Initial Study/Mitigated Negative Declaration

800 West Cliff Drive Roadway Realignment Project

JULY 2026

Prepared for:

CITY OF SANTA CRUZ
Public Works Department
809 Center Street, Room 201
Santa Cruz, California 95060
Contact: Tim Wong

Prepared by:

DUDEK

725 Front Street, Suite 400
Santa Cruz, California 95066
Contact: Ann Sansevero

City of Santa Cruz
Mitigated Negative Declaration

The Administrator of Environmental Quality of the City of Santa Cruz has prepared this Mitigated Negative Declaration for the following described project:

Project: City of Santa Cruz 800 West Cliff Drive Roadway Realignment Project

Application No.: Not Applicable

Project Location: 800 West Cliff Drive, Santa Cruz, California

Project Description: In December 2023 and early January 2024, high wave and storm events eroded and collapsed a section of the multiuse pathway across from approximately 800 West Cliff Drive and the Light House Field State Beach. The 800 West Cliff Drive Road Realignment project aims to eliminate the weakest link in the West Cliff Drive roadway system as an eroded scarp at the location has encroached to within 21 feet of the existing roadway, partially damaging an adjacent multiuse pathway. The project would shift an approximately 600-foot section of roadway nearest to the scarp approximately 60 feet inland, out of the 100-year erosion zone. A section of the multiuse pathway would also be shifted inland approximately 30 feet. A right-of-way acquisition from State Parks would be required to realign the road and multiuse pathway, as proposed. Other elements of the project include stormwater drainage improvements, minor utility improvements, minor improvements to an existing parking lot, relocation of existing signage and new signage, new fencing, new and relocated benches, removal of existing asphalt along the existing road and multiuse path, and construction site restoration.

Applicant: City of Santa Cruz

Applicant Address: City of Santa Cruz Public Works Department
809 Center Street, Room 201
Santa Cruz, California 95060

Finding: The City of Santa Cruz Public Works Department has reviewed the proposed project and has determined that the project, based on the Initial Study attached hereto, would not have a significant effect on the environment. An Environmental Impact Report is not required pursuant to the California Environmental Quality Act of 1970. This environmental review process and Mitigated Negative Declaration is done in accordance with the State CEQA Guidelines and the local City of Santa Cruz CEQA Guidelines and Procedures.

Mitigation Measures: The five mitigation measures identified in the Initial Study are listed below, and will be incorporated into the project design or as conditions of approval, to ensure that any potential effects on the environment will not be significant.

Summary of Impacts and Mitigation Measures

Impact	Mitigation Measure
Biological Resources	
Project construction could result in potentially significant impacts on special-status wildlife species. Mitigation measures would ensure that impacts would be less than significant.	MM BIO-1: Pre-Activity Surveys for Nesting Birds. Prior to any construction activities scheduled during the bird nesting season (February 1 to August 31), a qualified wildlife biologist with demonstrated nest-searching experience will conduct pre-construction surveys for nesting birds, including white-tailed kite and other raptors. The pre-construction survey will occur no more than 7 days prior to the onset of ground-disturbing activities (including clearing, grubbing, and staging). If active nests are found during the survey, the biologist will establish a no-disturbance buffer around the nest and mark the buffer perimeter with high-visibility fencing, flagging, or pin flags. The size of the buffer will be based on the species' sensitivity to disturbance and planned work activities in the vicinity; typical buffer sizes are 250 feet for raptors and 50 feet for passerines. The no-disturbance buffer will remain in effect until the nest is no longer active. If a lapse in project-related activities of 15 days or longer occurs during the bird nesting season, another pre-construction survey will be conducted.
	MM BIO-2: Pre-Activity Surveys for Roosting Bat. If tree trimming or removal is scheduled to begin during the peak activity timeframes (from March to April and August to October, then within 2 weeks prior to tree trimming or removal, a qualified biologist will examine trees to be removed or trimmed for suitable bat roosting habitat. High-quality habitat features (e.g., large tree cavities, basal hollows, loose or peeling bark, larger snags) will be identified, and the area around these features searched for bats and bat sign (e.g., guano, culled insect parts, staining). Riparian woodland and stands of mature broadleaf trees will be considered potential habitat for solitary foliage roosting bat species. If bat sign is detected, biologists will conduct an evening visual emergence survey of the source habitat feature, from a half hour before sunset to 1–2 hours after sunset for a minimum of 2 nights within the season that construction would be taking place. Night-vision goggles and/or full-spectrum acoustic detectors will be used during emergence surveys to assist in species identification. All emergence surveys will be conducted during favorable weather conditions (calm nights with temperatures conducive to bat activity and no precipitation predicted). If a potentially active bat roost is identified within a tree proposed for removal during the peak activity timeframes, passive monitoring with full-spectrum bat detectors will be used to assist in determining species present. A minimum of 4 nights of acoustic monitoring surveys will be conducted within the season that construction would be taking place. If site security allows, detectors should be set to record bat calls for the duration of each night. To the extent possible, all monitoring will be conducted during

Summary of Impacts and Mitigation Measures

Impact	Mitigation Measure
	favorable weather conditions (calm nights with temperatures conducive to bat activity and no precipitation predicted). The biologists will analyze the bat call data using appropriate software and prepare a report that will be submitted to the City and CDFW. Avoidance and minimization measures may be necessary if it is determined that bats are using the trees as roost sites, or if sensitive bats species are detected during acoustic monitoring. Appropriate measures will be determined by the qualified biologist and may include any combination of the measures listed below. ▪ Trees will be removed in pieces, rather than felling the entire tree. ▪ If a maternity roost is located, whether solitary or colonial, that roost will remain undisturbed with a buffer as determined by the biologist until September 15 or until they have determined that the roost is no longer active. ▪ If a non-maternity roost in a tree is found, every effort should be made to avoid the roost, as methods to evict bats from trees are largely untested. ▪ If a non-maternity roost is found within trees that cannot be avoided, eviction will be attempted using procedures designed in consultation with CDFW to reduce the likelihood of mortality of evicted bats. In all cases, the following stipulations will be observed. - Eviction will not occur before September 15 and will match the timeframe for tree removal for nesting birds and other sensitive wildlife. - Qualified biologists will carry out or oversee the eviction tasks and will monitor the tree trimming/removal. - Eviction will take place late in the day or in the evening to reduce the likelihood of evicted bats falling prey to diurnal predators. - Eviction will take place during weather and temperature conditions conducive to bat activity. ▪ Non-injurious harassment at the roost site, such as ultrasound deterrents or other sensory irritants, may be used to encourage bats to leave on their own. ▪ Prior to tree removal/trimming and after other eviction efforts have been attempted, any confirmed roost site will be gently shaken or repeatedly struck with a heavy implement such as a sledge hammer or an axe; several minutes should pass before felling trees or trimming limbs to allow bats time to arouse and leave the roost. The biologists will search downed vegetation for dead and injured bats. The presence of dead or injured bats will be reported to CDFW. Injured bats will be transported to the nearest CDFW-permitted wildlife rehabilitation facility.
	MM BIO-3: Pre-Activity Surveys for Monarchs. Removal of all cypress trees and associated vegetation activities (brush removal, tree trimming, understory vegetation removal, etc.) in the

Summary of Impacts and Mitigation Measures

Impact	Mitigation Measure
	immediate vicinity of any cypress trees will occur outside of monarch overwintering (October through March), to the extent feasible. If tree and vegetation removal must occur between October and March, a qualified biologist will survey the cypress groves no earlier than 1 week prior to tree removal to determine if any monarch butterflies are present. If monarchs are present, the qualified biologist will establish a no-disturbance buffer around the occupied tree(s) and mark the buffer perimeter with high-visibility fencing, flagging, or pin flags. The size of the buffer will be based on the height of the occupied tree(s) and size of the overwintering group. The no-disturbance buffer will remain in effect until the monarchs have dispersed for migration and the tree is no longer in use for overwintering.
Cultural and Tribal Cultural Resources	
Project construction could result in a potentially significant impacts on unknown archaeological recourse or tribal cultural resources. Mitigation measures would ensure that impacts would be less than significant.	MM CUL-1: Unanticipated Discovery of Archaeological Resources. All construction crews should be alerted to the potential to encounter sensitive archaeological material. In the event that archaeological resources (sites, features, artifacts) are exposed during construction activities for the proposed project, all construction work occurring within 60 feet of the find shall immediately stop until a qualified archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards, can evaluate the significance of the find and determine whether additional study is warranted. Precontact archaeological deposits may be indicated by the presence of discolored or dark soil, fire-affected material, concentrations of fragmented or whole marine shell, burned or complete bone, non-local lithic materials, or the characteristic observed to be atypical of the surrounding area. Common precontact artifacts may include modified or battered lithic materials; lithic or bone tools that appeared to have been used for chopping, drilling, or grinding; projectile points; fired clay ceramics or non-functional items; and other items. Depending upon the significance of the find under Section 106 of the National Historic Preservation Act (NHPA) and the California Environmental Quality Act (CEQA) (14 CCR 15064.5(f); PRC Section 21082), the archaeologist may simply record the find and allow work to continue. If the discovery is potentially significant under Section 106 of the NHPA or CEQA, additional work, such as preparation of an archaeological treatment plan, testing, or data recovery may be warranted.
	MM CUL-2: Human Remains. In accordance with Section 7050.5 of the California Health and Safety Code, if human remains are found, the county coroner shall be immediately notified of the discovery. No further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains shall occur until the county coroner has determined, within 2 working days of notification of the discovery, the appropriate treatment and

Summary of Impacts and Mitigation Measures

Impact	Mitigation Measure
	disposition of the human remains. If the county coroner determines that the remains are, or are believed to be, Native American, he or she shall notify the Native American Heritage Commission (NAHC) in Sacramento within 24 hours. In accordance with California Public Resources Code, Section 5097.98, the NAHC must immediately notify the person it believes to be the most likely descendant from the deceased Native American. The most likely descendant shall complete his/her inspection within 48 hours of being granted access to the site. The designated Native American representative would then determine, in consultation with the property owner, the disposition of the human remains.



June 24, 2026

Kevin Crossley, P.E., Acting Public Works Director
Administrator of Environmental Quality
City of Santa Cruz, California

Date

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A Biological Resources Technical Report
B Aquatic Resources Delineation Report
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D Noise and Vibration Technical Memorandum

Acronyms and Abbreviations

Acronym/Abbreviation	Definition
AB	Assembly Bill
ADT	average daily traffic
APN	Assessor's Parcel Number
Basin Plan	Water Quality Control Plan for the Central Coastal Basin
BMP	best management practice
BSA	biological study area
CAL FIRE	California Department of Forestry and Fire Protection
CalEPA	California Environmental Protection Agency
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CBC	California Building Code
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CFGC	California Fish and Game Code
CFR	Code of Federal Regulations
CGS	California Geological Survey
CH_4	Methane
CHL	California Historical Landmarks
CHRIS	California Historical Resources Information System
City	City of Santa Cruz
CNDDB	California Natural Diversity Database
CNEL	community noise equivalent level
CNPS	California Native Plant Society
CO	carbon monoxide
CO_2	carbon dioxide
CRHR	California Register of Historical Resources
CWA	Clean Water Act
dBA	A-weighted decibels
DOC	Department of Conservation
DTSC	Department of Toxic Substances Control
DPM	diesel particulate matter
EPA	U.S. Environmental Protection Agency
FEMA	Federal Emergency Management Agency
FHSZ	fire hazard severity zone
FIRM	Flood Insurance Rate Map
FMMP	Farmland Mapping and Monitoring Program
FTA	Federal Transit Administration
GHG	greenhouse gas
IPaC	Information, Planning, and Consultation

Acronym/Abbreviation	Definition
IS	initial study
LOS	level of service
MBARD	Monterey Bay Air Resources District
MM	Mitigation Measure
MND	mitigated negative declaration
MRZ	Mineral Resource Zone
N_2O	nitrous oxide
NAHC	Native American Heritage Commission
NCCAB	North Central Coast Air Basin
NCCP	natural community conservation plan
NO_2	nitrogen dioxide
NO_x	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
NWIC	Northwest Information Center
O_3	ozone
OEHHA	Office of Environmental Health Hazard Assessment
OMHCP	Operation and Maintenance Habitat Conservation
OSHA	Occupational Safety and Health Administration
Pb	lead
$PM_{2.5}$	fine particulate matter
PM_{10}	inhalable particular matter
PPV	peak particle velocity
ROG	reactive organic gas
RWQCB	Regional Water Quality Control Board
SB	Senate Bill
SMARA	Surface Mining and Reclamation Act
SO_2	sulfur dioxide
SO_x	sulfur oxides
SRA	state responsibility area
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	toxic air contaminant
USACE	U.S. Army Corps of Engineers
VMT	vehicle miles traveled

1 Introduction

1.1 Project Overview

The City of Santa Cruz (City has prepared an Initial Study/Mitigation Negative Declaration (IS/MND) for the 800 West Cliff Drive Road Realignment Project ("proposed project" or "project"). In December 2023 and early January 2024, high wave and storm events eroded and collapsed a section of the multiuse pathway across from approximately 800 West Cliff Drive and the Light House Field State Beach. The proposed project aims to eliminate the weakest link in the West Cliff Drive roadway system as an eroded scarp at the location has encroached to within 21 feet of the existing roadway, partially damaging the adjacent multiuse pathway. The project would shift an approximately 600-foot section of roadway nearest to the scarp approximately 60 feet inland, out of the 100-year erosion zone. A section of the multiuse pathway would also be shifted inland approximately 30 feet. A right-of-way acquisition from State Parks would be required to realign the road and multiuse pathway, as proposed. Other elements of the project include stormwater drainage improvements, minor utility improvements, minor improvements to an existing parking lot, relocation of existing signage and new signage, new fencing, new and relocated benches, removal of existing asphalt along the existing road and multiuse path, and construction site restoration.

1.2 Document Contents and Format

The CEQA applies to proposed projects initiated by, funded by, or requiring discretionary approvals from state or local government agencies. The proposed project constitutes a project as defined by CEQA (California Public Resources Code, Section 21065). The City is the CEQA lead agency for the proposed project. Pursuant to CEQA Guidelines Section 15063(d), an Initial Study must contain the following:

1. A description of the project including the location of the project;
2. An identification of the environmental setting;
3. An identification of environmental effects by use of a checklist, matrix, or other method, provided that entries on a checklist or other form are briefly explained to indicate that there is some evidence to support the entries. The brief explanation may be either through a narrative or a reference to another information source such as an attached map, photographs, or an earlier EIR or negative declaration. A reference to another document should include, where appropriate, a citation to the page or pages where the information is found.
4. A discussion of the ways to mitigate the significant effects identified, if any;
5. An examination of whether the project would be consistent with existing zoning, plans, and other applicable land use controls; and,
6. The name of the person or persons who prepared or participated in the Initial Study.

An IS has been prepared by the City, as the lead agency, in accordance with CEQA Guidelines to evaluate potential environmental effects and to determine whether an Environmental Impact Report, a Negative Declaration, or a Mitigated Negative Declaration (MND) should be prepared for the proposed project. The IS has also been prepared to satisfy CEQA requirements of other agencies that may provide approvals, permits, and/or funding for the proposed project.

In accordance with CEQA Guidelines Section 15369.5, an MND is "prepared for a project when an initial study has identified potentially significant effects on the environment, but (1) revisions in the project plans or proposals made by, or agreed to by, the Applicant before the proposed negative declaration and initial study are released for public review would avoid the effects or mitigate the effects to a point where clearly no significant effect on the environment would occur, and (2) there is no substantial evidence in light of the whole record before the lead agency that the project, as revised, may have a significant effect on the environment." The IS for the proposed project determined that the project could cause some potentially significant impacts on the environment, but as shown in the environmental analysis contained herein, those potentially significant impacts would be reduced to less than significant through the implementation of mitigation measures. Consequently, an MND has been prepared for the proposed project.

The City's decision makers must review and consider the MND in its discretion to approve, revise, or deny the project, as appropriate. The MND serves as the primary environmental document pursuant to CEQA for implementation of the project, including all required discretionary approvals.

This document is organized into the following sections:

- **Chapter 1, Introduction**, introduces and gives context to the project, outlines CEQA compliance and describes the document content and format. Chapter 1 also discusses the public review process.
- **Chapter 2, Project Setting and Description, describes** the existing conditions within the project study area. This chapter also identifies the project location and background and describes the project components in further detail.
- **Chapter 3, Environmental Impact Analysis**, presents an analysis of environmental impacts and the significance finding for each resource topic.
- **Chapter 4, References and Preparers,** provides the list of informational sources used for this IS, and identifies the individuals who prepared and/or contributed to the MND and supporting IS and technical studies as well as their areas of technical specialty.

1.3 Public Review Process

The City has issued a Notice of Intent (NOI) to Adopt a MND for the proposed project. In accordance with CEQA and the CEQA Guidelines, a 30-day public review period for this IS/MND will commence on July 2, 2026, and end on July 31, 2026. The IS/MND will be distributed for review to interested and involved public agencies, responsible/trustee agencies, organizations, and private individuals that request in writing to be informed of the proposed project. A hard copy of the IS/MND is also available for public review during regular business hours at:

City of Santa Cruz Public Works Department
809 Center Street, Room 201
Santa Cruz, California 95060

An electronic copy of the IS/MND can be viewed at https://www.santacruzca.gov/Government/City-Departments/Public-Works/Projects

During the public review period, the public will have the opportunity to provide written comments on the information contained within this IS/MND. The lead agency's discretionary approval/denial of the proposed project will consider the information contained in this document.

In reviewing the IS/MND, interested members of the public are encouraged to focus on the sufficiency of the document in identifying and analyzing potential project impacts on the environment, as well as the sufficiency of any mitigation measures proposed to reduce potential impacts to less-than-significant. Written comments on the IS/MND should be submitted by the end of the public review period. Please submit written comments by mail or via email with the subject line **"800 West Cliff Drive Project"** to the following contact:

Tim Wong
Assistant Engineer II
City of Santa Cruz Public Works Department
809 Center Street, Room 201
Santa Cruz, California 95060
twong@santacruzca.gov

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2 Setting and Project Description

This chapter provides a description of the proposed 800 West Cliff Drive Roadway Realignment Project (project or proposed project), and includes information about the location and setting, background, project components, and required project approvals.

2.1 Project Location and Setting

The project is located at 800 West Cliff Drive, Santa Cruz, California. West Cliff Drive within the project area is adjacent to an existing parking lot and beach cliff south of the existing roadway and Lighthouse Field State Beach to the north (see Figure 1 and Figure 2). The project realigns an approximately 600-foot-long segment of West Cliff Drive, a two-lane roadway, and the adjacent multiuse path along Lighthouse Field State Beach between Columbia Street and the Santa Cruz Surf Museum. The north of the roadway is bounded by Lighthouse Field State Beach, and is a relatively flat, grassy field containing localized undulations. The field contains patches of Monterey Cypress trees. Coastal bluffs bound the southern project and roadway limits. Between the existing roadway and the top of the bluffs is a swath of developed area between 15-feet and 200-feet wide consisting of a paved multiuse path and landscaped area with a few trees. Additionally, on the east end of the project limits is a paved 17-space parking lot (Parking Lot A) separated from the roadway with a vegetated area. There is minimal vertical relief from the northern end of the grassy field to the top of the coastal bluffs. The bluffs rise approximately 40 feet above the ocean. The general direction of storm water runoff is towards the coastal bluff.

2.2 Project Background

West Cliff Drive is a publicly owned right-of-way with an adjacent bicycling and pedestrian path (multiuse pathway) between West Cliff Drive and the coastline. Due to its location, it is a very popular recreational asset and a significant public access route and subject to significant coastal hazards.

In December 2023 and early January 2024, high wave and storm events eroded and collapsed a section of the multiuse pathway across from approximately 800 West Cliff Drive and the Lighthouse Field State Beach. The erosion associated with these events also further cut into the coastal bluff to within 21 feet of the existing roadway. The existing roadway is at risk of failure related to ongoing degradation of the bluff based on 50- and 100-year erosion models. The project would shift a section of roadway nearest to the bluff inland, as well as realign a section of the multiuse pathway. To accomplish the roadway realignment, a right-of-way property acquisition from State Parks in a small portion of Lighthouse Field State Beach would be required. The West Cliff Drive roadway is considered critical infrastructure for the City of Santa Cruz. This project was developed to address the need to maintain this critical infrastructure in the long term.

2.3 Project Components

The project would shift a section of roadway nearest to the scarp approximately 60 feet inland, out of the 100-year erosion zone. A section of the multiuse pathway would also be shifted inland approximately 30 feet. A right-of-way acquisition from State Parks would be required to realign the road and multiuse pathway, as proposed. Other elements of the project include stormwater drainage improvements, minor utility improvements, minor improvements to an existing parking lot, relocation of existing signage and new signage, new fencing, new and

relocated benches, removal of existing asphalt along the existing road and multiuse path, and construction site restoration. Project components are further described below.

2.3.1 Right-of-Way Acquisition

Approximately 2.95 acres of State Park land would be purchased by the City of Santa Cruz associated with Parking Lot A and areas adjacent to the roadway and multiuse pathway. These areas are currently part of Lighthouse Field State Beach. It is also estimated that an additional approximately 0.44 acres would be used during construction, which would require a temporary construction easement from State Parks.

2.3.2 Roadway Realignment

The proposed project would shift an approximately 600-foot section of roadway nearest the eroded coastal bluff approximately 40 to 60 feet inland, with a maximum displacement of about 60 feet, out of the 100-year erosion zone as modeled by Pacific Crest Engineering (Pacific Crest Engineering 2025). The project site is approximately 4.0 acres extending over two parcels of Lighthouse Field State Beach and the roadway right of way. Due to constraints from existing conditions such as the roadway tie-in points and existing private property, the planned realignment is the furthest back the roadway can be viably shifted landward, without the need for substantial engineering modifications such as sharp turns, reduced speed limit, extensive intrusion into Lighthouse Field State Beach, and superelevation banking. The new roadway section would be matched to the existing roadbed on the west and east sides of the project site (see Figure 3). The entire new roadway width with embankments, curbs, and the new two-lane road would be approximately 50 feet. The two-lane road itself is estimated at approximately 28 feet wide and would consist of 6 inches of asphalt placed on 7 inches of aggregate base and 12 inches of prepared subgrade. See Section 2.3.8 for construction information.

2.3.3 Multiuse Pathway Realignment

An approximately 300-foot section of the existing multiuse pathway adjacent to the roadway would also be shifted inland by up to approximately 30-feet horizontally (see Figure 3). The existing pathway within the project area would be demolished and material removed from the area. The new multiuse pathway is estimated to be 16-foot wide with 3 feet of buffer on either side and would be reconnected to the existing multiuse pathway alignment on both ends of the project area. The multiuse path would consist of 4 inches of asphalt placed on 7 inches of aggregate base and 8 inches of prepared subgrade. See Section 2.3.8 for construction information.

2.3.4 Stormwater Drainage Improvements

Three storm drains fall within the project area and would involve some modification or replacement as part of the project.

Storm drain #1, located at the western end of the new alignment, would be preserved in place, and one existing catch basin would be demolished and replaced with a new catch basin constructed per City of Santa Cruz standards. The new catch basin would be attached to the existing pipe and could include installation of a trash capture inlet filter.

Storm drain #2 currently runs under the existing roadway and multiuse path and outfalls at the coastal bluff. At the inlet of the existing storm drain on the north side of the existing road, the existing headwall would be demolished and a manhole would be installed. From the new manhole, a new 18-inch, approximately 65-foot-long storm drain would be placed under the proposed roadway. On the north side of the new roadway embankment, the area around

the inlet of this new pipe would be graded and sloped in a manner that allows stormwater to funnel toward the storm drain and the new catch basin could include a trash capture inlet filter. A concrete headwall would be constructed at the storm drain entrance. On the south side of the new roadway embankment, the new manhole and storm drain would be connected to an existing 18-inch storm drain to be retained with the project. Additionally, an existing catch basin, near the multiuse path, would be demolished and replaced with a second manhole. The 18-inch storm drain outfall on the coastal bluff would be retained without modification.

Storm drain #3, located at the eastern edge of the project area, under Parking Lot A, would be preserved in place. One existing catch basin would be demolished and replaced with a new catch basin constructed per City of Santa Cruz standards with an approximately 3-foot-long storm drain extension to connect to the existing storm drain to match the new roadway alignment. The new catch basin also could include a trash capture inlet filter.

2.3.5 Other Utilities

An existing 6-inch diameter water main, running along the new roadway alignment, would be left in place. An existing fire hydrant would be relocated up to 10 feet to the north and rotated 180 degrees to face north.

2.3.6 Parking

Existing Parking Lot A would be retained in place. At the end of construction, the western entrance to Parking Lot A would be extended with new curbs to match the new alignment. Additionally, signage in the parking lot would be updated (see Section 2.3.7 for additional information about signage). The permanent use of this parking lot would remain unchanged with the project, after its acquisition from State Parks, as described in Section 2.3.1.

2.3.7 Fencing, Signage, and Benches

New fencing would be installed along the southern edge of the project site to keep users off the coastal bluff. Two new benches would be installed on the western side of the realigned multi-use path. An existing bench would be relocated inside of the new fenceline. The existing Lighthouse Field State Beach monument sign would be relocated outside of the proposed right-of-way for the section of West Cliff Drive that would be realigned. All applicable street signage, lane lines and other pavement markings would also be installed. Existing timber poles and concrete bases placed along the north end of the roadway would be replaced or relocated to match the new roadway alignment.

2.3.8 Construction

Construction is expected to last 4 to 6 months during work hours between 7:00 AM and 5:00 PM. Weekend or evening work is not anticipated but could occur occasionally if required for specific time-sensitive construction activities with approval from the City.

For the majority of the construction period, access would be provided on the existing roadway and path adjacent to the work zone. Traffic detours would be put in place along West Cliff Drive based on the project Traffic Control Plan. During construction activities, traffic would be routed through the project area in three phases involving one-way traffic controls. For Phase 1, the existing roadway would remain open to one-way westbound traffic while the new roadway alignment is constructed. For Phase 2, one-way westbound traffic would be routed on the newly constructed roadway for the duration of construction while the existing roadway is demolished, the new westbound lane is tied into the existing roadway, and the new multiuse path is partially constructed. During Phase 3, the existing

multiuse path would be demolished and the new multiuse path would be tied into the existing path. Parking Lot A would remain closed to the public for the entire duration of construction. In addition to one-way traffic controls through the project area, eastbound traffic would be routed around the project area using existing roadways. Roadway closure at the project site would not impact direct access to any private properties or businesses as it is isolated from local neighborhoods by the Lighthouse Field State Beach. Temporary paths routed through the project would be added for pedestrian use during construction, connecting to the existing multiuse pathway alignment at either end of the project area. The contractor would submit a Traffic Control Plan for approval by the City.

Following project site isolation and placement of detour routes, the new roadway alignment would be graded and constructed. Typical construction equipment would be used, including excavators, backhoes, dozers, graders, loaders, compact track loaders, dump trucks, water trucks, compaction equipment, paving equipment, concrete trucks, cranes, and support equipment such as generators and air compressors. Approximately 1,000 – 2,000 cubic yards of material are expected to be removed and/or imported during project grading operations. Grading depths of the roadway section are estimated to be 25 inches and filled with aggregate base and asphalt concrete. A new embankment of native or imported material would be constructed up to a depth of 5 feet. Grading depths of the path are estimated to be 19.5 inches and filled with aggregate base and asphalt concrete. Additionally, the path would be constructed on an embankment up to a depth of 4 feet consisting of native or imported material. Existing vegetation, one heritage tree, and one dead tree within the proposed alignment would be removed (See Section 2.3.9, for additional information about tree removal). Project construction would comply with and implement City and Caltrans stormwater best management practices (BMPs) for construction to minimize erosion and water quality impacts. Additionally, a Stormwater Pollution Prevention Plan (SWPPP) would be prepared and implemented to comply with the National Pollution Discharge Elimination System (NPDES) Construction General Permit; alternatively, a NPDES Low Erosivity Waiver would be obtained.

Following construction of the new roadway, the existing roadway would be demolished. Material from demolition activities would be stockpiled on site. Dump trucks would remove excavated material to the City of Santa Cruz Resource Recovery Facility and Recycling Center located at 605 Dimeo Lane or other appropriate material disposal or recycling center. Existing Parking Lot A would be preserved and used for storage and staging for construction equipment and materials. Construction workers would also use the area for parking.

2.3.9 Site Restoration

Following completion of construction activities and connection of the new roadway and multiuse pathway, construction fencing would be removed, and topsoil would be placed on exposed earthen areas and then hydroseeded with an appropriate native seed mix. Additionally, the project would also implement habitat replacement for a small, isolated upland swale that meets the California Coastal Act one-parameter wetland criteria. A portion of this 0.037-acre upland swale would be affected due to the realignment of the road and would be replaced on site at a four-to-one ratio to meet Coastal Commission requirements, and as a condition of the pending Coastal Development Permit.

One of the two trees to be removed is a heritage tree under the City's Heritage Tree Ordinance (Chapter 9.56 of the City Municipal Code), which requires tree replacement/mitigation. Under the Heritage Tree Ordinance, removal of a heritage tree requires replanting 3, 15-gallon trees or 1, 24-inch-size specimen tree. Additionally, under the City's Local Coastal Program Policy CD 6.1.2, a two-to-one or more replacement is required when tree removal is necessary. Therefore, the project would replant 3, 24-inch-size trees to meet and exceed these requirements. In the Coastal Zone, the City authorizes heritage tree removal under coastal permits authorized under Municipal Code

24.08.200, Part 3. In this case, authorization of the heritage tree removal for the proposed project would be considered as part of the consolidated Coastal Development Permit (CDP) that would be considered by the Coastal Commission. Other trees to be retained would be protected with tree protection measures (e.g., establishment of tree protection zones, fencing) to prevent avoidable injury, which would be included as a condition of project approval.

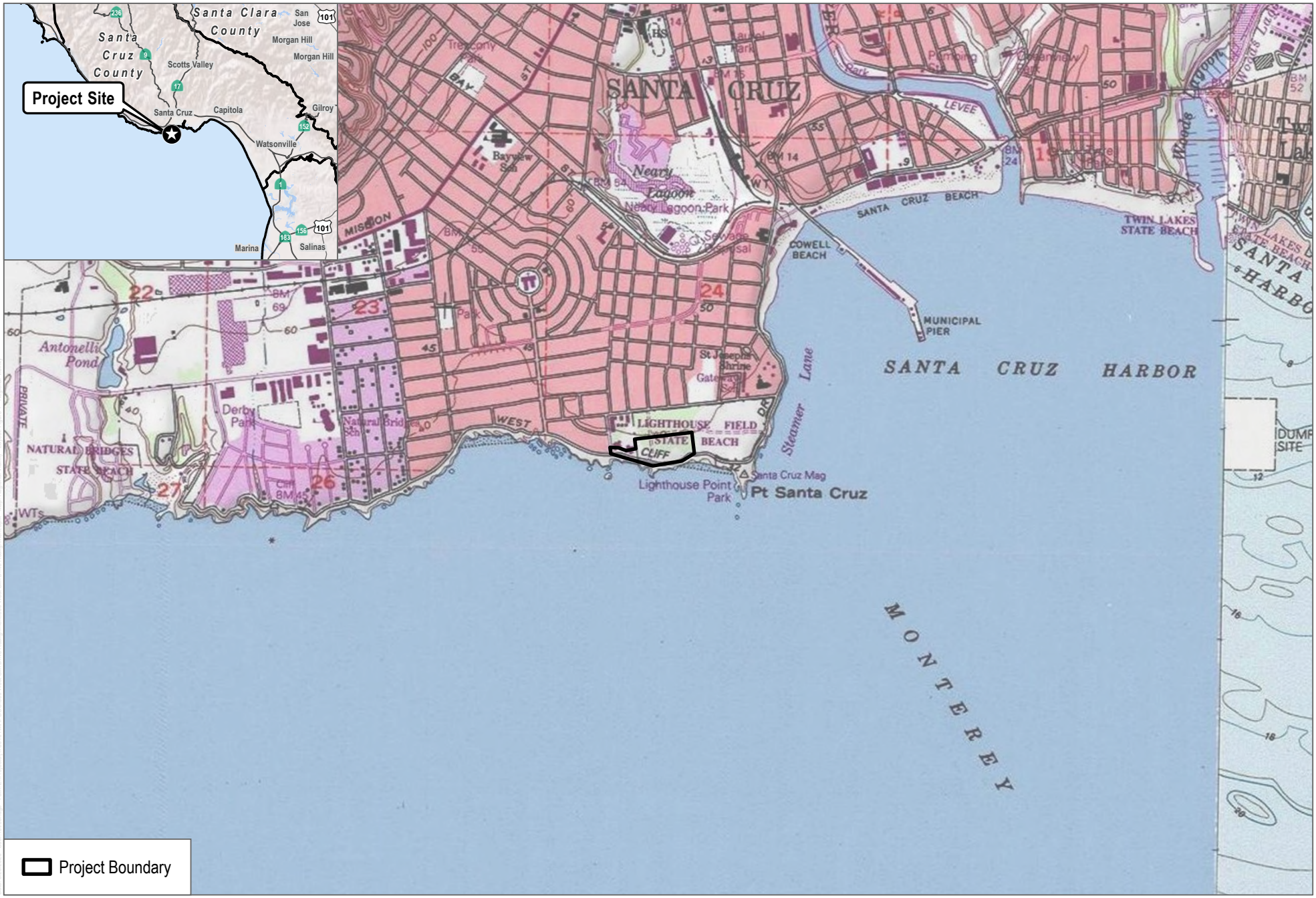
2.4 Project Approvals

Table 2-1 identifies the discretionary approvals required for implementation of the project. Clean Water Act (CWA) Section 404 permit from the U.S. Army Corps of Engineers and 401 water quality certifications from the Central Coast Regional Water Quality Control Board are not required for this project given that no jurisdictional waters or wetlands would be impacted by the project.

