None G5T3T4/S3 S4 SSC	Occurs in scrub habitats of southern California from San Luis Obispo County to San Diego County.	Not Expected	Scrub habitat is not present in the Study Area. There are no documented occurrences within five miles of the Study Area (CDFW 2022b).
Taxidea taxus American badger	None/None G5/S3 SSC	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Needs sufficient food, friable soils and open, uncultivated ground. Preys on burrowing rodents. Digs burrows.	Not Expected	Suitable open areas with friable soil are not present within the Study Area, nor is a suitable rodent prey base. There are no documented occurrences within five miles of the Study Area (CDFW 2022b).

Status (Federal/State)
FE = Federal Endangered
FT = Federal Threatened
FPE = Federal Proposed Endangered
FPT = Federal Proposed Threatened
FD = Federal Delisted
FC = Federal Candidate
SE = State Endangered
ST = State Threatened
SCE = State Candidate Endangered
SCT = State Candidate Threatened
SR = State Rare
SD = State Delisted
SSC = CDFW Species of Special Concern
FP = CDFW Fully Protected
WL = CDFW Watch List

Other Statuses

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur	Rationale
G1 or S1	Critically Imperiled Globally or Subnationally (state)			
G2 or S2	Imperiled Globally or Subnationally (state)			
G3 or S3	Vulnerable to extirpation or extinction Globally or Subnationally (state)			
G4/5 or S4/5	Apparently secure, common and abundant			
GH or SH	Possibly Extirpated – missing; known from only historical occurrences but still some hope of rediscovery			

Additional notations may be provided as follows

T – Intraspecific Taxon (subspecies, varieties, and other designations below the level of species)

Q – Questionable taxonomy that may reduce conservation priority

? – Inexact numeric rank

ATTACHMENT B

Jurisdictional Delineation for the San Luis Obispo Creek Bank Stabilization Project near Johnson Avenue, City of San Luis Obispo, San Luis Obispo County California. Rincon Consultants, Inc., July 2022

Rincon Consultants, Inc.

1530 Monterey Street, Suite D
San Luis Obispo, California 93401

805 547 0900

info@rinconconsultants.com
www.rinconconsultants.com

July 6, 2022
Project No: 21-11827

Mr. Wyatt Banker-Hix,
Engineer III
City of San Luis Obispo,
Public Works Department
919 Palm Street
San Luis Obispo, California 93401

Subject: Jurisdictional Delineation for the San Luis Obispo Creek Bank Stabilization Project near Johnson Avenue, City of San Luis Obispo, San Luis Obispo County, California

To Mr. Banker-Hix:

This Jurisdictional Delineation (JD) report has been prepared by Rincon Consultants, Inc. (Rincon) to assist the City of San Luis Obispo (City) with project planning for the San Luis Obispo (SLO) Creek Bank Stabilization Project (Project). This report is suitable for use by the United States Army Corps of Engineers (USACE) to confirm extent of potential jurisdiction under Section 404 of the Clean Water Act; the Central Coast Regional Water Quality Control Board (RWQCB) to confirm extent of potential jurisdiction pursuant to Section 401 of the Clean Water Act and the Porter-Cologne Water Quality Control Act; and the California Department of Fish and Wildlife (CDFW) to confirm jurisdiction pursuant to Section 1600 et seq. of the California Fish and Game Code (CFGC).

This JD report identified San Luis Obispo Creek as potentially being subject to the jurisdiction(s) of USACE, RWQCB, and CDFW.

Summary of Project Description

The proposed Project is located near the intersection of Pismo Street and Johnson Avenue in the City. The approximately 0.35-acre Project Area includes portions of Assessor's Parcel Numbers (APNs) 002-341-007 and 002-341-016. The approximate center of the Project Area is located at latitude 35.281432°N and longitude 120.654748°W (WGS-84 datum). The Project Area and Study Area, defined herein as the Project Area plus a 50-foot buffer, occur within the *San Luis Obispo*, *California* United States Geological Survey (USGS) 7.5-minute topographic quadrangle and are depicted in Figure 1 and Figure 2 (Attachment 1).

The Project will repair drainage control infrastructure along the banks of an approximately 180-linear-foot reach of San Luis Obispo Creek. A segment of existing concrete slope protection (circa pre-1957) on the southwest bank of San Luis Obispo Creek downstream of Johnson Avenue has failed and is in urgent need of repair. In addition, vegetative growth and the accumulation of sediment on the inner-radius of the channel bend has shifted the thalweg to the toe-of-slope along the damaged embankment, removing portions of the slope protection footing and creating additional exposure to the native soil underneath. Additional failures of the underlying soils and subsequent concrete slope protection will

jeopardize adjacent infrastructure (i.e., Pismo Street and the buried utilities underneath), downstream slope protection, trees and landscaping, and adjacent private property.

The Project will include the following components:

- temporary creek diversion and dewatering at the base of the existing concrete slope protection;
- staged construction to remove the deteriorated concrete footing and construct a new concrete footing and soil nail wall;
- installation of the soil nail wall over the top of the deteriorating concrete slab bank protection, with soil nails installed 4 to 6-foot on-center spacing each way, to limit the disturbance of the existing slope and to minimize work done in the creek channel;
- installation of a drainage system behind the soil nail wall to intercept groundwater flowing out of the embankment;
- vegetation grubbing within the riparian understory (approximately 2,760 square feet);
- excavation of the flood bench on the westerly side of the creek to remove sediment buildup to expand creek capacity and resiliency (approximately 125 cubic yards of sediment will be removed and hauled off site);
- addition of 6-inch-high concrete weirs connected to underlying bedrock to limit bank incision, encourage ponding, and enhance fish habitat;
- cutting four willow trees to approximately one foot above existing grade to mitigate future creek blockage due to fallen tree debris, trimming six oak trees adjacent to Pismo Street for construction access, and possibly trimming the lower limbs of one sycamore tree and one alder tree within the creek channel; and
- revegetation with the use of native riparian trees and shrubs, a native hydroseed mix, and jute or coconut fiber erosion control blankets, as per the Habitat Mitigation and Monitoring Plan (HMMP) developed for the Project.

Equipment, construction materials, and excavated materials will be raised and lowered from the Johnson Avenue Bridge.

Methods

The delineation study began with a literature review of aerial photographs and other data sources. After completion of the literature review, a field delineation was completed to identify, describe, and map all potential jurisdictional waters within the Study Area (Attachment 1, Figure 2). Fieldwork for this evaluation was conducted by Principal and Senior Ecologist Colby Boggs and Biologist Charleen Rode on May 3, 2022.

Literature Review

Prior to conducting the field survey, Rincon reviewed the National Wetlands Inventory (NWI) (United States Fish and Wildlife Service [USFWS] 2022b) and National Hydrography Dataset (USGS 2022b) to determine if any wetlands and/or other waters had been previously documented and mapped on or in the vicinity of the proposed Project site. The Web Soil Survey (United States Department of Agriculture [USDA], Natural Resources Conservation Service [NRCS] 2022a) and other available background information were also reviewed to better characterize the nature and extent of jurisdictional waters and

riparian habitats potentially occurring on the subject site. Furthermore, the National Hydric Soils List by State: California (USDA, NRCS 2022b) was reviewed to determine if any soil map unit types mapped on or in the vicinity of the Study Area were classified as hydric.

Field Delineation

Current federal and State methods and guidelines were used to identify and delineate potential jurisdictional areas. Potential wetland features were evaluated for presence of wetland parameters, specifically including positive indicators for hydrophytic vegetation, hydric soils, and wetland hydrology, according to routine delineation procedure (USACE 1987, 2008a). The *Arid West 2020 Regional Wetland Plant List,* used in determining the wetland indicator status of the examined vegetation, uses the following indicator status categories: Upland (UPL), Facultative Upland (FACU), Facultative (FAC), Facultative Wetland (FACW), and Obligate (OBL) (Lichvar 2020; USACE 2020). The Study Area was surveyed for any streams or other drainages that might exhibit positive indicators for an ordinary high water mark (OHWM) and which might constitute waters of the U.S. (Lichvar et al. 2008), as well as having a defined channel, bed and banks and any adjacent riparian habitat that could be subject to CDFW jurisdiction under the CFGC.

The Study Area was surveyed on foot for all aquatic and riparian resources including potential wetland and non-wetland jurisdictional areas, streambeds, and riparian habitat. General site characteristics and vegetation were documented. Extents of potential jurisdictional features, the existing culvert locations, sample points, and photo locations were mapped using a Trimble Geo 7X Global Positioning System (GPS) unit with sub-meter accuracy and were also plotted on aerial photographs. The data were subsequently transferred to Rincon's geographic information system (GIS) and used to produce Figures 1 through 4 (Attachment 1).

Existing Site Conditions

The Study Area is located within the Central Coast geographic subregion of California (Baldwin et al. 2012), approximately eight miles northeast of the Pacific Ocean and approximately two miles west of the Santa Lucia Range. San Luis Obispo Creek flows through the Study Area and has been heavily impacted by urban development within the City. Within the Study Area, the creek passes beneath the Johnson Avenue Bridge and runs southwest of a commercial shopping center before passing beneath the Toro Street Bridge. The creek banks within this area are heavily modified with existing erosion and flood control infrastructure. The Study Area is surrounded by a residential neighborhood and commercial development. Open space with connectivity to Reservoir Canyon and the Santa Lucia Range lies approximately 0.4 mile east and one mile north of the Study Area, respectively.

The climate in this region is characterized as Mediterranean, with warm, dry summers and cool, wet winters. The average high temperature during summer months (June through September) is 75.6 degrees Fahrenheit (°F) and the average low temperature is 51.2 °F. The average high temperature during the winter months (December through March) is 63.5 °F and the average low temperature is 42.5 °F. Average annual precipitation is 22.40 inches, with the majority of rainfall occurring during November through March (Western Regional Climate Center 2022). Topography within the Study Area is variable, with steep banks leading down to relatively level areas along the creek. Elevation within the Study Area ranges from approximately 230 to 310 feet above mean sea level (msl).

Hydrology

San Luis Obispo Creek flows through the Study Area. The creek drains from its headwaters in the Santa Lucia Range at approximately 2,500 feet above msl and extends southward to its mouth at the Pacific Ocean. The creek flows through agricultural, residential, and commercial areas, but is primarily surrounded by rangeland and open space. San Luis Obispo Creek has six major tributaries: Stenner Creek, Prefumo Creek, Laguna Lake, East Branch San Luis Obispo Creek, Davenport Creek, and See Canyon. The County of San Luis Obispo, City of San Luis Obispo, Town of Avila Beach, and Port San Luis Harbor each hold jurisdiction over various portions of the San Luis Obispo Creek Watershed (Coastal San Luis Resource Conservation District [CSLRCD] 2014).

The Study Area falls within the Upper San Luis Obispo Creek subwatershed (Hydrologic Unit Code [HUC]: 180600060701) (United States Environmental Protection Agency [US EPA] 2022) and is located within Reach 11 of San Luis Obispo Creek, as defined by the Waterway Management Plan (WMP; City of San Luis Obispo 2003). Reach 11 extends from the confluence of Stenner Creek to the California Street Bridge at San Luis Bay Drive. Reach 11 is approximately 8,100 feet long and is mostly developed, with many sections that pass beneath tunnels, closed bridges, and culverts, and banks primarily lined with stacked concrete, gabions, and rock walls. However, riparian habitat is present throughout the reach and is dominated by California sycamore (*Platanus racemosa,* FAC), arroyo willow (*Salix lasiolepis*, FACW), and tree of heaven (*Ailanthus altissima,* FACU). Approximately 93 percent of the stream within this reach is classified as flatwater habitat, with pools comprising one percent, and riffles comprising six percent of the remaining habitat. The pool frequency ratio within this reach is 2.4 pools per kilometer (0.62 mile), which represents the second lowest within the watershed (City of San Luis Obispo 2003).

Water quality is classified as good[1] in the portion of San Luis Obispo Creek upstream of Osos Street in the City, which includes the Study Area. However, water quality within the creek downstream of Osos Street is listed as impaired by bacteria and other microbes, degraded aquatic life, low oxygen, nitrogen and/or phosphorus, and salts on the 303(d) list of impaired water bodies by the State Water Resources Control Board (SWRCB) (US EPA 2022).

San Luis Obispo Creek is classified as a riverine system with a contained channel and surrounding wetlands. The NWI classifies the creek as R3UBH (Riverine [R], Upper Perennial [3], Unconsolidated Bottom [UB], and Permanently Flooded [H]) (USFWS 2022c).

Soils

The USDA, NRCS Web Soil Survey identifies Concepcion loam, 2 to 5 percent slopes as the only soil map unit within the Project Area (USDA, NRCS 2022a). Concepcion loam soils are derived from alluvium and form on toe slope terraces between elevations of 10 to 800 feet. The depth of the water table is more than 80 inches, the frequency of flooding and ponding is none, the available water supply is very low (about 3.2 inches), the soils are moderately well drained and are categorized as a very high runoff class. Concepcion loam is not included on the NRCS list of hydric soils (USDA, NRCS 2022b).

[1] Water quality is monitored by the US EPA for physical, chemical, and biological factors. The assessment of the water quality is analyzed against EPA-approved water standards or thresholds, and water quality can either be categorized as good or impaired.

Vegetation Communities/Land Cover Types

Vegetation community characterizations for this analysis were based on the classification systems presented in *A Manual of California Vegetation, Second Edition* (MCV2) (Sawyer et al. 2009) but have been modified slightly to most accurately reflect existing site conditions. *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986) is still used for reference and historical perspective, though its classifications are no longer supported by the State of California and have been superseded by Sawyer et al. 2009. Plant species nomenclature and taxonomy used for this JD report follow the treatments within the second edition of *The Jepson Manual* (Baldwin et al. 2012).

The Study Area includes riparian habitat associated with San Luis Obispo Creek as well as developed areas. The following vegetation communities and land cover types exist within the Study Area: Mixed Riparian Hardwood, Landscaped, and Developed (Figure 3). Each of these communities is described in detail below.

Mixed Riparian Hardwood

Riparian vegetation occurs throughout the Study Area within and around San Luis Obispo Creek. This vegetation community is similar to the California Sycamore – Coast Live Oak Riparian Woodlands (*Platanus racemosa – Quercus agrifolia* Woodland Alliance) described in MCV2 and ranked as S3/G3 (Sawyer et al. 2009). However, the mixed riparian hardwood community within the Study Area differs from the MCV2 description in that it has a dense understory and is permanently flooded within the banks of San Luis Obispo Creek. Within the Study Area, this community covers approximately 0.50 acre and is dominated by California sycamore with coast live oak, arroyo willow, and white alder (*Alnus rhombifolia*, FACW) as codominants. Native plant species in the understory of this community include poison oak (*Toxicodendron diversilobum*, FACU), sticky monkeyflower (*Mimulus auranticus,* FACU), and common horsetail (*Equisetum arvense,* FAC). Non-native species in the understory include elmleaf blackberry (*Rubus ulmifolius,* not-listed [NL]), smilo grass (*Stipa miliacea,* NL), bigleaf periwinkle (*Vinca major,* NL), cape ivy (*Delairea odorata,* UPL), and French broom (*Genista monspessulana,* NL); non-listed plants are typically assumed to be aligned with the UPL category. The California Sycamore – Coast Live Oak Riparian Woodlands community is listed on the CDFW Sensitive Natural Communities List (CDFW 2021c).