Table 2-1. Project Approvals

Agency	Legal Authority	Permit or Approval
State/Regional		
California State Parks	Landowner	Consideration of Right-of-Way Acquisition
California Department of Transportation	National Environmental Policy Act	Consideration of Finding of No Significant Impact
	State and Federal Funding Sources	Release of Funding for Construction
California Coastal Commission	California Environmental Quality Act (CEQA)	Consideration of City-adopted Mitigated Negative Declaration (MND)
	California Coastal Act	Consideration of Coastal Development Permit
Central Coast Regional Water Quality Control Board	National Pollution Discharge Elimination System (NPDES) Construction General Permit	Notice of Intent to Comply; requires preparation of a Storm Water Pollution Prevention Plan or an NPDES Low Erosivity Waver
Local		
City of Santa Cruz	CEQA	Consideration of MND for Adoption
	Santa Cruz Municipal Code, Title 24	Consideration of Design Permit
	Santa Cruz Municipal Code, Title 24	Consideration of Slope Variance Permit
	Santa Cruz Municipal Code, Title 15	City-Approved Traffic Control Plan

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SOURCE: USGS National Map 2026

DUDEK

0 1,000 2,000 Feet

FIGURE 1

Regional Vicinity

800 West Cliff Drive Roadway Realignment Project

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SOURCE: Esri Aerial Basemap

DUDEK

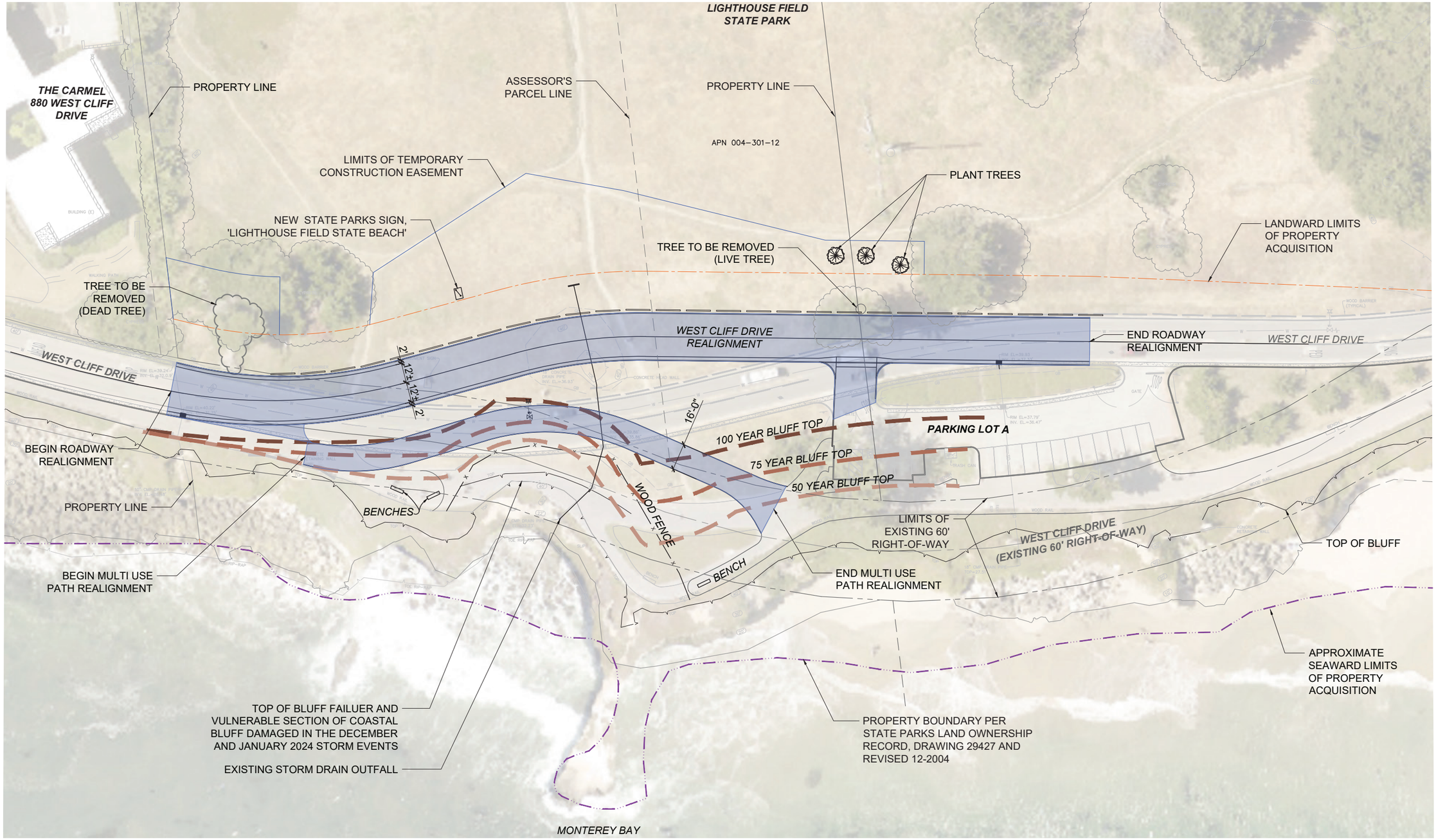
0 100 200 Feet

FIGURE 2

Project Area

800 West Cliff Drive Roadway Realignment Project

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PROJECT OVERVIEW

SCALE: 1" = 30'

30' 0 15' 30' 60'

SOURCE: MME Engineering 2026

FIGURE 3

Site Plan

800 West Cliff Drive Roadway Realignment Project

DUDEK

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3 Initial Study Checklist

1. **Project title:**

   800 West Cliff Drive Roadway Realignment Project

2. **Lead agency name and address:**

   City of Santa Cruz
   809 Center Street
   Santa Cruz, California 95060

3. **Contact person and phone number:**

   Tim Wong
   Assistant Engineer II
   City of Santa Cruz Public Works Department
   809 Center Street, Room 201
   Santa Cruz, California 95060
   831-420-5179
   twong@santacruzca.gov

4. **Project location:**

   800 West Cliff Drive, Santa Cruz, California

5. **Project sponsor's name and address:**

   City of Santa Cruz
   809 Center Street, Room 201
   Santa Cruz, California 95060

6. **General plan designation:**

   Coastal Recreation (CR) and Natural Areas (NA)

7. **Zoning:**

   Ocean Front Recreational (OF-R) and Parks (PK)

8. **Other public agencies whose approval is required (e.g., permits, financing approval, or participation agreement):**

   Other public agencies whose approval is required include the California Coastal Commission (CCC), California Department of Transportation (Caltrans), and California State Parks. See Section 2, Table 2-1 for a complete list of project approvals.

9. **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.?**

   On March 4, 2026, the City sent AB 52 letters to the two tribes who have requested AB 52 consultation; the Amah Mutsun Tribal Band had no concerns, but requested the final report, and the City engaged with Costanoan Rumsen Carmel Tribe in a consultation meeting on April 7, 2026. See Section 3.18, Tribal Cultural Resources, for additional information.

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

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" or "potentially significant unless mitigated" impact 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 (a) have been analyzed adequately in an earlier ENVIRONMENTAL IMPACT REPORT or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier ENVIRONMENTAL IMPACT REPORT or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.



June 24, 2026

Kevin Crossley, P.E., Acting Public Works Director
Administrator of Environmental Quality
City of Santa Cruz, California

Date

Instructions for Environmental Checklist

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 would 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 Environmental Impact Report (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.
5. Earlier analyses 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 address 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. This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.
9. The explanation of each issue should identify:
    a. the significance criteria or threshold, if any, used to evaluate each question; and
    b. the mitigation measure identified, if any, to reduce the impact to less than significance

3.1 Aesthetics

		Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
I.	**AESTHETICS** – Except as provided in Public Resources Code Section 21099, would the project**:**				
a)	Have a substantial adverse effect on a scenic vista?	☐	☐	☒	
b)	Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
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?	☐	☐	☒	☐
d)	Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☐	☒

a) Would the project have a substantial adverse effect on a scenic vista?

Less-than-Significant Impact. Scenic vistas generally refer to views of expansive open space areas or other natural features, such as mountains, undeveloped hillsides, large natural water bodies, or coastlines. Less commonly, certain urban settings or features, such as a striking or renowned skyline, may also represent a scenic vista. Scenic vistas also generally refer to views that are accessible from public vantage points, such as public roadways and parks. The City's General Plan 2030 EIR indicates that prominent scenic views are those that are oriented towards the Monterey Bay and Pacific Ocean or toward the Santa Cruz Mountains that frame the northern boundary of the City (City of Santa Cruz 2011). Within the City, significant panoramic views are identified from neighborhoods and open space areas at upper elevations as well as along the coast. General Plan 2030 EIR Figure 4.3.1 identifies panoramic views throughout the City that are mostly oriented towards the ocean or the Santa Cruz Mountains (City of Santa Cruz 2011).

The project site is within one or more scenic vistas identified in the City's General Plan 2030 EIR (City of Santa Cruz 2011). Lighthouse Point, to the east of the project site, is identified as a panoramic view with views in all directions, including towards the ocean and the Santa Cruz Mountains. However, due to the limited scale, and lack of structural building components and night lighting, the project would not substantially obstruct or degrade scenic views. Therefore, project impacts related to scenic vistas would be **less than significant**.

b) Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

No Impact. There are no officially designated State Scenic Highways in the City or adjacent unincorporated County area. However, Highway 1 north of the City is identified by the State of California as being eligible for a State Scenic Highway designation. Due to intervening terrain and development, views to the project site are not available from the eligible scenic segment of Highway 1. As such, implementation of the project would not damage scenic resources present within a state scenic highway and there would be **no impact**.

c) In non-urbanized areas, would the project 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?

Less-than-Significant Impact. The project would shift a 600-foot segment of the roadway and multiuse pathway inland, introducing a realigned segment of road and pathway and removing and restoring the existing road segment and pathway once construction of the project is complete. The new alignment would maintain connections to the existing roadway and pathway at both ends and would incorporate or replace typical roadway components such as embankments, curbs, gutters and associated drainage elements, and striping and signage. These modifications would subtly alter the corridor's appearance by relocating the roadway and pathway farther from the bluff edge while retaining the overall character of the existing transportation corridor. Tree removal required to accommodate the realignment is expected to involve approximately one living cypress tree and one dead cypress tree, resulting in localized vegetation change; however, disturbed areas would be restored through hydroseeding and tree planting following construction (see additional information below about tree replacement). Additionally, the State Parks interpretive sign would be relocated outside of the proposed right-of-way for the realigned section roadway. The sign visibility from the roadway and multiuse path would be similar to existing conditions.

Construction is anticipated to last approximately four to six months and would introduce temporary visual changes, including the presence of construction equipment and potential short-term obstruction of ocean views near Parking lot A. These effects would be temporary in nature and would not result in long-term adverse changes to visual resources once construction concludes. Although the project would introduce permanent changes related to roadway realignment, pathway relocation, drainage improvements, and limited vegetation removal, these modifications represent minor modifications to an already developed segment of West Cliff Drive rather than a transformation of the broader coastal landscape. The relocated roadway and pathway would remain visually consistent with existing patterns of paved roadway, landscaped areas, and the multiuse path that currently defines the West Cliff Drive corridor.

The City of Santa Cruz is an "urbanized area" under the definition of the term in CEQA Guidelines section 15387. Per the CEQA Guidelines Environmental Checklist (Appendix G), the City need not specifically consider existing visual character or the quality of the existing views and the project's potential effect on them. In an urbanized area, a project that conflicts with applicable zoning and other regulations governing scenic quality could be considered to result in a significant impact regarding scenic quality.

The project may be reviewed through the Design Permit process. Per section 24.08.400 of the Municipal Code, the purpose of the City's Design Permit review is to "promote the public health, safety and general

welfare through the review of architectural and site development proposals and through application of recognized principles of design, planning and aesthetics and qualities typifying the Santa Cruz community." The City must make the required findings to approve the Design Permit for the project, and with approval, the project would be consistent with Design Permit regulations that serve to reduce potential visual character impacts.

One of the findings set forth in section 24.08.430 of the City's zoning ordinance for approval of a Design Permit is that the site plan shall be situated and designed to protect views along the ocean and of scenic coastal areas. As discussed in Section 3.1(a), the proposed project would not result in impacts to existing scenic views and would not affect coastal views along West Cliff Drive.

Project construction would not result in the removal of particularly unique or scenic features, including trees. According to the Santa Cruz Municipal Code 9.56.040, a tree is considered a Heritage Tree if its trunk circumference is greater than 44 inches (approximately 14 inches diameter) at 54 inches above grade, or it is formally designated by the City Council due to historical, horticultural, ecological, or aesthetic significance. One Monterey cypress (*Hesperocyparis macrocarpa*) that meets the criterion of having a circumference greater than 44 inches at 54 inches above grade is proposed to be removed to accommodate the new alignment (the project would also require the removal of one dead tree). While the living Monterey cypress identified for removal meets the City's Heritage Tree size threshold, the tree has not been formally designated by the City Council for its historical, horticultural, ecological, or aesthetic significance (Dudek 2026a). Additionally, approximately eighteen other Monterey cypress trees were recorded within the project boundary and the majority (10 of 18) would be preserved in place and potential disturbance to the remaining eight would be limited to encroachment into the tree dripline and tree protections measures would be implemented to avoid injury to these trees. Due to the predominance of Monterey cypress in the local landscape, and as the tree has not been formally designated by the City Council for its historical, horticultural, ecological, or aesthetic significance, the anticipated removal of one Monterey cypress would not substantially alter or degrade the existing visual setting or visual quality.

Additionally, the removal of the one Monterey cypress meeting the City's Heritage Tree size threshold would be appropriately addressed through replacement tree planting of 3, 24-inch-size trees to meet and exceed the requirements of the Heritage Tree Ordinance and LCP Policy CD 6.1.2 (see Section 2.3.9, and 3.4[e] for additional information about the City's tree replacement requirements). There are no other applicable zoning and other regulations governing scenic quality. The project does not conflict with applicable zoning and other applicable regulations governing scenic quality. As a result, the project impact related to conflicts with applicable zoning and other regulations governing scenic quality is **less than significant**.

d) Would the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

No Impact. Construction of the project would occur during daylight hours and would not require the use of mobile lighting to illuminate the corridor. Additionally, no nighttime construction work is expected, requiring lighting. No new streetlights or traffic signals would be installed as a result of the project. As a result, the project would not create any new sources of substantial light or glare resulting in **no impact**.

3.2 Agriculture and Forestry Resources

		Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
II.	**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. 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:				
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?	☐	☐	☐	☒
b)	Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
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))?	☐	☐	☐	☒
d)	Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
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?	☐	☐	☐	☒

a) ***Would the project 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?***

No Impact. The project site does not contain any Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, pursuant to the Farmland Mapping and Monitoring Program (FMMP). Although the City includes some land designated for agriculture or grazing, the project site itself is not located on or near agricultural land (City of Santa Cruz 2012). The FMMP designates the project site and surrounding area as Vacant or Disturbed Land (DOC 2023). Therefore, the project would have **no impact** on Farmland.

b) Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract?

No Impact. The project site and vicinity do not contain any Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on maps prepared pursuant to the Farmland Mapping and Monitoring Program (FMMP). The FMMP designates the project site and surrounding area as Vacant or Disturbed Land (DOC 2023). Additionally, the project site and surrounding area are not zoned for agricultural use and there are no Williamson Act contracts that apply to the site (DOC 2026). While agricultural and grazing lands exist within the City of Santa Cruz, they are situated well outside the project site boundaries and would not be directly or indirectly impacted by the project (City of Santa Cruz, 2012). Therefore, the project would not conflict with existing zoning for agricultural use or a Williamson Act contract and would have **no impact**.

c) Would the project 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))?

No Impact. No land in the City of Santa Cruz, including the project site, is zoned for forest land or timberland (City of Santa Cruz 2011). Therefore, the project would not conflict with existing zoning for forest land, timberland, or timberland zoned Timberland Production and would have **no impact**.

d) Would the project result in the loss of forest land or conversion of forest land to non-forest use?

No Impact. No forest land is located on or near the project site (City of Santa Cruz 2011). Therefore, the project would not result in a loss or conversion of forest land and would have **no impact**.

e) Would the project 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?

No Impact. As previously discussed, no Farmland or forest land is located on or near the project site. Therefore, the project would not result in conversion of Farmland or forest land and would have **no impact**.

3.3 Air Quality

		Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
III.	**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:				
a)	Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒
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?	☐	☐	☒	☐
c)	Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
d)	Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☒	☐

a) Would the project conflict with or obstruct implementation of the applicable air quality plan?

No Impact. The U.S. Environmental Protection Agency (EPA) and the California Air Resources Board (CARB) have established ambient air quality standards (AAQS) that are the maximum levels of ambient (background) air pollutants considered safe, with an adequate margin of safety to protect public health and welfare. Criteria pollutants include ozone (O_3), nitrogen dioxide (NO_2), carbon monoxide (CO), sulfur dioxide (SO_2), inhalable particulates (PM_{10}), fine particulates ($PM_{2.5}$), and lead (Pb). High O_3 levels are caused by the cumulative emissions of reactive organic gases (ROG) and nitrogen oxides (NO_x), which react under certain meteorological conditions to form O_3. In California, sulfates, vinyl chloride, hydrogen sulfide, and visibility-reducing particles are also regulated as criteria air pollutants. An area is designated as "in attainment" when it is in compliance with the federal and/or state standards, as further discussed below.

The City of Santa Cruz is in the North Central Coast Air Basin (NCCAB), which is designated as a nonattainment area for state PM_{10} standards and as unclassified or attainment for all other state and federal standards (CARB 2023; EPA 2025). Regulatory oversight for air quality in the NCCAB rests at the regional level with the Monterey Bay Air Resources District (MBARD),[1] which prepares air quality plans to address attainment and/or maintenance of state and federal AAQS. These plans accommodate growth by projecting emissions based on different indicators, including population forecasts and by NCCAB-wide controls on stationary, area, and transportation sources of air pollution (MBARD 2008). The most recent Air Quality Management Plan (AQMP) for the Monterey Bay Region, the *2012-2015 Air Quality Management Plan* (2016 AQMP), was adopted in 2017. The 2016 AQMP relies on a multilevel

[1] Formerly the Monterey Bay Unified Air Pollution Control District (MBUAPCD).

partnership of federal, state, regional, and local governmental agencies. The 2016 AQMP builds on information developed in past AQMPs and updates the 2012 AQMP. The primary elements from the 2012 AQMP that were updated in the 2016 revision include air quality trends analysis, emission inventory, and mobile source programs (MBARD 2017).

As described in the MBARD 2008 CEQA Guidelines, project emissions that are not accounted for in the AQMP's emission inventory are considered a significant cumulative impact to regional air quality. However, for construction of a project, exhaust emissions are accounted for in the AQMP emissions inventory. Regarding long-term operations, the project would not result in an increase in criteria air pollutants as operations and maintenance of the roadway are expected to remain the same as the existing baseline conditions. As such, construction and operation of the project would not conflict with or obstruct implementation of the AQMP, resulting in **no impact**.

Furthermore, as determined in Section 3.3(b) (discussed below), the proposed project would result in emissions during short-term construction that would not exceed the MBARD thresholds of significance.

b) Would the project 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?

Less-than-Significant Impact. The MBARD has established thresholds of significance for criteria air pollutants of concern for construction and operations (MBARD 2008). Construction projects using typical construction equipment such as dump trucks, scrapers, bulldozers, compactors and front-end loaders that temporarily emit other air pollutants, such as precursors of O_3 (i.e., ROG and NO_x), are accommodated in the emission inventories of State- and federally required air plans and would not have a significant impact on the California or national AAQS (MBARD 2008). For operations, a project would result in a significant impact if it results in the generation of emissions of, or in excess of, 137 pounds per day for ROG or NO_x, 550 pounds per day of CO, 150 pounds per day of sulfur oxide (SO_x), and 82 pounds per day of PM_{10} from on-site sources.

The project would realign approximately 600-feet of West Cliff Drive and the adjacent multiuse path on approximately 4.0 acres over a construction period of approximately 4 to 6 months. MBARD's 2008 CEQA Guidelines establish that 8.1 acres could be graded per day with minimal earthmoving or 2.2 acres per day with grading and excavation without exceeding the PM_{10} threshold of 82 pounds per day. It is anticipated that a daily maximum of up to 2 acres of grading with excavation would occur during project construction, which would be less than the MBARD screening area threshold of 2.2 acres per day. Due to the temporary and linearly dispersed nature of these construction activities along the roadway alignment, emissions would be minimal and well below the MBARD significance threshold for PM_{10}. Regarding long-term operations, the project would result in similar emissions to the existing roadway network.

According to the MBARD CEQA Guidelines, projects that are consistent with the AQMP would not result in in cumulative impacts, as the AQMP already accounts for regional emissions. The AQMP takes into account cumulative development within the City, and thus, cumulative emissions have been accounted for in the AQMP. As indicated above in criterion 3.3(a), the project would not conflict with the AQMP.

Based on the preceding considerations, project emissions would not 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, and the impact would be **less than significant**.

c) Would the project expose sensitive receptors to substantial pollutant concentrations?

Less-than-Significant Impact. Some land uses are considered more sensitive to changes in air quality than others, depending on the population groups and the activities involved. People most likely to be affected by air pollution include children, the elderly, athletes, and people with cardiovascular and chronic respiratory diseases. The term "sensitive receptors" refers to facilities and structures where people who are sensitive to air pollution live or spend considerable amounts of time. Land uses where air pollution-sensitive individuals are most likely to spend time include schools and schoolyards (i.e., preschools and kindergarten through grade 12 schools), parks and playgrounds, daycare centers, nursing homes, hospitals, live in housing (i.e., prisons, dormitories, hospices, or similar), and residential communities (sensitive sites or sensitive land uses) (CARB 2005; MBARD 2008). Sensitive residential receptors are located immediately adjacent to the proposed project alignment at Columbia Street and West Cliff Drive, with additional residences located further away to the west and north of the project area.

Carbon Monoxide Hotspots

Traffic-congested roadways and intersections have the potential to generate localized high levels of CO. Localized areas where ambient concentrations exceed federal and/or state standards for CO are termed CO "hotspots." CO transport is extremely limited and disperses rapidly with distance from the source. Under certain extreme meteorological conditions, however, CO concentrations near a congested roadway or intersection may reach unhealthy levels affecting sensitive receptors. Typically, high CO concentrations are associated with severely congested intersections operating at an unacceptable level of service (LOS) (LOS E or worse is unacceptable). Projects contributing to adverse traffic impacts may result in the formation of a CO hotspot. Additional analysis of CO hotspot impacts would be conducted if a project would result in a significant impact or contribute to an adverse traffic impact at a signalized intersection that would potentially subject sensitive receptors to CO hotspots.

Title 40 of the Code of Federal Regulations, Section 93.123(c)(5), Procedures for Determining Localized CO, PM_{10}, and $PM_{2.5}$ Concentrations (Hot-Spot Analysis), states that "CO, PM_{10}, and $PM_{2.5}$ hot-spot analyses are not required to consider construction-related activities, which cause temporary increases in emissions. Each site which is affected by construction-related activities shall be considered separately, using established 'Guideline' methods. Temporary increases are defined as those which occur only during the construction phase and last five years or less at any individual site" (40 CFR 93.123). While project construction would involve on-road vehicle trips from trucks and workers during construction, construction activities would last approximately 4 to 6 months and would not require a project-level construction hotspot analysis. Regarding long-term operations, the project would result in similar emissions to the existing roadway network. Therefore, the project would not expose sensitive receptors to substantial CO emissions, and the impact would be **less than significant**.

Toxic Air Contaminants

In addition to impacts from criteria pollutants, project impacts may include emissions of pollutants identified by the state toxic air contaminants (TACs) or by the federal government as hazardous air

pollutants (HAPs). State law has established the framework for California's TAC identification and control program, which is generally more stringent than the federal program and aimed at TACs that are a problem in California. The state has formally identified more than 200 substances as TACs, including the federal HAPs. The greatest potential for TAC emissions during construction of the project would be diesel particulate matter (DPM) emissions from heavy equipment operations and heavy-duty trucks. In 2000, CARB approved a comprehensive *Diesel Risk Reduction Plan* to reduce diesel emissions from both new and existing diesel-fueled vehicles and engines (CARB 2000). Additional regulations apply to new trucks and diesel fuel, including the On-Road Heavy Duty Diesel Vehicle (In-Use) Regulation, the On-Road Heavy Duty (New) Vehicle Program, the In-Use Off-Road Diesel Vehicle Regulation, and the New Off-Road Compression-Ignition (Diesel) Engines and Equipment program. These regulations and programs have timetables by which manufacturers must comply and existing operators must upgrade their diesel-powered equipment. CARB has adopted several Airborne Toxic Control Measures (ATCM) that reduce diesel emissions, including the following measures:

- ATCM for Diesel Particulate Matter from Portable Engines Rated 50 horsepower and greater (17 CCR 93116);
- ATCM to limit diesel-fueled commercial motor vehicle idling (13 CCR 2485);
- ATCM for In-Use Off-Road Diesel-Fueled Fleets (13 CCR 2449 et seq.);
- ATCM for In-Use On-Road Diesel-Fueled Vehicles (13 CCR 2025).

Health effects from carcinogenic air toxics are usually described in terms of cancer risk. The MBARD recommends an incremental cancer risk threshold of 10 in 1 million, which indicates that a person has an additional risk of 10 chances in a million (0.001%) of developing cancer during their lifetime as a result of the air pollution scenario being evaluated. For context, the National Cancer Institute estimates that approximately 38.9% of people will be diagnosed with cancer during their lifetimes (National Cancer Institute 2025). "Incremental cancer risk" is the net increased likelihood that a person continuously exposed to concentrations of TACs resulting from a project over a 9-, 30-, and 70-year exposure period will contract cancer based on the use of standard Office of Environmental Health Hazard Assessment (OEHHA) risk-assessment methodology (OEHHA 2015). In addition, some TACs have noncarcinogenic effects. The MBARD recommends a Hazard Index of 1 or more for acute (short-term) and chronic (long-term) effects. The Hazard Index is the sum of the individual substance chronic or acute hazard indices for all TACs affecting the same target organ system.

DPM would be emitted from heavy equipment operations and diesel-fueled trucks, which are subject to CARB ATCMs to reduce diesel particulate emissions. Moreover, construction of the project would be short term, after which project-related TAC emissions (e.g., diesel emissions) would cease. Since the project would result in linear construction, construction activity would proceed along the alignment and would not require the extensive use of heavy-duty construction equipment or diesel trucks in any one location over the duration of construction, which would limit the exposure of any proximate individual sensitive receptor to TACs. Further, the project would not result in new long-term sources of TACs. Due to the short period of DPM exposure at any individual sensitive receptor, TACs emitted during construction would not be expected to result in concentrations causing significant health risks. This impact would be **less than significant**.

d) Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Less-than-Significant Impact. Based on available information, the project is not anticipated to result in other emissions that have not been addressed under Sections 3.3(a) through 3.3(c), above. As such, this analysis focuses on the potential for the project to generate odors.

The occurrence and severity of potential odor impacts depends on numerous factors. The nature, frequency, and intensity of the source; the wind speeds and direction; and the sensitivity of receiving location each contribute to the intensity of the impact. Although offensive odors seldom cause physical harm, they can be annoying and cause distress among the public and generate citizen complaints.

The MBARD has identified typical land uses that generate odors as landfills, rendering plants, chemical plants, agricultural uses, wastewater treatment plants, and refineries (MBARD 2008). The project would not result in the development of any of these land uses and would not result in a long-term source of odors. Potential temporary and intermittent odors may result from construction equipment exhaust, the application of asphalt, and pavement striping. Such odors would disperse rapidly from the project site and generally occur at magnitudes that would not affect substantial numbers of people. Therefore, odor impacts associated with the project would be **less than significant**.

3.4 Biological Resources

	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
IV. BIOLOGICAL RESOURCES – Would the project:				
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?	☐	☒	☐	☐
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 Wildlife or U.S. 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?	☐	☐	☐	☒

Dudek prepared a biological resources technical report and an aquatic resources delineation report for the project site and the larger Biological Study Area (BSA) (Appendix A and Appendix B, respectively). A reconnaissance-level biological survey and an aquatic resources delineation were conducted in October 2025 as part of preparing these reports. The results of these surveys and reports are incorporated into the analyses contained herein. Figures referenced herein can be found at the end of this subsection.

a) Would the project 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?

Less-than-Significant Impact with Mitigation Incorporated. Dudek prepared a biological resources assessment for the project site and the larger Biological Study Area (BSA) (Appendix A). Special-status species potentially occurring in the BSA were identified through a literature search of the following sources: the U.S. Fish and Wildlife Service's (USFWS) Information for Planning and Consultation (IPaC) online planning tool (USFWS 2025), the California Department of Fish and Wildlife's (CDFW) California Natural Diversity Database (CNDDB) (CDFW 2025a), and the California Native Plant Society's (CNPS) Inventory of Rare and Endangered Plants of California (CNPS 2025).

Following the literature review, Dudek conducted a reconnaissance-level field survey of the BSA on October 30, 2025. The focus of the survey was to identify existing biological resources, including vegetation and wildlife habitat values and habitat suitability for special-status plant and wildlife species.

The CNDDB and CNPS Inventory of Rare and Endangered Plants identified 70 special-status plant species as occurring or potentially occurring in the BSA vicinity (Appendix D of Appendix A, Special-Status Plant Species Potential to Occur). Of these, 51 were eliminated from further consideration due to a lack of suitable habitat or edaphic conditions (i.e., alkaline or serpentine soils) or the BSA's location outside a species' known geographic or elevation range. The 19 remaining species—Blasdale's bent grass (*Agrostis blasdalei*), bent-flowered fiddleneck (*Amsinckia lunaris*), Robbins' broomrape (*Aphyllon robbinsii*), coast rockcress (*Arabis blepharophylla*), pink star-tulip (*Calochortus uniflorus*), bristly sedge (*Carex comosa*), deceiving sedge (*Carex saliniformis*), johnny-nip (*Castilleja ambigua* var. *ambigua*), Monterey spineflower (*Chorizanthe pungens* var. *pungens*), Santa Cruz tarplant (*Holocarpha macradenia*), Kellogg's horkelia (*Horkelia cuneata* var. *sericea*), Point Reyes horkelia (*Horkelia marinensis*), harlequin lotus (*Hosackia gracilis*), coast iris (*Iris longipetala*), large-flowered leptosiphon (*Leptosiphon grandiflorus*), marsh microseris (*Microseris paludosa*), elongate copper moss (*Mielichhoferia elongata*), maple-leaved checkerbloom (*Sidalcea malachroides*), and Santa Cruz microseris (*Stebbinsoseris decipiens*)—have a low potential to occur within the BSA and are not discussed further.

The CNDDB and USFWS IPaC tool identified 44 special-status wildlife species as occurring or potentially occurring in the BSA vicinity. Of these, 23 species were eliminated from consideration due to the absence of suitable habitat within the BSA or the BSA's location outside of their known range (Appendix E of Appendix A, Special-Status Wildlife Species Potential to Occur). Eighteen of the remaining 21 species—Santa Cruz black salamander (*Aneides niger*), golden eagle (*Aquila chrysaetos*) (nesting and wintering), burrowing owl (*Athene cunicularia*) (burrow sites and some wintering sites), western snowy plover (*Charadrius nivosus nivosus*) (nesting), black swift (*Cypseloides niger*) (nesting), bald eagle (*Haliaeetus leucocephalus*), osprey (*Pandion haliaetus*) (nesting), bank swallow (*Riparia riparia*) (nesting), pallid bat (*Antrozous pallidus*), Townsend's big-eared bat (*Corynorhinus townsendii*), southern sea otter (*Enhydra lutris nereis*), San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*), mountain lion - Southern California/Central Coast ESU (*Puma concolor*), American badger (*Taxidea taxus*), western red bat (*Lasiurus frantzii*), Crotch's bumble bee (*Bombus crotchii*), western bumble bee (*Bombus occidentalis*), and Ohlone tiger beetle (*Cicindela ohlone*)—have a low potential (i.e., are unlikely) to occur within the BSA and are not discussed further. The two remaining species are known to occur within the BSA based on the presence of

suitable habitat and are discussed below. The potential presence of roosting bats is also discussed, although such species have a low potential to occur in the BSA.

White-tailed Kite and Other Nesting Birds

White-tailed kite (*Elanus leucurus*) is a California Fully Protected species, generally occurring in low-elevation grassland, wetland, oak woodland, low shrub, open woodlands, or savannah habitats (CDFW 2025a). White-tailed kite is known to occur in the BSA. There is one iNaturalist observation of this species foraging in Lighthouse Field in September 2020 (iNaturalist 2025). This species has high potential to nest in the BSA, as there are several suitable Monterey cypress trees scattered throughout Lighthouse Field. There is also grassland suitable for foraging within the BSA. There are no documented CNDDB occurrences within 3 miles of the BSA (CDFW 2025a).

If conducted during the nesting season (February 1 to August 31), project activities could impact nesting white-tailed kites and other nesting birds, if present in or adjacent to the project footprint. Tree removal could result in direct impacts by destroying eggs or killing nestlings in active nests. Increased human activity and construction-generated noise and vibration near active nests could cause adults to abandon eggs or recently hatched young if they perceive such disturbances as a threat. Any construction activity that would result in destruction of active bird nests or disturb nesting activity to the extent that it causes nest abandonment would violate the federal Migratory Bird Treaty Act and Sections 1503 and 3513 of the California Fish and Game Code (CFGC). Therefore, the impact of the project related to nesting white-tailed kites and other nesting birds is **potentially significant**.

The project would implement the following mitigation measure to reduce impacts to nesting white-tailed kites and other native birds to **less than significant**.

MM BIO-1: Pre-Activity Surveys for Nesting Birds. Prior to any construction activities scheduled during the bird nesting season (February 1 to August 31), a qualified wildlife biologist with demonstrated nest-searching experience will conduct pre-construction surveys for nesting birds, including white-tailed kite and other raptors. The pre-construction survey will occur no more than 7 days prior to the onset of ground-disturbing activities (including clearing, grubbing, and staging).

If active nests are found during the survey, the biologist will establish a no-disturbance buffer around the nest and mark the buffer perimeter with high-visibility fencing, flagging, or pin flags. The size of the buffer will be based on the species' sensitivity to disturbance and planned work activities in the vicinity; typical buffer sizes are 250 feet for raptors and 50 feet for passerines.

The no-disturbance buffer will remain in effect until the nest is no longer active. If a lapse in project-related activities of 15 days or longer occurs during the bird nesting season, another pre-construction survey will be conducted.

Roosting Bats

The BSA provides suitable foraging and roosting habitat for foliage-roosting bat species, although their potential to occur is low. If project activities require the removal of trees during peak activity timeframes

when young or overwintering bats may be present (generally March through April and August through October), such activities could directly impact active bat roosts. Therefore, the impact of the project related to roosting bats is **potentially significant**.

The project would implement the following mitigation measure to reduce impacts to foliage-roosting bats to **less than significant**.

MM BIO-2: Pre-Activity Surveys for Roosting Bat. If tree trimming or removal is scheduled to begin during the peak activity timeframes (from March to April and August to October, then within 2 weeks prior to tree trimming or removal, a qualified biologist will examine trees to be removed or trimmed for suitable bat roosting habitat. High-quality habitat features (e.g., large tree cavities, basal hollows, loose or peeling bark, larger snags) will be identified, and the area around these features searched for bats and bat sign (e.g., guano, culled insect parts, staining). Riparian woodland and stands of mature broadleaf trees will be considered potential habitat for solitary foliage roosting bat species.

If bat sign is detected, biologists will conduct an evening visual emergence survey of the source habitat feature, from a half hour before sunset to 1–2 hours after sunset for a minimum of 2 nights within the season that construction would be taking place. Night-vision goggles and/or full-spectrum acoustic detectors will be used during emergence surveys to assist in species identification. All emergence surveys will be conducted during favorable weather conditions (calm nights with temperatures conducive to bat activity and no precipitation predicted).

If a potentially active bat roost is identified within a tree proposed for removal during the peak activity timeframes, passive monitoring with full-spectrum bat detectors will be used to assist in determining species present. A minimum of 4 nights of acoustic monitoring surveys will be conducted within the season that construction would be taking place. If site security allows, detectors should be set to record bat calls for the duration of each night. To the extent possible, all monitoring will be conducted during favorable weather conditions (calm nights with temperatures conducive to bat activity and no precipitation predicted). The biologists will analyze the bat call data using appropriate software and prepare a report that will be submitted to the City and CDFW.

Avoidance and minimization measures may be necessary if it is determined that bats are using the trees as roost sites, or if sensitive bats species are detected during acoustic monitoring. Appropriate measures will be determined by the qualified biologist and may include any combination of the measures listed below.

- Trees will be removed in pieces, rather than felling the entire tree.
- If a maternity roost is located, whether solitary or colonial, that roost will remain undisturbed with a buffer as determined by the biologist until September 15 or until they have determined that the roost is no longer active.
- If a non-maternity roost in a tree is found, every effort should be made to avoid the roost, as methods to evict bats from trees are largely untested.

- If a non-maternity roost is found within trees that cannot be avoided, eviction will be attempted using procedures designed in consultation with CDFW to reduce the likelihood of mortality of evicted bats. In all cases, the following stipulations will be observed.
  - Eviction will not occur before September 15 and will match the timeframe for tree removal for nesting birds and other sensitive wildlife.
  - Qualified biologists will carry out or oversee the eviction tasks and will monitor the tree trimming/removal.
  - Eviction will take place late in the day or in the evening to reduce the likelihood of evicted bats falling prey to diurnal predators.
  - Eviction will take place during weather and temperature conditions conducive to bat activity.
- Non-injurious harassment at the roost site, such as ultrasound deterrents or other sensory irritants, may be used to encourage bats to leave on their own.
- Prior to tree removal/trimming and after other eviction efforts have been attempted, any confirmed roost site will be gently shaken or repeatedly struck with a heavy implement such as a sledge hammer or an axe; several minutes should pass before felling trees or trimming limbs to allow bats time to arouse and leave the roost. The biologists will search downed vegetation for dead and injured bats. The presence of dead or injured bats will be reported to CDFW. Injured bats will be transported to the nearest CDFW-permitted wildlife rehabilitation facility.

Monarch Butterfly

Monarch butterfly (*Danaus plexippus*) is a candidate species for listing as threatened under the Federal Endangered Species Act and is a California Species of Special Concern. The BSA contains groves of Monterey cypress suitable for overwintering monarchs and Lighthouse Field is a known overwintering site (CDFW 2025a, Pelton et al. 2017, Xerces Society 2025). Additionally, the USFWS designated Lighthouse Field as part of proposed Critical Habitat Unit 5 (site #3000), which contains all the physical or biological features essential to the conservation of the species (89 FR 100662). However, project construction would not impact any trees in or near the core monarch clustering area in the eucalyptus grove near the northeastern corner of the park (Pelton et al. 2017, CDFW 2025a: Occ. No. 105), approximately 1,400 feet northeast of the project site.

The project plans to remove brush and a downed tree within a Monterey cypress grove on the west side of the BSA within a known CNDDB occurrence for overwintering monarchs (CDFW 2025a; Occ. No. 24), but monarchs have not been observed in this location since 2015 and the occurrence is considered extirpated. The project proposes to realign West Cliff Drive northward closer to this grove but not directly beneath the canopy and plans to remove a solitary Monterey cypress from across from Parking Lot “A”. Removal of the brush, downed tree, and the solitary Monterey cypress is not likely to adversely affect monarch overwintering habitat, as the structure of the grove on the west side of the BSA would remain intact and available to monarchs during and after project implementation.

No signs of native milkweed or substantial patches of nectar plants were observed within the proposed road alignment during the field survey. Additionally, the seaside woolly sunflower—seaside daisy—seaside

buckwheat patch (see Section 3.4[b] below) would not be impacted by project development, so potential nectar sources for overwintering monarchs, if present, would remain available within 500 feet of the overwintering site on the west side of the BSA. Given the project's distance from the core monarch overwintering habitat in the northeastern part of Lighthouse Field and lack of impacts to monarch nectar sources, it is unlikely for the project to cause significant impacts to overwintering monarch habitat. However, it is possible that there are overwintering monarchs present within the construction footprint between October and March, and individual monarchs sheltering in cypress trees and adjacent vegetation could be impacted through direct injury or mortality from tree removals and other vegetation management activity associated with the project. Therefore, project impacts to monarch butterfly could be **potentially significant**.

The project would implement the following mitigation measure to reduce impacts to overwintering monarchs to **less than significant**.

MM BIO-3: Pre-Activity Surveys for Monarchs. Removal of all cypress trees and associated vegetation activities (brush removal, tree trimming, understory vegetation removal, etc.) in the immediate vicinity of any cypress trees will occur outside of monarch overwintering (October through March), to the extent feasible.

If tree and vegetation removal must occur between October and March, a qualified biologist will survey the cypress groves no earlier than 1 week prior to tree removal to determine if any monarch butterflies are present. If monarchs are present, the qualified biologist will establish a no-disturbance buffer around the occupied tree(s) and mark the buffer perimeter with high-visibility fencing, flagging, or pin flags. The size of the buffer will be based on the height of the occupied tree(s) and size of the overwintering group.

The no-disturbance buffer will remain in effect until the monarchs have dispersed for migration and the tree is no longer in use for overwintering.

b) Would the project 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 Wildlife or U.S. Fish and Wildlife Service?

No Impact. Land cover in the BSA consists of a variety of natural vegetation communities with some developed and human-altered land cover types (see Figure 4). Five vegetation communities and three land cover types were mapped in the BSA including wild oats and annual brome grasslands alliance, seaside woolly sunflower – seaside daisy – seaside buckwheat patches herbaceous alliance, Monterey cypress–Monterey pine woodland stands semi-natural alliance, arroyo willow thickets shrubland alliance, urban/developed land cover, Hottentot fig association, ornamental plantings land cover, and disturbed habitat. Of these vegetation communities and land cover types, seaside woolly sunflower – seaside daisy – seaside buckwheat patches herbaceous alliance and the arroyo willow thickets shrubland alliance are considered sensitive vegetation communities on CDFW's California Natural Community List (CDFW 2025b).

The project would not impact either of these sensitive natural communities. The project would not impact the seaside woolly-sunflower—seaside daisy—seaside buckwheat patches because the proposed road alignment and associated construction disturbance does not include the area of Lighthouse Field where this habitat is located (see Figure 4). Similarly, the project would not impact the arroyo willow thickets because the proposed road alignment does not include the drainage where

this habitat is located (Appendix A, Figure 4). In summary, the project would have **no impact** on riparian habitat or sensitive natural communities.

c) Would the project 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?

Less-than-Significant Impact. A field delineation was conducted on October 30, 2025, to identify and map existing aquatic resources potentially subject to the regulatory jurisdiction of the U.S. Army Corps of Engineers (USACE) pursuant to Section 404 of the CWA (33 USC 1344), waters of the state potentially subject to the regulatory jurisdiction of the Regional Water Quality Control Board (RWQCB) pursuant to Section 401 of the CWA and the Porter–Cologne Water Quality Control Act, stream and riparian habitats potentially subject to the jurisdiction of the California Department of Fish and Wildlife (CDFW) pursuant to Section 1602 of the CFGC, and wetlands potentially subject to the jurisdiction of the California Coastal Commission (CCC) pursuant to Section 30121 of the California Coastal Act (CCA), collectively defined as jurisdictional aquatic resources (Appendix B).

Waters of the United States

A total of six aquatic resources were documented in the BSA: two ephemeral channels, one impounded ephemeral channel/pond, two upland swales, and tidal waters of the Pacific Ocean (see Figure 5). Four of the features are connected into a single system draining a portion of the coastal terrace in the eastern part of the BSA to the Pacific Ocean immediately downstream. A fifth aquatic feature is an isolated upland swale on the coastal terrace and is not connected to any other features. These aquatic resources are not likely to be jurisdictional under the federal CWA Section 404, as all features are ephemeral in nature and lack continuous surface connection to downstream waters of the United States. The final aquatic feature comprises the adjacent tidal waters of the Pacific Ocean, a traditional navigable water, along the southern edge of the BSA. Tidal waters are considered jurisdictional waters; however, no project activities would occur below the high tide line. Therefore, the proposed project would have **no impact** on jurisdictional wetlands under the federal CWA.

Waters of the State

Four of the six total aquatic resources present in the BSA exhibited characteristics of waters of the state regulated by the RWQCB under the Porter-Cologne Water Quality Control Act, including the two ephemeral channels and one impounded ephemeral channel/pond located within the drainage in the eastern part of the BSA and tidal waters of the Pacific Ocean. None of these features are expected to be impacted by project implementation because they are located outside of the proposed road alignment, and no work would occur below the high tide line. Therefore, the proposed project would have **no impact** on waters of the state.

CDFW Aquatic Resources

The aquatic features located in the drainage in the eastern portion of the BSA described above are potentially subject to CDFW jurisdiction under CFGC Sections 1602. None of these features are expected

to be impacted by project implementation because they are located outside of the proposed road alignment. Therefore, the proposed project would have **no impact** on CDFW aquatic resources.

Coastal Commission Wetlands

All aquatic features identified as potentially under RWQCB and CDFW jurisdiction are also potentially under CCC jurisdiction. Two additional features were identified as one-parameter wetlands (i.e., wetlands defined by a single parameter such as hydric soils, hydrophytic vegetation, or hydrology), potentially under CCC jurisdiction. The project would impact one of these CCC wetlands.

Specifically, the project would impact a portion of a 0.037-acre isolated upland swale, which lies along the north edge of the proposed road alignment. None of the other aquatic resources would be impacted by the project, as described previously. The upland swale is not a functional wetland and is not considered an Environmentally Sensitive Habitat Area (ESHA) under the Coastal Act. Therefore, the project would not have a substantial adverse effect on a state protected wetland potentially under CCC jurisdiction and the impact would be **less than significant**.

As replacement or enhancement of the upland swale would likely be required as part of the Coastal Development Permit for the project, as required under Coastal Act Section 30233, the proposed project includes onsite replacement of this area at a four-to-one ratio as part of the project (see Section 2.3.9).

d) Would the project 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?

No Impact. The project would not cause direct impacts to habitat connectivity because the habitats onsite are already isolated from larger landscape blocks by dense urban development. Therefore, the project would have **no impact** on fish or wildlife movement or established wildlife corridors.

e) Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

Less-than-Significant Impact. There are 20 Monterey cypress trees on the project site of various sizes, 4 of which are heritage as defined by the City's Heritage Tree Ordinance in Chapter 9.56 of the City's Municipal Code. Generally, trees with a 14-inch or larger diameter are heritage trees. An arborist review (Dudek 2026) was conducted to review existing trees on the project site. The project would result in removal of one heritage tree and one dead tree. The project would retain the remaining 18 existing onsite trees and implement tree protection measures (e.g., establishment of tree protection zones, fencing) to prevent avoidable injury, which would be included as a condition of project approval.

Chapter 9.56 of the City Municipal Code defines heritage trees, establishes permit requirements for the removal of a heritage tree, and sets forth mitigation requirements as adopted by resolution by the City Council. Resolution NS-23, 710 adopted by the City Council in April 1998 establishes the criteria for permitting removal of a heritage tree and indicates that one or more of the following findings must be made:

1. The heritage tree or heritage shrub has, or is likely to have, an adverse effect upon the structural integrity of a building, utility, or public or private right of way;

2. The physical condition or health of the tree or shrub, such as disease or infestation, warrants alteration or removal; or
3. A construction project design cannot be altered to accommodate existing heritage trees or heritage shrubs.

Resolution NS-30, 072 sets forth the tree replacement/mitigation requirements for approved removal of a heritage tree to include replanting 3, 15-gallon or 1, 24-inch-size specimen or payment of the current retail value. Removal would be permitted if found in accordance with the above criteria and requirements. Approval of a tree removal permit automatically requires replacement trees as set forth above.

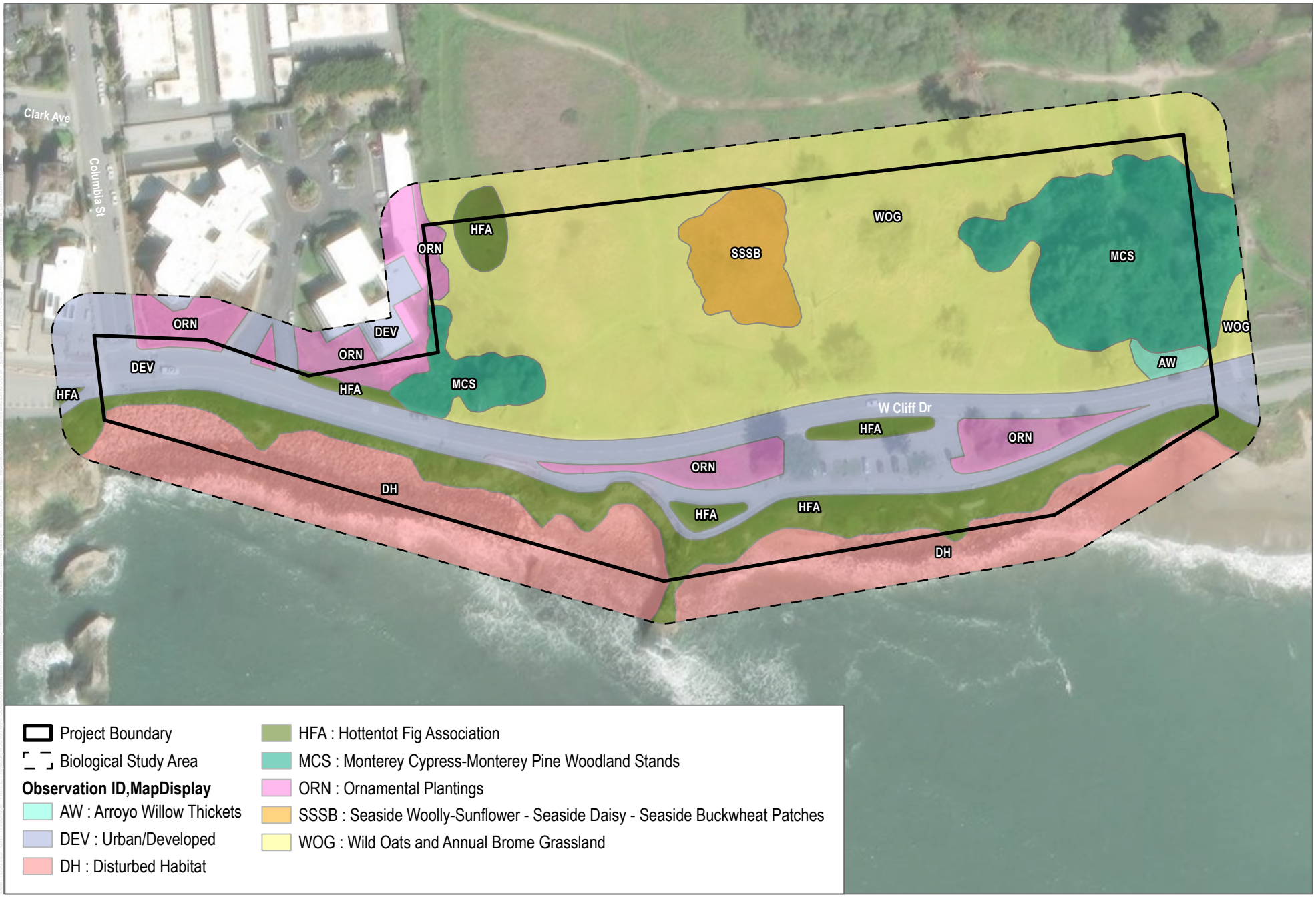
Removal of 1 heritage tree would require planting of 3, 15-gallon trees or 1, 24-inch-size trees to replace the removed heritage trees. The project site is in the coastal zone, and the City's Local Coastal Program (LCP) (Policy CD 6.1.2) requires a two-to-one or more replacement when tree removal is necessary for new development. Therefore, as indicated in Section 2.3.9, the project would replant 3, 24-inch-size trees to meet and exceed these requirements.

Removal of a heritage tree that is consistent with the criteria, provisions, and requirements set forth in City regulations would not result in a conflict with a local ordinance and would not have a significant impact. The project's proposed planting plan includes a total of three new trees that would exceed the replacement requirements established in City regulations and LCP. Therefore, the project would replace the removed heritage tree in accordance with City requirements and the impact of the project related to heritage trees would be **less than significant**.

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

No Impact. The City has an adopted Operation and Maintenance Habitat Conservation Plan (OMHCP) that covers municipal facility operations and maintenance (City of Santa Cruz 2021). The proposed project is not a Covered Activity in the OMHCP and therefore it does not apply to the project. There are no adopted Natural Community Conservation Plans (NCCP) in the City. Therefore, the project would not conflict with provisions of the adopted HCP or NCCP and there would be **no impact**.

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SOURCE: Esri Aerial Basemap, USDA SSURGO

DUDEK

0 70 140 Feet

FIGURE 4

Vegetation Communities and Land Cover Types

800 West Cliff Drive Roadway Realignment Project

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SOURCE: Esri Aerial Basemap, NOAA, OpenStreetMap

DUDEK

0 45 90 Feet

FIGURE 5

Potentially Jurisdictional Aquatic Resources

800 West Cliff Drive Roadway Realignment Project

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3.5 Cultural Resources

		Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
V.	**CULTURAL RESOURCES** – Would the project:				
a)	Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?	☐	☐	☐	☒
b)	Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	☐	☒	☐	☐
c)	Disturb any human remains, including those interred outside of formal cemeteries?	☐	☒	☐	☐

An historic property survey report (HPSR), including an attached archaeological survey report, was completed for the project in April 2026 (Appendix C). The HPSR included a records search of the California Historical Resources Information System (CHRIS) from the Northwest Information Center (NWIC) conducted for the project site and a 0.25-mile radius, a search of the Native American Heritage Commission (NAHC) Sacred Lands File, outreach to locally affiliated Native American groups, and an intensive pedestrian survey of the project site. The area of potential impact studied encompasses a 45.83-acre area spanning a 0.25-mile segment of West Cliff Drive and Lighthouse Field State Beach, in the City of Santa Cruz, as depicted in Appendix C. The area of direct impact coincides with the project footprint and adjacent areas that could be subject to disturbance. See Appendix C for the area of potential impact and the area of direct impact. The results of the HPSR are incorporated into the analyses contained herein.

a) Would the project cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?

No Impact. The results of the CHRIS records search contained in the HPSR indicated that no previously recorded cultural resources are within the project site. One recorded resource, the built historic resource called West Cliff Drive, was evaluated and found not eligible for listing in the National Register of Historic Places (NRHP), California Register of Historical Resources (CRHR), California Historical Landmarks (CHL), or the City of Santa Cruz Historic Resources Inventory due to a lack of significant associations and architectural merit.

A potential historic property/historical resource considered in the HPSR within the area of potential impact is the property known as Lighthouse Field State Beach. The State Beach was acquired by the State of California in 1978 and officially designated as a State Beach by the California State Parks Commission in 1981. It is currently less than 50 years of age—and will be even at the anticipated end of project construction in 2027; therefore, the State Beach does not meet the 50-year age threshold for inventory and evaluation. Moreover, research indicates that Lighthouse Field State Beach lacks a significant association with any events or persons important in history, nor does research suggest that this property possesses design or construction value, or information potential that is not already known about the

development of this property. As such, it lacks the necessary level of exceptional importance to satisfy NRHP Criteria Consideration G for properties that have achieved significance within the last fifty years. Therefore, it was not addressed further within the HPSR in Appendix C.

Therefore, the project would not involve alteration or demolition of built environment features and would not result in physical modifications to existing structures. Therefore, the project would not cause a substantial adverse change in the significance of a historical resource as defined by CEQA, resulting in **no impact** to historical resources.

b) Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?

Less-than-Significant Impact with Mitigation Incorporated. The CHRIS records search results included in the archaeological survey report (Appendix C) identified two prior studies that intersect the project area. The results of the NAHC Sacred Lands File search were positive, with the Costanoan Ohlone Rumsen-Mutsen Tribe indicated as the group to contact for more information (see Section 3.18, Tribal Cultural Resources, for additional information). The site survey which included scrapings and one bore pit found no cultural material. Based on the results of the assessment, the potential for encountering previously unknown potentially significant prehistoric or historical-period archaeological resources during project construction is low. Nevertheless, if ground-disturbing construction activities were to unearth previously unidentified archaeological resources, project impacts on such resources could be **potentially significant**.

The project would implement the following mitigation measure to reduce impacts to previously unidentified archaeological resources to **less than significant**.

MM CUL-1: Unanticipated Discovery of Archaeological Resources. All construction crews should be alerted to the potential to encounter sensitive archaeological material. In the event that archaeological resources (sites, features, artifacts) are exposed during construction activities for the proposed project, all construction work occurring within 60 feet of the find shall immediately stop until a qualified archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards, can evaluate the significance of the find and determine whether additional study is warranted. Precontact archaeological deposits may be indicated by the presence of discolored or dark soil, fire-affected material, concentrations of fragmented or whole marine shell, burned or complete bone, non-local lithic materials, or the characteristic observed to be atypical of the surrounding area. Common precontact artifacts may include modified or battered lithic materials; lithic or bone tools that appeared to have been used for chopping, drilling, or grinding; projectile points; fired clay ceramics or non-functional items; and other items. Depending upon the significance of the find under Section 106 of the National Historic Preservation Act (NHPA) and the California Environmental Quality Act (CEQA) (14 CCR 15064.5(f); PRC Section 21082), the archaeologist may simply record the find and allow work to continue. If the discovery is potentially significant under Section 106 of the NHPA or CEQA, additional work, such as preparation of an archaeological treatment plan, testing, or data recovery may be warranted.

c) Would the project disturb any human remains, including those interred outside of formal cemeteries?

Less-than-Significant Impact with Mitigation Incorporated. As previously discussed in Section 3.5(b) above, the project site is considered low sensitivity for the presence of archaeological resources and as such there is also low potential for encountering human remains. However, it is still possible that subsurface human remains could be encountered during ground disturbing activities within native soils. If ground-disturbing construction activities were to unearth human remains, project impacts on such resources could be **potentially significant**.

The project would implement the following mitigation measure to reduce impacts to human remains to **less than significant**.

MM CUL-2: Human Remains. In accordance with Section 7050.5 of the California Health and Safety Code, if human remains are found, the county coroner shall be immediately notified of the discovery. No further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains shall occur until the county coroner has determined, within 2 working days of notification of the discovery, the appropriate treatment and disposition of the human remains. If the county coroner determines that the remains are, or are believed to be, Native American, he or she shall notify the Native American Heritage Commission (NAHC) in Sacramento within 24 hours. In accordance with California Public Resources Code, Section 5097.98, the NAHC must immediately notify the person it believes to be the most likely descendant from the deceased Native American. The most likely descendant shall complete his/her inspection within 48 hours of being granted access to the site. The designated Native American representative would then determine, in consultation with the property owner, the disposition of the human remains.

3.6 Energy

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

a) Would the project result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

Less-than-Significant Impact. Petroleum would be the primary energy resource consumed throughout construction of the project to fuel off-road equipment, trucks, and worker vehicles. There are no unusual project characteristics or construction processes that would require the use of equipment that would be more energy intensive than is used for comparable activities, or equipment that would not conform to current emissions standards (and related fuel efficiencies). Equipment employed in construction of the project would therefore not result in inefficient, wasteful, or unnecessary consumption of fuel. Construction contractors would be required to comply with applicable CARB regulations regarding retrofitting, repowering, or replacement of diesel off-road construction equipment, which were discussed previously for criterion 3.3(c). Compliance with anti-idling and emissions regulations would result in a more efficient use of construction-related energy and the minimization or elimination of wasteful or unnecessary consumption of energy. Idling restrictions and the use of newer engines and equipment would result in less fuel combustion and energy consumption. Once construction is complete, long-term operations would be similar to existing conditions and would not result in additional energy consumption. Based on the preceding considerations, the project-related impacts regarding the potential for wasteful, inefficient, or unnecessary consumption of energy resources would be **less than significant**.

b) Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

No Impact. As discussed above for criterion 3.6(a), the project would not result in wasteful, inefficient, and unnecessary consumption of energy during construction or operation. The proposed project does not include the construction of new buildings or significant alterations to existing energy infrastructure. Short-term construction activities would be conducted in compliance with applicable regulations and would not result in long-term energy demand that could conflict with energy plans. As such, the project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency; therefore, there would be **no impact** from the project.

3.7 Geology and Soils

	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
VII. GEOLOGY AND SOILS – Would the project:				
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.	☐	☐	☒	☐
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☐	☒	☐
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
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?	☐	☐	☒	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	☐	☐	☐	☒
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?	☐	☐	☐	☒
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☒	☐

a) Would the project 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.

Less-than-Significant Impact. The Alquist-Priolo Earthquake Fault Zoning Act of 1972 regulates development near Holocene-active faults (i.e., faults that have moved in the past 11,700 years) to mitigate the hazard of surface fault rupture. This Act requires the State Geologist to delineate regulatory zones (known as Alquist-Priolo Earthquake Fault Zones) around the surface traces of Holocene-active faults and to issue appropriate maps. The project site is not located within an Alquist-Priolo Earthquake Fault Zone. The Alquist-Priolo Earthquake Fault Zone located closest to the project site is associated with the San Andreas Fault, located approximately 12 miles to the northeast and the potential for fault rupture is considered low (CGS 2021; Pacific Crest Engineering 2025). Therefore, the impact of the project related to fault rupture of a known earthquake fault would be **less than significant.**

ii) Strong seismic ground shaking?

and

iii) Seismic-related ground failure, including liquefaction?

Less-than-Significant Impact. The project site is located in a seismically active region of California with several active or potentially active faults. Thus, the project would experience high intensity ground shaking and associated seismic hazards during the lifetime of the project (Pacific Crest Engineering 2025).

Ground shaking may cause liquefaction of recent alluvial and terrace deposits. Liquefaction occurs when non-cohesive surface or subsurface materials are saturated and become liquid-like under the influence of ground shaking. This may result in ground failure. The City of Santa Cruz contains areas with varying liquefaction potential, with higher potential generally associated with young alluvial deposits located near creeks, waterways, and coastal lowlands. Other areas underlain by older or more consolidated deposits have lower liquefaction potential. According to liquefaction hazard mapping prepared for the City of Santa Cruz General Plan, the project site is located in an area with low liquefaction potential (City of Santa Cruz, 2012). The geotechnical report for the project also found that the project site has low liquefaction potential (Pacific Crest Engineering 2025).

While the project site is located within a region subject to seismic hazards, implementation of the project would not increase the risk of strong seismic ground shaking or seismic-related ground failure beyond existing conditions. The project involves realignment of an existing roadway and multiuse pathway and would not introduce new sensitive land uses or structures.

Design and construction of the project would conform to applicable geotechnical recommendations and current seismic design standards, including the California Building Code (CBC) and applicable

state and local regulations. Compliance with these standards would minimize the potential for damage to roadway infrastructure and reduce safety risks associated with seismic ground shaking and related hazards, including liquefaction. Accordingly, the impact of the project related to strong seismic ground shaking and seismic-related ground failure would be **less than significant**.

iv) Landslides?

Less-than-Significant Impact. Landsliding hazards in the City of Santa Cruz are typically associated with steep slopes, including coastal bluffs along West Cliff Drive. The analysis herein addresses both landsliding from terrestrial processes and from coastal erosion and is based on the project geotechnical investigation (Pacific Crest Engineering 2025).

Landsliding

Landslides occur when masses of rock, earth material, or debris flows move down a slope due to gravity. According to mapping from the California Geological Survey (CGS), the site is not located within a mapped landslide hazard zone (CGS 2021). The geotechnical report for the project indicates that the potential hazard of landsliding driven solely by terrestrial processes (i.e., not coastal erosion) is low at the project site (Pacific Crest Engineering 2025). The project would not include habitable structures or other structural development within or adjacent to identified landslide zones. The project would comply with applicable geotechnical design requirements of the City of Santa Cruz and of the project geotechnical report (Pacific Crest Engineering 2025). Given the nature of the project, adherence to geotechnical recommendations, and compliance with applicable design standards, the project would not increase existing landslide risks in the area. Therefore, impacts of the project related to landslides would be **less than significant**.

Coastal Erosion/Bluff Retreat

The project site is situated on the coastal bluff along West Cliff Drive overlooking Monterey Bay, an area experiencing ongoing coastal erosion due to wind, wave action, and seismic forces. Coastal erosion includes both bluff erosion and beach erosion. Large winter storm waves in tandem with slowly rising sea level underpins the long-term landward erosion of the bluff. Although long-term bluff retreat is expressed in terms of a uniform rate, such as feet per year, the bluff actually episodically fails in increments in the form of landslides or hydraulic plucking during large wave events and landslides due to local intense seismic shaking (Pacific Crest Engineering 2025).

An approximately 60-foot-long segment of bluff along the south side the project site experienced significant erosion in the January 2024 storm events and the resulting slide scar is now impinging upon the section of multiuse path that passes through the project site (Pacific Crest Engineering 2025). This slide scar and damage to the multiuse path are the primary reason for the proposed realignment of the roadway and multiuse path being pursued with the proposed project.

Coastal erosion is often managed through structures such as seawalls or riprap; however, such approaches were determined to be infeasible at this location (Pacific Crest Engineering 2025). Instead, the project proposes to relocate a segment of the roadway further inland, beyond the projected 100-year erosion zone and does not propose any disturbance to the coastal bluff. The

project would not increase existing coastal erosion of bluff retreat. Therefore, impacts of the project related to landslides from coastal erosion processes would be **less than significant**.

b) Would the project result in substantial soil erosion or the loss of topsoil?

Less-Than-Significant Impact. The proposed project is located along a coastal bluff that is subject to erosion from wave, wind, and seismic sources. As mentioned in Section 3.7 (a-iv), the project proposes to relocate the roadway further inland, beyond the projected 100-year erosion zone. Initial site preparation would include the demolition and removal of any existing pavement, two trees, surface vegetation, signage that would be replaced, and debris. Excavated material would be removed from the site or stockpiled for future landscaping. Any voids created by these removals would be backfilled with properly compacted engineering fill in accordance with geotechnical recommendations. Grading and excavation activities would adhere to the recommendations of geotechnical recommendations. Additionally, project construction would comply with and implement City and Caltrans stormwater best management practices for construction to minimize erosion and water quality impacts. A Stormwater Pollution Prevention Plan (SWPPP) would also be prepared and implemented to comply with the National Pollution Discharge Elimination System (NPDES) Construction General Permit. Alternatively, a NPDES Low Erosivity Waiver would be obtained. Given these measures, the project would not result in substantial soil erosion or loss of topsoil. Therefore, impacts related to loss of substantial soil erosion and loss of topsoil would be **less than significant**.

c) Would the project 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?

Less-than-Significant Impact. The project site is located in a seismically active region but is not within an Alquist-Priolo Earthquake Fault Zone, a landslide zone, and or an area identified as having liquefication potential (see Section 3.7[a-i, a-iii, and a-iv]). The project site is primarily underlain by sandstone bedrock, which is not susceptible to liquefication or lateral spreading (Pacific Crest Engineering 2025). While portions of the surrounding area are characterized by steep slopes and coastal bluff erosion, the project is relocating a segment of the road inland of the 100-year erosion zone. It would reduce exposure to unstable bluff conditions and would not introduce habitable structures. All grading, excavation, and construction activities would be performed in accordance with site-specific geotechnical recommendations and current requirements of the California Building Code. Compliance with these requirements would ensure proper soil stability, compaction, and structural support, thereby minimizing the potential for landslides, lateral spreading, subsidence, liquefaction, or collapse. The project would not be located on unstable geologic units or soils that would become unstable as a result of the project, and impacts related to geologic or soil instability would be **less than significant**.

d) Would the project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?

No Impact. Expansive soils are soils that exhibit significant volume change with variations in moisture content and can pose risks to structures and infrastructure if not properly addressed. According to the site-specific geotechnical investigation, soils at the project site exhibit little measured expansion pressure, indicating low to moderate expansive potential (Pacific Crest Engineering 2025).

The project consists of a roadway realignment and multiuse pathway improvements and does not include habitable structures. To further reduce any potential effects associated with expansive soils, subgrade sections beneath new pavement and pathway improvements would be constructed using non-expansive engineered fill, in accordance with geotechnical recommendations. Given the low expansive potential of onsite soils and adherence to applicable geotechnical design recommendations, the project would not create substantial direct or indirect risks to life or property related to expansive soils. Therefore, the project would have **no impact** related to expansive soils.

e) Would the project 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?

No Impact. The project would not involve the use of septic tanks or alternative wastewater disposal systems. Therefore, the project would have **no impact** related to soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems.

f) Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Less-than-Significant Impact. According to the City of Santa Cruz General Plan and General Plan 2030 EIR, there are geologic units throughout the City that are considered sensitive for paleontological resources, with paleontological resources being identified in certain locations (City of Santa Cruz 2012). Based on the General Plan 2030 EIR, the Late Pleistocene terrace deposits located at the project site and elsewhere in the City have recorded vertebrate fossil specimens and are considered sensitive for paleontological resources. However, the proposed project would involve limited and shallow ground disturbance associated with roadway realignment and multiuse pathway improvements. Given the limited scope and depth of excavation, the likelihood of encountering paleontological resources during construction is low.

General Plan Action HA1.2.3 requires the City to notify applicants or City contractors within paleontologically sensitive areas of the potential for encountering such resources during construction and condition approvals that work would be halted and resources examined in the event of encountering paleontological resources during construction. If the find is significant, the City would require treatment of the find in accordance with the recommendations of the evaluating paleontologist. Treatment may include, but is not limited to, specimen recovery and curation or thorough documentation. The City would be subject to this policy should any resource be inadvertently discovered during construction of the proposed roadway realignment. With implementation of General Plan 2030 policies and actions, the impact related to paleontological resources would be considered **less than significant**.