Landscaped

Landscaped areas are not naturally occurring and are not described in the Holland (1986) or MCV2 (Sawyer et al. 2009) classification systems. Landscaped areas within the Study Area cover approximately 0.10 acre and consist of residential yards along Pismo Street, as well as city-maintained landscaping along Johnson Avenue. Landscaped species within the Study Area include golden wattle (*Acacia longifolia,* NL), jacaranda (*Jacaranda mimosifolia,* NL), boxwood (*Buxus* sp., NL), date palm (*Phoenix* sp., NL), oleander (*Nerium oleander,* UPL), and Jupiter's beard (*Centranthus ruber,* NL).

Developed

Developed areas are not naturally occurring and are not described in the Holland (1986) or MCV2 (Sawyer et al. 2009) classification systems. Developed portions of the Study Area cover approximately 0.65 acre and include Johnson Avenue, Pismo Street, the Johnson Avenue Bridge, and residential homes.

Field Results and Discussion

Based upon the findings of Rincon's jurisdictional delineation, San Luis Obispo Creek is subject to USACE, RWQCB, and CDFW jurisdictions. The extent of each agency's jurisdiction is provided in Figure 4 (Attachment 1) and representative photographs of San Luis Obispo Creek can be found in Attachment 4.

San Luis Obispo Creek

San Luis Obispo Creek is a perennial creek and a Relatively Permanent Water (RPW) with a direct hydrologic surface connection to the Pacific Ocean, a Traditional Navigable Water (TNW). San Luis Obispo Creek is heavily used by the public; homeless encampments, trash, human and pet fecal matter, and pollutants from stormwater runoff impact this feature. This feature supports the federally threatened south-central California coast Distinct Population Segment (DPS) of steelhead (*Oncorhynchus mykiss*) and California red-legged frog (*Rana draytonii*) and contains federally designated critical habitat for both of these species (USFWS 2022a). The OHWM of San Luis Obispo Creek is defined by a change of vegetation, break in bank slope, and presence of drift deposits. San Luis Obispo Creek exhibits an OHWM on both banks with a width of approximately 16 feet. Substrates within the creek consist of cobble and silt with occasional pieces of large broken concrete. No vegetation was observed within the OHWM of the creek. Riparian vegetation on the banks includes tree of heaven, common horsetail, elmleaf blackberry, and arroyo willow. San Luis Obispo Creek qualifies as waters of the U.S. and State and is considered potentially subject to the jurisdiction of the USACE and RWQCB pursuant to Sections 404 and 401, respectively, of the Clean Water Act (CWA) based on its status as a RPW and direct connectively to a TNW. The riparian vegetation associated with this feature is likely subject to the jurisdiction of the RWQCB under the Porter-Cologne Water Quality Control Act. Considering this feature contains defined bed and banks as well as riparian vegetation, it is also considered potentially subject to the jurisdiction of CDFW pursuant to CFGC Section 1600 et seq.

The findings and conclusions presented in this report, including the location and extent of areas subject to regulatory jurisdiction, represent the professional opinion of the consultant biologists. These findings and conclusions should be considered preliminary and at the final discretion of the applicable resource agencies.

Table 1 USACE, CDFW, and RWQCB Jurisdictional Areas

	USACE Waters of the U.S.		CDFW Streambed/RWQCB Waters of the State	
Feature	Waters of the U.S. (acres/linear feet)	Wetland Waters of the U.S. (acres/linear feet)	Waters of the State[1] (acres/linear feet)	Wetland Waters of the State (acres/linear feet)
San Luis Obispo Creek	0.07 (246)	–	0.34 (246)	–

[1]Section 401 of the CWA and Porter-Cologne Water Quality Act waters of the State, calculated to top of bank; includes OWHM. Streambed calculated to top of bank or edge of riparian, whichever is greater.

Conclusion

The Study Area contains approximately 0.07 acre (246 linear feet) of waters of the U.S and approximately 0.34 acre (246 linear feet) of waters of the State, the latter of which is coterminous with

the CDFW jurisdictional streambed/riparian habitat. No wetland waters of the U.S. or State are present within the Study Area.

Impacts in the form of discharge of dredge and/or fill within USACE and RWQCB jurisdictions will likely require authorizations from these agencies under the CWA. The Project may qualify for coverage under a Section 404 Nationwide Permit (NWP) as well as qualify for coverage under a Pre-certified SWRCB Water Quality Certification (WQC) if applicable to the qualifying NWP. If it is determined that the Project does not qualify for coverage under an NWP and/or Pre-certified SWRCB WQC, the Project would need to seek a Letter of Permission or an Individual Permit and/or WQC under Section(s) 404 and/or 401, respectively, of the CWA. A Streambed Alteration Agreement from CDFW is also likely to be required to implement the Project.

Thank you for the opportunity to assist with this Project. Should you have any questions regarding this JD report, please contact Colby Boggs at cboggs@rinconconsultants.com.

Sincerely,
Rincon Consultants, Inc.

Charleen Rode
Biologist

Colby Boggs
Principal/Senior Ecologist

Attachments

Attachment 1	Figures
Attachment 2	Regulatory Framework
Attachment 3	Plant Species Observed in the Study Area (May 3, 2022)
Attachment 4	Representative Photographs (May 3, 2022)
Attachment 5	OHWM and Wetland Sampling Point Datasheet (May 3, 2022)

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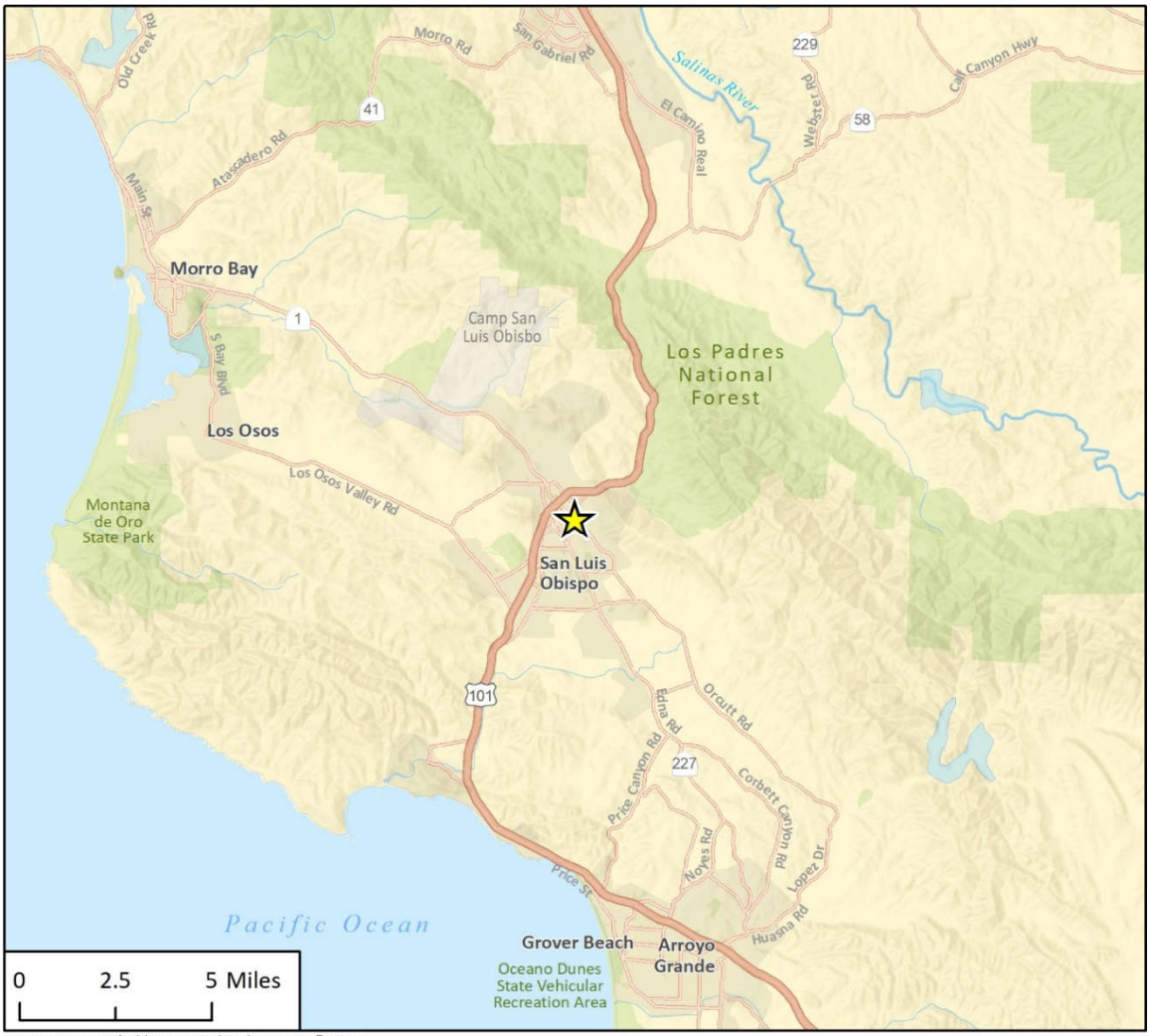
Attachment 1

Figures

Figure 1 Regional Location



Basemap provided by Esri and its licensors © 2021.

Project Location

N

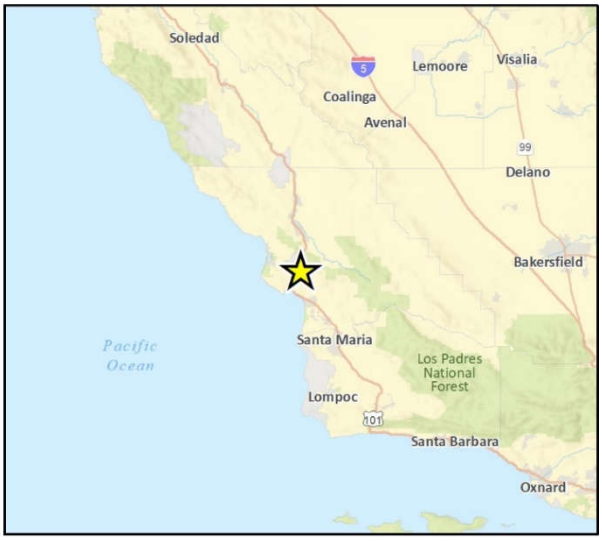


Figure 2 Project Area and Study Area

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Fig 2 Project Area and Study Area

Figure 3 Vegetation Communities and Land Cover

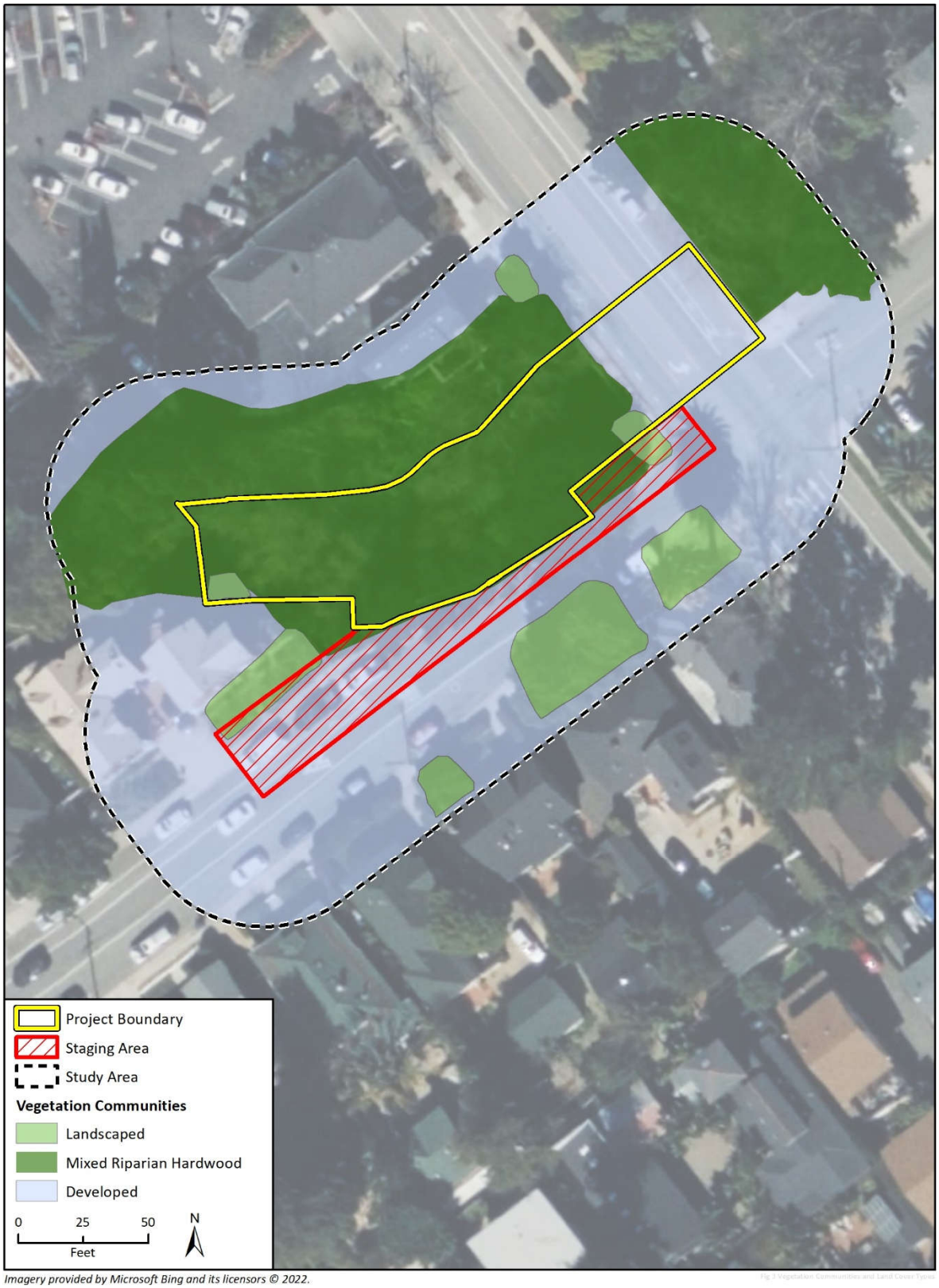

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Figure 4 Wetlands and Waters Delineation

Attachment 2

Regulatory Framework

Regulatory Framework

The following is a brief summary of the regulatory context under which biological resources are managed at the federal, State, and local levels. A number of federal and State statutes provide a regulatory structure which guide the protection of jurisdictional features. Agencies with the potential responsibility for protection of jurisdictional features within the project site include:

- United States Army Corps of Engineers (non-wetland waters and wetlands of the United States)
- Regional Water Quality Control Board (waters of the State)
- California Department Fish and Wildlife (riparian areas, streambeds, and lakes)

United States Army Corps of Engineers Jurisdiction

The USACE, under provisions of Section 404 of the Clean Water Act and USACE implementing regulations, has jurisdiction over the "waters of the United States." "Waters" include all waters subject to the ebb and flow of the tide, all interstate waters, all other waters (intrastate lakes, rivers, streams, mudflats, sandflats, playa lakes, natural ponds, seasonal drainage channels, etc.), all impoundments of waters otherwise defined as waters of the U.S., tributaries of waters otherwise defined as waters of the U.S., territorial seas, and wetlands adjacent to waters of the U.S. USACE jurisdictional limits are typically identified by the presence of an Ordinary High Water Mark (OHWM). The OHWM is the line on the shore or banks of a water course established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding area. The USACE defines wetlands as containing three parameters: hydrophytic vegetation, hydric soils, and wetland hydrology.