3.8 Greenhouse Gas Emissions

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

a) Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

and

b) Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Less-than-Significant Impact. Climate change refers to any significant change in measures of climate, such as average temperature, precipitation, or wind patterns over a period of time. Climate change may result from natural factors, natural processes, and human activities that change the composition of the atmosphere and alter the surface and features of the land. Significant changes in global climate patterns have recently been associated with global warming, an average increase in the temperature of the atmosphere near the Earth's surface, attributed to accumulation of greenhouse gas (GHG) emissions in the atmosphere. Greenhouse gases trap heat in the atmosphere, which in turn heats the surface of the Earth. Some GHGs occur naturally and are emitted to the atmosphere through natural processes, while others are created and emitted solely through human activities. The most common GHG that results from human activity is carbon dioxide (CO_2), followed by methane (CH_4) and nitrous oxide (N_2O).

California has adopted significant GHG reduction targets and strategies. The California State Legislature passed Assembly Bill (AB) 32 to provide initial direction to limit California's GHG emissions to 1990 levels by 2020 and initiate the state's long-range climate objectives. Since the passage of AB 32, the state has adopted GHG emissions reduction targets for future years beyond the initial 2020 horizon year, including those established by Senate Bill (SB) 32 and AB 1279, which require GHG emissions be reduced to 40% below 1990 levels by 2030, and 85% below 1990 levels by 2045, respectively. In addition, AB 1279 requires the state achieve net zero GHG emissions by no later than 2045 and achieve and maintain net negative GHG emissions thereafter. CARB's 2017 Scoping Plan was the first to address the state's strategy for achieving the 2030 GHG reduction target set forth in SB 32 (CARB 2017), and the most recent CARB 2022 Scoping Plan update outlines the state's plan to reduce emissions and achieve carbon

neutrality by 2045 in alignment with AB 1279 and assesses the progress made toward the 2030 SB 32 target (CARB 2022).

The City's *General Plan 2030* includes goals, policies, and actions on climate change, including reducing communitywide GHG emissions 30% by 2020, reducing communitywide GHG emissions 80% by 2050 (compared to 1990 levels), and for all new buildings to be emissions neutral by 2030. In September 2022, the City adopted the *2030 Climate Action Plan* (CAP) that updated the previous CAP and outlines measures and actions that are intended to reduce GHG emissions, per capita, by approximately 40% below 1990 levels by 2030, meeting the SB 32 target for 2030 to reduce total GHG emissions 40% below 1990 levels. The CAP also seeks to achieve a carbon neutrality goal by the year 2035 prior to the State's target carbon neutrality goal by 2045 (City of Santa Cruz 2022b). The CAP includes 31 measures with 152 associated individual actions, intended to reduce GHG emissions throughout the City. The measures include those related to building energy use and reduction, transportation, public infrastructure, and other climate restoration and sustainable government measures. Through implementation of its measures and actions, the CAP aims to reduce building energy consumption, vehicle-miles traveled, solid waste generation, and increase carbon sequestration (City of Santa Cruz 2022b).

Construction of the project would result in minimal, temporary GHG emissions, which are primarily associated with use of off-road construction equipment, on-road trucks, and worker vehicles. Once construction is complete, long-term operations would be similar to existing conditions and would not result in additional GHGs. As long-term GHG emissions of the project would be the same as existing conditions, the project would not conflict with the City's CAP, or CARB's 2017 and 2022 Scoping Plans, which prioritize emissions reductions from long-term sources. The project would not conflict with or hinder implementation of the City's CAP GHG reduction measures or obstruct the state's ability to achieve its carbon neutrality targets. Based on the preceding considerations, the project impacts regarding the generation of direct or indirect GHG emissions, and the project's potential to conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs would be **less than significant**.

3.9 Hazards and Hazardous Materials

	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
IX. HAZARDS AND HAZARDOUS MATERIALS – Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
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?	☐	☐	☒	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d) Be located on a site that 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?	☐	☐	☒	☐
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?	☐	☐	☐	☒
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	☐	☐	☒	☐

a) Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

and

b) Would the project 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?

Less-than-Significant Impact**.** Relatively small amounts of commonly used hazardous substances such as gasoline, diesel fuel, lubricating oil, adhesive materials, grease, and solvents would be used during construction of the roadway realignment and multiuse path improvements. These materials are not considered acutely hazardous and are routinely used for construction and infrastructure improvement projects. Further, these materials would be transported, stored, and handled in accordance with all applicable federal, state, and local regulations governing hazardous materials management. Consequently, use of these materials for their intended purpose would not pose a significant hazard to the public or environment due to accidental release.

Once construction has been completed, fuels and other petroleum products would not remain within the project area. Operation of the project would consist of a public roadway and multiuse path and would not require the routine transport, use, storage, or disposal of hazardous substances beyond limited maintenance-related activities. It should be noted that West Cliff Drive is an existing public roadway that is regularly used by vehicles, including those that may transport small quantities of hazardous materials; however, the project would not alter roadway capacity or increase the transport of such materials. Therefore, project impacts related to the routine transport, use, disposal, or accidental release of hazardous materials would be **less than significant**.

c) Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

No Impact. As described in Section 3.15, schools located in the vicinity of the project are more than one mile from the project site. The nearest public school is Bay View Elementary School, located approximately 1.1 miles north of the project site, and the nearest private school is Gateway School, located approximately 1.07 miles west.

Project construction would involve relatively small amounts of commonly used hazardous substances such as gasoline, diesel fuel, lubricating oil, grease, adhesive materials, and solvents. In the event of an accidental release of these materials during construction, any associated hazards would be temporary, localized, and limited to the immediate project area. Given the distance of nearby schools from the project site, there would be no potential for exposure of students or school personnel to hazardous materials. All materials would be transported, handled, and disposed of in accordance with applicable federal, state, and local regulations, further minimizing potential hazards. Operation of the project would consist of a public roadway and multiuse path and would not involve the routine use, storage, or disposal of hazardous materials. Therefore, the project would not pose a hazard to nearby schools, and **no impact** would occur.

d) Would the project be located on a site that 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?

Less-than-Significant Impact. A search of the Cortese List databases did not reveal any records for the project site pertaining to Leaking Underground Storage Tanks (LUSTs), toxic releases, or site cleanup requirements. As the project site is not included on the Cortese List, there are no known on-site hazards

related to the release of hazardous materials from contaminated soil or groundwater. Additionally, no hazardous materials release sites compiled pursuant to Government Code Section 65962.5 were identified within a 0.5-mile radius of the project site. The nearest site cleanup case is Rio Lagoon Skate Park, located approximately 0.73 miles from the project site; however, this site is a former cleanup site and is not currently active. The nearest active LUST site is Pottery Planet located approximately 3.13 miles from the project site, where petroleum hydrocarbon contamination is undergoing remediation. Both sites are located at sufficient distances such that the potential to affect the project site is low. Therefore, project impacts related to the creation of a significant hazard to the public or the environment due to the location of a hazardous materials site would be **less than significant**.

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?

No Impact. The proposed project would not result in a safety hazard or excessive noise for people working or residing in the study area due to airports because the project site is not located within 2 miles of a public use airport nor is it located within an airport land use plan. Therefore, the proposed project would have **no impact** related to airport hazards.

f) Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Less-than-Significant Impact. The City of Santa Cruz Evacuation Zone Maps identifies West Cliff Drive, where the project site is located, as one of the City's evacuation routes in the event of emergencies requiring evacuations (City of Santa Cruz 2026). Multiple evacuation routes serving the project site are available in the surrounding area, including West Cliff Drive, Bay Street, Woodrow Avenue, and Delaware Avenue, with specific routes to be designated during an emergency. As further discussed in Section 3.17, Transportation, the project would not include changes to the existing street system that could hinder the movement of residents or emergency vehicles through the area in the event of emergencies. Construction and on-site staging areas would not obstruct access along West Cliff Drive within the project area. Construction activities would require partial road closures or access limitations in the public right-of-way of West Cliff Drive on a temporary and periodic basis during the construction period. A Traffic Control Plan would be developed and approved by the City, which would include provisions for addressing lane closures and traffic diversions. Implementation of these requirements would ensure that access would be maintained for residents and emergency vehicles to continue to move through the area in the event of emergencies during construction. During operation, the realigned roadway and pathway segment could continue to function as it does during existing conditions and would have limited operational traffic and vehicle trips associated with routine maintenance of the facility, which would not affect access for emergency response or evacuation. Therefore, project impacts related to impairing implementation of or physically interfering with an adopted emergency response plan or emergency evacuation plan would be **less than significant**.

g) Would the project expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?

Less-than-Significant Impact. As further discussed in Section 3.20, Wildfire, the project site is not located in a state responsibility area (SRA) or designated as a very high fire hazard severity zone (VHFHSZ) (CAL FIRE 2026). According to the City of Santa Cruz General Plan EIR, the project site is not located in an identified fire hazard area (City of Santa Cruz 2011). The nearest fire hazard area to the project site is located inland north of West Cliff Drive, approximately 0.6 miles from the project site, where elevated fuel loads and urban interface conditions present fire hazard risks. The project site is not located near or adjacent to wildlands that could transport embers from a wildland fire into the project area. The project site is located along West Cliff Drive and is characterized primarily by coastal recreational and open space land uses associated with Lighthouse Field State Beach, with nearby residential neighborhoods located inland to the north. The project does not propose habitable structures that would result in people residing on the project site, nor does it include components that would pose a substantial risk of wildfire ignition. Therefore, the project impacts related to exposure of people or structures to a significant risk of loss, injury, or death involving wildland fires would be **less than significant**.

3.10 Hydrology and Water Quality

	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
X. HYDROLOGY AND WATER QUALITY – Would the project:				
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	☐	☒	☐
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☒	☐
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;	☐	☐	☒	☐
ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	☐	☐	☒	☐
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	☐	☐	☒	☐
iv) impede or redirect flood flows?	☐	☐	☒	☐
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☒	☐
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☒	☐

a) Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

Less-than-Significant Impact. Construction activities could temporarily degrade water quality that could be discharged to the local storm drain system as a result of erosion caused by earthmoving activities or the accidental release of hazardous construction chemicals. Grading and other construction activities

associated with the project could lead to increased erosion and sedimentation resulting from exposed soils and the generation of water pollutants, including trash, construction materials, and equipment fluids. Additionally, spills, leakage, or improper handling and storage of substances such as oils, fuels, chemicals, metals, and other substances from vehicles, equipment, and materials used during project construction could contribute to stormwater pollutants or leach to underlying groundwater.

A significant impact would occur if the proposed project would discharge water that did not meet the water quality standards established by the SWRCB National Pollutant Discharge Elimination System (NPDES) and waste discharge requirement permit programs, and the Central Coast Water Quality Control Board's Basin Plan (CCRWQCB 2024). BMPs would be implemented during construction pursuant to the California State Water Resources Control Board Water Quality Order No. 99-08-DWQ (General Construction Permit) through the preparation of a SWPPP or NPDES Low Erosivity Waiver. The SWPPP, if prepared, would be consistent with the SWRCB Order No. 2009-0008-DWQ NPDES General Permit No. CAS00002 (Construction General Permit), amended by Order No. 2010-0014-DWQ and Order No. 2012-0006-DWQ, and implemented during project construction. Project construction will also comply with and implement City and Caltrans stormwater best management practices (BMPs) for construction to minimize erosion and water quality impacts. BMPs include scheduling activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the discharge of pollutants. BMPs also include treatment requirements, operating procedures, and practice to control site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. Through implementation of a SWPPP and/or stormwater BMPs, the potential for polluted runoff associated with construction activities would be minimized. Project operation would not involve ground disturbance or result in an increase in impervious surface area on the site, which would limit the potential for off-site migration of sediment and pollutants in runoff after construction is complete. Therefore, the proposed project would not violate any water quality standard or waste discharge requirements during construction and operation. As such, impacts to water quality standards would be **less than significant**.

b) Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

Less-than-Significant Impact. The project site is currently a segment of an existing roadway adjacent to undeveloped park land. The existing conditions of the project site are paved surfaces along the roadway and multiuse path, actively maintained landscape areas, and undeveloped park land within Lighthouse Field State Beach. The project does not include construction of residential, commercial, industrial, or other development that would generate new water demand requiring increased groundwater extraction. Project implementation resulting in realigning a 600-foot section of the existing roadway, changes to existing curbs, sidewalks, gutters, and driveways would not result in substantial changes from the existing paved surface areas on the project site. As such, the project would not substantially interfere with stormwater infiltration or groundwater recharge. Additionally, the project would not require the use of groundwater for any construction or operational water needs. Any water use required as part of construction activities would be obtained from other public or private sources (e.g., mobile water trucks). Conditions would remain the same after project implementation. As such, the project would not significantly change groundwater supplies or result in substantial losses to groundwater recharge capability, and impacts would be **less than significant**.

c) Would the project 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?

ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite?

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?

iv) Impede or redirect flood flows?

Less-than-Significant Impact. The project would maintain the existing drainage patterns of West Cliff Drive in the area of the project site. The project would not alter any natural waterways or drainages, and would not result in a net increase in impervious surfaces. The roadway improvements associated with the implementation of the project would be negligible in terms of changes to the existing drainage pattern and would not cause a substantial change in the volume of surface runoff, introduce a new substantial source of polluted runoff, or cause an increase in flooding. The project would result in more than 1 acre of land disturbance; therefore, a site-specific SWPPP, as referenced in Section 3.10(a), may be prepared and implemented during project construction, or a NPDES Low Erosivity Waiver would be obtained. Additionally, project construction would also comply with and implement City and Caltrans stormwater BMPs for construction to minimize erosion and water quality impacts. Implementation of the SWPPP and/or BMPs would maintain the existing level of runoff from the project site and would reduce sediment and pollutant runoff. During operation, the realigned segment of West Cliff Drive would operate similar to existing conditions, with storm drainage improvements sized to adequately handle stormwater flows consistent with City of Santa Cruz design standards (see Section 2.3.4, Stormwater Drainage Improvements). The project hardscape, proposed landscaping, and storm drainage improvements would reduce potential for erosion during operation. Additionally, the project would not introduce structures that could alter, impede, or redirect flood flows (see Section 3.10[d] for additional information about flood hazards). Therefore, impacts associated with drainage patterns would be **less than significant**.

d) In flood hazard, tsunami, or seiche zones, would the project risk release of pollutants due to project inundation?

Less-than-Significant Impact. This impact discussion addresses flood and tsunami hazards, as well as sea-level rise.

Flood and Tsunami Hazards

According to the City's General Plan 2030 EIR, the project site is not located within a Federal Emergency Management Agency (FEMA) flood hazard zone (City of Santa Cruz 2012). A tsunami inundation zone has been identified along the City's coastline and extends into portions of the downtown area and along major coastal watercourses, including the portion of West Cliff Drive that crosses through the project site (City of Santa Cruz 2012). Because the project is limited to the realignment of a segment of the existing roadway and multiuse path, and would not involve construction of new habitable structures, the project would not

expose people or property to tsunami hazards. Therefore, the project would not expose people or structures to flood or tsunami hazards, nor would it result in the release of pollutants in flood or tsunami inundation zones. Impacts related to flooding and tsunami hazards and related release of pollutants due to inundation would be **less than significant**.

Sea Level Rise

The City's General Plan 2030 EIR reported that sea level rise, storms of increasing intensity, and an alternating series of floods and droughts threaten the City of Santa Cruz in the coming decades. The City prepared the 2025-2030 Local Hazard Mitigation Plan – Climate Adaptation Plan, which combines the Local Hazard Mitigation Plan and the Climate Adaptation Plan to provide a comprehensive approach to hazard mitigation and climate adaptation (City of Santa Cruz 2025). The Plan summarizes prior studies related to sea level rise and indicates that existing rising tide inundation areas for the City of Santa Cruz have been modeled in the 2014 Monterey Bay Sea Level Rise Vulnerability Study and refined in the City's 2017 Sea Level Rise Vulnerability Analysis. According to these studies, the Lower Seabright Neighborhoods, Neary Lagoon, Upper Seabright Neighborhoods, and the Westside Industrial District are areas that would be flooded under existing conditions by normal high water level tides on average once per month. Modeled 2030 and 2060 projected inundation caused by future sea level rise shows the Beach and Boardwalk District, Lower Ocean Neighborhoods, Lower and Upper Seabright Neighborhoods, and Neary Lagoon could be impacted (City of Santa Cruz 2025). The Plan also indicates that future sea level rise will likely continue to cause or exacerbate coastal property damage and property loss due to wave overtopping and flooding, thereby reducing property values, reducing recreational areas and open space, and causing loss of access/disrupted transportation, and displacement. The Plan indicates that West Cliff Drive is not a critical facility which provides essential services and protects life and property within the City (City of Santa Cruz 2025).

The project site is not located within an area identified as being subject to future sea level rise inundation; however, it is located immediately adjacent to the coastal bluff to the south of the site that is inundated under existing conditions (City of Santa Cruz 2025). As indicated in Section 3.7, Geology and Soils, an approximately 60-foot-long segment of bluff along the south side the project site experienced significant erosion in the January 2024 storm events and the resulting slide scar is now impinging upon the section of multiuse path that passes through the project site (Pacific Crest Engineering 2025). This slide scar and damage to the multiuse path are the primary reason for the proposed realignment of the roadway and multiuse path being pursued with the proposed project. The proposed project would shift an approximately 600-foot section of roadway nearest the eroded coastal bluff approximately 40 to 60 feet inland out of the 100-year erosion zone as modeled by Pacific Crest Engineering (Pacific Crest Engineering 2025).

Because the project is limited to the realignment of a segment of the existing roadway and multiuse path, and would not involve construction of new habitable structures, the project would not expose people or property to sea level rise inundation. As the project would not expose people or structures to sea level rise inundation and related release of pollutants due to inundation, project impacts would be **less than significant**.

e) Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

Less-than-Significant Impact. There is not a sustainable groundwater management plan that applies to the project area. The two groundwater management plans in the County are the Mid-County Groundwater

Management Plan that addresses the Santa Cruz Mid-County Groundwater Basin located in unincorporated Santa Cruz County to the east of the site, and the Santa Margarita Groundwater Management Plan that address the Santa Margarita Groundwater Basin located in unincorporated Santa Cruz County and the City of Scotts Valley to the north of the project site. Given that there are no applicable sustainable groundwater management plans that apply to the project site, the project would have no conflicts related to such a plan.

Water quality objectives are included in the Water Quality Control Plan for the Central Coastal Basin for protection of surface water and groundwater quality in the Central Coast Region. As indicated in Section 3.10(a), the Basin Plan lists beneficial uses for surface waters and describes the water quality objectives that must be maintained to allow those uses. The proposed project would not result in new discharges or conflict with provisions in the Basin Plan as the proposed realignment of a segment of roadway and multiuse path would not result in permanent increases in runoff or affect water quality, as described in Section 3.10(a). Therefore, the project would not conflict with adopted water quality or groundwater plans. As a result, project impacts would be **less than significant**.

3.11 Land Use and Planning

		Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
XI.	**LAND USE AND PLANNING** – Would the project:				
a)	Physically divide an established community?	☐	☐	☐	☒
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?	☐	☐	☒	☐

a) Would the project physically divide an established community?

No Impact. The project would not include any structures that would have the potential to serve as barriers that could physically divide an established community. The project would involve the realignment of an existing roadway segment and associated multiuse pathway within a developed transportation corridor along West Cliff Drive. All project components, including roadway realignment, multiuse pathway relocation, stormwater drainage improvements, utility adjustments, parking lot modifications, and site restoration, would occur within or immediately adjacent to existing roadway right-of-way and developed areas of Lighthouse Field State Beach. The project would not introduce new transportation corridors or barriers, and would not alter existing access patterns between neighborhoods or recreational areas. Temporary traffic controls and detours during construction would be limited in duration and would not result in long-term changes to circulation or access. Because the project would maintain an existing transportation facility and would not physically separate or isolate residential areas, neighborhoods, or community facilities, the project would not result in the physical division of an established community. Therefore, the project would have **no impact** related to physical division of an established community.

b) Would the project 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?

Less-than-Significant Impact. The project would not affect, alter, or change existing or planned land uses within the project area, as no zoning, land use, or General Plan amendments are required. The project site is designated Coastal Recreation and Natural Areas under the City of Santa Cruz General Plan, and the proposed roadway realignment and multi-use pathway improvements are consistent with these land use designations (City of Santa Cruz 2012). The project would not conflict with the City of Santa Cruz General Plan. The realigned roadway and multi-use pathway are consistent with General Plan goals to improve safety, accessibility, and active transportation opportunities for pedestrians and cyclists within the City. Therefore, impacts related to land use and consistency with planning policies would be **less than significant**.

3.12 Mineral Resources

	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
XII. MINERAL RESOURCES – Would the project:				
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒

a) ***Would the project 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?***

and

b) ***Would the project 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?***

No Impact. The California Geological Survey is responsible for classifying land into Mineral Resource Zones (MRZs) under the Surface Mining and Reclamation Act (SMARA) based on the known or inferred mineral resource potential of that land. Mineral resources lands are classified based on geologic and economic factors without regard to existing land use and ownership (CGS 2021). The following MRZ categories are used to classify land:

- **MRZ-1:** Areas where available geologic information indicates that little likelihood exists for the presence of significant mineral resources.
- **MRZ-2:** Areas where geologic information indicates the presence of significant mineral resources.
- **MRZ-3:** Areas containing known or inferred construction aggregate resources of undetermined mineral resource significance.
- **MRZ-4:** Areas where available geologic information is inadequate to assign to any other MRZ category.

The mineral lands classification of the project site is MRZ-4 (County of Santa Cruz 2022). This classification is indicative of no significant mineral deposits (City of Santa Cruz 2012; County of Santa Cruz 2022). Therefore, the project would have **no impact** on the availability of known mineral resources of state, regional, or local importance.

3.13 Noise

	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
XIII. NOISE – Would the project result in:				
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?	☐	☐	☒	☐
b) Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
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?	☐	☐	☐	☒

Dudek prepared a noise and vibration technical memorandum for the proposed project (Appendix D). Sound-pressure level measurements of short duration (i.e., less than an hour apiece) were conducted on December 11, 2026, in the vicinity of the project site. These measurements were completed to quantify and characterize the existing outdoor noise levels adjacent to noise-sensitive receivers that could be impacted by project noise. The results of this memorandum are incorporated into the analyses contained herein. The Figure referenced herein can be found at the end of this subsection.

a) Would the project result in 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?

Less-than-Significant Impact. The impact analysis below addresses both construction and operational noise exposure associated with the proposed project.

Construction-Related Noise Exposure

The major construction activities for the proposed project would consist of grubbing/land-clearing, grading/excavation, drainage/utilities/ subgrade, and paving. Noise impacts from construction activities associated with the proposed project would be a function of the noise generated by construction equipment, equipment location, sensitivity of nearby land uses, and the timing and duration of the construction activities. The nearest sensitive receptors to the project site are residences located as close as 20 feet from the project alignment. Because of the linear nature of the project, the amount of time that

construction work would occur immediately adjacent to any one noise-sensitive receiver would generally be relatively brief. Construction noise modeling was performed to predict worst-case construction noise levels at the closest noise-sensitive uses to the site (Appendix D). The modeled construction noise prediction is worst-case because it assumes all the equipment in a given phase is operating along the construction zone boundary that is closest to the identified off-site receiver. In general, all the construction equipment would not be operating along the construction zone boundary closest to the identified receiver, instead the construction activities would be distributed across the construction zone. Thus, the construction noise analysis herein provides conservative, worst-case results in terms of construction noise exposure for the modeled off-site receivers.

Table 3-1 provides a summary of the construction noise modeling; detailed information is provided in Appendix D, Attachment B. Refer to Figure 6 for the location of the modeled residential receivers (R1 – R4) identified in Table 3-1.

Table 3-1. Construction Noise Levels at Nearest Off-Site Receptors by Phase

Phase	Construction Noise Level $L_{eq\ 8\text{-}hr\ /\ 1\ hr}$ (dBA)			
	R1	R2	R3	R4
(0) Tree Removal (2 Trees)	73	55	51	51
(1) Pavement Removal & Demolition	75	59	56	56
(2) Site Preparation – New Alignment	72	57	54	53
(3) Grading – New Alignment	74	58	55	55
(4) Aggregate Base – New Alignment	74	58	55	55
(5) Paving – New Alignment	75	60	56	56
Highest Noise Level Across All Phases	**75**	**60**	**56**	**56**

Source: Appendix D (Attachment B)

While the City of Santa Cruz has not adopted construction noise level limits for construction activities conducted during daytime hours, the Federal Transit Administration (FTA) has adopted a guideline for daytime construction noise exposure at residential land uses. The FTA guideline is a maximum of 80 dBA L_{eq} which is averaged over a typical 8-hour construction day. Assuming construction activity intensity is similar across the 8-hour construction day, the L_{eq} value for the FTA 8-hour averaging period would be equal to the $L_{eq\ 1hr}$ value for any given hour within the 8-hour construction window (hence the labeling of $L_{eq\ 8\text{-}hr\ /\ 1\ hr}$ in the results columns of Table 3-1). As reported in Table 3-1, construction noise levels are not predicted to exceed the FTA recommended maximum of 80 dBA $L_{eq\ 8\text{-}hr}$ at any modeled noise-sensitive receiver.

Table 3-2 provides a comparison of the highest construction related noise levels from all construction phases to measured daytime ambient traffic noise exposure at the closest noise-sensitive land uses.

Table 3-2. Highest Construction Noise Levels Compared to Daytime Ambient Noise Levels

Receiver	Ambient Measure Loc. Ref.	Noise Level $L_{eq\ 1\ hr}$ (dBA)		
		Highest Construction Noise Level	Daytime Ambient Noise Level	Increase
R1	ST1	75	59	19
R2	ST2	60	60	0
R3	ST3	56	56	0
R4	ST3	56	56	0

Source: Appendix D (Attachment B)

As reported in Table 3-2, noise levels during even the construction phase with the greatest intensity would not result in an increase in the ambient noise environment at noise-sensitive receivers represented by R2-R4. However, as also reported in Table 3-2, noise levels during the construction phase with the greatest intensity could result in a temporary increase of up to 19 dBA L_{eq} at the apartment complex adjacent to the west end of the project limits (R1). This increase would be readily noticeable and could lead to instances of annoyance. However, for residents that may be outside during construction, noise levels of 75 dBA L_{eq} are not considered hazardous or harmful (hearing protection for construction workers is required for noise levels greater than 80 dBA Leq). Also, the construction noise would likely occur only during the day (avoiding sleep disturbance), and would be temporary, lasting only until construction is completed. In addition, indoor areas of the adjacent apartment complex would experience noise levels approximately 25 dBA L_{eq} less than outdoor levels, or no greater than 50 dBA L_{eq}. These indoor construction-related levels would not be anticipated to interfere with conversation of other daytime indoor activities.

While not specifically proposed, nor anticipated, some elements of the project may need to be constructed in the nighttime period (such as to avoid daytime closure of the roadway segment where the realignment connects to the existing alignment). Nighttime noise levels in urban environments tend to be 5-7 dBA lower than daytime levels. Applying this adjustment to the daytime ambient noise levels reported in Table 3-2, noise levels from construction activities conducted in the nighttime period could result in increases over ambient noise levels of up to 7 dBA at R2, R3 and R4, and up to 26 dBA at R1. Construction noise levels of at least 7 dBA over ambient (or background) levels would be quite evident and could lead to sleep disturbance for existing nearby residences represented by R1, R2, R3 and R4. However, the following ordinances and regulations would govern any incidental nighttime construction work.

SCMC Chapter 9.36 prohibits excessive noise during nighttime hours (10:00 PM through 8:00 AM) (Section 9.36.010, Subsection[a]), but without any quantitative (numerical) limits. Subsection (e) of Chapter 9.36 allows for specific construction activities to occur between the hours of 10:00 PM and 8:00 AM where either the chief building inspector, public works director, planning and community development director or water department director have provided written determination and consent that said task is required to commence or be completed between said hours. Additionally, at a minimum, notice of the dates and times such tasks would be undertaken shall be provided to all residents, tenants and property owners who occupy or own property within 300 feet of the construction site at which such tasks would be performed.

The above mandatory notice would allow residents to prepare for rare occasions when nighttime construction might be required for technical reasons. In addition, Caltrans has standard noise control

requirements for any construction activities that must be carried out at night. Nighttime construction noise is regulated by the Department's provisions in Section 14-8.02, "Noise Control" of the 2024 Standard Specifications and Special Provisions (Caltrans 2024). Section 14-8.02 requirements are applicable when construction noise levels could substantially increase nighttime ambient noise levels at existing noise-sensitive receivers, potentially resulting in sleep disruption. Through mandatory adherence to the requirements of Section 14-08.02, significant noise impacts from rare nighttime construction activity would be avoided.

Hence, while construction noise may result in annoyances when compared to existing ambient noise levels, since the maximum daytime levels would not be harmful to outdoor receivers, would not interfere with indoor activities, would be temporary in nature, and rare nighttime construction would comply with ordinances and regulations, short-term construction noise impacts would be **less than significant.**

Project-Related Traffic Noise Exposure

As discussed in Appendix D, Dudek used a worst-case weekend-days traffic volume of 7,300 ADT to model the existing traffic noise associated with the current alignment of West Cliff Drive and for the proposed realigned section of West Cliff Drive that is included in the project.

Since the project would not affect the volume or type of vehicles, nor the speed of such vehicles, project-related changes to traffic noise exposure at local noise-sensitive receivers involved entering the existing alignment and proposed alignment of West Cliff Drive as separate TNM runs. Table 3-3 presents the results of the traffic noise modeling; detailed information is provided in Attachment C of Appendix D.

Table 3-3. Project-Related Traffic Noise Level Exposures Compared to Existing

Receiver	Existing AlignmentdBA CNEL	Proposed Alignment dBA CNEL	Increase (dBA CNEL)	Noticeable Increase?
R1	57.7	57.6	0	No
R2	36.0	36.4	0.4	No
R3	33.0	33.2	0.2	No
R4	33.3	33.6	0.3	No

Source: Appendix D (Attachment C)

As indicated above, the realignment of a 600-foot segment of West Cliff Drive under the proposed project would result in traffic noise level exposure increases at existing noise-sensitive receivers of no greater than 0.4 dBA CNEL, which would not be a detectable change by the human ear. Consequently, project operational traffic noise impacts would be **less than significant.**

b) Would the project result in generation of excessive groundborne vibration or groundborne noise levels?

Less-than-Significant Impact. Construction activity may generate vibration that could cause annoyance to people in the project vicinity and/or have the potential to damage nearby buildings. These kinds of activities can generate varying degrees of ground-borne vibration, depending on the construction procedures and the type of construction equipment operated. Construction equipment generates vibrations that spread through the ground and diminish with distance from the source. The

effects on buildings (i.e., building damage) are dependent on the location of the buildings to the source and the characteristic of the building structure.

Construction Vibration

As discussed in Appendix D (Vibration Methodology), groundborne vibration generated from construction equipment can be calculated by employing the vibration attenuation distance equation and using the vibration generation levels for various equipment, along with the distance between construction equipment and existing off-site structures.

The nearest building to the construction site would be an apartment building, with the closest point of the building foundation located approximately 100 feet from the western project limits. This building is considered to be recent age commercial construction for which Caltrans identifies a building damage vibration standard of 0.5 PPV IPS. The closest corner of the second nearest existing building, an apartment complex that extends southward from Pelton Avenue, is located approximately 540 feet northwest from the project construction zone. This building is also considered to be recent age commercial construction for which Caltrans identifies a building damage vibration standard of 0.5 PPV IPS. The next closest structures to the project site are single-family residences along the north side of Pelton Avenue, no closer than 750 feet from the future construction zone boundary of the project. These single-family residences each have a damage standard of 0.3 PPV IPS.

Using the distance and building categories described immediately above, and employing the vibration attenuation distance equation vibration from construction activity was calculated at each of the representative existing buildings in the project vicinity. Results are presented below in Table 3-4.

Table 3-4. Calculated Construction Vibration Levels at Vicinity Receivers

Receiver Location	Equipment	Distance to Construction (feet)	Calculated Vibration Level, IPS PPV	Building Damage Standard (IPS PPV)	Below Building Damage Standard (IPS PPV)?
R1 - Apartments (northwest of western project limits)	Small Dozer Heavy Dozer Loaded Trucks Vibratory Roller	100	0.0004 0.011 0.010 0.026	0.5	Y Y Y Y
R2 - Apartments (north-northwest of western project limits)	Small Dozer Heavy Dozer Loaded Trucks Vibratory Roller	540	0.00003 0.001 0.001 0.002	0.5	Y Y Y Y
R3 – Residence (north of project limits across Pelton Ave)	Small Dozer Heavy Dozer Loaded Trucks Vibratory Roller	750	0.00002 0.001 0.0005 0.001	0.3	Y Y Y Y

Table 3-4. Calculated Construction Vibration Levels at Vicinity Receivers

Receiver Location	Equipment	Distance to Construction (feet)	Calculated Vibration Level, IPS PPV	Building Damage Standard (IPS PPV)	Below Building Damage Standard (IPS PPV)?
R4 – Residence (north of project limits across Pelton Ave)	Small Dozer	100	0.00002	0.3	Y
	Heavy Dozer		0.001		Y
	Loaded Trucks		0.0005		Y
	Vibratory Roller		0.001		Y

Source: Appendix D (Attachment D).

As reported in Table 3-4, construction of the project would result in vibration levels well below the identified building damage threshold for all existing structures in the project vicinity. Vibration levels at such structures would also remain well below the annoyance threshold of 0.2 IPS PPV. As such, construction vibration impacts of the project would be **less than significant.**

Operation Phase Vibration

Vibration impacts associated with public roadways result from the passage of heavy trucks or buses. The ongoing operation of the proposed project would not alter the existing vehicle composition using the roadway or the overall volume of vehicles. Consequently, long-term operation of the project would have **no impact** on vibration levels associated with the existing roadway.

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?***

No Impact. The proposed project is not located within the vicinity of a private airstrip. The project area is not located within an Airport Land Use Plan, nor is it located within 2 miles of a public use airport. Watsonville Municipal Airport is located approximately 13.25 miles southwest of the project site. In addition, project would not include occupied facilities that would result in the exposure of people to airport-related noise. No impact would occur.



Legend

R# - Modeled Receiver Location

FIGURE 6

Modeled Noise Sensitive Receiver Locations

800 West Cliff Drive Roadway Realignment Project

DUDEK

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3.14 Population and Housing

	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
XIV. POPULATION AND HOUSING – Would the project:				
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)?	☐	☐	☒	☐
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

a) ***Would the project 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)?***

Less-than-Significant Impact. The project would not include the construction of new homes or businesses or extend new roads or other infrastructure into undeveloped areas. Given the modest level of construction required for the project, it is reasonable to anticipate that workforce requirements for construction could be met through the local labor force within the region. Long-term operation and maintenance of the project would be performed by existing City of Santa Cruz staff and would not generate new employment. Therefore, the project impact related to population growth would be **less than significant**.

b) ***Would the project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?***

No Impact. The proposed project would include construction of a 600-foot segment of realigned road and path along West Cliff Drive. The project site does not contain residential uses. Therefore, the proposed project would not displace people or housing, or require the construction of replacement housing elsewhere and would have **no impact**.

3.15 Public Services

	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
XV. PUBLIC SERVICES – Would the project:				
a) 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?	☐	☐	☒	☐
Police protection?	☐	☐	☒	☐
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☒	☐
Other public facilities?	☐	☐	☐	☒

a) ***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?

Less-than-Significant Impact. Fire protection services within the project area are provided by the City of Santa Cruz Fire Department. There are no fire stations located within or immediately adjacent to the project site. The nearest fire station, Station 3 of the Santa Cruz Fire Department, is located approximately 1 mile north of the project site.

The project involves the realignment of an existing segment of West Cliff Drive and an adjacent multiuse pathway and does not include residential, commercial, or population-generating development. As a public infrastructure project, it would not increase demand for fire protection services or require the construction, relocation, or expansion of fire stations or other fire protection facilities. In the long term, the project is intended to improve roadway stability and maintain safe circulation, which could have a beneficial effect on emergency vehicle access along this segment of West Cliff Drive.

Construction is expected to last approximately four to six months and would involve temporary one-way traffic controls, lane shifts, and detours through the project area. While these temporary conditions could intermittently affect traffic flow, a Traffic Control Plan would be implemented to ensure that emergency vehicle access is maintained at all times. Emergency response routes would remain available during all construction phases, and coordination with emergency service providers would occur as necessary. As a result, construction activities would not substantially impair fire department response times or access.

The project includes the relocation of one existing fire hydrant by up to approximately 10 feet to accommodate the new roadway alignment. The hydrant may be temporarily out of service during relocation. The City of Santa Cruz Public Works Department would coordinate with the Santa Cruz Fire Department to ensure continued fire protection during this period. Hydrant access and functionality would be restored promptly following relocation and would meet all applicable City standards. Therefore, the project would not result in a substantial adverse effect on fire protection services, and impacts would be **less than significant**.

Police protection?

Less-than-Significant Impact. Police protection services in the project area and City of Santa Cruz are provided by the Santa Cruz Police Department. No police stations are located within the project site. The nearest police facility is located approximately 1.5 miles north of the project site, and the project area is served by existing patrol routes and response protocols.

The project would not introduce new land uses, residential units, or commercial activities and therefore would not increase the demand for police protection services. The realignment of an existing roadway and multiuse path would not alter community boundaries, access to neighborhoods, or established patrol patterns. As such, the project would not generate the need for additional police personnel, vehicles, or facilities.

During construction, temporary traffic controls and detours would be implemented along West Cliff Drive. These measures could result in short-term changes to traffic circulation; however, access through the corridor would be maintained at all times, and temporary conditions would be managed through an approved Traffic Control Plan. Police access to the project area would remain available throughout construction, and temporary conditions would not substantially affect police response times.

Overall, the project would not increase demand for police protection services or require the expansion or modification of police facilities. Impacts related to police protection services would therefore be **less than significant**.

Schools?

No Impact. There are several public and private schools located within the broader vicinity of the project site; however, no schools are located within or immediately adjacent to the project area.

The project involves the realignment of an existing segment of West Cliff Drive and an adjacent multiuse pathway and does not include residential, commercial, or population-generating development that would increase student enrollment. The project would not otherwise affect the ability of existing schools to operate at acceptable service levels. Accordingly, the project would not result in the need for new or altered school facilities and therefore, there would be **no impacts** related to school services.

Parks?

Less-than-Significant Impact. Several public parks are located within the vicinity of the project site. The following parks are located within approximately one mile of the project area:

- **Lighthouse Field State Beach** – located immediately adjacent to and north of West Cliff Drive within the project area
- **Lighthouse Neighborhood Park** – approximately 0.3 miles north
- **Garyfield Park** – approximately 0.8 miles northwest
- **Neary Lagoon Park** – approximately 0.82 miles north
- **Depot Park** – approximately 0.95 miles north

Of these parks, Lighthouse Field State Beach is directly adjacent to the project site and would be partially affected during construction. The project would require permanent right-of-way acquisition of approximately 2.95 acres from State Parks and the temporary use of an additional approximately 0.44 acres of parkland for construction activities. In addition, Parking Lot A, which serves Lighthouse Field State Beach, would be closed to public use for the duration of construction and used for construction staging, equipment storage, and worker parking. These activities would temporarily reduce available parking and may temporarily inconvenience park users.

However, the project would not permanently remove or degrade park recreational facilities within Lighthouse Field State Beach. Public access to the beach and parks would generally be maintained during construction through alternative access routes, temporary pedestrian paths, and appropriate signage. Any construction-related disruptions would be temporary and limited to the construction period. Upon completion of the project, Parking Lot A would be reopened for public use, and disturbed areas would be restored, including placement of topsoil and hydroseeding with an appropriate native seed mix.

Other nearby parks such as Lighthouse Neighborhood Park, Garfield Park, Neary Lagoon Park, and Depot Park, are not adjacent to the project site and would not be directly or indirectly affected by construction activities. The project would not alter access routes, recreational amenities, or operations at these parks.

The project is a public infrastructure improvement that does not include residential development or other population-generating land uses. Therefore, it would not increase demand for park services or require the development or expansion of park or recreational facilities. While temporary, localized impacts to Lighthouse Field State Beach use and parking availability could occur during construction, these impacts would be short term and would not result in a permanent reduction of park or recreational opportunities. Therefore, impacts related to parks and recreation facilities would be **less than significant**.

Other public facilities?

No Impact. The two closest public libraries serving the project area are Garfield Park Branch Library (approximately 0.62 miles north of the project site) and the Santa Cruz Public Library Downtown Branch (approximately 1.55 miles north of the project site).

Neither of these library facilities is located within or adjacent to the project area, and no construction activities would occur near library buildings, access points, or parking areas. The project involves the

realignment of an existing roadway segment and adjacent multiuse pathway along West Cliff Drive and would not alter roadway access routes serving library users. The project is a public infrastructure improvement and does not include residential or other population-generating land uses. As such, it would not generate new population or increase demand for library services or facilities. The project would not require the construction, expansion, or modification of any library facilities, and there would be **no impact**.

3.16 Recreation

	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
XVI. RECREATION				
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?	☐	☐	☒	☐
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?	☐	☒	☐	☐

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?

Less-than-Significant Impact. The project would realign an existing segment of West Cliff Drive and the adjacent multiuse pathway within a developed roadway corridor adjacent to Lighthouse Field State Beach and other neighborhood and regional parks. The project does not include residential or commercial development and would not introduce a new population or substantially increase recreational use beyond existing levels.

The multiuse pathway along West Cliff Drive is an existing recreational facility that already experiences high levels of pedestrian and bicycle use. The project would relocate and reconstruct a segment of this pathway to improve long-term safety and resiliency in response to coastal erosion, but it would not expand the overall pathway network or create new access points that would substantially increase recreational use. Rather, the project would maintain and improve existing recreational infrastructure that is already in use.

During construction, temporary disruptions to access and parking at Lighthouse Field State Beach may occur, including the temporary closure of Parking Lot A. These effects would be short-term and would not result in increased use of other nearby parks or facilities. Upon completion, Parking Lot A would be reopened and temporarily disturbed areas within Lighthouse Field State Beach would be restored.

Because the project would not generate new demand for recreational facilities, would not substantially increase usage of existing parks, and would include restoration of temporarily disturbed areas after

construction, it would not cause or accelerate substantial physical deterioration of neighborhood or regional parks or other recreational facilities. Therefore, project impacts would be **less than significant**.

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?

Less-than-Significant Impact with Mitigation Incorporated. The project involves the realignment and reconstruction of an existing multiuse pathway, which is a recreational facility. The physical environmental effects of realigning the multiuse path are evaluated throughout this CEQA document. Mitigation measures are identified related to biological resources (see Section 3.4, Biological Resources) and cultural and tribal cultural resources (see Section 3.5, Cultural Resources and Section 3.18, Tribal Cultural Resources) to reduce impacts to less than significant. All other impact categories for the project would be less than significant or would result in no impact.

The project would not increase the overall length, width, or capacity of the pathway beyond what currently exists, nor would it add new recreational amenities or facilities. The project does not propose the development of new parks, playgrounds, picnic areas, or other recreational facilities, nor does it expand existing park infrastructure within Lighthouse Field State Beach or nearby parks. Although a small portion of State Park land would be permanently acquired and a temporary construction easement from State Parks would be used during construction, these areas would be restored following construction, and recreational use would continue consistent with existing conditions.

Because the project does not introduce new or expanded recreational facilities and is intended to maintain and protect existing recreational infrastructure rather than intensify its use, it would not result in adverse physical effects on the environment specifically related to recreation. Additionally, as indicated above, the physical environmental effects of realigning the multiuse path are evaluated throughout this CEQA document and mitigated where warranted (see Sections 3.4, 3.5, and 3.18). Therefore, the project impact related to the construction or expansion of recreational facilities would be **less than significant with mitigation**.

3.17 Transportation

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

a) Would the project conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

No Impact. West Cliff Drive is a scenic coastal road along the west side of the City of Santa Cruz that serves as a popular route for visitors and locals for recreation and access to key community destinations such as the Santa Cruz Wharf, Santa Cruz Surfing Museum, Lighthouse Field State Beach, and Natural Bridges State Beach. West Cliff Drive is classified as a major collector roadway that generally runs east-west along the Pacific Coast of Santa Cruz. In the vicinity of the project site, the roadway carries approximately 5,300 vehicles and 2,500 pedestrians and cyclists on weekdays and 7,300 vehicles and 3,200 pedestrians and cyclists on weekend-days according to counts collected in 2019.

The General Plan 2030 includes goals, policies and actions that set forth comprehensive measures to reduce vehicle trips, increase vehicle occupancy, encourage use of alternative transportation modes, and promote alternative-sustainable land use patterns, all of which would help reduce vehicle trips, and avoid and minimize adverse impacts related to traffic. The project consists of the realignment of a segment of roadway and multiuse path outside of the 100-year erosion zone. Construction would occur over a four-to-six-month period, and the site would be restored after construction. Project operations of the realigned facility would be the same, as under existing conditions.

The project would not increase roadway capacity, generate a permanent increase in traffic, or change traffic patterns that could cause an impact to the circulation system including transit, roadway, bicycle, and pedestrian facilities and therefore would not conflict with adopted policies addressing the circulation system. Therefore, the project would not conflict with plans or policies regarding the City's circulation system and would result in **no impact**.

b) Would the project conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)?

Less-than-Significant Impact. CEQA Guidelines section 15064.3, subdivision (b) codifies the switch from LOS to vehicle miles traveled (VMT) as the metric for transportation analysis pursuant to state legislation adopted in 2013. CEQA Guidelines Section 15064.3(b) indicates that development projects that exceed an applicable VMT threshold of significance may indicate a significant impact.

In accordance with the CEQA Guidelines, the City has transitioned from intersection LOS formerly used for traffic impact analyses to VMT as the metric for determining potentially significant impacts. The City adopted a VMT transportation threshold on June 9, 2020, in accordance with CEQA and state requirements, as well as VMT Implementation Guidelines that are consistent with the State's VMT Guidelines. The threshold generally establishes that a project exceeding a level of 15 percent below the County-wide average VMT may result in a significant transportation impact. Updates to the City's Guidelines were adopted on June 14, 2022 (City of Santa Cruz 2022a).

Projects, or portions of a project that meet the screening criteria do not require a CEQA transportation analysis, and such projects, or portions of a project, would have a non-significant CEQA transportation impact based on their project location and characteristics. According to the City's guidelines (City of Santa Cruz 2022a), projects that would not be expected to result in a significant VMT impact and that are screened out from further transportation impact review include:

- Small projects that generate fewer than 110 trips per day;
- Projects near high quality transit: within a ½ mile of a major transit stop or a high quality transit corridor with a combined service interval frequency of 15 minutes or less during the AM and PM peak hours;
- Local-serving retail if a single store is less than 50,000 square feet or project is a local-serving project as determined by the City;
- Affordable housing projects that provide a high percentage of affordable housing as determined by the City;
- Local essential service, including day care center, public K-12 schools, police or fire facility, medical/dental office building, government offices, and supportive housing types (assisted living, permanent supportive housing, memory care, etc.);
- Map based screening; and
- Redevelopment projects that do not result in a net increase in VMT.

The project was reviewed in accordance with the City's adopted guidelines. The proposed project meets the screening criteria because it is a redevelopment project that does not result in a net increase in VMT. As a result, the project would not result in a significant impact related to VMT based on the City's adopted threshold and guidelines and is screened out from further VMT impact review. Therefore, the project impact related to VMT and conflicts with CEQA Guidelines section 15064.3 would be **less than significant**.

c) Would the project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Less-than-Significant Impact. The proposed project is a roadway realignment to ensure the long-term reliability of a section of West Cliff Drive. The project would be designed and constructed to meet the current design standards for the City of Santa Cruz. Once construction is completed, all pedestrian use and parking would return to pre-construction conditions. Therefore, project impacts due to increased hazards from geotmetric design features or incompatible uses would be **less than significant**.

d) Would the project result in inadequate emergency access?

Less-than-Significant Impact. The project would not include changes to the existing street system that could hinder emergency access. Construction and staging areas would not obstruct project site egress or ingress. As previously discussed, construction of the project would require partial road closures or access limitations in the public right-of-way of West Cliff Drive on a temporary and periodic basis during the construction period. A Traffic Control Plan would be developed as part of the project, which would include provisions for addressing lane closures and traffic diversions. Implementation of these requirements would ensure that access would be maintained for residents and emergency vehicles to continue to move through the area in the event of emergencies during construction. During operation, the realigned roadway and pathway segment could continue to function as it does during existing conditions and would have limited operational traffic and vehicle trips associated with routine maintenance of the facility, which would not affect access for emergency response or evacuation. Therefore, the project impact on emergency access would be **less than significant**.

3.18 Tribal Cultural Resources

	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
XVIII. 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, 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:				
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), or	☐	☒	☐	☐
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.	☐	☒	☐	☐

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, 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:

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)?***

and

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 Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.***

Less-than-Significant Impact with Mitigation Incorporated. As described in Section 3.5, Cultural Resources, the existing roadway and multiuse path on the project site is neither listed in nor eligible for the NRHP, CRHR, CHL, or local register of historic resources. Based on the CHRIS records search conducted for the project site (see Appendix C), the project area contains no previously recorded archaeological resources

or tribal cultural resources. Similarly, the search of the NAHC Sacred Lands File and outreach to locally affiliated Native American contacts did not identify any known Native American resources in the project area. The project would not cause a substantial adverse change in the significance of a known tribal cultural resource listed in or eligible for listing in the NRHP, CRHR, CHL, or a local register.

On February 27, 2026, Dudek sent tribal outreach letters to Amah Mutsun Tribal Band of Mission San Juan Bautista, Costanoan Ohlone Rumsen-Mutsun, Indian Canyon Mutsun Band of Costanoan, and the Wuksachi Indian Tribe/Eschom Valley band. Dudek's outreach letters received two responses. Shelby Brown of the Amah Mutsun Tribal Band of Mission San Juan Bautista responded on March 2, 2026, that she was interested in the project and requested more information. Dudek responded and shared the draft of the Archaeological Survey Report with her. On behalf of Kanyon Sayers-Roods of the Indian Canyon Mutsun Band of Costanoan, Nichole Rhodes responded on March 18, 2026, that they are interested in consulting and recommended a cultural sensitivity training at the initiation of project construction.

On March 4, 2026, the City of Santa Cruz sent AB 52 letters to the two tribes who have requested AB 52 consultation, the Amah Mutsun Tribal Band and the Costanoan Rumsen Carmel Tribe. Tyler Suttle responded for the Amah Mutsun Tribal Band that they do not have concerns but would like a copy of the final environmental document and would like to be updated with any inadvertent finds. Henry Munoz of the Costanoan Rumsen Carmel Tribe requested a tribal consultation call with the City, which occurred on April 7, 2026. During this call, Henry Munoz expressed interest in being part of the revegetation effort following the project implementation and recommended monitoring.

In the event that a tribal cultural resource is discovered on the project site during ground-disturbing construction activities, MM CUL-1 and MM CUL-2 described in Section 3.5 would reduce potentially significant impacts to less than significant. Therefore, the project impact related to unanticipated discoveries of tribal cultural resources would be **less than significant with mitigation**.

3.19 Utilities and Service Systems

	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
XIX. UTILITIES AND SERVICE SYSTEMS – Would the project:				
a) Require or result in the relocation or construction of new or expanded water, waste water treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☒	☐	☐
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?	☐	☐	☐	☒
c) Result in a determination by the waste water 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?	☐	☐	☐	☒
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?	☐	☐	☒	☐
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☒	☐

a) ***Would the project require or result in the relocation or construction of new or expanded water, waste water treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?***

Less-than-Significant Impact with Mitigation Incorporated. The project would involve minor modifications and relocations of existing utility infrastructure within a developed roadway corridor but would not require the construction of new or expanded utility facilities that could result in significant environmental effects.

Stormwater drainage facilities within the project area would be modified to accommodate the roadway and multiuse pathway realignment. These improvements include the replacement or modification of existing catch basins, installation of short storm drain extensions, construction of manholes, and reconfiguration of storm drain inlets and connections to existing storm drain lines. All stormwater improvements would

connect to and utilize the existing municipal storm drain system, and no new outfalls or extensions of the overall stormwater system would be constructed. The storm drain outfall at the coastal bluff would be retained without modification. These improvements are designed to improve drainage function and would be implemented in accordance with City of Santa Cruz standards.

An existing 6-inch water main within the project area would remain in place. A single fire hydrant would be relocated a short distance (up to approximately 10 feet) to conform to the new roadway alignment. No new water supply lines, storage facilities, or treatment facilities would be required, and the project would not increase water demand.

The project does not include wastewater, electric power, natural gas, or telecommunications system expansions. No new utility corridors or permanent utility extensions would be constructed. Any temporary service disruptions associated with utility relocations would be short term and would be coordinated with applicable service providers to minimize impacts.

Because all utility work would occur within or adjacent to an existing developed roadway, would primarily consist of short-distance relocations or modifications of existing facilities, and would not increase long-term service demand or require new utility infrastructure, the construction or relocation of utilities would not likely result in significant environmental effects. However, the physical environmental effects of the project, including stormwater and utility work are evaluated throughout this CEQA document. Mitigation measures are identified related to biological resources (see Section 3.4, Biological Resources) and cultural and tribal cultural resources (see Section 3.5, Cultural Resources and Section 3.18, Tribal Cultural Resources) to reduce impacts of the proposed project to less than significant. All other impact categories for the project would be less than significant or would result in no impact. Therefore, the project impact related to the relocation or construction of stormwater and other utility improvements would be **less than significant with mitigation**.

b) Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?

No Impact. The project involves the realignment of a segment of existing roadway and adjacent multiuse pathway and does not include residential, commercial, industrial, or institutional development. As a public infrastructure improvement project, it would not generate new water demand or increase long-term water consumption. The project would not add new users to the water system, nor would it induce reasonably foreseeable future development that would require additional water supplies.

An existing 6-inch water main within the project area would remain in place, and the project includes the minor relocation of an existing fire hydrant to accommodate the new roadway alignment. This hydrant relocation would not increase water demand and would continue to serve fire protection needs consistent with existing conditions. Water use during construction would be temporary and limited, consisting primarily of dust control. This short-term use would be minimal and would not affect the availability of potable water supplies or the City's ability to meet water demands during normal, dry, or multiple dry years.

Because the project does not increase operational water demand, does not require new or expanded water supply infrastructure, and does not facilitate growth, sufficient water supplies are available to serve the project under all hydrologic conditions. Therefore, the project would not impact water supply availability, and there would be **no impact**.

c) Would the project result in a determination by the waste water 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?

No Impact. The project involves the realignment of a segment of existing roadway and adjacent multiuse pathway and does not include residential, commercial, industrial, or institutional land uses. As a public infrastructure improvement project, it would not generate wastewater flows or increase long-term wastewater demand. Because the project would not increase wastewater generation or place new demands on wastewater collection or treatment facilities, the project would have **no impact** related to wastewater treatment capacity.

d) Would the project 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?

Less-than-Significant Impact. Solid waste collection and disposal services, including recycling services, are provided to City residents, businesses, and institutions within the City's boundaries by the City of Santa Cruz. The City's Resource Recovery Facility (RRF) is located approximately 3 miles west of the City off Highway 1 at 605 Dimeo Lane. The site covers 100 acres with 67 acres available for disposal use. The RRF only accepts municipal solid waste and serves as a sorting facility to remove any recyclable or composting materials. The recycling center accepts a variety of recyclable materials.

The RRF is permitted to receive a total of 10,484,325 cubic yards (cy) of solid waste, including wood waste, tires, sludge (biosolids), mixed municipal wastes, metals, inert wastes, industrial wastes, green materials, dead animals, and construction/demolition wastes. The landfill had a remaining capacity of approximately 5.3 million cy (approximately 51%) and is anticipated to reach maximum final capacity in the year 2054 (CalRecycle 2025a). In 2025, 57,759 tons of solid waste were disposed of at the RRF, which is an average of approximately 158 tons per day (approximately 34% of daily capacity) (CalRecycle 2025b).

The project would generate a limited amount of solid waste during the 4-to-6-month construction period. Solid waste generated during construction would be temporary and the amount would not exceed the remaining capacity of the City's RRF. Construction-related waste would consist primarily of demolished asphalt pavement, concrete, soil, and tree and vegetation debris associated with construction of the proposed alignment. These materials would be managed in accordance with applicable state and local regulations and transported to approved disposal or recycling facilities, including the RRF or other appropriate facilities. Asphalt and concrete materials would be recycled to the extent feasible, consistent with City policies and state solid waste reduction requirements. Tree and vegetation debris would be chipped, recycled, or otherwise disposed of at permitted facilities in compliance with local requirements.

The project does not include operational elements that would generate ongoing solid waste. As a public infrastructure project involving the realignment of a segment of existing roadway and multiuse pathway, the project would not introduce residential, commercial, or industrial land uses that would generate long-term solid waste streams. Solid waste generation following construction would be the same as existing conditions.

Construction waste management practices would comply with all applicable regulations and would support compliance with California's solid waste diversion and landfill reduction goals. Because solid waste

generation would be short term, limited in volume, and handled through existing waste management systems with sufficient capacity, the project would not impair solid waste reduction goals or exceed local or regional capacity. Accordingly, impacts related to solid waste generation would be **less than significant**.

e) Would the project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

Less-than-Significant Impact. Waste generated during construction of the project would be properly managed and disposed of in accordance with applicable federal, state, and local requirements (see Section 3.19[d] above). Construction-related waste would consist primarily of asphalt, concrete, soil, and limited tree and vegetation debris. All solid waste would be collected, transported, recycled, or disposed of at permitted facilities, such as the City's RRF, in compliance with applicable regulations.

Under the California Integrated Waste Management Act of 1989 (AB 939), local jurisdictions are required to implement waste reduction and recycling programs and divert at least 50 percent of solid waste from landfills. The City of Santa Cruz maintains programs consistent with these requirements, and recyclable materials generated by the project would be diverted to the extent feasible. The project does not include operational components that would generate ongoing solid waste. Therefore, the project would comply with all applicable solid waste management and reduction statutes and regulations, and impacts would be **less than significant.**

3.20 Wildfire

	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
XX. WILDFIRE – If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:				
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
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?	☐	☐	☐	☒
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?	☐	☐	☒	☐
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?	☐	☐	☒	☐

a) Would the project substantially impair an adopted emergency response plan or emergency evacuation plan?

Less-than-Significant Impact. The City of Santa Cruz maintains an adopted Emergency Operations Plan (EOP) that establishes the framework for emergency preparedness, response, evacuation coordination, and recovery within the City. The EOP identifies roles and responsibilities for City departments and personnel during emergencies resulting from natural and human-caused hazards, including earthquakes, storms, flooding, tsunamis, wildfires, and hazardous materials incidents. The EOP is implemented in coordination with the Santa Cruz County Operational Area in accordance with the Standardized Emergency Management System (SEMS), as required by State law.

The project involves the realignment of an existing segment of West Cliff Drive and the adjacent multiuse pathway within an established roadway corridor. The project would not permanently alter roadway connectivity, designated emergency access routes, or evacuation procedures identified in adopted emergency response or evacuation plans. Following construction, West Cliff Drive would remain fully accessible to emergency vehicles, and the realigned roadway is intended to improve long-term roadway stability in an area subject to coastal erosion.

During construction, temporary lane shifts, one-way traffic controls, and partial roadway closures may be required within the public right-of-way. These temporary disruptions would be managed through an approved Traffic Control Plan consistent with applicable standards, and emergency vehicle access would be maintained throughout the construction period. Construction and staging activities would not obstruct site ingress or egress, and coordination with City departments and emergency service providers would occur as needed to preserve emergency response capabilities.

Because the project would not permanently interfere with emergency access or evacuation routes and would maintain emergency response functionality during construction, it would not substantially impair an adopted emergency response plan or emergency evacuation plan. Therefore, impacts related to emergency response and evacuation would be **less than significant**.

b) Due to slope, prevailing winds, and other factors, would the project exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

No Impact. The project site is located within a developed coastal corridor of the City of Santa Cruz adjacent to Lighthouse Field State Beach. According to the California Department of Forestry and Fire Protection (CAL FIRE), areas of the City designated as Fire Hazard Severity Zones (FHSZ) are classified based on fuel loading, slope, fire weather, and other fire behavior factors. Review of the CAL FIRE FHSZ mapping indicates that the project site is not located within a State- or locally-designated Moderate, High, or Very High Fire Hazard Severity Zone (CAL FIRE 2026).

The project consists of the realignment of a segment of existing roadway and multiuse pathway and does not increase the intensity or type of land use at the site. Vegetation removal would be minimal and limited to the removal of up to two trees, with disturbed areas restored following construction. Although the project site is adjacent to coastal bluff slopped terrain, the area lacks continuous wildland vegetation or fuel loads that would contribute to wildfire ignition or spread. Additionally, the urbanized setting limits wildfire risk.

Because the project site is outside mapped Fire Hazard Severity Zones and would not alter existing wildfire risk conditions or expose new population to increased wildfire-related air pollutant concentrations, the project would not exacerbate wildfire risks or expose new population to wildfire-related hazards, and there would be **no impact**.

c) Would the project 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?

Less-than-Significant Impact. The project would involve the realignment of an existing segment of West Cliff Drive and the adjacent multiuse pathway, as well as minor stormwater drainage and utility improvements. Project activities would occur primarily within the existing roadway right-of-way and adjacent developed areas and would not require the construction of new off-site infrastructure, fuel breaks, emergency water sources, or utility corridors.

Proposed infrastructure improvements include roadway and pathway reconstruction, storm drain modifications, minor utility adjustments, installation of fencing, benches, signage, and the relocation of a

fire hydrant to accommodate the new roadway alignment. These improvements would replace or modify existing facilities and would not introduce new ignition sources, increase fuel loads, or alter conditions in a manner that would exacerbate fire risk.

The project site is mainly urbanized, and it not located in a FHSZ (see Section 3.20[b]). Construction activities would be temporary and would be conducted in accordance with applicable fire safety regulations and standard construction best management practices, including equipment maintenance, controlled fueling, and fire prevention measures.

The project does not include operational features that would introduce ongoing fire hazards or would require new or expanded utility systems that could contribute to wildfire risk. Accordingly, the installation and maintenance of associated infrastructure would not increase wildfire risk. Therefore, impacts related to wildfire risk associated with project infrastructure would be **less than significant**.

d) Would the project 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?

Less-than-Significant Impact. The project is located within a developed transportation corridor along West Cliff Drive and involves the realignment of an existing roadway segment and adjacent multiuse pathway. The project area includes coastal bluff slopes subject to long-term erosion processes; however, the project is designed to reduce risk by relocating infrastructure inland, away from the eroding bluff edge and outside the modeled 100-year erosion zone.

The project would not introduce new development downslope or downstream of existing structures or alter the natural bluff face that would increase landslide or slope failure risk. Grading associated with the project would be limited, controlled, and engineered to support the new roadway and pathway embankments. The project site is not located within a FHSZ, and post fire slope instability is not expected. Vegetation removal would be minimal, limited to two trees and minor landscaping within the project footprint, and disturbed areas would be restored following construction.

Stormwater drainage improvements are included as part of the project and would improve collection and conveyance of runoff within the project area. Drainage facilities would be designed to prevent concentration of runoff in a manner that could destabilize slopes, increase erosion, or result in downslope flooding. Existing stormwater outfalls at the coastal bluff would be retained, and no new outfalls would be constructed. The project would not substantially increase impervious surface area beyond existing conditions and therefore would not result in increased volumes that could expose people or structures to downstream flooding hazards.

With implementation of measures and standard construction best management practices, the project would not expose people or structures to substantial risks related to flooding, landslides, post-fire slope instability, or drainage changes. Therefore, project impacts would be **less than significant**.

3.21 Mandatory Findings of Significance

	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
XXI. MANDATORY FINDINGS OF SIGNIFICANCE				
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?	☐	☐	☐	☒

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?***

Less-than-Significant Impact with Mitigation Incorporated. As discussed in Section 3.4 Biological Resources, construction of the proposed project would potentially result in potentially significant impacts to biological resources. However, with incorporation of mitigation measures MM BIO-1, MM BIO-2 and MM BIO-3, all potentially significant impacts would be reduced to a level below significance. The proposed project would not substantially degrade the quality of the environment, impact fish or wildlife species, or plant communities. As discussed in Section 3.5, Cultural Resources, and Section 3.18, Tribal Cultural Resources, unknown intact archaeological resources and tribal cultural resources could be encountered during ground disturbing activities within native soils resulting in potentially significant impacts. However,

with implementation of mitigation measures MM-CUL-1, MM-CUL-2 impacts would be reduced to less than significant. Overall, project impacts would be **less than significant with mitigation**.

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.)

Less-than-Significant Impact. As provided in the analysis presented in Section 3, the proposed project would not result in significant impacts to Aesthetics, Agriculture and Forestry Resources, Air Quality, Cultural Resources, Energy, Greenhouse Gas Emissions, Hydrology and Water Quality, Land Use and Planning, Mineral Resources, Noise, Population and Housing, Public Services, Recreation, Transportation, Utilities and Service Systems. Mitigation measures recommended for Biological Resources, Cultural Resources, and Tribal Cultural Resources would reduce impacts to below a level of significance.

The proposed project would incrementally contribute to construction-phase cumulative impacts for projects occurring within the vicinity of the project site. With mitigation, however, implementation of the proposed project would not result in any residually significant impacts that could contribute to a cumulative impact. In the absence of residually significant impacts, the incremental accumulation of effects would not be cumulatively considerable and would be **less than significant**.

c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

No Impact. No environmental effects have been identified that would have direct or indirect adverse effects on human beings.

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4.2 List of Preparers

4.2.1 City of Santa Cruz

Kevin Crossley, P.E., Assistant Public Works Director
Joshua Spangrud, P.E., Senior Professional Engineer
Tim Wong, Assistant Engineer II
Hilary Papendick, Senior Resilience Planner

4.2.2 Dudek

Ann Sansevero, Project Manager
Tiffany Hernandez, Senior Environmental Planner
Kaylee Palmares, Environmental Analyst
Josh Saunders, Aesthetics
Eden Vitakis, Aesthetics

Matt Morales, Air Quality, Greenhouse Gas Emissions, and Energy
Matt Ricketts, Biological Resources Technical Report Lead
Laurie Monarres, Permitting Specialist and Aquatic Resources Delineation Report Lead
Tara Johnson-Kelly, Biological Resources Technical Report and Aquatic Resources Delineation Report
Erin Fisher-Colton, Biological Resources Technical Report and Aquatic Resources Delineation Report
Sarah Brewer, Archaeological Survey Report
Brooke Crumpton, Archaeological Survey Report
Fallin Steffen, Historical Property Survey Report
Jonathan Leech, Noise and Vibration Technical Memorandum
Rachel Strobridge, GIS/Graphics

Appendix A

Biological Resources Technical Report

Biological Resources Technical Report

CEQA and NEPA Compliance 800 West Cliff Drive Roadway Realignment Project Santa Cruz County, California

MARCH 2026

Prepared for:

CITY OF SANTA CRUZ PUBLIC WORKS DEPARTMENT
809 Center Street
Santa Cruz, California 95060
Contact: Josh Spangrud

CALTRANS DISTRICT 5
50 Higuera Street
San Luis Obispo, California 93401
Contact: Evelyn Sanchez

Prepared by:

DUDEK

725 Front Street, Suite 400
Santa Cruz, California 95060
Contact: Tara Johnson-Kelly

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Executive Summary

The City of Santa Cruz (City) engaged Dudek to evaluate biological resources within the 800 West Cliff Drive Roadway Realignment Project ("project" or "proposed project") area to ensure compliance with the National Environmental Policy Act (NEPA) and California Environmental Quality Act (CEQA). This memorandum presents technical findings and assesses the project for potential impacts on biological resources. Dudek prepared a separate technical memorandum to delineate aquatic resources subject to regulation under the federal Clean Water Act (CWA), the Porter–Cologne Water Quality Control Act, Section 1602 of the California Fish and Game Code, and the California Coastal Act (Dudek 2025). This document focuses on summarizing biological resource findings and evaluating potential effects in accordance with relevant federal environmental laws and regulations. It is also intended to support CEQA documentation for the project, and therefore identifies potentially significant impacts and recommends mitigation measures to reduce such impacts to less than significant.

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1 Project Location

The proposed road realignment would occur along West Cliff Drive in the southern portion of Lighthouse Field State Beach, approximately 1,260 feet east of Columbia Street (Figures 1 and 2; Appendix A). The proposed project is within Section 24 of Township 11 South, Range 2 West, Mount Diablo Meridian, as depicted on the Santa Cruz U.S. Geological Survey (USGS) quadrangle. Surrounding land uses consist of dense suburban neighborhoods to the north and west, Lighthouse Field State Beach to the north and east, and coastal bluff and open ocean to the south. The Biological Study Area (BSA) comprises the approximately 9.75-acre project area plus a 50-foot survey buffer.

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2 Project Description and Need

In December 2023 and early January 2024, high wave and storm events eroded and collapsed a section of the multiuse pathway across from approximately 800 West Cliff Drive and the Light House Field State Beach. The 800 West Cliff Drive Roadway Realignment Project aims to eliminate the weakest link in the West Cliff Drive roadway system as an eroded scarp at the location has encroached to within 21 feet of the existing roadway, partially damaging an adjacent multiuse pathway. The project will shift an approximately 600-foot section of roadway approximately 50 feet inland, outside of the projected 100-year erosion zone. A section of the multiuse path will be relocated approximately 15 feet inland. Other elements of the project include stormwater drainage improvements, relocation of existing signage, installation of new and relocated benches, removal of existing asphalt along existing road and multiuse path and construction site restoration. To accomplish the roadway realignment, a right-of-way property acquisition would be required from State Parks in a small portion of Lighthouse Field State Beach.