Areas not considered to be jurisdictional waters include non-tidal drainage and irrigation ditches excavated on dry land, artificially-irrigated areas, artificial lakes or ponds excavated on dry land used for irrigation or stock watering, small artificial water bodies such as swimming pools, and water filled depressions (51 Fed. Reg. 41, 217 1986). In addition, a Supreme Court ruling (Solid Waste Agency of Northern Cook Counties [SWANCC] vs. USACE, January 9, 2001) determined that the USACE exceeded its statutory authority by asserting Clean Water Act jurisdiction over "an abandoned sand and gravel pit in northern Illinois, which provides habitat for migratory birds." Based solely on the use of such waters by migratory birds, the Supreme Court's holding was strictly limited to waters that are "non-navigable, isolated, and intrastate."

The Supreme Court further addressed the extent of the USACE jurisdiction in Rapanos v. U.S. (June 19, 2006). There, a sharply divided Court issued multiple opinions, none of which garnered the support of a majority of Justices. This created substantial uncertainty as to which jurisdictional test should be used. The Ninth Circuit Court of Appeal, which encompasses California, answered this in Northern California River Watch v. City of Healdsburg (August 11, 2006). There, the Court held that Justice Kennedy's opinion in Rapanos provides the controlling rule of law. Under that rule, wetlands or other waters which are not navigable in fact are subject to USACE jurisdiction if they have a "significant nexus" to a navigable-in-fact waterway. As Justice Kennedy explained, whether a significant nexus exists in any given situation will have to be decided on a case-by-case basis, depending on site-specific circumstances.

USACE Headquarters in Washington, D.C. issued substantive guidance on June 5, 2007, to its District Offices as to how to apply these rulings. Based on this guidance, additional quantitative, qualitative, and other physical data is required for the USACE to make a determination of jurisdictional authority. This determination is reviewed by the United States Environmental Protection Agency (USEPA).

In accordance with the Rapanos guidance, the USACE will assert jurisdiction over traditional navigable waters (TNWs), non-navigable tributaries of TNWs that are relatively permanent waters (RPWs), and wetlands that directly abut such tributaries. TNWs include all of the "navigable waters of the U.S.," defined in 33 CFR Part 329 and by pertinent federal court decisions. RPWs convey water flow seasonally, typically for at least 3 months. In addition, non-navigable tributaries that are not relatively permanent (non-RPWs), wetlands adjacent to non-RPWs, and wetlands adjacent to but that do not directly abut a TNW will be found jurisdictional based on a fact-specific analysis that they have a significant nexus with a TNW. The significant nexus evaluation considers the volume, duration, and frequency of water flow in the tributary and the proximity of the tributary to a TNW, as well as the hydrologic, ecologic, and other functions performed by the tributary and all of its adjacent wetlands.

Wetland Waters of the U.S.

The USACE defines wetlands as "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 CFR 328.3). The USACE's delineation procedures identify wetlands in the field based on indicators of three wetland parameters: hydrophytic vegetation, hydric soils, and wetland hydrology. The following is a discussion of each of these parameters.

Hydrophytic Vegetation

Hydrophytic vegetation dominates areas where frequency and duration of inundation or soil saturation exerts a controlling influence on the plant species present. Plant species are assigned wetland indicator status according to the probability of their occurring in wetlands. More than fifty percent of the dominant plant species must have a wetland indicator status to meet the hydrophytic vegetation criterion. The USACE published the National Wetland Plant List (USACE 2018), which separates vascular plants into the following four basic categories based on plant species frequency of occurrence in wetlands:

- **Obligate Wetland (OBL).** Almost always occur in wetlands
- **Facultative Wetland (FACW).** Usually occur in wetlands, but occasionally found in non-wetlands
- **Facultative (FAC).** Occur in wetlands or non-wetlands
- **Facultative Upland (FACU).** Usually occur in non-wetlands, but may occur in wetlands
- **Obligate Upland (UPL).** Almost never occur in wetlands

The USACE considers OBL, FACW and FAC species to be indicators of wetlands. An area is considered to have hydrophytic vegetation when greater than 50 percent of the dominant species in each vegetative stratum (tree, shrub, and herb) fall within these categories. Any species not appearing on the United States Fish and Wildlife Service's list is assumed to be an upland species, almost never occurring in wetlands. In addition, an area needs to contain at least 5% vegetative cover to be considered as a vegetated wetland.

Hydric Soils

Hydric soils are saturated or inundated for a sufficient duration during the growing season to develop anaerobic or reducing conditions that favor the growth and regeneration of hydrophytic vegetation. Field indicators of wetland soils include observations of ponding, inundation, saturation, dark (low chroma) soil colors, bright mottles (concentrations of oxidized minerals such as iron), gleying (indicates reducing conditions by a blue-grey color), or accumulation of organic material. Additional supporting information includes documentation of soil as hydric or reference to wet conditions in the local soils survey, both of which must be verified in the field.

Wetland Hydrology

Wetland hydrology is inundation or soil saturation with a frequency and duration long enough to cause the development of hydric soils and plant communities dominated by hydrophytic vegetation. If direct observation of wetland hydrology is not possible (as in seasonal wetlands), or records of wetland hydrology are not available (such as stream gauges), assessment of wetland hydrology is frequently supported by field indicators, such as water marks, drift lines, sediment deposits, or drainage patterns in wetlands.

Regional Water Quality Control Board Jurisdiction

The State Water Resources Control Board (SWRCB) and local Regional Water Quality Control Board (RWQCB) have jurisdiction over "waters of the State," which are defined as any surface water or groundwater, including saline waters, within the boundaries of the state.

The SWRCB or local RWQCB have not established regulations for field determinations of waters of the state except for wetlands currently. The RWQCB are affected by or shares USACE jurisdiction unless isolated conditions or ephemeral waters are present. Each local RWQCB may delineate their jurisdictions of waters of the state differently based on current interpretations of jurisdiction.

Procedures for defining RWQCB jurisdiction pursuant to the SWRCB's *State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State* went into effect May 28, 2020.The SWRCB define an area as wetland if, under normal circumstances:

(i) the area has continuous or recurrent saturation of the upper substrate caused by groundwater, or shallow surface water, or both;

(ii) the duration of such saturation is sufficient to cause anaerobic conditions in the upper substrate; and

(iii) the area's vegetation is dominated by hydrophytes or the area lacks vegetation.

The SWRCB's *Implementation Guidance for the Wetland Definition and Procedures for Discharges of Dredge and Fill Material to Waters of the State* (2020), states that waters of the U.S. and waters of the State should be delineated using the standard USACE delineation procedures, taking into consideration that the methods shall be modified only to allow for the fact that a lack of vegetation does not preclude an area from meeting the definition of a wetland.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Act is the principal law governing water quality regulation in California. It establishes a comprehensive program to protect water quality and the beneficial uses of water. The Porter-Cologne Act applies to surface waters, wetlands, and ground water and to both point and nonpoint sources of pollution. Pursuant to the Porter-Cologne Act (California Water Code section 13000 et seq.), the policy of the State is as follows:

- The quality of all the waters of the State shall be protected
- All activities and factors affecting the quality of water shall be regulated to attain the highest water quality within reason
- The State must be prepared to exercise its full power and jurisdiction to protect the quality of water in the State from degradation

The Porter-Cologne Act established nine RWQCB (based on hydrogeologic barriers) and the SWRCB, which are charged with implementing its provisions and which have primary responsibility for protecting water quality in California. The SWRCB provides program guidance and oversight, allocates funds, and reviews RWQCB decisions. In addition, the SWRCB allocates rights to the use of surface water. The RWQCBs have primary responsibility for individual permitting, inspection, and enforcement actions within each of nine hydrologic regions. The SSWRCB and RWQCB have numerous nonpoint source related responsibilities, including monitoring and assessment, planning, financial assistance, and management.

California Department of Fish and Wildlife Jurisdiction

The California Department of Fish and Wildlife (CDFW) has not defined the term "stream" for the purposes of implementing its regulatory program under Section 1602, and the agency has not promulgated regulations directing how jurisdictional streambeds may be identified, or how their limits should be delineated. Considering this, four sources of information were reviewed and considered in determining the appropriate limits of CDFW jurisdiction within the site, as discussed below. The principles presented in these materials were used to guide the delineation of on-site streams, with consideration given to the relevance (i.e., jurisdiction, applicability) of each source to the project and resources at hand.

- **The plain language of Section 1602 of CFGC** establishes the following general concepts:
  - References "river," "stream," and "lake"
  - References "natural flow"
  - References "bed," "bank," and "channel"
- **Applicable court decisions**, in particular *Rutherford v. State of California* (188 Cal App. 3d 1276 (1987), which interpreted Section 1602's use of "stream" to be as defined in common law. The Court indicated that a "stream" is commonly understood to:
  - Have a source and a terminus
  - Have banks and a channel
  - Convey flow at least periodically, but need not flow continuously and may at times appear outwardly dry

  - Represent the depression between the banks worn by the regular and usual flow of the water
  - Include the area between the opposing banks measured from the foot of the banks from the top of the water at its ordinary stage, including intervening sand bars
  - Include the land that is covered by the water in its ordinary low stage
  - Include lands below the OHWM
- **CDFW regulations** defining "stream" for other purposes, including sport fishing (14 CCR 1.72) and streambed alterations associated with cannabis production (14 CCR 722(c)(21)), which indicate that a stream:
  - Flows at least periodically or intermittently
  - Flows through a bed or channel having banks
  - Supports fish or aquatic life
  - Can be dry for a period of time
  - Includes watercourses where surface or subsurface flow supports or has supported riparian vegetation
- **Guidance documents**, including A Field Guide to Lake and Streambed Alteration Agreements (CDFG 1994) and Methods to Describe and Delineate Episodic Stream Processes on Arid Landscapes for Permitting Utility-Scale Solar Power Plants (Brady and Vyverberg 2013), which suggest the following:
  - A stream may flow perennially or episodically
  - A stream is defined by the course in which water currently flows, or has flowed during the historic hydrologic course regime (approximately the last 200 years)
  - Width of a stream course can reasonably be identified by physical or biological indicators
  - A stream may have one or more channels (single thread vs. compound form)
  - Features such as braided channels, low-flow channels, active channels, banks associated with flood benches, floodplains, islands, and stream-associated vegetation, are interconnected parts of the watercourse
  - Canals, aqueducts, irrigation ditches, and other means of water conveyance can be considered streams if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife
  - Biologic components of a stream may include aquatic and riparian vegetation, all aquatic animals including fish, amphibians, reptiles, invertebrates, and terrestrial species which derive benefits from the stream system
  - The lateral extent of a stream can be measured in different ways depending on the particular situation and the type of fish or wildlife resource at risk

The tenets listed above, among others, are applied in desert environments. Coastal drainages are delineated predominately based on the following factors:

- Areas that exhibited evidence of hydrologic activity, such as scour, formation of banks, and/or deposition of sediment or material

Areas where the vegetation community was adapted to the presence of elevated soil moisture levels (i.e., contained mostly hydrophytic species).

Attachment 3

Plant Species Observed in the Study Area (May 3, 2022)

Plant Species Observed Within the Study Area on May 3, 2022

Scientific Name	Common Name	Status	Wetland Indicator Status
Acacia longifolia	golden wattle	Introduced, Cal-IPC: Watch List	Not-listed
Ailanthus altissima	tree of heaven	Introduced, Cal-IPC Moderate	FACU
Alnus rhombifolia	white alder	Native	FACW
Buxus sp.	boxwood	Introduced	Not-listed
Centranthus ruber	Jupiter's beard	Introduced	Not-listed
Delairea odorata	cape ivy	Introduced, Cal-IPC: High	UPL
Equisetum arvense	common horsetail	Native	FAC
Eucalyptus globulus	blue gum eucalyptus	Introduced, Cal-IPC: Limited	UPL
Genista monspessulana	French broom	Introduced, Cal-IPC: High	Not -listed
Hedera helix	English ivy	Introduced, Cal-IPC: High	FACU
Jacaranda mimosifolia	jacaranda	Introduced	Not-listed
Mentha aquatica	water mint	Introduced	FACW
Mimulus auranticus	sticky monkeyflower	Native	FACU
Nerium oleander	oleander	Introduced	UPL
Oxalis pes-caprae	Bermuda buttercup	Introduced, Cal-IPC: Moderate	UPL
Phoenix sp.	date palm	Introduced	Not-listed
Platanus racemosa	California sycamore	Native	FAC
Quercus agrifolia	coast live oak	Native	UPL
Rubus ulmifolius	elmleaf blackberry	Introduced	Not-listed
Salix lasiolepis	arroyo willow	Native	FACW
Stipa miliacea	smilo grass	Introduced, Cal-IPC: Limited	Not-listed
Toxicodendron diversilobum	poison oak	Native	FACU
Tropaeolum majus	garden nasturtium	Introduced	UPL
Vinca major	bigleaf periwinkle	Introduced, Cal-IPC Moderate	Not-listed

Cal-IPC = California Invasive Plant Council Rank

Attachment 4

Representative Photographs (May 3, 2022)

Photograph 1. Biologist Charleen Rode conducting the aquatic resources delineation survey of San Luis Obispo Creek. Human impact and trash debris were observed northwest of the OHWM underneath the culvert (facing southwest, May 3, 2022).

Photograph 2. The natural bottom culvert underneath Johnson Avenue (facing northeast, May 3, 2022).

Photograph 3. View of the different vegetation present on the south bank and north bank of San Luis Obispo Creek. The south bank is a steep concrete bank with cape ivy and the north bank is a gradual slope with dense vegetation including elmleaf blackberry, arroyo willow, and tree of heaven (facing southwest, May 3, 2022).

Photograph 4. The south bank of San Luis Obispo Creek contains large broken concrete pieces in the stream and a large cut into the bank (facing southwest, May 3, 2022).

Photograph 5. A closer look at the south bank of San Luis Obispo Creek where the concrete infrastructure has been undercut and eroded by water flow (facing south, May 3, 2022).