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3 Regulatory Context

3.1 Federal

3.1.1 National Environmental Policy Act

NEPA establishes an ongoing federal commitment to use all practical methods to foster a balanced relationship between humans and nature, ensuring that environmental, social, and economic needs are met for both current and future generations. NEPA promotes a structured, interdisciplinary approach to planning and decision-making, requiring environmental documentation for major federal actions that could significantly impact the environment. Regulations from the Council on Environmental Quality (40 CFR 1500-1508) mandate that federal agencies evaluate and compare feasible alternatives to proposed actions, aiming to improve environmental quality and reduce negative effects. Agencies are also instructed to prioritize environmental considerations early in project planning and to incorporate analyses required by other environmental laws and executive orders into the NEPA process. Overall, NEPA serves as a comprehensive framework for assessing the environmental consequences of federal actions. Caltrans is responsible for completion of the NEPA process for the proposed project as Federal Highway Administration funding is involved.

3.1.2 Federal Endangered Species Act

The federal Endangered Species Act (ESA) (16 USC 1531 et seq.), as amended, is administered by the U.S. Fish and Wildlife Service (USFWS), National Oceanic and Atmospheric Administration, and National Marine Fisheries Service (NMFS). This legislation is intended to provide a means to conserve the ecosystems upon which endangered and threatened species depend, and provide programs for the conservation of those species, thus preventing extinction of plants and wildlife. As part of this regulatory act, ESA provides for designation of Critical Habitat, defined in ESA Section 3(5)(A) as specific areas within the geographical range occupied by a species where physical or biological features "essential to the conservation of the species" are found and that "may require special management considerations or protection." Critical Habitat may also include areas outside the current geographical area occupied by the species that are nonetheless "essential for the conservation of the species." Under provisions of Section 9(a)(1)(B) of ESA, it is unlawful to "take" any ESA-listed species. "Take" is defined in Section 3(19) of ESA as, harassing, harming, pursuing, hunting, shooting, wounding, killing, trapping, capturing, or collecting, or attempting to engage in any such conduct. Federal regulations found in 50 Code of Federal Regulations section 17.3 further defines the term "harm" to mean any act that actually kills or injures a federally-listed species, including significant habitat modification or degradation.

Section 7(a)(2) of ESA directs federal agencies to consult with USFWS for any actions they authorize, fund, or carry out that may jeopardize the continued existence of any listed species or result in the destruction or adverse modification of federally designated Critical Habitat. Consultation begins when the federal agency submits a written request for initiation to USFWS or NMFS, along with the agency's Biological Assessment of its proposed action (if necessary), and USFWS or NMFS accepts that sufficient information has been provided to initiate consultation. If USFWS or NMFS concludes that the action is not likely to adversely affect a listed species, the action may be conducted without further review under ESA. Otherwise, USFWS or NMFS must prepare a written Biological Opinion describing how the agency's action will affect the listed species and its Critical Habitat.

3.1.3 Clean Water Act

The Clean Water Act (CWA) is the major federal legislation governing water quality, providing guidance for the restoration and maintenance of the chemical, physical, and biological integrity of the nation's waters. Section 401 of the CWA requires an applicant for a federal license or permit that may result in a discharge of pollutants into waters of the United States to obtain state certification, thereby ensuring that the discharge will comply with provisions of the CWA. The State Water Resources Control Board and Regional Water Quality Control Boards (RWQCBs) administer the 401 certification program in California. Section 402 of the CWA establishes a permitting system for the discharge of any pollutant (except dredged or fill material) into waters of the United States. Section 404 establishes a permit program administered by the U.S. Army Corps of Engineers (USACE) that regulates the discharge of dredged or fill material into waters of the United States, including wetlands. USACE implementing regulations are found in 33 Code of Federal Regulations (CFR) Parts 320 to 332. Guidelines for implementation are referred to as the Section 404(b)(1) Guidelines, which were developed by the U.S. Environmental Protection Agency (EPA) in conjunction with USACE (40 CFR 230). The guidelines allow the discharge of dredged or fill material into the aquatic ecosystem only if there is no practicable alternative that would have less adverse impacts.

3.1.4 Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) regulates or prohibits taking, killing, possession of, or harm to migratory bird species listed in Title 50, Section 10.13 of the Code of Federal Regulations. The MBTA is an international treaty for the conservation and management of bird species that migrate through more than one country and is enforced in the United States by the U.S. Fish and Wildlife Service. Hunting of specific migratory game birds is permitted under the regulations listed in Title 50, Section 20 of the Code of Federal Regulations. The MBTA was amended in 1972 to include protection for migratory birds of prey (raptors). In 2017, the Department of Interior issued Memorandum M-37041 expressing the legal opinion that the MBTA prohibits both intentional and incidental take (take incidental to a lawful activity) of bird species.

3.1.5 EO 11990 – Protection of Wetlands

Executive Order 11990 outlines a national directive to prevent negative impacts on wetlands when feasible alternatives exist. To implement this policy, the U.S. Department of Transportation issued DOT Order 5660.1A in 1978. For federally funded projects, it is required to identify any potential effects on wetlands and evaluate options that would avoid such impacts. If avoidance is not possible, the project must incorporate all reasonable measures to reduce harm, and these efforts must be documented in a dedicated Wetlands Only Practicable Alternative Finding. Another key requirement is to engage the public early in the planning process for projects that may affect wetlands. To support this, the Federal Highway Administration (FHWA) offers technical guidance through Technical Advisory 6640.8A and reviews environmental documentation to ensure regulatory compliance.

3.1.6 EO 13112 – Invasive Species

On February 3, 1999, Executive Order 13112 was signed by President Clinton, directing federal agencies to prevent the introduction and spread of invasive species across the United States. The order defines invasive species as any non-native organism, including seeds, spores, or other reproductive material, that can establish itself in an ecosystem and potentially cause harm to the environment, economy, or human health. In response, the FHWA

issued guidance on August 10, 1999, requiring the use of California's invasive species list, maintained by the Invasive Species Council of California (ISCC), to identify invasive plants for consideration in NEPA environmental reviews. Under this order, federal agencies must not approve, fund, or implement actions that could contribute to the spread of invasive species unless they have thoroughly evaluated and applied all feasible strategies to reduce associated risks.

3.2 State

3.2.1 California Environmental Quality Act

The California Environmental Quality Act (CEQA) requires identification of a project's potentially significant impacts on biological resources and feasible mitigation measures and alternatives that could avoid or reduce significant impacts. The State of California CEQA Guidelines (CEQA Guidelines), Section 15380(b)(1), defines endangered animals or plants as species or subspecies whose "survival and reproduction in the wild are in immediate jeopardy from one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, disease, or other factors" (14 CCR 15000 et seq.). A rare animal or plant is defined in Section 15380(b)(2) as a species that, although not presently threatened with extinction, exists "in such small numbers throughout all or a significant portion of its range and may be considered 'threatened' as that term is used in the federal Endangered Species Act." Additionally, an animal or plant may be presumed to be endangered, rare, or threatened if it meets the criteria for listing, as defined further in CEQA Guidelines, Section 15380(c). CEQA also requires identification of a project's potentially significant impacts on riparian habitats (e.g., wetlands, bays, estuaries, and marshes) and other sensitive natural communities, including habitats occupied by endangered, rare, and threatened species.

3.2.2 California Endangered Species Act

The California Department of Fish and Wildlife (CDFW) administers the California Endangered Species Act (CESA), which prohibits the "take" of plant and animal species designated by the California Fish and Game Commission as endangered or threatened in the state of California. Under CESA Section 86, take is defined as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." CESA Section 2053 stipulates that state agencies may not approve projects that will "jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat essential to the continued existence of those species, if there are reasonable and prudent alternatives available consistent with conserving the species or its habitat which would prevent jeopardy."

CESA defines an endangered species as "a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant which is in serious danger of becoming extinct throughout all, or a significant portion, of its range due to one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, or disease." CESA defines a threatened species as "a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant that, although not presently threatened with extinction, is likely to become an endangered species in the foreseeable future in the absence of the special protection and management efforts required by this chapter. Any animal determined by the [California Fish and Game] Commission as rare on or before January 1, 1985, is a threatened species." A candidate species is defined as "a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant that the Commission has formally noticed as being under review by the department for addition to either the list of endangered species or the list of threatened species, or a species for which the

Commission has published a notice of proposed regulation to add the species to either list." CESA does not list invertebrate species.

CESA authorizes the taking of threatened, endangered, or candidate species if take is incidental to otherwise lawful activity and if specific criteria are met. These provisions also require CDFW to coordinate consultations with USFWS for actions involving federally listed species that are also state-listed species. In certain circumstances, CESA allows CDFW to adopt a CESA incidental take authorization as satisfactory for California Environmental Quality Act (CEQA) purposes based on finding that the federal permit adequately protects the species and is consistent with state law.

A CESA permit may not authorize the take of "fully protected" species that are protected in other provisions of the California Fish and Game Code, discussed further below.

3.2.3 Porter-Cologne Water Quality Control Act

The intent of the Porter–Cologne Water Quality Control Act is to protect water quality and the beneficial uses of water, and it applies to both surface water and groundwater. Under this law, the State Water Resources Control Board develops statewide water quality plans, and the RWQCBs develop basin plans that identify beneficial uses, water quality objectives, and implementation plans. The RWQCBs have the primary responsibility to implement the provisions of both statewide and basin plans. All waters of the state are regulated under the Porter–Cologne Water Quality Control Act, including isolated waters that are no longer regulated by USACE. Recent changes in state procedures require increased analysis and mitigation. Developments with impact to jurisdictional waters of the state must demonstrate compliance with the goals of the act by developing stormwater pollution prevention plans, standard urban stormwater mitigation plans, and other measures to obtain a Clean Water Act, Section 401 certification and/or Waste Discharge Requirement.

3.2.4 California Fish and Game Code

3.2.4.1 Sections 3503 and 3513 – Nesting Bird Protection

Section 3503 of the CFGC prohibits the needless destruction of nests or eggs of native bird species, and Section 3503.5 of the CFGC states that no birds in the orders of Falconiformes or Strigiformes (birds of prey) can be taken, possessed, or destroyed. For the purposes of these state regulations, CDFW currently considers an active nest as one that is under construction or in use and includes existing nests that are being modified. For example, if a hawk is adding to or maintaining an existing stick nest in a transmission tower, then it would be considered to be active and covered under these CFGC Sections. Section 3513 states that it is unlawful to take or possess any migratory non-game bird as designated in the MBTA.

3.2.4.2 Section 1602 – Lake and Streambed Alteration Program

Under Sections 1602-1616 of the CFGC, CDFW regulates activities that would 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. CDFW also regulates work that would deposit or dispose of debris, water, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake. CDFW jurisdiction includes ephemeral, intermittent, and perennial watercourses (including dry washes) and lakes characterized by the presence of (1) definable bed and banks and (2) existing fish or wildlife resources. In practice, CDFW marks its

jurisdictional limit at the top of the stream or lake bank or the outer edge of the riparian vegetation, where present, and sometimes extends its jurisdiction to the edge of the 100-year floodplain. Because riparian habitats do not always support wetland hydrology or hydric soils, wetland boundaries, as defined by Clean Water Act Section 404, sometimes include only portions of the riparian habitat adjacent to a river, stream, or lake. Therefore, jurisdictional boundaries under 1602-1616 may encompass a greater area than those regulated under Clean Water Act Section 404; CDFW does not have jurisdiction over ocean or shoreline resources.

3.2.5 California Coastal Act

The California Coastal Act of 1976 (Coastal Act) is a comprehensive state law designed to protect California's coastline by balancing coastal development with conservation, public access, and the long-term health of coastal resources. It establishes the California Coastal Commission as a permanent regulatory agency empowered to oversee development within the "coastal zone," a geographically defined area extending roughly 1,000 yards inland from the mean high tide line and 3 miles offshore. The Coastal Act prioritizes protecting sensitive habitats, maximizing public access to beaches, preserving coastal agriculture, and ensuring that development occurs in an orderly, environmentally responsible way. Overall, it seeks to safeguard the coast as a vital natural resource while allowing necessary, coastal-dependent uses to proceed under strict environmental standards.

Under the Coastal Act (PRC Section 30107.5), an environmentally sensitive habitat area (ESHA) is "any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments." Section 30240 of the Coastal Act includes special protection for ESHAs:

(a) "[ESHAs] shall be protected against any significant disruption of habitat values, and only uses dependent on those resources shall be allowed within those areas."

(b) "Development in areas adjacent to [ESHAs] and parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade those areas, and shall be compatible with the continuance of those habitat and recreation areas."

Additionally, Coastal Act Section 30233 states (in relevant part): (a) The diking, filling, or dredging of open coastal waters, wetlands, estuaries, and lakes shall be permitted in accordance with other applicable provisions of this division, where there is no feasible less environmentally damaging alternative, and where feasible mitigation measures have been provided to minimize adverse environmental effects, and shall be limited to the following:

- New or expanded port, energy, and coastal-dependent industrial facilities, including commercial fishing facilities.
- Maintaining existing, or restoring previously dredged, depths in existing navigational channels, turning basins, vessel berthing and mooring areas, and boat launching ramps.
- In open coastal waters, other than wetlands, including streams, estuaries, and lakes, new or expanded boating facilities and the placement of structural pilings for public recreational piers that provide public access and recreational opportunities.
- Incidental public service purposes, including but not limited to, burying cables and pipes or inspection of piers and maintenance of existing intake and outfall lines.
- Mineral extraction, including sand for restoring beaches, except in environmentally sensitive areas.

- Restoration purposes.
- Nature study, aquaculture, or similar resource dependent activities.

4 Study Methods

4.1 Literature and Database Review

Special-status species potentially occurring in the BSA were identified through a literature search of the following sources: the U.S. Fish and Wildlife Service's (USFWS) Information for Planning and Consultation (IPaC) online planning tool (USFWS 2025a), the California Department of Fish and Wildlife's (CDFW) California Natural Diversity Database (CNDDB) (CDFW 2025a), and the California Native Plant Society's (CNPS) Inventory of Rare and Endangered Plants of California (CNPS 2025a). Searches of the above-referenced databases were completed for the five U.S. Geological Survey 7.5-minute quadrangles surrounding the BSA: Davenport, Felton, Laurel, Santa Cruz, and Soquel.

For this report, special-status species are defined as (1) plants or wildlife listed, proposed for listing, or candidates for listing as threatened or endangered under the federal Endangered Species Act (FESA); (2) plants or wildlife listed or candidates for listing as threatened or endangered under the California Endangered Species Act (CESA); (3) wildlife designated as Fully Protected under Sections 3511, 4700, 5050, and 5515 of the California Fish and Game Code; (4) wildlife designated as a California Species of Special Concern by the CDFW; or (5) plants assigned a California Rare Plant Rank of 1A, 1B, 2A or 2B by the CNPS. The California Rare Plant Ranking (CRPR) system includes six rarity and endangerment ranks for categorizing plant species of concern, as follows:

- CRPR 1A – Plants presumed to be extinct in California
- CRPR 1B – Plants that are rare, threatened, or endangered in California and elsewhere
- CRPR 2A – Plants presumed to be extinct in California, but more common elsewhere
- CRPR 2B – Plants that are rare, threatened, or endangered in California, but more common elsewhere
- CRPR 3 – Plants about which more information is needed (a review list)
- CRPR 4 – Plants of limited distribution (a watch list)

Plants with CRPR 1A, 1B, 2A, or 2B may qualify as endangered, rare, or threatened species within the definition of CEQA Guidelines Section 15380. CDFW recommends that potential impacts to CRPR 1 and 2 species be evaluated in CEQA review documents. In general, CRPR 3 and 4 species do not meet the definition of endangered, rare, or threatened pursuant to CEQA Guidelines Section 15380, but these species may be evaluated on a case-by-case basis.

4.2 Field Survey

Following the literature review, Dudek biologists Tara Johnson-Kelly and Erin Fisher-Colton conducted a formal wetland delineation and reconnaissance-level field survey of the BSA on October 30, 2025 (Table 1), to identify and describe existing biological resources, including vegetation communities; wildlife habitat; aquatic resources (e.g., wetlands); and sensitive resources, such as vegetation communities considered sensitive by CDFW (2025b), habitat potentially supporting special-status plant and wildlife species, and ESHAs as defined by the California Coastal Act. Determinations for the potential of special-status species to occur were based on a review of habitat types, soils, and elevation preferences, as well as the known geographic range of each species and nearby documented occurrences. Species were determined "not expected to occur" when the BSA was clearly outside the known

geographic range of the species or did not support suitable habitat. Representative photographs are included in Appendix B, Representative Site Photographs.

Table 1. Field Survey Conditions

Date	Survey Hours	Conditions	Biologists
10/30/2025	10:00 a.m.-5:58 p.m.	64-65°F; 50% cloud cover; 1-3 mph wind	Tara Johnson-Kelly, Erin Fisher-Colton

All plant species were identified to the lowest taxonomic group possible. Nomenclature for plant species follow the Jepson Manual, Vascular Plants of California, Second Edition (Jepson Flora Project 2025). Wildlife species detected by sight, calls, tracks, scat, or other signs were recorded into a field notebook and/or a digital survey form. Wildlife species not observed but expected to use the BSA were identified based on known habitat preferences and regional distribution.

4.3 Aquatic Resource Delineation

Dudek biologists conducted a field delineation on October 30, 2025, to identify and map existing aquatic resources potentially subject to the regulatory jurisdiction of USACE pursuant to Section 404 of the Clean Water Act (33 USC 1344), waters of the state potentially subject to the regulatory jurisdiction of the RWQCB pursuant to Section 401 of the Clean Water Act and the Porter–Cologne Water Quality Control Act, stream and riparian habitats potentially subject to the jurisdiction of CDFW pursuant to Section 1602 of the California Fish and Game Code, and wetlands potentially subject to the jurisdiction of the CCC pursuant to Section 30121 of the California Coastal Act (CCA), collectively defined as jurisdictional aquatic resources. The field delineation was conducted using the Wetlands Delineation Manual (USACE 1987), Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (USACE 2008), and the National Ordinary High Water Mark Field Delineation Manual for Rivers and Streams (USACE 2025a).

5 Environmental Setting

The BSA is approximately 13.66 acres in size and includes all areas potentially affected directly or indirectly by the proposed project. The BSA encompasses the preliminary limits of ground disturbance (aka. 9.75-acre project footprint) plus a 50-foot survey buffer (3.91 acres). The preliminary limits of ground disturbance was established at the outset of project design to allow for resource surveys to proceed and is likely an overestimate of the ultimate limits of ground disturbance and associated direct and indirect impacts of the project.

5.1 Topography, Climate, and Land Use

The BSA is located on the central coast of California along the northern edge of Monterey Bay. The review area has flat coastal terrace topography, with bluffs dropping steeply to the ocean along the high tide line. Elevation ranges from approximately 5 to 40 feet above mean sea level, with the highest elevations at the northeastern end of the BSA and the lowest elevations along the shore of Monterey Bay south of West Cliff Drive. Santa Cruz County experiences a Mediterranean climate with warm, dry summers and cool, wet winters. The average annual maximum temperature is 68.9°F, and the average minimum temperature is 45°F (WRCC 2025). Average annual precipitation is 29.33 inches, most of which falls between October and April (WRCC 2025).

5.2 Hydrology

The BSA is in the Monterey Bay watershed (HUC 10: 1806001503) (USGS 2025). The BSA consists of coastal marine terraces and bluffs along the northern edge of Monterey Bay. Surface runoff in the BSA flows down small drainages to culverts running below West Cliff Drive and discharges directly onto the beach.

The U.S. Fish and Wildlife Service's National Wetlands Inventory identifies estuarine and marine wetland along the beach on the south edge of the BSA (USFWS 2025c). No freshwater features are identified. According to the Federal Emergency Management Agency, most of the BSA is in an area of undetermined flood hazard, with the portions of the BSA below the bluffs along the beach listed as 1% annual chance flood hazard (FEMA 2025) (Figure 3, Hydrologic Setting).

5.3 Soils

According to the Natural Resources Conservation Service, there are four soil types mapped in the review area: Beaches; Pinto loam, 0 to 2 percent slopes; Watsonville loam, thick surface, 0 to 2 percent slopes; and Watsonville loam, thick surface, 2 to 15 percent slopes. All four of the soil types mapped in the review area are considered hydric soil types (USDA 2025a, 2025b). Soil types within the review area are summarized in Table 2; visually depicted in Figure 4, Soils; and described below (USDA 2025a):

- **Beaches:** Beaches are shallow sands from 0 to 10 feet in elevation along the coast.
- **Pinto Series:** Pinto soils consist of terraces of moderately well-drained soils of loam and sandy clay loam formed from alluvium and/or marine deposits.
- **Watsonville Series:** Watsonville soils consist of marine terraces of somewhat poorly drained loam, clay, and sandy clay loam formed from alluvium.

Table 2. Soils in the BSA

Soil Type	Hydric Rating	Acreage
109 – Beaches	Yes	0.56
161 – Pinto loam, 0 to 2 percent slopes	Yes	9.08
178 – Watsonville loam, thick surface, 0 to 2 percent slopes	Yes	0.01
179 – Watsonville loam, thick surface, 2 to 15 percent slopes	Yes	4.01
	Total	13.66

Sources: USDA 2025a, 2025b.

5.4 Vegetation Communities and Land Cover Types

Land cover in the BSA consists of a variety of natural vegetation communities with some developed and human-altered land cover types. Five vegetation communities and three land cover types were mapped in the BSA (Table 3). These vegetation communities and land cover types are depicted on Figure 5, Vegetation Communities and Land Cover Types, and described in further detail below.

Table 3. Vegetation Communities and Land Cover Types in the BSA

Vegetation Community or Land Cover Type	Acreage in the Biological Study Area
Vegetation Communities	
Wild Oats and Annual Brome Grassland	4.98
Seaside Woolly Sunflower – Seaside Daisy – Seaside Buckwheat Patches	0.38
Monterey Cypress – Monterey Pine Woodland Stands	1.42
Arroyo Willow Thickets	0.06
Land Cover Types	
Urban/Developed	2.14
Hottentot Fig Association	1.37
Ornamental Plantings	0.87
Disturbed Habitat	2.44
Total	13.66

Source: CNPS 2025.

5.4.1 Urban/Developed

Urban/developed land cover refers to areas that have been constructed on or otherwise physically altered to the point where vegetation is no longer present. Urban or developed areas are characterized by permanent or semi-permanent structures, hardscapes, and landscaped areas. Within the BSA, the urban land cover consists of West Cliff Drive, the paved recreation trail, parking areas, and surrounding buildings, totaling 2.14 acres. This land cover primarily supports ruderal or landscaped vegetation. Urban/developed land cover is not considered a sensitive vegetation community in CDFW's California Natural Community List (CDFW 2025b).

5.4.2 Wild Oats and Annual Brome Grassland

The wild oats and annual brome grasslands alliance is characterized by wild oat (*Avena fatua*), brome grasses (*Bromus spp.*), and other non-native grass and oat species being dominant or co-dominant in the herbaceous layer. This alliance has open to continuous cover with herbs less than 1.2 meters (m) in height (CNPS 2025b). The wild oats and annual brome grasslands vegetation community is not identified as a sensitive vegetation community in CDFW's California Natural Community List (CDFW 2025b). Within the BSA, this vegetation community is dominated by wild oat, narrowleaf plantain (*Plantago lanceolata*), big quaking grass (*Briza maxima*), cat's-ear (*Hypochaeris radicata*), and buckhorn plantain (*Plantago coronopus*). Ornamentally planted Monterey cypress (*Hesperocyparis macrocarpa*) trees are present at low cover. This alliance is found in the northern portion of the BSA, totaling 4.98 acres.

5.4.3 Seaside Woolly-Sunflower – Seaside Daisy – Seaside Buckwheat Patches

The seaside woolly sunflower – seaside daisy – seaside buckwheat patches herbaceous alliance is characterized by a sparse to continuous herbaceous layer less than 1.5 meters in height composed of 50% relative cover of seaside woolly sunflower (*Eriophyllum staechadifolium*), seaside daisy (*Erigeron glaucus*), and seaside buckwheat (*Eriogonum latifolium)*. Other herbs that may be present include beach sagewort (*Artemisia pycnocephala*), seacliff buckwheat (*Eriogonum parvifolium*), beach strawberry (*Fragaria chiloensis*), common yarrow (*Achillea millefolium*), Henderson's angelica (*Angelica hendersonii*), and sea pink (*Armeria maritima*). Emergent shrubs such as coyote brush (*Baccharis pilularis*), yellow bush lupine (*Lupinus arboreus*), varicolored lupine (*Lupinus versicolor*), or California blackberry (*Rubus ursinus*) may be present at low cover (CNPS 2025b). This herbaceous alliance is considered a sensitive vegetation community on CDFW's California Natural Community List (CDFW 2025b). In the BSA, this vegetation community appeared to be intentionally planted and maintained, possibly as part of a native habitat restoration project, and totals 0.38 acre in the northern portion of the BSA.

5.4.4 Monterey Cypress–Monterey Pine Woodland Stands

The Monterey cypress–Monterey pine woodland stands semi-natural alliance is characterized by Monterey cypress, Canary Island pine (*Pinus canariensis*), Aleppo pine (*Pinus halepensis*), stone pine (*Pinus pinea*), and/or Monterey pine (*Pinus radiata*) dominant in the tree canopy with coastal wattle (*Acacia cyclops)* and *Eucalyptus* spp. This alliance has an open to continuous canopy less than 50 m in height with a sparse to continuous shrub layer and variable herbaceous layer. These stands were ornamentally planted as groves and windbreaks and have become naturalized in coastal areas (CNPS 2025b). This semi-natural alliance is not considered a sensitive vegetation community on CDFW's California Natural Community List (CDFW 2025b). In the BSA, this vegetation community is dominated by Monterey cypress and Monterey pine and occurs on the west end of Lighthouse Field and along the drainage on the east side of the BSA (CDFW 2025c), totaling 1.42 acres.

5.4.5 Arroyo Willow Thickets

The arroyo willow thickets shrubland alliance is characterized by arroyo willow (*Salix lasiolepis*) dominant in the low tree/tall shrub canopy along with bigleaf maple (*Acer macrophyllum*), mule fat (*Baccharis salicifolia*), button willow (*Cephalanthus occidentalis*), red-stemmed dogwood (*Cornus sericea*), Pacific wax myrtle (*Morella californica*),

California sycamore (*Platanus racemosa*), Fremont cottonwood (*Populus fremontii*), black cottonwood (*Populus trichocarpa*), other willows (*Salix* spp.), and coyote brush. Shrub canopy height is typically less than 10 m and emergent trees may be present at low cover (CNPS 2025b). This alliance is considered a sensitive vegetation community on CDFW'S California Natural Community List (CDFW 2025b). In the BSA, this vegetation community is dominated by arroyo willow and occurs near the south end of the drainage on the east side of the project footprint and totals 0.06 acres.

5.4.6 Hottentot Fig Association

The ice plant vegetation community (*Carpobrotus* [*edulis*] association) is an association of the ice plant mats alliance. This association is dominated by non-native hottentot fig (*Carpobrotus edulis*) with few other species present. This association is not classified as a sensitive vegetation community on CDFW's California Natural Community List (CDFW 2025b). This vegetation community is found in the southern portion of the BSA along West Cliff Drive and along the top of the coastal buff, totaling approximately 1.37 acres.

5.4.7 Ornamental Plantings

The ornamental plantings land cover type consists of a variety of native and non-native plants that were intentionally planted for aesthetic purposes. These consist of native species such as Monterey cypress (*Hesperocyparis macrocarpa*), as well as non-native turf grasses such as Bermudagrass (*Cynodon dactylon*). This land cover type was found in the southern part of the BSA as landscaping along West Cliff Drive and surrounding residential properties, totaling approximately 0.87 acres.

5.4.8 Disturbed Habitat

Disturbed habitat includes areas of land exposed to frequent disturbance by people or the environment to the point that little to no vegetation persists. Within the BSA, this land cover type includes the riprap along the coastal bluff, open areas of beach, and sections of the coastal bluff with little to no vegetative cover that are exposed to frequent wave action. This land cover type was found along the south side of West Cliff Drive in the southern half of the BSA, totaling approximately 2.44 acres.

5.5 Plants and Wildlife

A total of 39 species of native or naturalized plants, 11 native (28%) and 28 non-native (72%), were recorded in the BSA. A complete list of observed plant species is provided as Appendix C, Plant Species Compendium.

Dudek observed 18 wildlife species within the BSA during the field survey: Brandt's cormorant (*Urile penicillatus*), house finch (*Haemorhous mexicanus*), black phoebe (*Sayornis nigricans*), sharp-shinned hawk (Accipiter striatus), red-tailed hawk (*Buteo jamaicensis*), great egret (*Ardea alba*), American crow (*Corvus brachyrhynchos*), pygmy nuthatch (*Sitta pygmaea*), brown pelican (*Pelecanus occidentalis*), mourning dove (*Zenaida macroura*), western gull (*Larus occidentalis*), yellow-rumped warbler (*Setophaga coronata*), northern flicker (*Colaptes auratus*), spotted towhee (*Pipilo maculatus*), golden-crowned sparrow (*Zonotrichia atricapilla*), white-crowned sparrow (*Zonotrichia eucophrys*), Sierran treefrog (*Pseudacris sierra*), and California ground squirrel (*Otospermophilus beecheyi*).

5.6 Special-Status Species

5.6.1 Special-Status Plants

The CNDDB and CNPS Inventory of Rare and Endangered Plants identified 70 special-status plant species as occurring or potentially occurring in the BSA vicinity (Appendix D, Special-Status Plant Species Potential to Occur). Of these, 51 were eliminated from further consideration due to a lack of suitable habitat or edaphic conditions (i.e., alkaline or serpentine soils) or the BSA's location outside a species' known geographic or elevation range. The 19 remaining species—Blasdale's bent grass (*Agrostis blasdalei*), bent-flowered fiddleneck (*Amsinckia lunaris*), Robbins' broomrape (*Aphyllon robbinsii*), coast rockcress (*Arabis blepharophylla*), pink star-tulip (*Calochortus uniflorus*), bristly sedge (*Carex comosa*), deceiving sedge (*Carex saliniformis*), johnny-nip (*Castilleja ambigua* var. *ambigua*), Monterey spineflower (*Chorizanthe pungens* var. *pungens*), Santa Cruz tarplant (*Holocarpha macradenia*), Kellogg's horkelia (*Horkelia cuneata* var. *sericea*), Point Reyes horkelia (*Horkelia marinensis*), harlequin lotus (*Hosackia gracilis*), coast iris (*Iris longipetala*), large-flowered leptosiphon (*Leptosiphon grandiflorus*), marsh microseris (*Microseris paludosa*), elongate copper moss (*Mielichhoferia elongata*), maple-leaved checkerbloom (*Sidalcea malachroides*), and Santa Cruz microseris (*Stebbinsoseris decipiens*)—have a low potential to occur within the BSA and are not discussed further.

Although Monterey cypress was recorded on the project site, these trees do not have special status since they were intentionally planted for ornamental purposes and are not naturally occurring. Additional rationale for potential to occur determinations is provided in Appendix D.

5.6.2 Special-Status Wildlife

The CNDDB and USFWS IPaC tool identified 44 special-status wildlife species as occurring or potentially occurring in the BSA vicinity. Of these, 23 species were eliminated from consideration due to the absence of suitable habitat within the BSA or the BSA's location outside of their known range (Appendix E, Special-Status Wildlife Species Potential to Occur). Eighteen of the remaining 21 species—Santa Cruz black salamander (*Aneides niger*), golden eagle (*Aquila chrysaetos*) (nesting and wintering), burrowing owl (*Athene cunicularia*) (burrow sites and some wintering sites), western snowy plover (*Charadrius nivosus nivosus*) (nesting), black swift (*Cypseloides niger*) (nesting), bald eagle (*Haliaeetus leucocephalus*), osprey (*Pandion haliaetus*) (nesting), bank swallow (*Riparia riparia*) (nesting), pallid bat (*Antrozous pallidus*), Townsend's big-eared bat (*Corynorhinus townsendii*), southern sea otter (*Enhydra lutris nereis*), San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*), mountain lion - Southern California/Central Coast ESU (*Puma concolor*), American badger (*Taxidea taxus*), western red bat (*Lasiurus frantzii*), Crotch's bumble bee (*Bombus crotchii*), western bumble bee (*Bombus occidentalis*), and Ohlone tiger beetle (*Cicindela ohlone*)—have a low potential (i.e., are unlikely) to occur within the BSA and are not discussed further. The two remaining species are known to occur within the BSA based on the presence of suitable habitat and are discussed below. Additional rationale for potential to occur determinations is provided in Appendix E.

White-tailed kite

White-tailed kite (*Elanus leucurus*) is a California Fully Protected species, generally occurring in low-elevation grassland, wetland, oak woodland, low shrub, open woodlands, or savannah habitats (CDFW 2025a). This species also uses fencerows, irrigation ditches (with residual vegetation), and disturbed lands. White-tailed kites typically

nest and roost in trees with dense canopies (often broad-leafed deciduous trees) adjacent to open areas, either as isolated trees or at the edges of forests, woodlands, or riparian areas (CDFW 2025a; Dunk 2020).

White-tailed kite is known to occur in the BSA. There is one iNaturalist observation of this species foraging in Lighthouse Field in September 2020 (iNaturalist 2025). This species has high potential to nest in the BSA, as there are several suitable Monterey cypress trees scattered throughout Lighthouse Field. There is also grassland suitable for foraging within the BSA. There are no documented CNDDB occurrences within 3 miles of the BSA (CDFW 2025a).

Monarch Butterfly

Monarch butterfly (*Danaus plexippus*) is a candidate species for listing as threatened under FESA and is a California Species of Special Concern. In the fall (late November-February), western North American monarchs begin migration from Canada and states west of the Rockies to their overwintering sites in coastal California and Baja California, Mexico, a journey that takes over two months and 300 to 1,000 miles to complete. Overwintering sites are typically composed of wind-sheltered groves of blue gum eucalyptus (*Eucalyptus globulus*), Monterey pine, or Monterey cypress near water sources. The groves provide indirect sunlight, moisture, and protection from strong winds and freezing temperatures. In early spring (February-March) monarchs mate at the overwintering sites before dispersing over several generations toward the Rockies and Pacific Northwest. In addition to overwintering habitat, the species requires access to habitat that supports a variety of nectar resources and native wilkweed (*Asclepias* spp.) as a larval host plant. (89 FR 100662)

Monarch butterfly is known to occur within the BSA, which supports a known overwintering site (Xerces Society 2025) that is also included in Unit 5 (Santa Cruz County) of proposed critical habitat for the species (Lighthouse Field [site #3000]; USFWS 2025b). Additionally, there is one recent CNDDB record of the species on the west end of Lighthouse Field in the BSA (CDFW 2025a; Occ. No. 240). The BSA contains groves of Monterey cypress that could host overwintering monarchs.

5.6 Sensitive Natural Communities

Sensitive natural communities are vegetation communities that are of limited distribution statewide or within a county or region. A list of sensitive natural communities in California is maintained by CDFW (2025b) based on the rarity of, and potential threats to, these communities in California. Communities with a state rarity ranking of S1 through S3 in CDFW's California Natural Community List (CDFW 2025b) are considered highly imperiled, and project impacts on high-quality occurrences of these communities are typically considered significant under CEQA. Sensitive natural communities often include riparian vegetation along rivers, streams, and lakes. As described in Section 5.4, there are two vegetation communities in the BSA that are considered sensitive natural communities by CDFW (2025b): seaside woolly sunflower—seaside daisy—seaside buckwheat patches and arroyo willow thickets. While Monterey cypress (*Hesperocyparis macrocarpa*) was recorded in the BSA, these trees were intentionally planted for ornamental purposes and would not be classified as a sensitive natural community (CDFW 2025b).

5.7 Aquatic Resources

Based on data collected, 6 aquatic resources (0.072 acres, 427 linear feet) were documented in the BSA: 2 ephemeral channels, 1 impounded ephemeral channel/pond, 2 upland swales, and tidal waters of the Pacific Ocean, a traditional navigable water. Table 4 provides a summary of all aquatic resources delineated in the BSA,

including Cowardin type (Cowardin et al. 1979; USACE 2024), location, and acreage/linear feet within the BSA. Further information can be found in the Aquatic Resources Delineation Report prepared for the project (Dudek 2025).

Table 4. Extent of Potentially Jurisdictional Waters

Feature Name	Cowardin [1]	Location (Latitude/Longitude; Decimal Degrees)	Acres[2]	Linear Feet[2]	USACE Jurisdiction
Non-Wetland Waters Ephemeral					
WCD-NWW-01	R6	36.95245445, -122.0294771	0.008	127	No
WCD-NWW-02	R6	36.95291173, -122.0296156	0.008	186	No
WCD-CCW-01	R6	36.95266948, -122.0294795	0.008	40	No
		Non-Wetland Waters Subtotal	*0.025*	*353*	--
Upland Swales					
WCD-US-01	U	36.95272991, -122.0293151	0.010	75	No
WCD-CCW-02	U	36.95221145, -122.0312314	0.037	NA	No
		Upland Swales Subtotal	*0.047*	*75*	--
Tidal Waters[3]					
Tidal Waters	M2	36.95167991, -122.03160767	2.017	NA	Yes
		Grand Total	**2.089**	**427**	--

Notes: USACE = U.S. Army Corps of Engineers; CCW = California Coastal Commission Wetland; NWW = non-wetland water; R6 = riverine, ephemeral; US = upland swale; U = upland.

1 Pursuant to Classification of Wetlands and Deepwater Habitats of the United States (Cowardin et al. 1979) and Cowardin Codes for ORM Data Entry (USACE 2024).

2 Acres calculated using the ordinary high-water mark. Totals may not sum due to rounding.

3 Acres calculated using the High Tide Line.

5.8 Habitat Connectivity

Wildlife corridors are linear features that connect large patches of natural open space and provide avenues for the migration of animals. Habitat linkages are small patches that join larger blocks of habitat and help reduce the adverse effects of habitat fragmentation; they may be continuous habitat or discrete habitat islands that function as steppingstones for wildlife dispersal. Because many wildlife species have species-specific habitat requirements for survival and dispersal, corridors may also be species specific. At a minimum, corridors promote local colonization or recolonization of distinct habitat patches and potentially increase genetic variability within and between populations. In addition, increased exposure to an inhospitable urban matrix due to reductions in connectivity can increase general mortality. All of these factors can contribute significantly to local species extinctions. Thus, corridors help species populations, distributed in and among habitat patches, to persist over time.

The BSA is subject to frequent disturbance from recreation and vehicle traffic and is located within a matrix of dense suburban development. As a result, the natural habitats in the BSA are isolated from larger landscape blocks located north of Highway 1 in the Santa Cruz Mountains. These natural habitats may facilitate small movements of local, urban-adapted wildlife during their daily foraging activities, but the BSA does not function as a regional wildlife corridor or linkage due to its isolation from the Santa Cruz Mountains.

5.9 Invasive Species

Dudek observed 20 invasive plant species from the California Invasive Plant Council (Cal-IPC)'s California Invasive Plant Inventory (Cal-IPC 2025) during the October 30 field survey (Table 5). These included three species with a Cal-IPC rating of high and 12 species with a category rating of moderate.

Table 5. Cal-IPC Invasive Plant Inventory Species Observed in the BSA

Scientific Name	Common Name	Cal-IPC Rating
Carpobrotus edulis	Hottentot fig; highway iceplant	High
Foeniculum vulgare	Fennel; sweet fennel; sweet anise	Moderate
Hedera helix	English ivy	High
Hypochaeris radicata	Rough cat's-ear; false dandelion	Moderate
Raphanus sativus	Wild radish	Limited
Mentha pulegium	Pennyroyal; European	Moderate
Oxalis pes-caprae	Bermuda buttercup; buttercup oxalis; sour grass	Moderate
Rumex acetosella	Sheep sorrel	Moderate
Rumex crispus	Curly dock	Limited
Rubus armeniacus	Himalayan blackberry	High
Avena barbata	Slender oat	Moderate
Briza maxima	Big quakinggrass; rattlesnake grass	Limited
Bromus diandrus	Ripgut brome, great brome; ripgut grass	Moderate
Bromus hordeaceus	Soft brome; soft chess; lopgrass	Limited
Cynodon dactylon	Bermuda grass; couch grass; devil grass; wire grass; vine grass; bermudagrass	Moderate
Ehrharta erecta	Panic veldtgrass; Stebbin's grass	Moderate
Festuca perennis	Italian ryegrass	Moderate
Hordeum murinum	Hare barley, foxtail, wild barley, wall barley, smooth barley	Moderate
Phalaris aquatica	Harding grass; bulbous canarygrass; Phalaris; toowoombagrass	Moderate
Polypogon monspeliensis	Rabbitsfoot grass; annual beardgrass; rabbitfootgrass; tawny beardgrass	Limited

6 Impacts and Mitigation

6.1 Special-Status Species

6.1.1 White Tailed Kite and Nesting Migratory Birds

Project Impacts

If conducted during the nesting season (February 1 to August 31), project activities could impact nesting white-tailed kites and other nesting birds, if present in or adjacent to the project footprint. Tree removal could result in direct impacts by destroying eggs or killing nestlings in active nests. Increased human activity and construction-generated noise and vibration near active nests could cause adults to abandon eggs or recently hatched young if they perceive such disturbances as a threat. Any construction activity that would result in destruction of active bird nests or disturb nesting activity to the extent that it causes nest abandonment would violate the federal MBTA and Sections 1503 and 3513 of the CFGC. Therefore, the impact of the project related to nesting white-tailed kites and other nesting birds is **potentially significant**.

Avoidance and Minimization Measures

The project will implement the following measure to reduce impacts to nesting white-tailed kites and other native birds.

Mitigation Measure 1:

- Prior to any construction activities scheduled during the bird nesting season (February 1 to August 31), a qualified wildlife biologist with demonstrated nest-searching experience will conduct pre-construction surveys for nesting birds, including white-tailed kite and other raptors. The pre-construction survey will occur no more than 7 days prior to the onset of ground-disturbing activities (including clearing, grubbing, and staging).
- If active nests are found during the survey, the biologist will establish a no-disturbance buffer around the nest and mark the buffer perimeter with high-visibility fencing, flagging, or pin flags. The size of the buffer will be based on the species' sensitivity to disturbance and planned work activities in the vicinity; typical buffer sizes are 250 feet for raptors and 50 feet for passerines.
- The no-disturbance buffer will remain in effect until the nest is no longer active. If a lapse in project-related activities of 15 days or longer occurs during the bird nesting season, another pre-construction survey will be conducted.

Implementation of the above measure would reduce any potentially significant impacts to **less than significant**.

6.1.2 Roosting Bats

Project Impacts

The BSA provides suitable foraging and roosting habitat for foliage-roosting bat species. If project activities require the removal of trees during peak activity timeframes when young or overwintering bats may be present (generally March through April and August through October), such activities could directly impact active bat roosts. Therefore, the impact of the project related to roosting bats is **potentially significant**.

Avoidance and Minimization Measures

The project will implement the following measure to reduce impacts to foliage-roosting bats.

Mitigation Measure 2:

- If tree trimming or removal is scheduled to begin during the peak activity timeframes (from March to April and August to October, then within 2 weeks prior to tree trimming or removal, a qualified biologist will examine trees to be removed or trimmed for suitable bat roosting habitat. High-quality habitat features (e.g., large tree cavities, basal hollows, loose or peeling bark, larger snags) will be identified, and the area around these features searched for bats and bat sign (e.g., guano, culled insect parts, staining). Riparian woodland and stands of mature broadleaf trees will be considered potential habitat for solitary foliage roosting bat species.
- If bat sign is detected, biologists will conduct an evening visual emergence survey of the source habitat feature, from a half hour before sunset to 1–2 hours after sunset for a minimum of 2 nights within the season that construction would be taking place. Night-vision goggles and/or full-spectrum acoustic detectors will be used during emergence surveys to assist in species identification. All emergence surveys will be conducted during favorable weather conditions (calm nights with temperatures conducive to bat activity and no precipitation predicted).
- If a potentially active bat roost is identified within a tree proposed for removal during the peak activity timeframes, passive monitoring with full-spectrum bat detectors will be used to assist in determining species present. A minimum of 4 nights of acoustic monitoring surveys will be conducted within the season that construction would be taking place. If site security allows, detectors should be set to record bat calls for the duration of each night. To the extent possible, all monitoring will be conducted during favorable weather conditions (calm nights with temperatures conducive to bat activity and no precipitation predicted). The biologists will analyze the bat call data using appropriate software and prepare a report that will be submitted to the City and CDFW.
- Avoidance and minimization measures may be necessary if it is determined that bats are using the trees as roost sites, or if sensitive bats species are detected during acoustic monitoring. Appropriate measures will be determined in by the qualified biologist and may include any combination of the measures listed below.
    - Trees will be removed in pieces, rather than felling the entire tree.
    - If a maternity roost is located, whether solitary or colonial, that roost will remain undisturbed with a buffer as determined by the biologist until September 15 or until they have determined that the roost is no longer active.

- If a non-maternity roost in a tree is found, every effort should be made to avoid the roost, as methods to evict bats from trees are largely untested.
- If a non-maternity roost is found within trees that cannot be avoided, eviction will be attempted using procedures designed in consultation with CDFW to reduce the likelihood of mortality of evicted bats. In all cases, the following stipulations will be observed.
    - Eviction will not occur before September 15 and will match the timeframe for tree removal for nesting birds and other sensitive wildlife.
    - Qualified biologists will carry out or oversee the eviction tasks and will monitor the tree trimming/removal.
    - Eviction will take place late in the day or in the evening to reduce the likelihood of evicted bats falling prey to diurnal predators.
    - Eviction will take place during weather and temperature conditions conducive to bat activity.
- Non-injurious harassment at the roost site, such as ultrasound deterrents or other sensory irritants, may be used to encourage bats to leave on their own.
- Prior to tree removal/trimming and after other eviction efforts have been attempted, any confirmed roost site will be gently shaken or repeatedly struck with a heavy implement such as a sledge hammer or an axe; several minutes should pass before felling trees or trimming limbs to allow bats time to arouse and leave the roost. The biologists will search downed vegetation for dead and injured bats. The presence of dead or injured bats will be reported to CDFW. Injured bats will be transported to the nearest CDFW-permitted wildlife rehabilitation facility.

Implementation of the above measure would reduce any potentially significant impacts on roosting bats to **less than significant**.

6.1.3 Monarch Butterfly

Project Impacts

The BSA contains groves of Monterey cypress suitable for overwintering monarchs and Lighthouse Field is a known overwintering site (CDFW 2025a, Pelton et al. 2017, Xerces Society 2025). Additionally, the USFWS designated Lighthouse Field as part of proposed Critical Habitat Unit 5 (site #3000), which contains all the physical or biological features essential to the conservation of the species (89 FR 100662). However, project construction would not impact any trees in or near the core monarch clustering area in the eucalyptus grove near the northeastern corner of the park (Pelton et al. 2017, CDFW 2025a: Occ. No. 105), approximately 1,400 feet northeast of where construction would occur.

The project plans to remove brush and a downed tree within a Monterey cypress grove on the west side of the BSA within a known CNDDB occurrence for overwintering monarchs (CDFW 2025a; Occ. No. 24), but monarchs have not been observed in this location since 2015 and the occurrence is considered extirpated. The project proposes to realign West Cliff Drive northward closer to this grove but not directly beneath the canopy and plans to remove a solitary Monterey cypress from across from Parking Lot "A". Removal of the brush, downed tree, and the solitary Monterey cypress is not likely to adversely affect monarch overwintering habitat, as the structure of the grove on the west side of the BSA will remain intact and available to monarchs during and after project implementation.

No signs of native milkweed or substantial patches of nectar plants were observed within the proposed road alignment during the field survey. Additionally, the seaside woolly sunflower—seaside daisy—seaside buckwheat patch will not be impacted by project development, so potential nectar sources for overwintering monarchs will remain available within 500 feet of the overwintering site. Given the project's distance from core monarch overwintering habitat at Lighthouse Field and lack of impacts to monarch nectar sources, it is unlikely for the project to cause significant impacts to overwintering monarch habitat. However, it is possible that there are overwintering monarchs present within the construction footprint between October and March, and individual monarchs sheltering in cypress trees and adjacent vegetation could be impacted through direct injury or mortality from tree removals and other vegetation management activity associated with the project. These impacts could be **potentially significant** to monarch butterfly.

Avoidance and Minimization Measures

The project will implement the following measure to reduce impacts to overwintering monarchs.

Mitigation Measure 3:

- Removal of all cypress trees and associated vegetation activities (brush removal, tree trimming, understory vegetation removal, etc.) in the immediate vicinity of any cypress trees will occur outside of monarch overwintering (October through March), to the extent feasible.
- If tree and vegetation removal must occur between October and March, a qualified biologist will survey the cypress groves no earlier than 1 week prior to tree removal to determine if any monarch butterflies are present. If monarchs are present, the qualified biologist will establish a no-disturbance buffer around the occupied tree(s) and mark the buffer perimeter with high-visibility fencing, flagging, or pin flags. The size of the buffer will be based on the height of the occupied tree(s) and size of the overwintering group.
- The no-disturbance buffer will remain in effect until the monarchs have dispersed for migration and the tree is no longer in use for overwintering.

Implementation of the above measure would reduce any potentially significant impacts to **less than significant**.

6.2 Sensitive Natural Communities

The project would not impact any sensitive natural communities. The project would not impact the seaside woolly-sunflower—seaside daisy—seaside buckwheat patches because the proposed road alignment and associated construction disturbance does not include the area of Lighthouse Field where this habitat is located (Appendix F). Similarly, the project would not impact the arroyo willow thickets because the proposed road alignment does not include the drainage where this habitat is located (Appendix F). In summary, the project would have **no impact** on riparian habitat or sensitive natural communities.

6.3 Environmentally Sensitive Habitat Areas

The project would not impact any ESHAs as the area that would be subject to direct and indirect impacts does not meet the definition of ESHA under Coastal Act Section 30107.5. Specifically, the project would not impact any "area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments."

While there is a small upland swale in the area of potential impact that meets the Coastal Act definition of a wetland (WCD-CCW-02), this area does not meet the above definition of ESHA. It is not a functional wetland, but rather a slight depression where soil moisture creates better conditions for curly dock to grow. This feature was distinguishable by a greater concentration of curly dock than the surrounding grassland, lack of distinct ordinary high water mark, and lack of continuous surface connectivity to downstream waters. Therefore, the project would have **no impact** on ESHAs and would not be expected to require special protections for ESHAs under Section 30240 of the Coastal Act. See Section 6.4.4 below for additional information about the Coastal wetland.

6.4 Aquatic Resources

6.4.1 Waters of the United States (USACE)

A total of six aquatic resources were documented in the BSA: two ephemeral channels, one impounded ephemeral channel/pond, two upland swales, and tidal waters of the Pacific Ocean. Four of the features, WCD-NWW-01, WCD-NWW-02, WCD-CCW-01, and WCD-US-01, are connected into a single system draining a portion of the coastal terrace in the eastern part of the BSA to the Pacific Ocean immediately downstream. A fifth aquatic feature, WCD-CCW-02, is an isolated wetland swale on the coastal terrace and is not connected to any other features. These aquatic resources are not likely to be jurisdictional under Clean Water Act Section 404, as all features are ephemeral in nature and lack continuous surface connection to downstream WOTUS. The final aquatic feature comprises 2.017 acres of tidal waters of the Pacific Ocean, a traditional navigable water, along the southern edge of the BSA. Tidal waters are considered jurisdictional waters; however, no project activities would occur below the high tide line. Therefore, the proposed project would have **no impact** on jurisdictional wetlands under the Clean Water Act. Additionally, permits from the USACE should not be required for project implementation.

6.4.2 Waters of the State (RWQCB)

Based on the results of the aquatic resources delineation (Dudek 2025), four of the six total aquatic resources present in the BSA exhibited characteristics of "waters of the state": WCD-NWW-01, WCD-NWW-02, WCD-CCW-01, and tidal waters. Approximately 2.229 acres (353 linear feet) of aquatic resources potentially subject to RWQCB jurisdiction are present in the BSA (Table 6; Figure 6, Potentially Jurisdictional Aquatic Resources).

Table 6. Aquatic Resource Summary for the BSA – RWQCB

Feature Name	Cowardin [1]	Location (Latitude/Longitude; Decimal Degrees)	Acres[2]	Linear Feet[2]	RWQCB Jurisdiction
Non-Wetland Waters Ephemeral					
WCD-NWW-01	R6	36.95245445, -122.0294771	0.107	127	Yes
WCD-NWW-02	R6	36.95291173, -122.0296156	0.089	186	Yes
WCD-CCW-01	R6	36.95266948, -122.0294795	0.016	40	Yes

Table 6. Aquatic Resource Summary for the BSA – RWQCB

Feature Name	Cowardin [1]	Location (Latitude/Longitude; Decimal Degrees)	Acres[2]	Linear Feet[2]	RWQCB Jurisdiction
Tidal Waters[3]					
Tidal Waters	M2	36.95167991, -122.03160767	2.017	--	Yes
		Grand Total	**2.229**	**353**	–

Notes: RWQCB = Regional Water Quality Control Board; CCW = California Coastal Commission Wetland; NWW = non-wetland water; R6 = riverine, ephemeral.

1 Pursuant to Classification of Wetlands and Deepwater Habitats of the United States (Cowardin et al. 1979) and Cowardin Codes for ORM Data Entry (USACE 2024).

2 Acres calculated up to the top of bank. Totals may not sum due to rounding.

3 Acres calculated using the High Tide Line.

None of these features are expected to be impacted by project implementation because they are located outside of the proposed road alignment, and no work would occur below the high tide line. Therefore, the proposed project would have **no impact** on waters of the state.

Additionally, permits from the RWQCB would not be required for project implementation, as aquatic resources under the jurisdiction of RWQCB would not be impacted by the project.

6.4.3 CDFW Aquatic Resources

Four of the six aquatic features identified during the aquatic resources delineation, approximately 0.222 acres (427 linear feet) in the eastern portion of the BSA, are potentially subject to CDFW jurisdiction (Table 7; Figure 6, Potentially Jurisdictional Aquatic Resources).

The ephemeral non-wetland waters in the BSA do not support a continuous riparian corridor or dominance of riparian or wetland vegetation. However, upland vegetation and trees within 10 feet of the drainages were mapped as riparian because they could provide riparian functions, such as sediment stability, woody debris input, and shade. Non-riparian areas were dominated by Monterey cypress in the canopy, with occasional arroyo willows. A total of 1.170 acres of riparian habitat was documented in the BSA.

Table 7. Aquatic Resource Summary for the BSA – CDFW

Feature Name	Cowardin[1]	Location (Latitude/Longitude; Decimal Degrees)	Acres[2]	Linear Feet[2]	CDFW Jurisdiction
Non-Wetland Waters Ephemeral					
WCD-NWW-01	R6	36.95245445, -122.0294771	0.107	127	Yes
WCD-NWW-02	R6	36.95291173, -122.0296156	0.089	186	Yes
WCD-CCW-01	R6	36.95266948, -122.0294795	0.016	40	Yes
		Non-Wetland Waters Subtotal	*0.212*	*353*	–
Upland Swales					
WCD-US-01	U	36.95272991, -122.0293151	0.010	75	Yes

Table 7. Aquatic Resource Summary for the BSA – CDFW

Feature Name	Cowardin[1]	Location (Latitude/Longitude; Decimal Degrees)	Acres[2]	Linear Feet[2]	CDFW Jurisdiction
		Upland Swales Subtotal	*0.010*	*75*	--
Riparian					
Riparian Canopy	N/A	Various	1.170	NA	Yes
		Riparian Canopy	*1.170*	*NA*	--
		Grand Total	**1.392**	**427**	**–**

Notes: CDFW = California Department of Fish and Wildlife; CCW = California Coastal Commission Wetland; NWW = non-wetland water; R6 = riverine, ephemeral; US = upland swale; U = upland.

1 Pursuant to Classification of Wetlands and Deepwater Habitats of the United States (Cowardin et al. 1979) and Cowardin Codes for ORM Data Entry (USACE 2024).

2 Acres calculated to the top of bank. Totals may not sum due to rounding.

None of these features are expected to be impacted by project implementation because they are located outside of the proposed road alignment. Therefore, the proposed project would have **no impact** on CDFW aquatic resources.

Additionally, a CDFW Lake and Streambed Alteration Agreement would not be required for project implementation, as CDFW aquatic resources would not be impacted by the project.

6.4.4 California Coastal Commission (CCC)

All aquatic features identified as potentially under RWQCB and CDFW jurisdiction are also potentially under CCC jurisdiction. Two features, WCD-CCW-01 and WCD-CCW-02, were identified as one-parameter wetlands (i.e., wetlands defined by a single parameter such as hydric soils, hydrophytic vegetation, or hydrology). Approximately 0.259 acre (427 linear feet) of aquatic resources potentially subject to CCC jurisdiction are present in the review area (Table 8; Figure 6, Potentially Jurisdictional Aquatic Resources).

The realignment of West Cliff Drive would avoid impacts to most aquatic resources in the BSA but would have minor impacts on an isolated 0.037-acre upland swale potentially subject to CCC jurisdiction. Specifically, the project would impact WCD-CCW-02, which lies along the north edge of the proposed road alignment. None of the other aquatic resources listed in Table 8 would be impacted by the project. WCD-CCW-02 is not a functional wetland and is not considered an ESHA, as described in Section 6.3. Therefore, the project would not have a substantial adverse effect on a state protected wetland potentially under CCC jurisdiction and the CEQA impact would be **less than significant**. However, it is understood that mitigation for impacts to WCD-CCW-02 would likely be required as part of the Coastal Development Permit for the project, as required under Coastal Act Section 30233.

Table 8. Aquatic Resource Summary for the BSA – CCC

Feature Name	Cowardin[1]	Location (Latitude/Longitude; Decimal Degrees)	Acres[2]	Linear Feet[2]	CCC Jurisdiction
Non-Wetland Waters Ephemeral					
WCD-NWW-01	R6	36.95245445, -122.0294771	0.107	127	Yes
WCD-NWW-02	R6	36.95291173, -122.0296156	0.089	186	Yes
WCD-CCW-01	R6	36.95266948, -122.0294795	0.016	40	Yes
		Non-Wetland Waters Subtotal	*0.212*	*353*	--
Upland Swales					
WCD-US-01	U	36.95272991, -122.0293151	0.010	75	Yes
WCD-CCW-02	U	36.95221145, -122.0312314	0.037	NA	Yes
		Upland Swales Subtotal	*0.047*	*75*	--
Tidal Waters[3]					
Tidal Waters	M2	36.95167991, -122.03160767	2.017	—	Yes
		Grand Total	**2.089**	**427**	–

Notes: CDFW = California Department of Fish and Wildlife; CCW = California Coastal Commission Wetland; NWW = non-wetland water; R6 = riverine, ephemeral; US = upland swale; U = upland.

1 Pursuant to Classification of Wetlands and Deepwater Habitats of the United States (Cowardin et al. 1979) and Cowardin Codes for ORM Data Entry (USACE 2024).

2 Acres calculated to the top of bank. Totals may not sum due to rounding.

6.5 Habitat Connectivity

The project would not cause direct impacts to habitat connectivity because the habitats onsite are already isolated from larger landscape blocks by dense urban development. The project would have **no impact** on fish or wildlife movement or established wildlife corridors.

7 Conclusions and Regulatory Determinations

7.1 Federal Endangered Species Act Consultation Summary

One species proposed for listing under FESA could potentially occur in the BSA. A preliminary effect determination for this species is provided in Table 9.

Table 9. Species Listed or Proposed for Listing under FESA in the BSA

Species	Status	Determination	Rationale
Monarch *Danaus plexippus* (overwintering population)	Proposed Threatened	May affect, not likely to adversely affect	The project is located within Critical Habitat Unit 5 (Lighthouse Field) and plans to remove brush and a downed tree from a historic overwintering grove but would not impact any trees in the core clustering area of Lighthouse Field approximately 1,400 feet to the northeast. The project would not impact any nectar sources and mitigation measures would ensure no significant impact would occur to individual monarchs.

7.2 California Endangered Species Act Consultation Summary

No state-listed species occur in the BSA and no take of state-listed species is anticipated during project implementation.

7.3 Essential Fish Habitat Consultation Summary

The BSA is outside essential fish habitat, therefore consultation with NMFS is not warranted.

7.4 Wetlands and Other Waters Consultation Summary

The City is pursuing a Coastal Development Permit (CDP) from the California Coastal Commission for 800 West Cliff Drive and other West Cliff Drive storm damage repair sites already completed under emergency CDPs. The mitigation established for the CDP is anticipated to address the potential removal of the upland swale (WCD-CCW-02) for this project.

7.5 Invasive Species

Executive Order 13112 - Invasive Species was signed in February 1999 to effectively mandate federal agencies to work on preventing and controlling the introduction and spread of invasive species. Federal Highway Administration (FWHA) guidance issued August 10, 1999, directs the use of the California Department of Food and Agriculture's noxious weed list to identify invasive plants that must be considered as part of CEQA analysis for a proposed project in California.

There are currently invasive plant species in the BSA, especially in the southern half of the BSA where highway ice plant grows in mats along West Cliff Drive and the edge of the bluff. If vegetation is proposed to be removed during this project, the contractor will take the following precautionary measures to dispose of all removed invasive vegetation properly:

- All heavy equipment and machinery used off-road shall be pressure washed, if feasible, or otherwise decontaminated prior to vegetation clearing or grading activities. Heavy equipment and machinery shall be visually inspected for sand, mud, or weed seeds prior to being used. The equipment shall be staged in areas free of invasive species.
- Additionally, workers participating in vegetation removal and/or grading shall clean their equipment and footwear of soils and vegetative matter. If vegetation is proposed to be removed during this maintenance safety project, the contractor will take precautionary measures to dispose of all removed invasive vegetation properly.

7.6 Other

All native nesting birds are protected by the Migratory Bird Treaty Act (MBTA) (16 USC 703–711). Native nesting bird species are also protected by California Fish and Game Code Sections 3503, 3503.5, 3513 and 3800. These laws regulate the take, possession, or destruction of the nest or eggs of any migratory bird or bird of prey. Avoidance and minimization measures for nesting birds are described in Section 6.1.1 and will be implemented to protect nesting birds and comply with nesting bird protections under the MBTA and CFGC.

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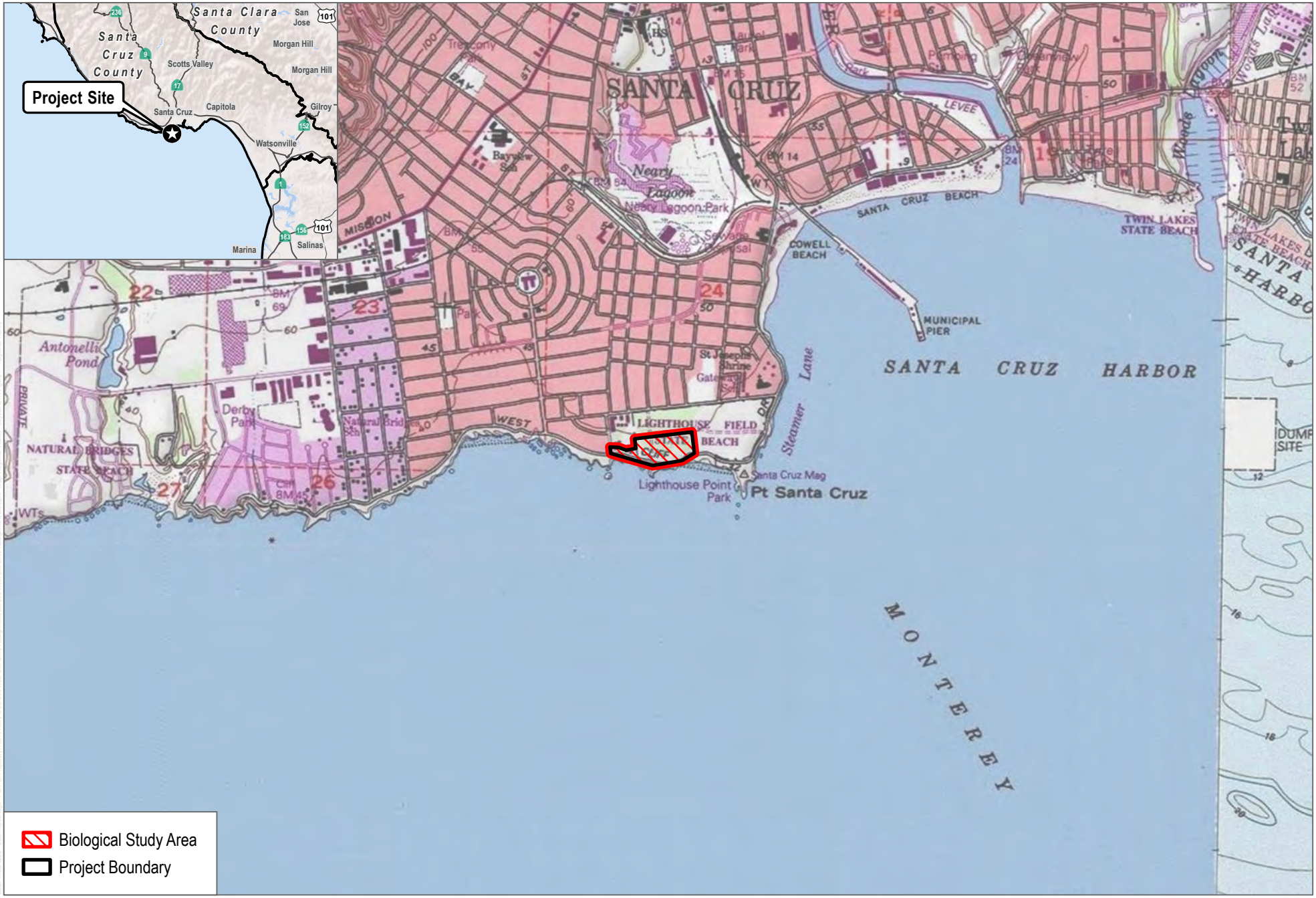
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Appendix A
Figures



SOURCE: USGS National Map 2025

FIGURE 1

Regional Vicinity

DUDEK

0 1,000 2,000 Feet



SOURCE: Esri Aerial Basemap

DUDEK

0 100 200 Feet

FIGURE 2

Biological Study Area

Biological Resources Technical Memorandum for CEQA and NEPA Compliance, 800 West Cliff Drive Realignment Project, Santa Cruz County, California



SOURCE: Esri Aerial Basemap, NHD, NWI

FIGURE 3

Hydrologic Setting

DUDEK

0 1,000 2,000 Feet



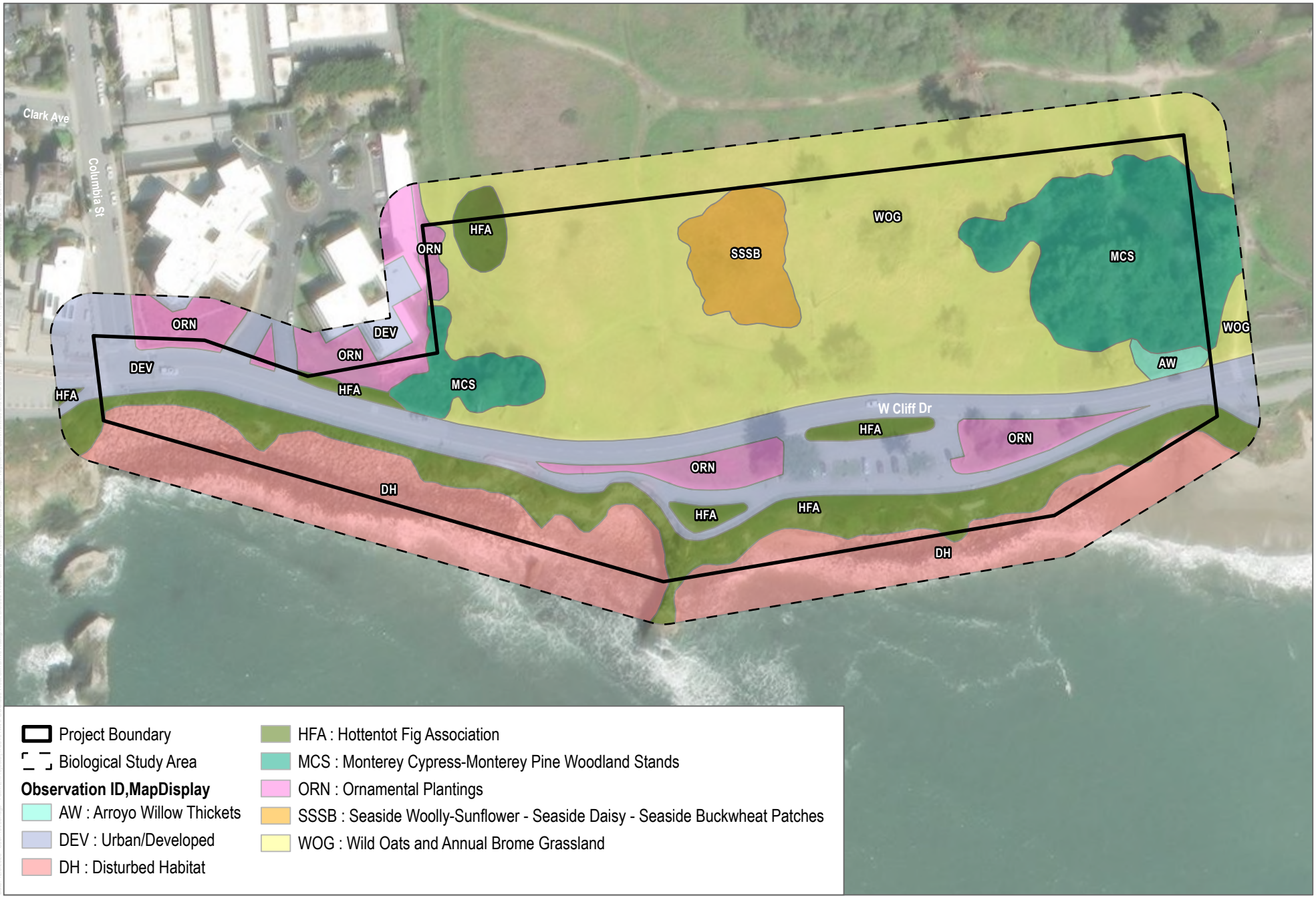
SOURCE: Esri Aerial Basemap, USDA SSURGO

FIGURE 4

Soils

DUDEK

0 70 140 Feet



SOURCE: Esri Aerial Basemap, USDA SSURGO

FIGURE 4

Vegetation Communities and Land Cover Types

DUDEK

0 70 140 Feet

Biological Resources Technical Memorandum for CEQA and NEPA Compliance, 800 West Cliff Drive Realignment Project, Santa Cruz County, California



SOURCE: Esri Aerial Basemap, NOAA, OpenStreetMap

DUDEK

0 45 90 Feet

FIGURE 6

Potentially Jurisdictional Aquatic Resources

Biological Resources Technical Memorandum for CEQA and NEPA Compliance, 800 West Cliff Drive Realignment Project, Santa Cruz County, California

Appendix B
Representative Site Photographs

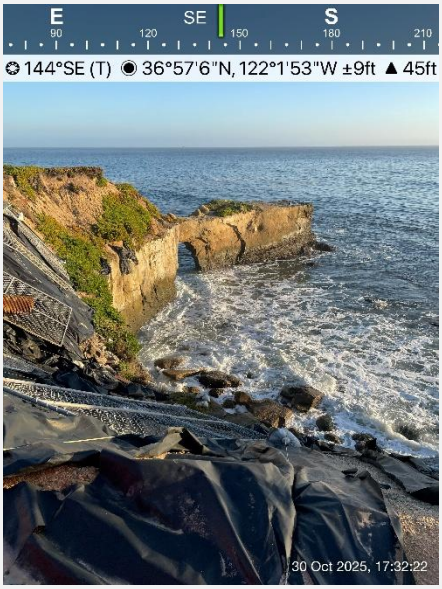


Photo 1. Coastal bluff erosion that prompted the need for the Project.