Attachment 5

OHWM Sampling Point Datasheet (May 3, 2022)

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project/Site: SLO Creek City/County: San Luis Obispo Date: 5/3/22 Time: 1100
Applicant/Owner: City of SLO State: CA Data Point: 1
Investigator(s): C. Rede & C. Boggs NWI Classification: R3UBH
Photo File Numbers — Projection Coordinates: 35.281528, -120.654753 Datum: —
Stream SLO Creek
Are climatic/hydrologic conditions on the site typical for this time of year? Yes (If no, explain in remarks.)
Do normal conditions exist on the site? Yes Is the site significantly disturbed? No

Potential anthropogenic influences on the channel system

SLO Creek is a perennial creek that flows through SLO & drains into the Pacific Ocean. Impacted by stormwater runoff, trash, urbanization & human impact

Brief Site Description

Reach of SLO Creek, urbanization, residential, human impact (homeless encampment). Concrete wall/bank from Johnson Ave culvert to end of study Area

USACE Jurisdiction

Tributary to waters (Y/N) Y Stream Order 2

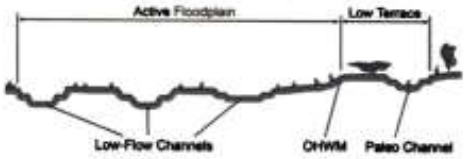
Checklist of Resources (if available)

- ✓ Aerial photography
  - Dates:
- ___ Topographic maps
  - Scale:
- ___ Geologic maps
- ✓ Vegetation maps
- ✓ Soils maps
- ___ Rainfall/precipitation maps
- ___ Existing delineations(s) for the site
- X Global positioning system (GPS)
- ___ Other studies
- ___ Stream gage data
  - Gage number:
  - Period of record:
- ___ Clinometer/level
- ___ History of recent effective discharges
- ___ Results of flood frequency analysis
- ___ Most recent shift-adjusted rating
- ___ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

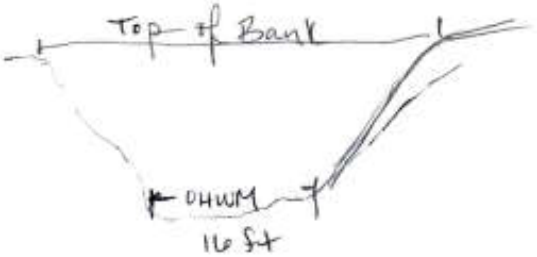
Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

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.
   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 OHWM and record the indicators. Record the OHWM position via:
   - ✓ Mapping on aerial photograph
   - ✓ Digitized on computer
   - X GPS
   - ___ Other:

Hydrogeomorphic Floodplain Units



Cross section drawing



Arid West Ephemeral and Intermittent Streams OHWM Datasheet

OHWM

GPS Point: 1

Indicators:

- [x] Change in average sediment texture
- [x] Change in vegetation species
- [x] Change in vegetation Cover
- [x] Break in bank slope
- [x] Other: Drift deposit
- [ ] Other:

Comments:

Floodplain Unit [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point:

Characteristics of the floodplain unit:

Average sediment texture: Cobble

Total veg cover: 80 % Tree: 15 % Shrub: 45 % Herb: 20 %

Community successional stage:

- [ ] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [x] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [x] Drift and/or debris
- [x] Presence of bed and bank
- [x] Benches
- [ ] Soil Development
- [ ] Surface relief
- [ ] Other:
- [ ] Other:
- [ ] Other:

Comments:

South Bank, steep w/ concrete bank,
North Bank, dense veg
Tree of Heaven, Blackberry
Sycamore, Arroyo Willow
Jupiter's Beard, Cape Ivy
English Ivy, Coast Live Oak

Floodplain Unit [ ] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point:

Characteristics of the floodplain unit:

Average sediment texture:

Total veg cover: % Tree: % Shrub: % Herb: %

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:

Floodplain Unit [ ] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point:

Characteristics of the floodplain unit:

Average sediment texture:

Total veg cover: % Tree: % Shrub: % Herb: %

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:

ATTACHMENT C

San Luis Obispo Creek Bank Stabilization Project Cultural Resources Assessment Report. Rincon Consultants, Inc., June 2022

(Note: this report is not included in the public release Draft IS-MND because it includes confidential information related to the locations of sensitive resources. The report is on file with the City.)

ATTACHMENT D

Geotechnical Engineering Report San Luis Obispo Creek Bank Stabilization Pismo Street San Luis Obispo, California. Earth Systems Pacific. December 30, 2021

GEOTECHNICAL ENGINEERING REPORT
SAN LUIS OBISPO CREEK BANK STABILIZATION
PISMO STREET
SAN LUIS OBISPO, CALIFORNIA

December 30, 2021

Prepared for

Mr. Larry Kraemer
Cannon Corporation

Prepared by

Earth Systems Pacific
4378 Old Santa Fe Road
San Luis Obispo, CA 93401

Earth Systems
4378 Old Santa Fe Road | San Luis Obispo, CA 93401 | Ph: 805.544.3276 | www.earthsystems.com

December 30, 2021

FILE NO.: 304956-001

Mr. Larry Kraemer
Cannon Corporation
1050 Southwood Drive
San Luis Obispo, California

PROJECT: SAN LUIS CREEK BANK STABALIZATION
SPECIFICATION NO. 1000183
PISMO STREET
SAN LUIS OBISPO, CALIFORNIA

SUBJECT: Geotechnical Engineering Report

Dear Mr. Kraemer:

In accordance with the proposal to provide a geotechnical engineering report, this geotechnical engineering report has been prepared for use in the development of plans and specifications for the proposed San Luis Obispo creek bank stabilization project located adjacent to Pismo Street, west of the Johnson Avenue bridge in San Luis Obispo, California. Preliminary geotechnical engineering recommendations for site preparation, grading, retaining walls and associated foundations, drainage and maintenance, and observation and testing are presented herein. Results of Low One electronic copy and one bound copy have been provided to you.

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 report, please do not hesitate to contact the undersigned.

Sincerely,

Earth Systems Pacific

Robert Down, PE
Principal Engineer

Aileen Flynn, EIT
Staff Engineer

Doc. No.: 2112-072.SER/pm

TABLE OF CONTENTS

APPENDICES

1.0 INTRODUCTION AND SITE SETTING

Based on the preliminary plans and discussions with the design team, the proposed development will involve the stabilization of the San Luis Obispo Creek bank west of Johnson Avenue through the construction of a soil nail wall. The soil nail wall will be constructed over the existing slope protection.

The creek bank is partially contained by an existing slope stabilization system. Loose debris and vegetation found near the wall on the underlying bedrock will be removed. We do not anticipate any other grading for the project.

Approximate site coordinates of latitude 35.2814N and longitude 120.6547W were obtained from Google Earth (2021) and were taken at the approximate location shown on Figure 1 – Site Vicinity Map.

2.0 SCOPE OF SERVICES

The scope of work for this geotechnical engineering investigation included the following: a general site reconnaissance, subsurface exploration, laboratory testing of selected samples, geotechnical evaluation of the data collected, and the preparation of this report.

This report and preliminary geotechnical recommendations are intended to comply with the applicable considerations of Sections 1803.1 through 1803.6, J104.3 and J104.4, of the 2019 California Building Code (CBC) and common geotechnical engineering practice in this area under similar conditions at this time. The test procedures were accomplished in general conformance with the standards noted, as modified by common geotechnical engineering practice in this area under similar conditions at this time.

Preliminary geotechnical recommendations for site preparation, grading, retaining walls and associated foundations, drainage and maintenance, and construction observation and testing are presented to guide the development of project plans and specifications. It is our intent that this report be used exclusively by the client to form the geotechnical basis of the design of the project and in the preparation of plans and specifications. Application beyond this intent is strictly at the user's risk. If future property owners wish to use this report, such use will be allowed to the extent the report is applicable, only if the user agrees to be bound by the same contractual conditions as the original client, or contractual conditions that may be applicable at the time of the report use.

This report does not address issues in the domain of contractors such as, but not limited to, site safety, loss of volume due to stripping of the site, shrinkage of soils during compaction, dewatering, shoring, temporary slope angles, construction means and methods, etc. Analyses of the areal or site geology, and of the soil for asbestos (either naturally occurring or in man-made products), radioisotopes, mold or other microbial content, corrosivity, hydrocarbons, lead, or other chemical properties are beyond the scope of this report. Ancillary features such as access roads; fences; flag and light poles; signage; and nonstructural fills and slopes are not within our scope and are also not addressed.

As there may be unresolved geotechnical issues with respect to this project, the geotechnical engineer should be retained to provide consultation as the design progresses, and to review project plans as they near completion to assist in verifying that pertinent geotechnical issues have been addressed and to aid in conformance with the intent of this report. In the event that there are any changes in the nature, design, or location of improvements, or if any assumptions used in the preparation of this report prove to be incorrect, the conclusions and recommendations contained in this report shall not be considered valid unless the changes are reviewed, and the conclusions of this report are modified or verified by the geotechnical engineer in writing. The criteria presented in this report are considered preliminary until such time as any peer review or review by any jurisdiction has been completed, conditions are observed by the geotechnical engineer in the field during construction, and the recommendations have been verified as appropriate or are modified by the geotechnical engineer in writing.

3.0 FIELD INVESTIGATION

On November 4 and 5, 2021, we drilled 3 borings at the site to depths ranging from approximately 7.0 to 21.5 feet below the existing ground surface. Borings were drilled with a truck-mounted Mobile Model B-53 drill rig that utilizing a six-inch outside diameter hollow stem auger and a Simco drill rig 4-inch solid stem auger; both soil with an automatic trip hammer for sampling. The approximate locations of the borings are shown on the Figure 2 - Exploration Location Map in Appendix A.

Soil samples were obtained from the exploratory borings using a 2-inch outside diameter ring-lined barrel sampler (ASTM D 3550-01/07 with shoe similar to D 2937-10) and Standard Penetration Tests (SPT) were conducted at selected depths within the borings (ASTM D1586/D1586-18). Bulk soil samples were also obtained from the auger cuttings. After sampling was complete, the borings were backfilled with the auger cuttings.

Soils encountered in the borings were categorized and logged in general accordance with the Unified Soil Classification System and ASTM D 2488-17. Where bedrock was encountered, its properties were described based upon observation of ring and/or Standard Penetration Test samples, observation of auger cuttings, the effort required to drill into bedrock, and the effort required to drive samplers into bedrock. Copies of the boring logs can also be found in Appendix A along with a boring log legend. In reviewing the boring logs and legend, the reader should recognize that the legend is intended as a guide only, and there are several conditions that may influence the soil characteristics as observed during drilling. These include, but are not limited to, the presence of cobbles or boulders, cementation, variations in soil moisture, presence of groundwater, and other factors. It should also be noted that the descriptions of bedrock must span a wider range of density and strength characteristics than soil and are relative to other *bedrock* strata. For example, fractured and weathered bedrock may be described as "soft," yet it will be considerably harder than almost any type of soil. Conversely, a clay soil may be described as "hard," however it will not be nearly as hard as even "soft" bedrock. Consequently, the logger must exercise judgment in interpreting the subsurface characteristics, possibly resulting in soil descriptions that vary somewhat from the legend.

4.0 LABORATORY ANALYSIS

Selected samples from the borings were tested in our laboratory for bulk density (ASTM D 2937-17, modified for ring liners) and moisture content (ASTM D 2216-10), expansion index (ASTM D 2937-19), and cohesion and angle of shearing resistance (ASTM D 3080/3080M-11).

The geotechnical laboratory test results for our investigation can be found in Appendix B.

5.0 GENERAL SUBSURFACE PROFILE

Based upon our subsurface exploration, the site is underlain by fill and bedrock of the Franciscan Mélange geological formation. Surficial soils at the site were classified as silty and clayey sands and were underlain with sandy lean clays and clayey sands with layers of poorly graded sands and gravels. Gravel content varied between layers. Fill extended to a depth of approximately 17.5 feet and was underlain with Franciscan Mélange sandstone. No subsurface water was encountered during the exploration.

Please refer to the Boring Logs in Appendix A for a more detailed description of the subsurface conditions encountered.

6.0 CONCLUSIONS

In our opinion, the site is suitable, from a geotechnical engineering standpoint, for the proposed soil nail wall and associated improvements as discussed in the "Introduction and Site Setting" section of the report, provided the recommendations contained herein are implemented in the design and construction. The primary geotechnical engineering concerns at the site are the potential for strong seismic shaking, erosion potential and failure of existing slope stabilization, and soil expansion potential.

Potential for Strong Seismic Shaking

The site is in a region of high seismic activity with the potential for large seismic events that could generate strong ground shaking. The CBC requires that seismic loads be considered in structural design. A seismic analysis was undertaken to provide seismic acceleration design parameters; the results are presented in the "Retaining Walls" section of this report for use by others in the structural design process.

The ASCE 7-16 (ASCE, 2017/2018) method available on the Structural Engineers Associate of California (SEAOC) Seismic Design Map Tool website (SEAOC, 2021) was used for the seismic analysis. The risk category for buildings and structures is assigned by others in accordance with Table 1604.5 (CSBC, 2019); however, based on our current understanding of the project, we selected Risk Category II for our analysis. The site coordinates from the "Site Setting" section of this report were used in the analysis. Based on the general subsurface profile encountered, the Site Class per Chapter 20 Table 20.3-1 (ASCE, 2017) is "C – Very Dense Soil and Soft Rock." A general ground motion seismic analysis was performed and seismic parameters provided for use in design.

Erosion Potential

The site soils are considered to be erodible. Caution should be exercised to protect the soil from erosion during and following construction. As mentioned previously, the existing slope protection has been undermined and has failed in some locations. To reduce the potential for further undermining and failure of the existing slope protection, retaining wall design parameters are provided to retain the slope, including the remaining existing slope protection.

Soil Expansion Potential

An expansion index test performed on a composite sample of the surficial alluvium at the site produced an expansion index value of 39. Per Section 1803.5.3 of the 2019 CBC, these soils are considered to be expansive, with "low" expansion potentials per ASTM D 4829-19. Expansive soils tend to swell with increases in soil moisture and shrink as soil moisture decreases; the upper 3 to 5 feet of soil is the zone most affected by these seasonal soil moisture fluctuations. The volume changes that these materials undergo in this cyclical pattern can damage improvements if precautionary measures are not incorporated into the design and construction procedures. Recommendations for reducing the potential for damage to the proposed improvements, including moisture conditioning the soil, placement of non-expansive fill, as appropriate, retaining wall design parameters, and deepening foundations, are provided for use in design.

7.0 PRELIMINARY GEOTECHNICAL RECOMMENDATIONS

These recommendations are applicable for the proposed project as described in the "Introduction and Site Setting" section of this report. If other improvements not previously mentioned are included, the geotechnical engineer should be contacted for revised recommendations.

Unless otherwise noted, the following definitions are used in the recommendations presented below. Where terms are not defined, definitions commonly used in the construction industry are intended.

- **Exterior Pedestrian Flatwork Areas:** The areas within and extending a minimum of 2 feet beyond the limits of the flatwork areas, if removal and reconstruction are needed.
- **Subgrade:** The elevation of the surface upon which a sand cushion/non-expansive imported material or aggregate base will be placed for flatwork or pavement improvements.
- **Existing Grade:** Elevations of the site that existed as of the date of this report.
- **Scarified:** Thoroughly plowed or ripped in two orthogonal directions to a depth of not less than 8 inches.
- **Moisture Conditioned:** Soil moisture content adjusted to just above optimum moisture content prior to application of compactive effort.

- **Compacted / Recompacted:** Soils placed in level lifts not exceeding 8 inches in loose thickness and compacted to a minimum of 90 percent of maximum dry density, unless specified otherwise. The standard tests used to establish maximum dry density and field density should be ASTM D 1557-12 and ASTM D 6938-17, respectively, or other methods acceptable to the geotechnical engineer and jurisdiction.

Site Preparation

1. The ground surface in the grading area should be prepared for construction by removing vegetation, debris, and other deleterious materials. Any existing utility lines that will not remain in service should be either removed or abandoned. The appropriate method of utility abandonment will depend upon the type and depth of the utility. Recommendations for abandonment during construction can be made as necessary.

2. Voids created by the removal of materials or utilities described above should be called to the attention of the geotechnical engineer. No fill should be placed unless the underlying soil has been observed by the geotechnical engineer.

Grading

1. Following site preparation, exterior pedestrian flatwork areas should be overexcavated to a depth of 1 foot below planned subgrade elevation or existing grade, whichever is deeper. The soil surface exposed by overexcavation should be scarified, moisture conditioned, and recompacted.

2. Voids created by dislodging cobbles and/or debris during scarification should be backfilled and recompacted, and the dislodged materials should be removed from the work area

3. Previously removed site soils and other similar soils may be used as moisture conditioned and properly compacted fill up to subgrade or finish grade, as applicable.

4. All materials used as fill should be cleaned of all debris and any rocks larger than 6 inches in maximum dimension. When fill material includes rocks, the rocks should be placed in a sufficient soil matrix to ensure that voids caused by nesting of the rocks will not occur and that the fill can be properly compacted.

5. If the soils become unstable, or if the recommended compaction cannot be readily achieved, drying the soil to just above optimum moisture content may be necessary.

Placement of gravel layers or geotextiles may also be necessary to help stabilize unstable soils. If such conditions are found, the geotechnical engineer should be contacted to assist the contractor in selecting appropriate measures for stabilization of unstable soils.

6. The recommended soil moisture content should be maintained during construction and throughout the life of the project. Failure to maintain the soil moisture content can result in cracks and disturbance, which are an indication of degradation of the soil compaction. If cracks are allowed to develop, or if soils near improvements such as foundations, flatwork, pavement, curbs, etc. are otherwise disturbed, damage to those improvements may result. Soils that have been or are otherwise disturbed should be removed, moisture conditioned, and compacted.

Utility Trenches

1. A select, noncorrosive, easily compacted sand should be used as bedding and shading immediately around utilities. Trench backfill, within the upper 12 inches of the vehicle pavement areas should also be nonexpansive. Site soils or select import may be used as trench backfill within the remaining trench depths.

2. Utility trench backfill should be moisture conditioned and compacted to a minimum of 90 percent of maximum dry density. Trenches located within areas to be paved should be compacted to a minimum of 95 percent of maximum dry density within the upper foot of subgrade and all aggregate base.

3. Trench backfill should be placed in level lifts not exceeding 6 inches in loose thickness, moisture conditioned, and compacted to the minimums noted above.

4. Long-term settlement of properly compacted, imported sand or crushed gravel trench backfill should be assumed to be about 0.2 to 0.5 percent of the depth of the backfill; long-term settlement of properly compacted site soil or crushed sandstone trench backfill should be assumed to be about 0.5 to 1 percent of the depth of the backfill. Improvements that are constructed over or near trenches should be designed to accommodate long-term settlement.

5. Compaction of trench backfill by jetting or flooding is not recommended except under extraordinary circumstances. However, to aid in *encasing* utility conduits, particularly corrugated drainpipes, and multiple, closely spaced conduits in a single trench, jetting or

flooding may be useful. Flooding or jetting should only be attempted with extreme caution, and any jetting operation should be subject to review by the geotechnical engineer.

6. The recommendations of this section are minimums only and may be superseded by the requirements of the architect/engineer, the recommendations of the pipe manufacturers, utility companies, or the requirements governing jurisdiction based upon soil corrosivity or other factors.

Exterior Pedestrian Flatwork

1. Exterior pedestrian flatwork should have a minimum thickness of 4 inches. Minimum reinforcement for exterior pedestrian flatwork should consist of No. 3 rebar placed at 24 inches on-center each way.

2. In conventional construction, it is common to use four to six inches of sand beneath exterior flatwork. Another measure that can be taken to reduce the risk of movement of flatwork is to provide thickened edges or grade beams around the perimeters of the flatwork. The thickened edges or grade beams could be up to 12 inches deep, with the deeper edges or grade beams providing better protection. At a minimum, the thickened edge or grade beam should be reinforced by two No. 4 rebar, one near the top and one near the bottom of the thickened edge or grade beam.

3. For an added level of protection, the flatwork can be provided with perimeter trenched edges a minimum of 3 inches deeper than the chosen nonexpansive layer. The trenched edges should be reinforced with No. 4 rebar top and bottom. The decision regarding the thickness of nonexpansive material to use below flatwork, as well as the use of trenched edges, is left to the architect/engineer or owner.

4. Flatwork should be constructed with frequent joints to allow articulation as the flatwork moves in response to seasonal soil temperature and moisture variations. The soil below flatwork should be moisture conditioned prior to casting the flatwork.

5. Flatwork surfaces should be sloped to freely drain toward appropriate drainage facilities. Water should not be allowed to stand or pond on or adjacent to pavement or other improvements as it could infiltrate into the aggregate base and/or subgrade, causing premature pavement deterioration.

Retaining Walls

Retaining Wall Foundations

1. A footing may be constructed at the toe of any soil nail wall to support the long-term dead load of the wall without requiring the soil nails to act in shear or bending, and to help prevent the wall from being undermined. Where used, footings should penetrate a minimum of 6 inches into intact bedrock. Footings may be designed based upon an allowable bearing capacity of 3,000 psf.

2. Soil nail wall footings should be reinforced in accordance with the requirements of the architect/engineer; however, minimum reinforcement should consist of two No. 4 rebars, one at the top and one at the bottom

3. The seismic acceleration site parameters included in the table below have been provided to the design team for use in its analyses. The 2010 ASCE 7 method with 2013 updates, available on the Structural Engineers Association of California website (SEAOC 2021), was used to obtain the parameters. The project was considered to be a "nonessential" facility from the perspective of risk category as described by the CBC. The site coordinates stated in the "Introduction and Site Setting" section were used in the analysis. Based upon the subsurface conditions encountered during our investigation, the site should be classified as Site Class C (Very Dense Soil and Soft Rock). Foundations may be designed using the following 2019 CBC seismic parameters.

TABLE 1: SEISMIC ACCELERATION SITE PARAMETERS

Mapped Spectral Response Accelerations		**Site Coefficients for Site Class C**		**Adjusted MCE Spectral Response Accelerations for Site Class C**		**Design Spectral Response Accelerations for Site Class C**	
Seismic Parameter	Value (g)	Site Coefficient	Value	Seismic Parameter	Value (g)	Seismic Parameter	Value (g)
S_S	1.072	F_a	1.200	S_{MS}	1.286	S_{DS}	0.858
S_1	0.395	F_v	1.500	S_{M1}	0.593	S_{D1}	0.395
Peak Mean Ground Acceleration (PGA_m) : 0.570 g							
Seismic Design Category: D							

4. Foundation excavations should be observed by the geotechnical engineer prior to placement of reinforcing steel. Soils in foundation excavations should be moistened to optimum moisture content, or just above, prior to application of compactive effort, and no desiccation cracks should be present prior to placement.

Soil Nail Walls

1. Soil nails should be installed on 4- to 8-foot center spacing, each way. The rows of nails may be staggered, at the discretion of the architect/engineer.

2. The soil nail wall should be embedded a minimum of 6 inches into the underlying bedrock.

3. Soil nails should have a minimum length of 80 percent of the maximum height of the wall. It is suggested that the soil nails be designed to be only one length or two common lengths and bar sizes; varying the length of each individual nail as well as the bar size should be avoided. The spacing of the nails can be varied as appropriate to accommodate the design loads.

4. Soil nails should be designed to be installed on a 15 to 20 degree downward batter, measured from the horizontal, unless other angles are required from a structural or construction viewpoint.

5. To aid and verify design, a number of verification test nails and shotcrete facing should be installed in the proposed soil nail wall areas and tested prior to soil nail wall construction. A minimum of two verification nails should be installed per row.

6. Soil nail holes should be a minimum of 4 inches in diameter. The secondary corrosion protection should be as required by the engineer. Corrosion protection could consist of plastic sheathing, epoxy coating, or other similar measures at the discretion of the engineer.

7. Prior to insertion of the nails, the nail holes should be cleaned of all debris, slough, mud, etc. Cleaning should be via compressed air, flushing, or other appropriate methods.

8. Centering devices should be used on the nails to ensure that they remain in the center of the hole during the grouting process. A centering device should be placed about 1 foot from the end of the nail and at maximum 8-foot spacing to the face of the slope, 2 minimum per hole.

9. Soil nails should be grouted via low pressure tremie pipe. Grout should be neat cement with a water/cement ratio of 0.4 to 0.5, or as required by the engineer. Soils nails should be post grouted at least one time. Secondary post grout points are recommended. Alternately, epoxy or other synthetic grouts may also be utilized. In using these alternate grouts, the nail type, hole diameter, etc., should be as recommended by the grout manufacturer.

10. The *preliminary* design should be based upon allowable bond strength as tabulated below. Shear strength parameters are also provided for reference. All parameters should be confirmed during construction.

TABLE 4: SOIL NAIL WALL DESIGN PARAMETERS

Material	Wet Unit Wt. (pcf)	Cohesion (psf)	Friction Angle (degrees)	Allowable Bond Strength (psi)
Soils: Top Row	115	750	20	5
Soils: Subsequent Rows	120	500	25	8
Rock	115	-	-	20

11. Prior to shotcreting, strips of prefabricated drainage material should be applied to the slope. The drain material should be a minimum of 12 inches wide, and there should be no more than 4 feet clear between the drain strips. The drain strips should extend from just below the top of the wall to weep holes at the lowest elevation that will allow drainage. Alternately, the drain strips could discharge into a collection pipe at the toe of the wall and the pipe could discharge, in a nonerosive manner, at a convenient location.

12. Reinforcing should be applied and the slope shotcreted, as required by the engineer. Specifications for the shotcrete are left to the engineer.

13. Test panels should be prepared during shotcreting operations. The strength of the shotcrete should be verified by testing cores taken from the panels. Additional testing and/or inspection should be as required by the engineer.

14. Soil nails should be tested for tensile capacity and elongation (creep). Unless otherwise specified by the engineer, at a minimum, five percent of the nails, in random locations and a minimum of one per row, should be tested to a minimum of 150 percent of required capacity. If any nails fail to attain the test load for tension or exceed the specification for elongation, testing of additional nails may be recommended. The engineer should specify the maximum elongation at various loads. The testing should be performed by the contractor with observation of the tests by the soils engineer.

Retaining Walls - General

1. Retaining wall design may be based on the following parameters:

TABLE 2: RETAINING WALL DESIGN PARAMETERS

Parameter	Backfill Type	Value
Active Equivalent Fluid Pressure	Site Soils	45 pcf
At-Rest Equivalent Fluid Pressure	Site Soils	60 pcf
Passive Equivalent Fluid Pressure	Bedrock	300 pcf
Maximum Toe Pressure	Bedrock	3,000 psf
Coefficient of Sliding Friction	Bedrock	0.40

2. No surcharges are taken into consideration in the above values. The maximum toe pressures are allowable values to which a factors of safety have been applied. No factors of safety, load factors or other factors have been applied to an of the remaining values.

3. If the active or at-rest pressures for imported sand or gravel are utilized for design of retaining walls, the sand or gravel should be used exclusively as backfill above a 1:1 plane extending upward from the bottom of the wall, except as noted in the following paragraph.

4. The above pressures are applicable to a horizontal retained surface behind the wall. Walls having a retained surface that slopes upward from the wall should be designed for an additional fluid pressure of 1 pcf for the active case and 1.5 pcf for the at-rest case, for every 2 degrees of slope inclination.

5. Section 1803.5.12.1 of the CBC requires that dynamic seismic lateral earth pressures be provided by the geotechnical engineer for walls retaining more than 6 feet of backfill. Using the PGA_m was 0.570 g and the methods presented by Lew et al. Structural Engineers Association of California (SEAOC) Convention Proceedings (2010), the seismic incremental increases in lateral soil pressure, above the static active equivalent fluid pressure for cantilevered walls, were determined to be the following:

TABLE 3: LATERAL SEISMIC SOIL PRESSURE INCREASES

Backfill Material	Incremental Increase (pcf)
Imported Sand/Gravel	15
Site Soils, 8-12 feet tall	5
Site Soils, 12-14 feet tall	10
Site Soils, 14- 16 feet tall	20
Site Soils, 16-20 feet tall	22

According to Lew et al. (2010), the seismic incremental increase for cantilever walls is due to the out-of-phase interaction between the wall and the backfill soil. For rigid walls, in-phase interaction between the wall and the accelerating soil occurs. Consequently, no incremental increase is considered necessary for walls that are designed using the at-rest equivalent fluid pressures recommended in this section.

6. In typical structural design methods for retaining walls such as those found in Section 1605 of the CBC, lateral soil pressure is multiplied by a load factor of 1.6. According to Lew et al. (2010), a load factor of 1.6 is too conservative for seismic loads; Lew suggests that the seismic increase in lateral pressure be separated from the static active pressure and that a load factor of 1.0 be used for the seismic increase. Further, Al Atik and Sitar (2010) found that pressure increases due to seismic earth loads were minimal for walls retaining less than 12 feet of backfill. While the Al Atik and Sitar's research is generally accepted among geotechnical and structural engineers in California, it is not entirely acknowledged by the agency that develops the building code (California Building Standards Commission), as the CBC sets the height below which seismic loads may be ignored at 6 feet. Given this disparity, it is suggested that caution be used *not to over-engineer walls retaining between 6 and 12 feet of backfill*.

Vehicular Pavements

HMA Pavement

The following Hot Mix Asphalt (HMA) pavement sections are based upon an assumed R-value of 15 and assumed Traffic Indices (TIs) of 4.0 through 8.0. Determination of the appropriate TI for specific areas of the project is left to others. The HMA sections were calculated in accordance with the method presented in the "Highway Design Manual" (Caltrans 2018). The calculated HMA and Class 2 aggregate base (AB) thicknesses are for compacted material. Normal Caltrans construction tolerances should apply.

Table 5: HMA Pavement Sections

Traffic Index	HMA (in)	Class 2 AB*(in)
4.0	2.25	6.75
4.5	2.50	7.75
5.0	2.75	8.50
5.5	3.00	10.00
6.0	3.25	11.00
7.0	4.00	13.00
8.0	4.50	15.75

*Per Caltrans (2018) Section 26

PCC Pavement

1. If unreinforced Portland cement concrete pavement is planned, the following *minimum* section is recommended:

    - 8 inches plain PCC (4,000 psi minimum)
    - Joint spacing at 8 to 10 feet on-center each way
    - #4 smooth joint dowels at 12-inch centers
    - 12 inches Class 2 AB and subgrade compacted to a *minimum* of 95 percent of maximum dry density

2. If reinforced concrete pavement is planned, the following minimum section may be used:

   - 6 inches PCC (4,000 psi minimum)
   - Joint spacing at 10 to 12 feet on-center each way
   - No. 4 rebar at 18-inch centers each way
   - No. 4 smooth joint dowels at 18-inch centers
   - 12 inches Class 2 AB and subgrade compacted to a minimum of 95 percent of maximum dry density

3. Alternately, the pavement may be designed by the architect/engineer for the appropriate loads. Provided that a minimum of 12 inches of AB compacted to a minimum of 95 percent of maximum dry density is provided, the design may be based on a subgrade modulus of 200 pci (psi/in). Specification of concrete properties and reinforcing is left to the architect/engineer.

Pavement Sections - General

1. HMA and PCC pavements should be constrained by curbs, gutters, flatwork, walls, etc.; free edges to the pavements should be avoided.

2. HMA and PC pavement should be set back a minimum of 5 feet from any descending slope or fully retained by the slope protection. Alternately, deepened curbs may be used to constrain the pavement. Where curbs will be deepened in lieu of the recommended setback, the individual situation should be reviewed, and specific recommendations prepared by the geotechnical engineer.

3. Subgrade and AB should be firm and unyielding when proof-rolled with heavy, rubber-tired grading equipment prior to continuing construction.

4. Finished pavement surfaces should be sloped to freely drain toward appropriate drainage facilities. Water should not be allowed to stand or pond on or adjacent to pavement, as it could cause premature pavement deterioration or improvement damage.

5. To reduce migration of surface drainage into the subgrade, maintenance of non-permeable pavement areas is critical. Any cracks that develop in the pavement should be promptly sealed.

6. The local jurisdiction may have additional requirements for pavement or pavers that could take precedence over the above recommendations.

Drainage and Maintenance

1. Unpaved ground surfaces should be graded during construction and, per Section 1804.4 (CBC 2019), finish graded to direct surface runoff away from foundations, slopes, and other improvements at a minimum 5 percent grade for a minimum distance of 10 feet. If this is not feasible due to the terrain, property lines, or other factors, swales with improved surfaces, area drains, or other drainage features should be provided to divert drainage away from these areas.

2. Finished surfaces should be sloped to freely drain toward appropriate drainage facilities. Water should not be allowed to stand or pond on or adjacent to slopes or other improvements.

3. Stabilization of surface soils, particularly those disturbed during construction, by vegetation or other means *during and following construction,* should be implemented to protect the site from erosion damage. Care should be taken to establish and maintain vegetation.

4. To reduce the potential for damage due to erosion it is essential that the surface soils, particularly those disturbed during construction, be stabilized by vegetation or other means during and following construction. Care should be taken to establish and maintain vegetation. The landscaping and exterior flatwork should be installed to maintain the surface drainage recommended above.

5. To reduce the potential for disruption of drainage patterns and undermining of foundations and other improvements, rodent activity should be aggressively controlled.

Observation and Testing

1. It must be recognized that the recommendations contained in this report are based on a limited number of borings and rely on continuity of the subsurface conditions encountered. Therefore, the geotechnical engineer should be retained to provide consultation during the design phase, to review plans as they near completion, to interpret this report during construction, and to provide construction monitoring in the form of testing and observation.

2. At a minimum, the geotechnical engineer should be retained to provide:

   - Review of the project plans as they near completion
   - Professional observation during grading and backfill
   - Professional observation during wall construction
   - Oversight of soil special inspection during grading and construction

3. Special inspection of grading and backfill should be provided as per Section 1705.6 and Table 1705.6 (CBSC, 2019). The special inspector should be under the direction of the geotechnical engineer. It is our opinion that none of the grading construction is of a nature that should warrant continuous special inspection; periodic special inspection should suffice. Subject to approval by the Building Official, the exception to continuous special inspection is described in Section 1704.2 (CBSC, 2019) and should be specified by the architect/engineer and periodic special inspection of the following items should be provided by the special inspector.

   - Stripping and clearing of vegetation and unsuitable materials
   - Scarification, moisture conditioning, and compaction of the soil
   - Fill quality, placement, and compaction, as needed
   - Utility trench backfill
   - Soil nail wall construction
   - Subgrade and AB/nonexpansive fill compaction and proof-rolling

4. A program of quality control should be developed prior to beginning grading. The contractor or project manager should determine any additional inspection items required by the architect/engineer or the governing jurisdiction.

5. Locations and frequency of compaction tests should be as per the recommendation of the geotechnical engineer at the time of construction. The recommended test locations and frequency may be subject to modification by the geotechnical engineer, based upon soil and moisture conditions encountered, size and type of equipment used by the contractor, the general trend of the results of compaction tests, or other factors.

6. A preconstruction conference among the owner, the geotechnical engineer, the governing agency, the special inspector, the project inspector, the architect/engineer, and contractors is recommended to discuss planned construction procedures and quality control requirements.

7. The geotechnical engineer should be notified at least 48 hours prior to beginning construction operations. If Earth Systems Pacific is not retained to provide construction observation and testing services, it shall not be responsible for the interpretation of the information by others or any consequences arising therefrom.

8.0 CLOSURE

Our intent was to perform the investigation in a manner consistent with the level of care and skill ordinarily exercised by members of the profession currently practicing in the locality of this project and under similar conditions. No representation, warranty, or guarantee is either expressed or implied. This report is intended for the exclusive use by the client as discussed in the "Scope of Services" Section. Application beyond the stated intent is strictly at the user's risk.

This report is valid for conditions as they exist at this time for the type of project described herein. The conclusions and recommendations contained in this report could be rendered invalid, either in whole or in part, due to changes in building codes, regulations, standards of geotechnical or construction practice, changes in physical conditions, or the broadening of knowledge. If Earth Systems Pacific is not retained to provide construction observation and testing services, it shall not be responsible for the interpretation of the information by others or any consequences arising therefrom.

If changes with respect to project type or location become necessary, if items not addressed in this report are incorporated into plans, or if any of the assumptions used in the preparation of this report are not correct, this firm shall be notified for modifications to this report. Any items not specifically addressed in this report should comply with the CBC (CBSC, 2019) and the requirements of the governing jurisdiction.

The preliminary recommendations of this geotechnical report are based upon the geotechnical conditions encountered at the site and may be augmented by additional requirements of the architect/engineer, or by additional recommendations provided by the geotechnical engineer based on conditions exposed at the time of construction.

Thank you for this opportunity to have been of service. If you have any questions, please feel free to contact this office at your convenience.

End of Text.

TECHNICAL REFERENCE LIST

ACI (American Concrete Institute). 2014. "Building Code Requirements for Structural Concrete." *Document 318-14*.

ASCE (American Society of Civil Engineers). 2017. *Minimum Design Loads and Associated Criteria for Buildings and Other Structures, ASCE/SEI 7-16*.

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Caltrans (California Department of Transportation). 2018. "Standard Specifications."

Google Earth. 2020. Google Earth [website], retrieved from: http://www.google.com/earth/index.html

SEAOC (Structural Engineers Association of California). 2020. “Seismic Design Map Tool.” Retrieved from: https://seismicmaps.org/

APPENDIX A

Figure 1 – Site Vicinity Map
Figure 2 – Exploration Location Map
Boring Log Legend
Boring Logs

N

BASE MAP PROVIDED BY: GOOGLE EARTH (2021)

NOT TO SCALE

Earth Systems Pacific
4378 Old Santa Fe Road, San Luis Obispo, CA 93401
www.earthsystems.com
(805) 544-3276 ● Fax (805) 544-1786

SITE VICINITY MAP

San Luis Obispo Creek Bank Stabilization
Pismo Street
San Luis Obispo, California

Date
December 2021

Project No.
304956-001

Figure 1

304956-001 SLOCREEKBANKSTABILIZATION110521maps.dwg

LEGEND

B1 Boring Location (Approx.)

BASE MAP PROVIDED BY: GOOGLE EARTH (2021)

N

NOT TO SCALE

Earth Systems Pacific
4378 Old Santa Fe Road, San Luis Obispo, CA 93401
www.earthsystems.com
(805) 544-3276 ● Fax (805) 544-1786

EXPLORATION LOCATION MAP

San Luis Obispo Creek Stabilization
Pismo Street
San Luis Obispo, California

Date
December 2021

Project No.
304956-001

Figure 2

304956-001 SLOCREEKBANKSTABILIZATION110521maps.dwg

Earth Systems Pacific

BORING LOG LEGEND

SAMPLE / SUBSURFACE WATER SYMBOLS	GRAPH. SYMBOL
CALIFORNIA MODIFIED	
STANDARD PENETRATION TEST (SPT)	
SHELBY TUBE	
BULK	
SUBSURFACE WATER DURING DRILLING	
SUBSURFACE WATER AFTER DRILLING	

UNIFIED SOIL CLASSIFICATION SYSTEM (ASTM D 2487)

MAJOR DIVISIONS	GROUP SYMBOL	TYPICAL DESCRIPTIONS	GRAPH. SYMBOL
COARSE GRAINED SOILS (MORE THAN HALF OF MATERIAL IS LARGER THAN #200 SIEVE SIZE)	GW	WELL GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES	
	GP	POORLY GRADED GRAVELS, OR GRAVEL-SAND MIXTURES, LITTLE OR NO FINES	
	GM	SILTY GRAVELS, GRAVEL-SAND-SILT MIXTURES, NON-PLASTIC FINES	
	GC	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES, PLASTIC FINES	
	SW	WELL GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES	
	SP	POORLY GRADED SANDS OR GRAVELLY SANDS, LITTLE OR NO FINES	
	SM	SILTY SANDS, SAND-SILT MIXTURES, NON-PLASTIC FINES	
	SC	CLAYEY SANDS, SAND-CLAY MIXTURES, PLASTIC FINES	
FINE GRAINED SOILS (HALF OR MORE OF MATERIAL IS SMALLER THAN #200 SIEVE SIZE)	ML	INORGANIC SILTS AND VERY FINE SANDS, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY	
	CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS	
	OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY	
	MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SANDY OR SILTY SOILS, ELASTIC SILTS	
	CH	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS	
	OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS	
	PT	PEAT AND OTHER HIGHLY ORGANIC SOILS	

OBSERVED MOISTURE CONDITION

DRY	SLIGHTLY MOIST	MOIST	VERY MOIST	WET (SATURATED)

CONSISTENCY

COARSE GRAINED SOILS			FINE GRAINED SOILS		
BLOWS/FOOT		DESCRIPTIVE TERM	BLOWS/FOOT		DESCRIPTIVE TERM
SPT	CA SAMPLER		SPT	CA SAMPLER	
0-10	0-16	LOOSE	0-2	0-3	VERY SOFT
11-30	17-50	MEDIUM DENSE	3-4	4-7	SOFT
31-50	51-83	DENSE	5-8	8-13	MEDIUM STIFF
OVER 50	OVER 83	VERY DENSE	9-15	14-25	STIFF
			16-30	26-50	VERY STIFF
			OVER 30	OVER 50	HARD

GRAIN SIZES

U.S. STANDARD SERIES SIEVE				CLEAR SQUARE SIEVE OPENING		
# 200	# 40	# 10	# 4	3/4"	3"	12"

SILT & CLAY	SAND			GRAVEL		COBBLES	BOULDERS
	FINE	MEDIUM	COARSE	FINE	COARSE		

TYPICAL BEDROCK HARDNESS

MAJOR DIVISIONS	TYPICAL DESCRIPTIONS
EXTREMELY HARD	CORE, FRAGMENT, OR EXPOSURE CANNOT BE SCRATCHED WITH KNIFE OR SHARP PICK; CAN ONLY BE CHIPPED WITH REPEATED HEAVY HAMMER BLOWS
VERY HARD	CANNOT BE SCRATCHED WITH KNIFE OR SHARP PICK; CORE OR FRAGMENT BREAKS WITH REPEATED HEAVY HAMMER BLOWS
HARD	CAN BE SCRATCHED WITH KNIFE OR SHARP PICK WITH DIFFICULTY (HEAVY PRESSURE); HEAVY HAMMER BLOW REQUIRED TO BREAK SPECIMEN
MODERATELY HARD	CAN BE GROOVED 1/16 INCH DEEP BY KNIFE OR SHARP PICK WITH MODERATE OR HEAVY PRESSURE; CORE OR FRAGMENT BREAKS WITH LIGHT HAMMER BLOW OR HEAVY MANUAL PRESSURE
SOFT	CAN BE GROOVED OR GOUGED EASILY BY KNIFE OR SHARP PICK WITH LIGHT PRESSURE, CAN BE SCRATCHED WITH FINGERNAIL; BREAKS WITH LIGHT TO MODERATE MANUAL PRESSURE
VERY SOFT	CAN BE READILY INDENTED, GROOVED OR GOUGED WITH FINGERNAIL, OR CARVED WITH KNIFE; BREAKS WITH LIGHT MANUAL PRESSURE

TYPICAL BEDROCK WEATHERING

MAJOR DIVISIONS	TYPICAL DESCRIPTIONS
UNWEATHERED	NO DISCOLORATION, NOT OXIDIZED
SLIGHTLY WEATHERED	DISCOLORATION OR OXIDATION IS LIMITED TO SURFACE OF, OR SHORT DISTANCE FROM, FRACTURES: SOME FELDSPAR CRYSTALS ARE DULL
MODERATELY WEATHERED	DISCOLORATION OR OXIDATION EXTENDS FROM FRACTURES, USUALLY THROUGHOUT; Fe-Mg MINERALS ARE "RUSTY", FELDSPAR CRYSTALS ARE "CLOUDY"
HIGHLY WEATHERED	DISCOLORATION OR OXIDATION THROUGHOUT; FELDSPAR AND Fe-Mg MINERALS ARE ALTERED TO CLAY TO SOME EXTENT, OR CHEMICAL ALTERATION PRODUCES IN SITU DISAGGREGATION
DECOMPOSED	DISCOLORATION OR OXIDATION THROUGHOUT, BUT RESISTANT MINERALS SUCH AS QUARTZ MAY BE UNALTERED; FELDSPAR AND Fe-Mg MINERALS ARE COMPLETELY ALTERED TO CLAY

drafting/masters/Boring Log Legend 062719.dwg

Earth Systems Pacific

Boring No. 1

LOGGED BY: A. Flynn
DRILL RIG: Mobile B-53 with Automatic Hammer
AUGER TYPE: 6" Hollow Stem

JOB NO.: 304956-001
DATE: 11/4/2021

San Luis Obispo Creek Bank Stabilization
Pismo Street
San Luis Obispo, California

DEPTH (feet)	USCS CLASS	SYMBOL	SOIL DESCRIPTION	SAMPLE DATA: INTERVAL (feet)	SAMPLE TYPE	DRY DENSITY (pcf)	MOISTURE (%)	BLOWS PER 6 IN.
0			5.0" AC / 9.0" AB					
1	SM		SILTY SAND: dark brown, medium dense, slightly moist (Fill)	1.0 - 5.0	◯			
3			some gravel					
5	SP		POORLY GRADED SAND WITH GRAVEL AND SILT: brown, medium dense, slightly moist	5.0 - 6.5	■	109.5	8.0	5 8 16
6	GW		WELL GRADED GRAVEL: brown, medium dense, slightly moist					
8	CL		SANDY LEAN CLAY: dark brown, stiff, slightly moist					
10	CL		SANDY LEAN CLAY WITH GRAVEL: dark brown, hard, moist	10.0 - 11.5	■	101.4	18.1	7 21 30
13			brown					
14	CL		SANDY LEAN CLAY: brown, very stiff, moist	15.0 - 16.5	■	102.4	19.5	7 12 14
16	SC		CLAYEY SAND: olive brown, medium dense, slightly moist					
18			SANDSTONE: yellowish brown, hard, slightly moist, medium weathered (Franciscan Mélange)	20.0 - 20.5	■	104.4	8.1	50/4
22			End of Boring @ 21.5' due to practical refusal No subsurface water encountered					

LEGEND: ■ Ring Sample ◯ Grab Sample ▭ Shelby Tube Sample ● SPT

NOTE: This log of subsurface conditions is a simplification of actual conditions encountered. It applies at the location and time of drilling. Subsurface conditions may differ at other locations and times.

Earth Systems Pacific

Boring No. 2

LOGGED BY: A. Flynn
DRILL RIG: Mobile B-53 with Automatic Hammer
AUGER TYPE: 6" Hollow Stem

JOB NO.: 304956-001
DATE: 11/4/2021

San Luis Obispo Creek Bank Stabilization
Pismo Street
San Luis Obispo, California

DEPTH (feet)	USCS CLASS	SOIL DESCRIPTION	SAMPLE DATA: INTERVAL (feet)	SAMPLE TYPE	DRY DENSITY (pcf)	MOISTURE (%)	BLOWS PER 6 IN.
0		6.0" AC / 10.0" AB					
1	SM	SILTY SAND: dark brown, medium dense, slightly moist (Fill)	1.0 - 5.0	○			
5	SM	SILTY SAND WITH GRAVEL: dark brown, medium dense, slightly moist	5.0 - 6.5	■	105.6	5.5	5 8 10
8	CL	SANDY LEAN CLAY WITH GRAVEL: brown, stiff, moist	10.0 - 11.5	■	94.5	19.3	4 9 14
12	SC	CLAYEY SAND: brown, dense, moist					
15	SC	CLAYEY SAND WITH GRAVEL: brown, medium dense, moist	15.0 - 16.5	■	103.2	17.0	9 17 23
17	CL	SANDY LEAN CLAY WITH GRAVEL: dark brown, stiff, slightly moist					
18		SANDSTONE: dark yellowish brown, medium hard, slightly moist, medium weathered (Franciscan Mélange)	20.0 - 21.0	●		9.7	30 50/6
21.5		End of Boring @ 21.5' due to practical refusal No subsurface water encountered					

LEGEND: ■ Ring Sample ○ Grab Sample ▭ Shelby Tube Sample ● SPT

NOTE: This log of subsurface conditions is a simplification of actual conditions encountered. It applies at the location and time of drilling. Subsurface conditions may differ at other locations and times.

Earth Systems Pacific

Boring No. 3

LOGGED BY: A. Flynn
DRILL RIG: SIMCO
AUGER TYPE: 4" Solid Stem

JOB NO.: 304956-001
DATE: 11/5/2021

San Luis Obispo Creek Bank Stabilization
Pismo Street
San Luis Obispo, California

DEPTH (feet)	USCS CLASS	SYMBOL	SOIL DESCRIPTION	SAMPLE DATA: INTERVAL (feet)	SAMPLE TYPE	DRY DENSITY (pcf)	MOISTURE (%)	BLOWS PER 6 IN.
0	SC		CLAYEY SAND: brown, medium dense, slightly moist (Fill)					
5	SC		CLAYEY SAND W/ GRAVEL: dark brown, medium dense, slightly moist	5.0 - 6.5	■	114.8	12.7	8 20 27
6	GP		POORLY GRADED GRAVEL: dark brown, very dense, slightly moist					
7			End of Boring @ 7.0' due to practical refusal No subsurface water encountered					

LEGEND: ■ Ring Sample ◯ Grab Sample ▭ Shelby Tube Sample ● SPT

NOTE: This log of subsurface conditions is a simplification of actual conditions encountered. It applies at the location and time of drilling. Subsurface conditions may differ at other locations and times.

APPENDIX B

Laboratory Results

SLO Creek Bank Stabilization 304956-001

BULK DENSITY TEST RESULTS

ASTM D 2937-17 (modified for ring liners)

November 22, 2021

BORING NO.	DEPTH feet	MOISTURE CONTENT, %	WET DENSITY, pcf	DRY DENSITY, pcf
1	6.0 - 6.5	8.0	118.3	109.5
1	11.0 - 11.5	18.1	119.7	101.4
1	16.0 - 16.5	19.5	122.4	102.4
1	20.0 - 20.5	8.1	112.9	104.4
2	6.0 - 6.5	5.5	111.5	105.6
2	11.0 - 11.5	19.3	112.8	94.5
2	16.0 - 16.5	17.0	120.7	103.2
2	20.0 - 20.5	9.7	---	---
3	6.0 - 6.5	12.7	129.4	114.8

EXPANSION INDEX TEST RESULTS

ASTM D 4829-19

BORING NO.	DEPTH feet	EXPANSION INDEX
2	1.0 - 5.0	39

SLO Creek Bank Stabilization 304956-001

DIRECT SHEAR

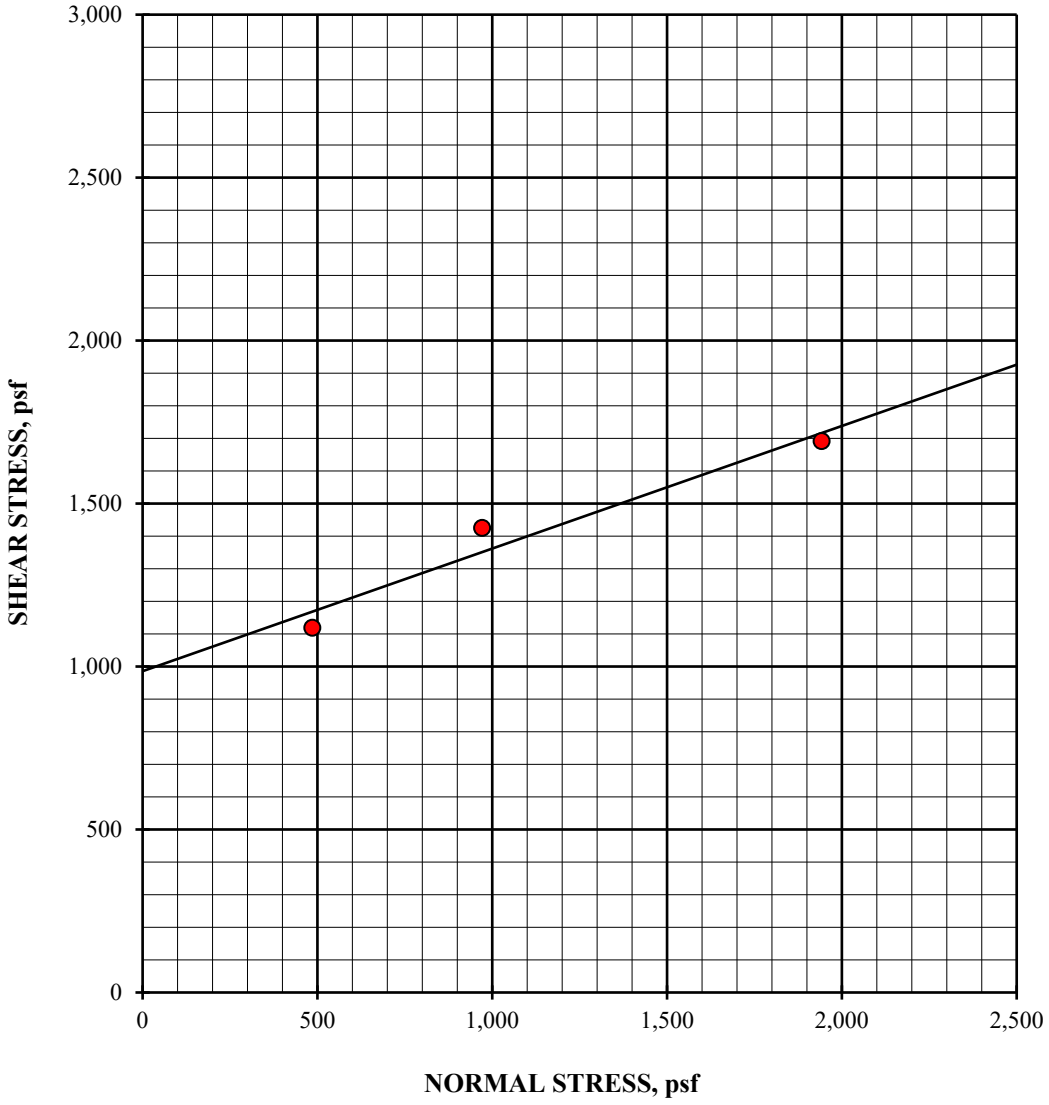
ASTM D 3080/D3080M-11[5] (modified for consolidated, undrained conditions)

November 22, 2021

Boring #1 @ 11.0 - 11.5'
Sandy Lean Clay with Gravel (CL)
Ring sample, saturated

INITIAL DRY DENSITY: 100.1 pcf
INITIAL MOISTURE CONTENT: 18.1 %
PEAK SHEAR ANGLE (Ø): 21°
COHESION (C): 986 psf

SHEAR vs. NORMAL STRESS



SLO Creek Bank Stabilization 304956-001

DIRECT SHEAR continued

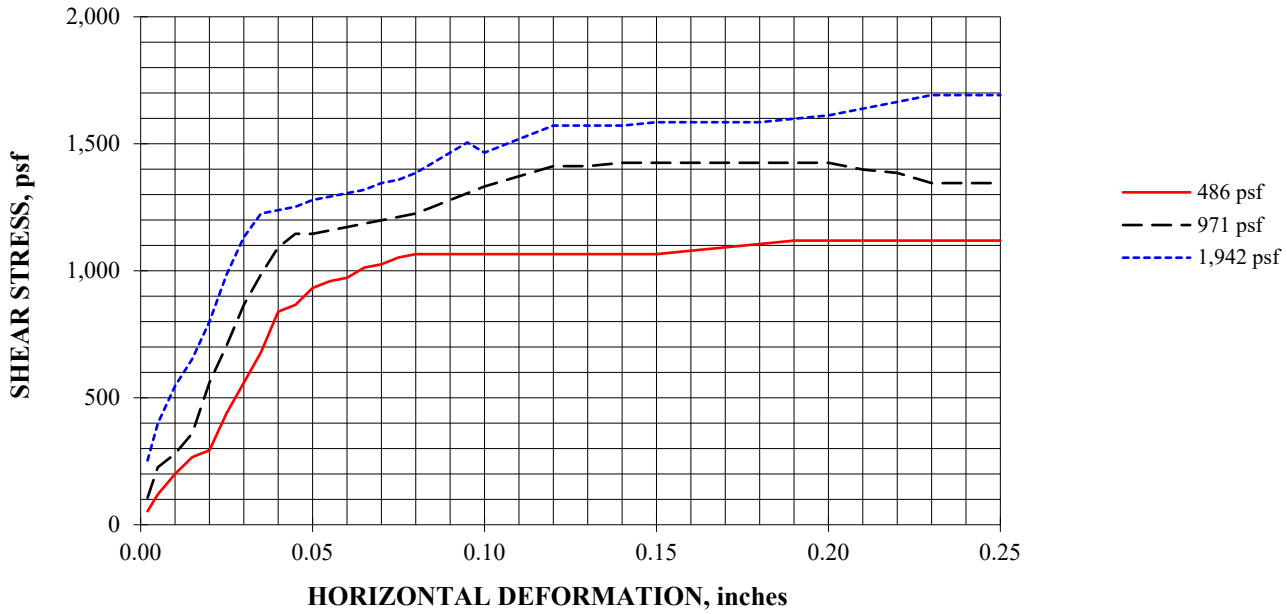
ASTM D 3080/D3080M-11[5] (modified for consolidated, undrained conditions)

Boring #1 @ 11.0 - 11.5' November 22, 2021

Sandy Lean Clay with Gravel (CL)

Ring sample, saturated SPECIFIC GRAVITY: 2.70 (assumed)

SAMPLE NO.:	1	2	3	AVERAGE
INITIAL				
WATER CONTENT, %	18.1	18.1	18.1	18.1
DRY DENSITY, pcf	98.4	101.1	100.7	100.1
SATURATION, %	68.7	73.4	72.6	71.5
VOID RATIO	0.712	0.666	0.673	0.684
DIAMETER, inches	2.410	2.410	2.410	
HEIGHT, inches	1.00	1.00	1.00	
AT TEST				
WATER CONTENT, %	36.2	29.6	31.0	
DRY DENSITY, pcf	99.8	103.6	105.7	
SATURATION, %	100.0	100.0	100.0	
VOID RATIO	0.688	0.626	0.595	
HEIGHT, inches	0.99	0.98	0.95	



SLO Creek Bank Stabilization 304956-001

DIRECT SHEAR

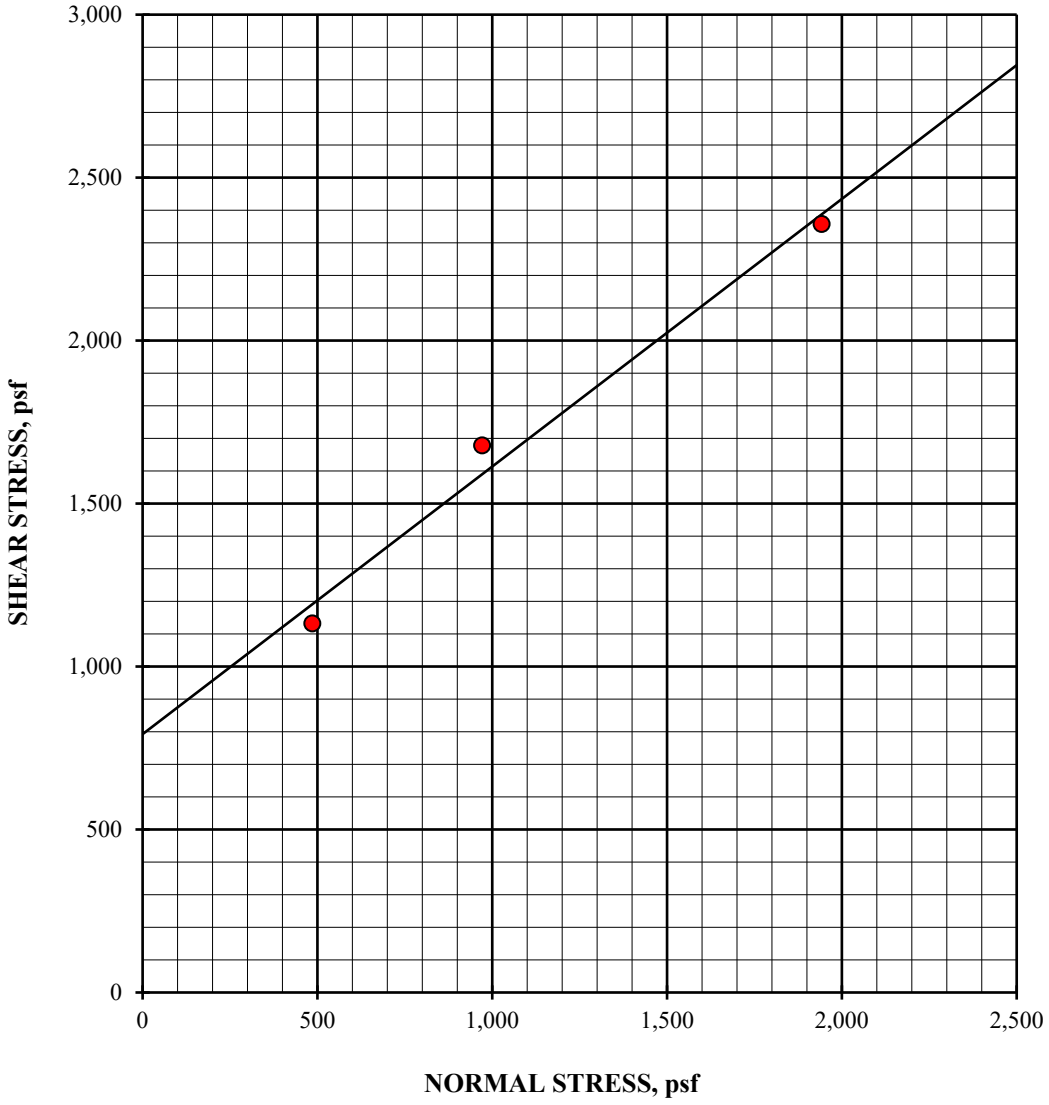
ASTM D 3080/D3080M-11[5] (modified for consolidated, undrained conditions)

November 22, 2021

Boring #1 @ 16.0 - 16.5'
Clayey Sand (SC)
Ring sample, saturated

INITIAL DRY DENSITY: 101.8 pcf
INITIAL MOISTURE CONTENT: 19.5 %
PEAK SHEAR ANGLE (Ø): 39°
COHESION (C): 793 psf

SHEAR vs. NORMAL STRESS



SLO Creek Bank Stabilization 304956-001

DIRECT SHEAR continued

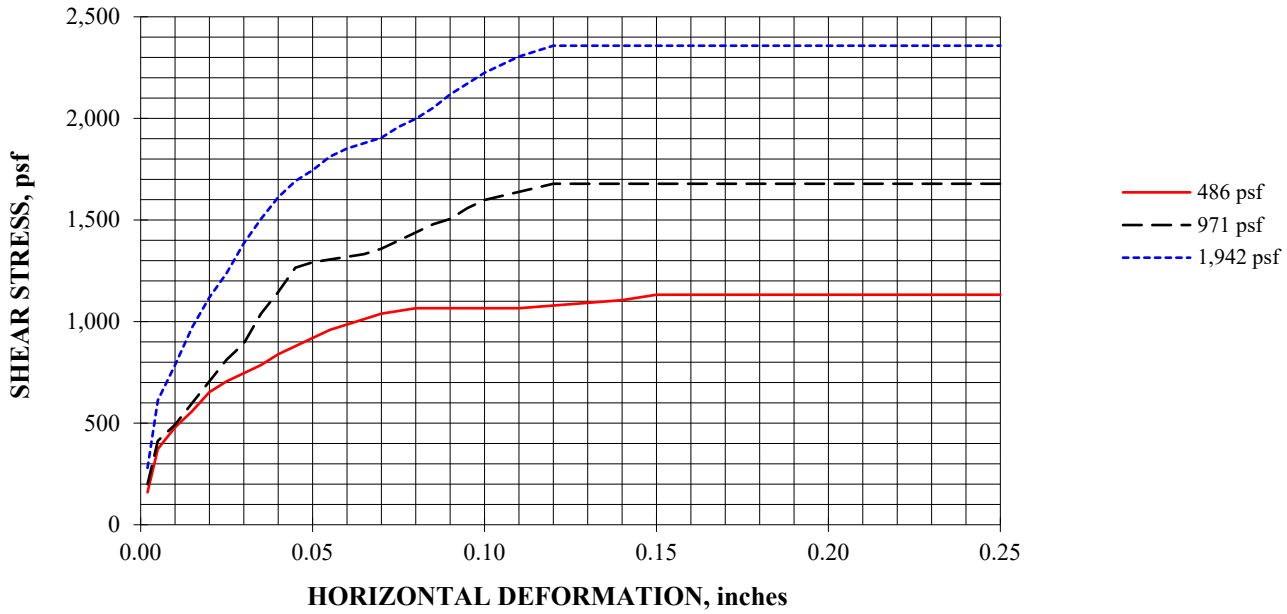
ASTM D 3080/D3080M-11[5] (modified for consolidated, undrained conditions)

Boring #1 @ 16.0 - 16.5' November 22, 2021

Clayey Sand (SC)

Ring sample, saturated SPECIFIC GRAVITY: 2.65 (assumed)

SAMPLE NO.:	1	2	3	AVERAGE
INITIAL				
WATER CONTENT, %	19.5	19.5	19.5	19.5
DRY DENSITY, pcf	100.6	101.4	103.3	101.8
SATURATION, %	80.3	81.9	86.0	82.8
VOID RATIO	0.643	0.631	0.601	0.625
DIAMETER, inches	2.410	2.410	2.410	
HEIGHT, inches	1.00	1.00	1.00	
AT TEST				
WATER CONTENT, %	32.0	29.8	28.7	
DRY DENSITY, pcf	101.6	104.1	108.5	
SATURATION, %	100.0	100.0	100.0	
VOID RATIO	0.627	0.588	0.524	
HEIGHT, inches	0.99	0.97	0.95	



SLO Creek Bank Stabilization 304956-001

DIRECT SHEAR

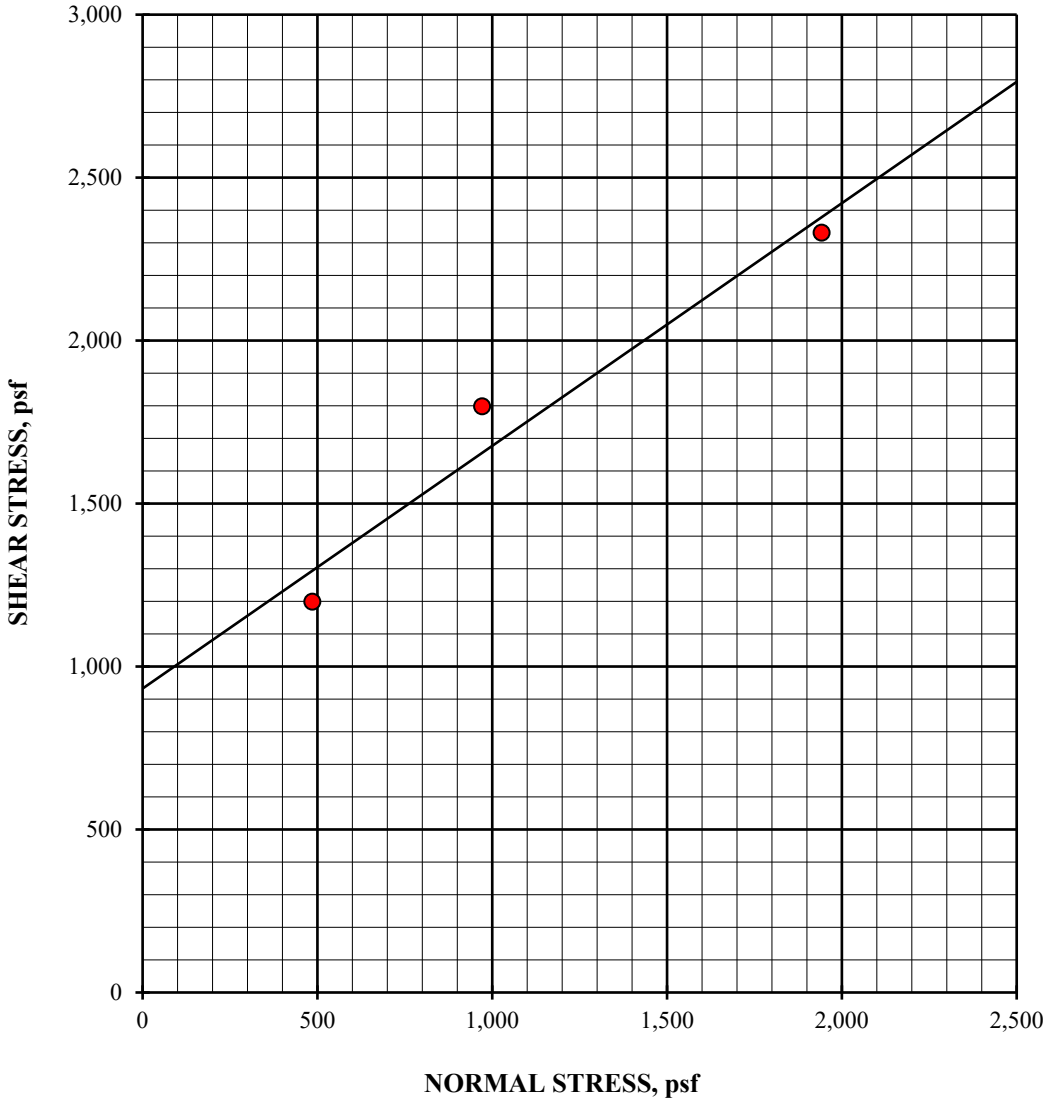
ASTM D 3080/D3080M-11[5] (modified for consolidated, undrained conditions)

November 22, 2021

Boring #2 @ 6.0 - 6.5'
Silty Sand with Gravel (SM)
Ring sample, saturated

INITIAL DRY DENSITY: 105.1 pcf
INITIAL MOISTURE CONTENT: 5.5 %
PEAK SHEAR ANGLE (Ø): 37°
COHESION (C): 932 psf

SHEAR vs. NORMAL STRESS



SLO Creek Bank Stabilization 304956-001

DIRECT SHEAR continued

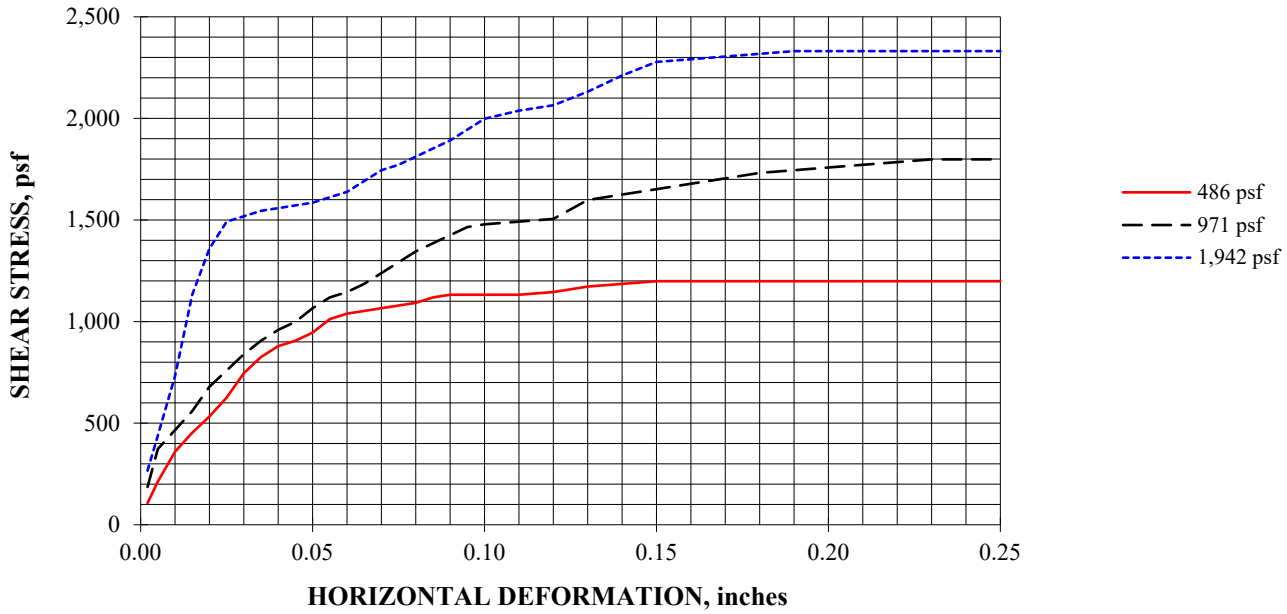
ASTM D 3080/D3080M-11[5] (modified for consolidated, undrained conditions)

Boring #2 @ 6.0 - 6.5' November 22, 2021

Silty Sand with Gravel (SM)

Ring sample, saturated SPECIFIC GRAVITY: 2.65 (assumed)

SAMPLE NO.:	1	2	3	AVERAGE
INITIAL				
WATER CONTENT, %	5.5	5.5	5.5	5.5
DRY DENSITY, pcf	107.8	104.4	103.2	105.1
SATURATION, %	27.3	25.0	24.2	25.5
VOID RATIO	0.534	0.584	0.602	0.573
DIAMETER, inches	2.410	2.410	2.410	
HEIGHT, inches	1.00	1.00	1.00	
AT TEST				
WATER CONTENT, %	13.2	13.0	13.7	
DRY DENSITY, pcf	109.2	106.5	106.1	
SATURATION, %	68.3	62.2	64.8	
VOID RATIO	0.514	0.552	0.559	
HEIGHT, inches	0.99	0.98	0.97	



SLO Creek Bank Stabilization 304956-001

DIRECT SHEAR

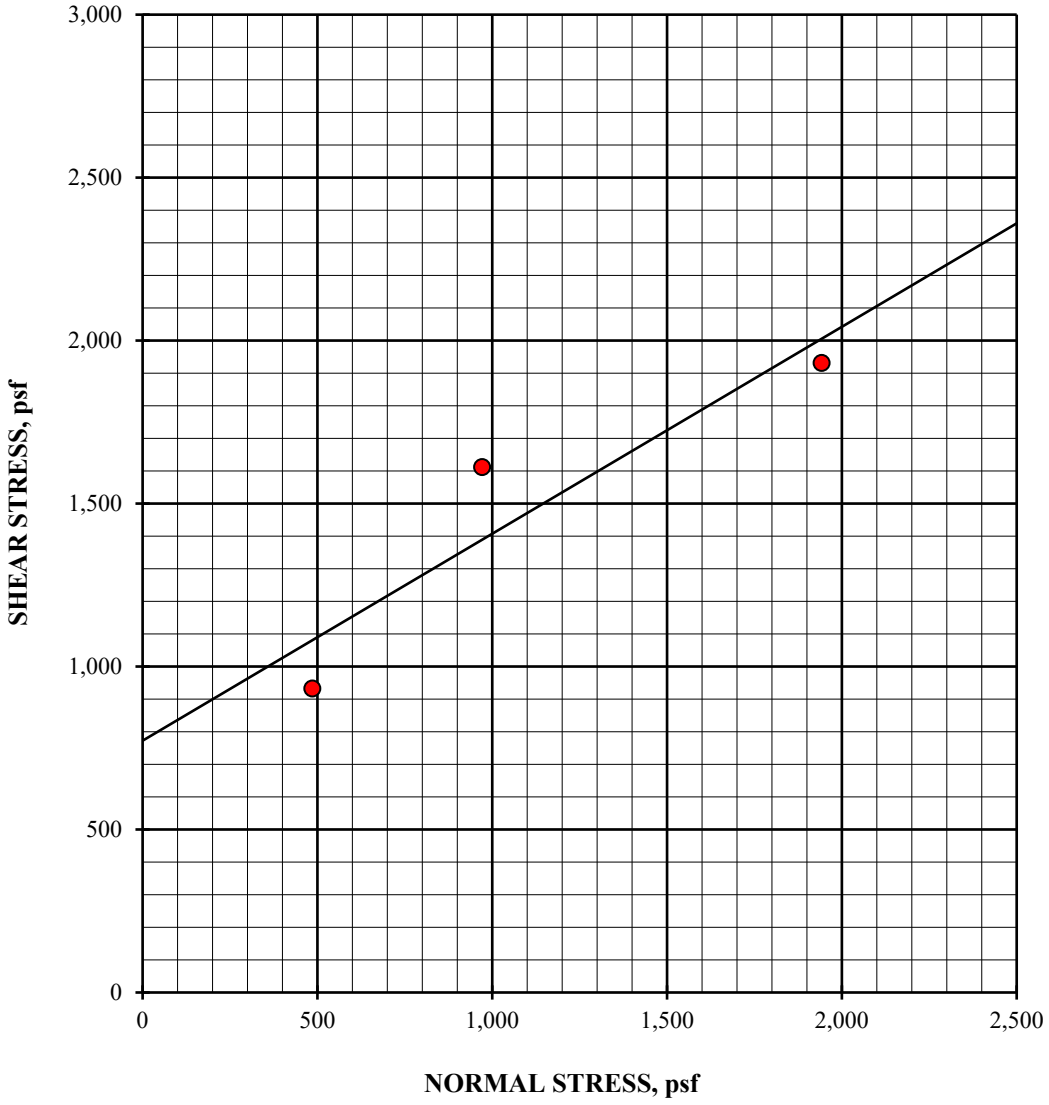
ASTM D 3080/D3080M-11[5] (modified for consolidated, undrained conditions)

November 22, 2021

Boring #2 @ 11.0 - 11.5'
Sandy Lean Clay (CL)
Ring sample, saturated

INITIAL DRY DENSITY: 94.8 pcf
INITIAL MOISTURE CONTENT: 19.3 %
PEAK SHEAR ANGLE (Ø): 32°
COHESION (C): 773 psf

SHEAR vs. NORMAL STRESS



DIRECT SHEAR continued

ASTM D 3080/D3080M-11[5] (modified for consolidated, undrained conditions)

Boring #2 @ 11.0 - 11.5' November 22, 2021

Sandy Lean Clay (CL)

Ring sample, saturated SPECIFIC GRAVITY: 2.70 (assumed)

SAMPLE NO.:	1	2	3	AVERAGE
INITIAL				
WATER CONTENT, %	19.3	19.3	19.3	19.3
DRY DENSITY, pcf	90.2	99.3	94.9	94.8
SATURATION, %	60.0	74.7	67.1	67.3
VOID RATIO	0.869	0.697	0.776	0.781
DIAMETER, inches	2.410	2.410	2.410	
HEIGHT, inches	1.00	1.00	1.00	
AT TEST				
WATER CONTENT, %	31.3	24.3	26.2	
DRY DENSITY, pcf	91.3	102.6	100.8	
SATURATION, %	100.0	100.0	100.0	
VOID RATIO	0.846	0.641	0.671	
HEIGHT, inches	0.99	0.97	0.94