Photo 2. Coastal bluff and hottentot fig vegetation community, view facing east.

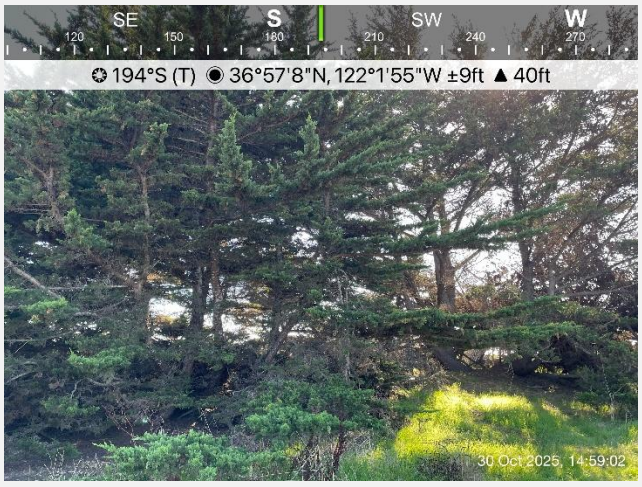


Photo 3. Monterey cypress—Monterey pine woodland stand on the west side of the BSA known to provide monarch butterfly overwintering habitat.



Photo 4. Hottentot fig association.



Photo 5. Seaside woolly sunflower—seaside daisy—seaside buckwheat patch



Photo 6. Monterey cypress trees scattered within the wild oats and annual brome grassland community.



Photo 7. West Cliff Drive at the west end of the BSA, view facing east. Visible land cover types include urban/developed, hottentot fig association, and disturbed (rip rap).



Photo 8. Monterey cypress trees planted as ornamentals adjacent to the existing parking lot in the BSA.

Appendix C
Plant Species Compendium

Plant Species

Vascular Species

Eudicots

AIZOACEAE—FIG-MARIGOLD FAMILY

Carpobrotus edulis—hottentot fig* (Not Listed)

APIACEAE—CARROT FAMILY

Foeniculum vulgare—fennel* (Not Listed)

ARALIACEAE—GINSENG FAMILY

Hedera helix—English ivy* (FACU)

ASTERACEAE—SUNFLOWER FAMILY

Achillea millefolium—common yarrow (FACU)

Artemisia californica—California sagebrush (Not Listed)

Baccharis pilularis—coyote brush (Not Listed)

Erigeron glaucus—seaside fleabane (FACU)

Eriophyllum staechadifolium—no common name (Not Listed)

Grindelia stricta—Oregon gumweed (FACW)

Hypochaeris radicata—hairy cat's ear* (FACU)

BRASSICACEAE—MUSTARD FAMILY

Raphanus raphanistrum—wild radish* (Not Listed)

CONVOLVULACEAE—MORNING-GLORY FAMILY

Convolvulus arvensis—field bindweed* (Not Listed)

FABACEAE—LEGUME FAMILY

Vicia sativa—garden vetch* (FACU)

GERANIACEAE—GERANIUM FAMILY

Geranium molle—dovefoot geranium* (Not Listed)

LAMIACEAE—MINT FAMILY

Mentha pulegium—pennyroyal* (OBL)

MALVACEAE—MALLOW FAMILY

Malva parviflora—cheeseweed mallow* (Not Listed)

MYRSINACEAE—MYRSINE FAMILY

Lysimachia arvensis—scarlet pimpernel* (FAC)

OXALIDACEAE—OXALIS FAMILY

Oxalis pes-caprae—Bermuda buttercup* (Not Listed)

PLANTAGINACEAE—PLANTAIN FAMILY

Plantago coronopus—buckhorn plantain* (FAC)

POLYGONACEAE—BUCKWHEAT FAMILY

Eriogonum latifolium—seaside buckwheat (Not Listed)

Rumex acetosella—common sheep sorrel* (FACU)

Rumex crispus—curly dock* (FAC)

Rumex pulcher—fiddle dock* (FAC)

ROSACEAE—ROSE FAMILY

Rubus armeniacus—Himalayan blackberry* (FAC)

SALICACEAE—WILLOW FAMILY

Salix lasiolepis—arroyo willow (FACW)

Gymnosperms and Gnetophytes

CUPRESSACEAE—CYPRESS FAMILY

Hesperocyparis macrocarpa—Monterey cypress (Not Listed)

Monocots

CYPERACEAE—SEDGE FAMILY

Cyperus eragrostis—tall flatsedge (FACW)

POACEAE—GRASS FAMILY

Avena barbata—slender oat* (Not Listed)

Briza maxima—big quakinggrass* (Not Listed)

Bromus diandrus—ripgut brome* (Not Listed)

Bromus hordeaceus—soft brome* (FACU)

Cynodon dactylon—Bermudagrass* (FACU)

Ehrharta erecta—panic veldtgrass* (Not Listed)

Elymus glaucus—blue wildrye (FACU)

Festuca perennis—perennial rye grass* (FAC)

Hordeum murinum—mouse barley* (FACU)
Phalaris aquatica—Harding grass* (FACU)
Polypogon monspeliensis—annual rabbitsfoot grass* (FACW)
Sporobolus indicus—smut grass* (FACU)

FACU = facultative upland
FAC = facultative
FACW = facultative wetland
UPL = upland
OBL = obligate

* Signifies introduced (non-native) species.

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Appendix D
Plant Species Potential to Occur

Scientific Name	Common Name	Status* (Federal/State/CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
Agrostis blasdalei	Blasdale's bent grass	None/None/1B.2	Coastal bluff scrub, Coastal dunes, Coastal prairie/perennial rhizomatous herb/ May–July/0–490	**Low potential to occur**. Suitable habitat for this species is present in the BSA. However, there are no CNDDB or Calflora records of this species in the BSA.
Amsinckia lunaris	bent-flowered fiddleneck	None/None/1B.2	Cismontane woodland, Coastal bluff scrub, Valley and foothill grassland/annual herb/Mar–June/10–1,640	**Low potential to occur.** Suitable habitat for this species is present in the BSA, however, there are no CNDDB or Calflora records of this species in the BSA.
Anomobryum julaceum	slender silver moss	None/None/4.2	Broadleafed upland forest, Lower montane coniferous forest, North Coast coniferous forest; Roadsides (usually)/moss/N.A./ 330–3,280	**Not expected to occur.** There is no suitable habitat for this species in the BSA and there are no CNDDB or Calflora records of this species in the BSA.
Aphyllon robbinsii	Robbins' broomrape	None/None/1B.1	Coastal bluff scrub; Rocky, Sandy/annual herb (achlorophyllous)/Apr–July/0–330	**Low potential to occur.** Suitable habitat for this species is present in the BSA, however, there are no CNDDB or Calflora records of this species in the BSA.
Arabis blepharophylla	coast rockcress	None/None/4.3	Broadleafed upland forest, Coastal bluff scrub, Coastal prairie, Coastal scrub; Rocky/perennial herb/Feb–May/10–3,610	**Low potential to occur.** Suitable habitat for this species is present in the BSA, however, there are no Calflora records of this species in the BSA.
Arctostaphylos andersonii	Anderson's manzanita	None/None/1B.2	Broadleafed upland forest, Chaparral, North Coast coniferous forest; Edges, Openings/ perennial evergreen shrub/Nov–May/ 195–2,495	**Not expected to occur.** There is no suitable habitat for this species present in the BSA and there are no CNDDB records of this species within 1 mile of the BSA.

Scientific Name	Common Name	Status* (Federal/State/CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
Arctostaphylos glutinosa	Schreiber's manzanita	None/None/1B.2	Chaparral, Closed-cone coniferous forest/ perennial evergreen shrub/Mar–Apr (Nov)/ 560–2,245	**Not expected to occur.** There is no suitable habitat for this species present in the BSA and there are no CNDDB records of this species within 1 mile of the BSA.
Arctostaphylos ohloneana	Ohlone manzanita	None/None/1B.1	Closed-cone coniferous forest, Coastal scrub/evergreen shrub/Feb–Mar/ 1,475–1,740	**Not expected to occur.** There is no suitable habitat for this species present in the BSA and the site is outside of the species' known elevation range.
Arctostaphylos silvicola	Bonny Doon manzanita	None/None/1B.2	Chaparral, Closed-cone coniferous forest, Lower montane coniferous forest/perennial evergreen shrub/Jan–Mar/395–1,970	**Not expected to occur.** There is no suitable habitat for this species present in the BSA and there are no CNDDB records of this species within 1 mile of the BSA.
Arenaria paludicola	marsh sandwort	FE/SE/1B.1	Marshes and swamps (brackish, freshwater); Openings, Sandy/perennial stoloniferous herb/May–Aug/10–560	**Not expected to occur.** There is no suitable habitat for this species present in the BSA and there are no CNDDB records of this species in the BSA.
Astragalus agnicidus	Humboldt County milk-vetch	None/SE/1B.1	Broadleafed upland forest, North Coast coniferous forest; Disturbed areas, Openings, Roadsides (sometimes)/perennial herb/(Mar)Apr–Sep/395–2,625	**Not expected to occur.** There is no suitable habitat for this species present in the BSA and there are no CNDDB records of this species within 1 mile of the BSA.
Azolla microphylla	Mexican mosquito fern	None/None/4.2	Marshes and swamps (ponds, slow water)/ annual/perennial herb/Aug/100–330	**Not expected to occur.** There is no suitable habitat for this species present in the BSA and there are no Calflora records of this species in the BSA.

Scientific Name	Common Name	Status* (Federal/State/CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
Calandrinia breweri	Brewer's calandrinia	None/None/4.2	Chaparral, Coastal scrub; Burned areas, Disturbed areas, Loam (sometimes), Sandy (sometimes)/annual herb/(Jan)Mar–June/ 35–4,005	**Not expected to occur.** There is no suitable habitat for this species present in the BSA and there are no Calflora records of this species in the BSA.
Calochortus uniflorus	pink star-tulip	None/None/4.2	Coastal prairie, Coastal scrub, Meadows and seeps, North Coast coniferous forest/ perennial bulbiferous herb/Apr–June/ 35–3,510	**Low potential to occur.** There is suitable habitat for this species present in the BSA, however, there are no Calflora records of this species in the BSA.
Calyptridium parryi var. *hesseae*	Santa Cruz Mountains pussypaws	None/None/1B.1	Chaparral, Cismontane woodland; Gravelly (sometimes), Openings, Sandy (sometimes)/ annual herb/May–Aug/1,000–5,020	**Not expected to occur.** There is no suitable habitat for this species present in the BSA and the site is outside of the species' known elevation range.
Carex comosa	bristly sedge	None/None/2B.1	Coastal prairie, Marshes and swamps (lake margins), Valley and foothill grassland/ perennial rhizomatous herb/May–Sep/ 0–2,050	**Low potential to occur.** There is suitable habitat for this species present in the BSA, however, there are no CNDDB records of this species in the BSA.
Carex saliniformis	deceiving sedge	None/None/1B.2	Coastal prairie, Coastal scrub, Marshes and swamps (coastal salt), Meadows and seeps; Mesic/perennial rhizomatous herb/ (May)June (July)/10–755	**Low potential to occur.** There is suitable habitat for this species present in the BSA, however, there are no records of this species within the BSA.
Castilleja ambigua var. *ambigua*	johnny-nip	None/None/4.2	Coastal bluff scrub, Coastal prairie, Coastal scrub, Marshes and swamps, Valley and foothill grassland, Vernal pools (margins)/ annual herb (hemiparasitic)/ Mar–Aug/0–1,425	**Low potential to occur.** There is suitable habitat for this species present in the BSA, however, there are no records of this species within the BSA.
Chorizanthe pungens var. *hartwegiana*	Ben Lomond spineflower	FE/None/1B.1	Lower montane coniferous forest (maritime ponderosa pine sandhills)/annual herb/ Apr–July/295–2,000	**Not expected to occur.** There is no suitable habitat for this species present in the BSA and

Scientific Name	Common Name	Status* (Federal/State/CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
				there are no records of this species in the BSA.
Chorizanthe pungens var. *pungens*	Monterey spineflower	FT/None/1B.2	Chaparral (maritime), Cismontane woodland, Coastal dunes, Coastal scrub, Valley and foothill grassland; Sandy/annual herb/ Apr–June (July–Aug)/10–1,475	**Low potential to occur.** There is suitable habitat for this species present in the BSA, however, there are no records of this species in the BSA.
Chorizanthe robusta var. *hartwegii*	Scotts Valley spineflower	FE/None/1B.1	Meadows and seeps (sandy), Valley and foothill grassland (mudstone, Purisima outcrops)/annual herb/Apr–July/755–805	**Not expected to occur.** The site is outside of the species' known elevation range.
Chorizanthe robusta var. *robusta*	robust spineflower	FE/None/1B.1	Chaparral (maritime), Cismontane woodland (openings), Coastal dunes, Coastal scrub; Gravelly (sometimes), Sandy (sometimes)/ annual herb/Apr–Sep/10–985	**Not expected to occur.** There is no suitable habitat for this species present in the BSA and there are no records of this species in the BSA.
Collinsia multicolor	San Francisco collinsia	None/None/1B.2	Closed-cone coniferous forest, Coastal scrub; Serpentine (sometimes)/annual herb/ (Feb)Mar–May/100–900	**Not expected to occur.** The BSA is outside the species' known elevation range and there are no CNDDB records in the BSA.
Cypripedium fasciculatum	clustered lady's-slipper	None/None/4.2	Lower montane coniferous forest, North Coast coniferous forest; Seeps (usually), Serpentine (usually), Streambanks/perennial rhizomatous herb/Mar–Aug/330–7,990	**Not expected to occur.** The BSA is outside the species' known elevation range. There are no Calflora observations of this species in the BSA.
Cypripedium montanum	mountain lady's-slipper	None/None/4.2	Broadleafed upland forest, Cismontane woodland, Lower montane coniferous forest, North Coast coniferous forest/perennial rhizomatous herb/Mar–Aug/605–7,300	**Not expected to occur.** The BSA is outside the species' known elevation range and there are no Calflora records of this species in the BSA.
Dacryophyllum falcifolium	tear drop moss	None/None/1B.3	North Coast coniferous forest; Carbonate/ moss/N.A./165–900	**Not expected to occur.** The BSA is outside the species' known elevation range and there are no records of this species in the BSA.

Scientific Name	Common Name	Status* (Federal/State/CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
Eastwoodiella californica	swamp harebell	None/None/1B.2	Bogs and fens, Closed-cone coniferous forest, Coastal prairie, Marshes and swamps (freshwater), Meadows and seeps, North Coast coniferous forest; Mesic/perennial rhizomatous herb/June–Oct/5–1,330	**Not expected to occur.** There are no records of this species in the BSA.
Elymus californicus	California bottle-brush grass	None/None/4.3	Broadleafed upland forest, Cismontane woodland, North Coast coniferous forest, Riparian woodland/perennial herb/May–Aug (Nov)/50–1,540	**Not expected to occur.** The BSA is outside the species' known elevation range and there are no Calflora records of this species in the BSA.
Eriogonum nudum var. *decurrens*	Ben Lomond buckwheat	None/None/1B.1	Chaparral, Cismontane woodland, Lower montane coniferous forest (maritime ponderosa pine sandhills); Sandy/perennial herb/June–Oct/165–2,625	**Not expected to occur.** The BSA is outside the species' known elevation range and there are no CNDDB records of this species in the BSA.
Erysimum franciscanum	San Francisco wallflower	None/None/4.2	Chaparral, Coastal dunes, Coastal scrub, Valley and foothill grassland; Granitic (often), Roadsides (sometimes), Serpentine (often)/ perennial herb/Mar–June/0–1,805	**Not expected to occur.** There are no Calflora records of this species in the BSA.
Erysimum teretifolium	Santa Cruz wallflower	FE/SE/1B.1	Chaparral, Lower montane coniferous forest/ perennial herb/Mar–July/395–2,000	**Not expected to occur.** The BSA is outside the species' known elevation range and there are no CNDDB records of this species in the BSA.
Eschscholzia hypecoides	San Benito poppy	None/None/4.3	Chaparral, Cismontane woodland, Valley and foothill grassland; Clay, Serpentine/annual herb/Mar–June/655–4,920	**Not expected to occur.** The BSA is outside of the species' known elevation range.
Fissidens pauperculus	minute pocket moss	None/None/1B.2	North Coast coniferous forest (damp coastal soil)/moss/N.A./35–3,360	**Not expected to occur.** There is no suitable habitat for this species present in the BSA.
Gilia tenuiflora ssp. *arenaria*	Monterey gilia	FE/ST/1B.2	Chaparral (maritime), Cismontane woodland, Coastal dunes, Coastal scrub; Openings, Sandy/annual herb/Apr–June/0–150	**Not expected to occur.** There are no CNDDB records of this species in the BSA.

Scientific Name	Common Name	Status* (Federal/State/CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
Hesperocyparis abramsiana var. *abramsiana*	Santa Cruz cypress	FT/SE/1B.2	Chaparral, Closed-cone coniferous forest, Lower montane coniferous forest; Granitic (sometimes), Sandstone (sometimes)/ perennial evergreen tree/N.A./920–2,625	**Not expected to occur.** The BSA is outside of the species' known elevation range.
Hoita strobilina	Loma Prieta hoita	None/None/1B.1	Chaparral, Cismontane woodland, Riparian woodland; Mesic, Serpentine (usually)/ perennial herb/May–July (Aug–Oct)/ 100–2,820	**Not expected to occur.** The BSA is outside the species' known elevation range and there are no CNDDB records in the BSA.
Holocarpha macradenia	Santa Cruz tarplant	FT/SE/1B.1	Coastal prairie, Coastal scrub, Valley and foothill grassland; Clay (often), Sandy/ annual herb/June–Oct/35–720	**Low potential to occur.** There is suitable habitat for this species present in the BSA, however, there are no records of this species in the BSA.
Horkelia cuneata var. *sericea*	Kellogg's horkelia	None/None/1B.1	Chaparral (maritime), Closed-cone coniferous forest, Coastal dunes, Coastal scrub; Gravelly (sometimes), Openings, Sandy (sometimes)/ perennial herb/Apr–Sep/35–655	**Low potential to occur.** There is suitable habitat for this species present in the BSA, however, there are no records of this species within the BSA.
Horkelia marinensis	Point Reyes horkelia	None/None/1B.2	Coastal dunes, Coastal prairie, Coastal scrub; Sandy/perennial herb/May–Sep/ 15–2,475	**Low potential to occur.** There is suitable habitat for this species present in the BSA, however, there are no records of this species within the BSA.
Hosackia gracilis	harlequin lotus	None/None/4.2	Broadleafed upland forest, Cismontane woodland, Closed-cone coniferous forest, Coastal bluff scrub, Coastal prairie, Coastal scrub, Marshes and swamps, Meadows and seeps, North Coast coniferous forest, Valley and foothill grassland; Roadsides/perennial rhizomatous herb/Mar–July/0–2,295	**Low potential to occur**. There is suitable habitat for this species present in the BSA, however, there are no records of this species within the BSA.
Iris longipetala	coast iris	None/None/4.2	Coastal prairie, Lower montane coniferous forest, Meadows and seeps; Mesic/perennial rhizomatous herb/Mar–May(June)/0–1,970	**Low potential to occur.** There is suitable habitat for this species present in the BSA, however, there are no records of this species within the BSA.

Scientific Name	Common Name	Status* (Federal/State/CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
Lasthenia californica ssp. *macrantha*	perennial goldfields	None/None/1B.2	Coastal bluff scrub, Coastal dunes, Coastal scrub/perennial herb/Jan–Nov/15–1,705	**Not expected to occur.** There are no records of this species in the BSA.
Leptosiphon aureus	bristly leptosiphon	None/None/4.2	Chaparral, Cismontane woodland, Coastal prairie, Valley and foothill grassland/annual herb/Apr–July/180–4,920	**Not expected to occur.** The BSA is outside the species' known elevation range and there are no records of this species in the BSA.
Leptosiphon grandiflorus	large-flowered leptosiphon	None/None/4.2	Cismontane woodland, Closed-cone coniferous forest, Coastal bluff scrub, Coastal dunes, Coastal prairie, Coastal scrub, Valley and foothill grassland; Sandy (usually)/annual herb/Apr–Aug/15–4,005	**Low potential to occur.** There is suitable habitat for this species present in the BSA, however, there are no records of this species in the BSA.
Malacothamnus arcuatus var. *arcuatus*	arcuate bushmallow	None/None/1B.2	Chaparral, Cismontane woodland/perennial deciduous shrub/Apr–Sep/50–1,165	**Not expected to occur.** There are no records of this species in the BSA.
Micropus amphibolus	Mt. Diablo cottonweed	None/None/3.2	Broadleafed upland forest, Chaparral, Cismontane woodland, Valley and foothill grassland; Rocky/annual herb/Mar–May/ 150–2,705	**Not expected to occur.** The BSA is outside the species' known elevation range.
Microseris paludosa	marsh microseris	None/None/1B.2	Cismontane woodland, Closed-cone coniferous forest, Coastal scrub, Valley and foothill grassland/perennial herb/ Apr–June (July)/15–1,165	**Low potential to occur.** There is suitable habitat for this species present in the BSA, however, there are no records of this species in the BSA.
Mielichhoferia elongata	elongate copper moss	None/None/4.3	Broadleafed upland forest, Chaparral, Cismontane woodland, Coastal scrub, Lower montane coniferous forest, Meadows and seeps, Subalpine coniferous forest; Acidic (usually), Carbonate (sometimes), Metamorphic, Roadsides (often), Vernally Mesic (usually)/moss/N.A./0–6,430	**Low potential to occur.** There is suitable habitat for this species present in the BSA, however, there are no records of this species in the BSA.

Scientific Name	Common Name	Status* (Federal/State/CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
Mimulus rattanii ssp. *decurtatus*	Santa Cruz County monkeyflower	None/None/4.2	Chaparral, Lower montane coniferous forest; Gravelly, Lake Margins/annual herb/ May–July/1,310–1,640	**Not expected to occur.** The site is outside of the species' known elevation range. There are no Calflora records of this species in the BSA.
Monardella sinuata ssp. *nigrescens*	northern curly-leaved monardella	None/None/1B.2	Chaparral (SCR Co.), Coastal dunes, Coastal scrub, Lower montane coniferous forest (SCR Co., ponderosa pine sandhills); Sandy/ annual herb/(Apr)May–July (Aug–Sep)/ 0–985	**Not expected to occur.** There are no CNDDB records of this species in the BSA.
Monolopia gracilens	woodland woollythreads	None/None/1B.2	Broadleafed upland forest (openings), Chaparral (openings), Cismontane woodland, North Coast coniferous forest (openings), Valley and foothill grassland; Serpentine/ annual herb/(Feb)Mar–July/330–3,935	**Not expected to occur.** The BSA is outside the species' known elevation range.
Pedicularis dudleyi	Dudley's lousewort	None/SR/1B.2	Chaparral (maritime), Cismontane woodland, North Coast coniferous forest, Valley and foothill grassland/perennial herb/ Apr–June/195–2,955	**Not expected to occur.** The BSA is outside the species' known elevation range and there are no CNDDB records of this species in the BSA.
Penstemon rattanii var. *kleei*	Santa Cruz Mountains beardtongue	None/None/1B.2	Chaparral, Lower montane coniferous forest, North Coast coniferous forest/perennial herb/(Mar)May–June/1,310–3,610	**Not expected to occur.** The site is outside of the species' known elevation range.
Pentachaeta bellidiflora	white-rayed pentachaeta	FE/SE/1B.1	Cismontane woodland, Valley and foothill grassland (often serpentinite)/annual herb/ Mar–May/115–2,035	**Not expected to occur.** The BSA contains suitable habitat for this species, but the BSA is outside the species' known elevation range. There is one historic CNDDB occurrence within 1 mile of the BSA mapped generally to Santa Cruz (CDFW 2025; Occ. No. 11). However, this record is more than twenty years old.

Scientific Name	Common Name	Status* (Federal/State/CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
Perideridia gairdneri ssp. *gairdneri*	Gairdner's yampah	None/None/4.2	Broadleafed upland forest, Chaparral, Coastal prairie, Valley and foothill grassland, Vernal pools; Vernally Mesic/perennial herb/ June–Oct/0–2,000	**Not expected to occur.** There are no Calflora records of this species in the BSA.
Pinus radiata	Monterey pine	None/None/1B.1	Cismontane woodland, Closed-cone coniferous forest/perennial evergreen tree/ N.A./80–605	**Not expected to occur.** There are no CNDDB records of this species naturally occurring in the BSA. Species is widely planted as an ornamental or wind break outside of its natural range.
Piperia candida	white-flowered rein orchid	None/None/1B.2	Broadleafed upland forest, Lower montane coniferous forest, North Coast coniferous forest; Serpentine (sometimes)/perennial herb/(Mar–Apr) May–Sep/100–4,300	**Not expected to occur.** The BSA is outside the species' known elevation range and there are no CNDDB records of this species in the BSA.
Piperia michaelii	Michael's rein orchid	None/None/4.2	Chaparral, Cismontane woodland, Closed-cone coniferous forest, Coastal bluff scrub, Coastal scrub, Lower montane coniferous forest/perennial herb/Apr–Aug/10–3,000	**Not expected to occur.** There are no Calflora records of this species in the BSA.
Plagiobothrys chorisianus var. *chorisianus*	Choris' popcornflower	None/None/1B.2	Chaparral, Coastal prairie, Coastal scrub; Mesic/annual herb/Mar–June/10–525	**Not expected to occur.** There are no CNDDB records of this species in the BSA.
Plagiobothrys chorisianus var. *hickmanii*	Hickman's popcornflower	None/None/4.2	Chaparral, Closed-cone coniferous forest, Coastal scrub, Marshes and swamps, Vernal pools/annual herb/Apr–June/50–1,280	**Not expected to occur.** The BSA is outside the species' known elevation range and there are no records of this species in the BSA.
Plagiobothrys diffusus	San Francisco popcornflower	None/SE/1B.1	Coastal prairie, Valley and foothill grassland/annual herb/Mar–June/ 195–1,180	**Not expected to occur.** There is suitable habitat for this species present in the BSA, however, the BSA is outside the species' known elevation range and there are no records of this species in the BSA.

Scientific Name	Common Name	Status* (Federal/State/CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
Polygonum hickmanii	Scotts Valley polygonum	FE/SE/1B.1	Valley and foothill grassland (mudstone, sandstone)/annual herb/May–Aug/ 690–820	**Not expected to occur.** The site is outside of the species' known elevation range.
Ranunculus lobbii	Lobb's aquatic buttercup	None/None/4.2	Cismontane woodland, North Coast coniferous forest, Valley and foothill grassland, Vernal pools; Mesic/annual herb (aquatic)/Feb–May/50–1,540	**Not expected to occur.** There are no Calflora records of this species in the BSA.
Sanicula hoffmannii	Hoffmann's sanicle	None/None/4.3	Broadleafed upland forest, Chaparral, Cismontane woodland, Coastal bluff scrub, Coastal scrub, Lower montane coniferous forest; Clay (often), Serpentine (often)/ perennial herb/Mar–May/100–985	**Not expected to occur.** The BSA is outside the species' known elevation range and there are no Calflora records of this species in the BSA.
Senecio aphanactis	chaparral ragwort	None/None/2B.2	Chaparral, Cismontane woodland, Coastal scrub; Alkaline (sometimes)/annual herb/ Jan–Apr (May)/50–2,625	**Not expected to occur.** There are no CNDDB records of this species in the BSA.
Sidalcea malachroides	maple-leaved checkerbloom	None/None/4.2	Broadleafed upland forest, Coastal prairie, Coastal scrub, North Coast coniferous forest, Riparian woodland; Disturbed areas (often)/ perennial herb/(Mar)Apr–Aug/0–2,395	**Low potential to occur.** The BSA contains suitable habitat for this species, however, there are no Calflora records of this species in the BSA. There is one CNDDB record of this species within 1 mile of the BSA (CDFW 2025; Occ. No. 4), however, this record is more than twenty years old.
Stebbinsoseris decipiens	Santa Cruz microseris	None/None/1B.2	Broadleafed upland forest, Chaparral, Closed-cone coniferous forest, Coastal prairie, Coastal scrub, Valley and foothill grassland; Openings, Serpentine (sometimes)/annual herb/Apr–May/ 35–1,640	**Low potential to occur.** There is suitable habitat for this species present in the BSA, however, there are no CNDDB records of this species in the BSA.
Toxicoscordion fontanum	marsh zigadenus	None/None/4.2	Chaparral, Cismontane woodland, Lower montane coniferous forest, Marshes and swamps, Meadows and seeps; Serpentine (often), Vernally Mesic/perennial bulbiferous herb/Apr–July/50–3,280	**Not expected to occur.** There are no Calflora records of this species in the BSA.

Scientific Name	Common Name	Status* (Federal/State/CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
Trifolium buckwestiorum	Santa Cruz clover	None/None/1B.1	Broadleafed upland forest, Cismontane woodland, Coastal prairie; Gravelly/annual herb/Apr–Oct/115–2,000	**Not expected to occur.** The BSA is outside the species' known elevation range and there are no records of this species in the BSA.
Trifolium polyodon	Pacific Grove clover	None/SR/1B.1	Closed-cone coniferous forest, Coastal prairie, Meadows and seeps, Valley and foothill grassland; Granitic (sometimes), Mesic/annual herb/Apr–June (July)/ 15–1,395	**Not expected to occur.** There are no CNDDB records of this species in the BSA.

***Status Legend:**
FE: Federally listed as endangered
FT: Federally listed as threatened
FC: Federal Candidate for listing
SE: State listed as endangered
ST: State listed as threatened
SC: State Candidate for listing
SR: State Rare
CRPR 1A: Plants presumed extirpated in California and either rare or extinct elsewhere
CRPR 1B: Plants rare, threatened, or endangered in California and elsewhere
CRPR 2A: Plants presumed extirpated in California but common elsewhere
CRPR 2B: Plants rare, threatened, or endangered in California but more common elsewhere
CRPR 3: Review List: Plants about which more information is needed
CRPR 4: Watch List: Plants of limited distribution
.1 Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)
.2 Moderately threatened in California (20–80% occurrences threatened / moderate degree and immediacy of threat)
.3 Not very threatened in California (<20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

References:

CDFW (California Department of Fish and Wildlife). 2025. California Natural Diversity Database (CNDDB) Rarefind. CDFW, Biogeographic Data Branch. Accessed November 2025. https://www.dfg.ca.gov/biogeodata/cnddb/mapsanddata.asp.

CalFlora. 2025. Observation Search, Santa Cruz County. Accessed November 2025. https://www.calflora.org/

Appendix E
Wildlife Species Potential to Occur

Scientific Name	Common Name	Status* (Federal/State)	Habitat	Potential to Occur
Amphibians				
Ambystoma macrodactylum croceum	Santa Cruz long-toed salamander	FE/FP, SE	Dense riparian vegetation, thick coastal scrub, and oak woodland	**Not expected to occur.** The BSA is outside the known range of the species (California Herps 2025).
Aneides niger	Santa Cruz black salamander	None/SSC	Restricted to mesic forests in the fog belt of the outer Coast Range of San Mateo, Santa Cruz, and Santa Clara counties. Mixed deciduous and coniferous woodlands and coastal grasslands. Occurs in moist streamside microhabitats and is found under rocks, talus, and damp woody debris.	**Low potential to occur.** The BSA does not contain suitable habitat for this species, but there is one CNDDB record of this species within 1 mile of the BSA (CDFW 2025; Occ. No. 17). However, this record is more than 20 years old.
Dicamptodon ensatus	California giant salamander	None/SSC	Known from wet coastal forests and chaparral near streams and seeps from Mendocino Co. south to Monterey Co. and east to Napa Co. Aquatic larvae found in cold, clear streams, occasionally in lakes and ponds. Adults known from wet forests under rocks and logs near streams and lakes.	**Not expected to occur.** The BSA does not contain suitable habitat for this species and there are no CNDDB records within 1 mile of the BSA.
Rana boylii pop. 4	foothill yellow-legged frog - central coast DPS	FT/SE	Rocky streams and rivers with open banks in forest, chaparral, and woodland	**Not expected to occur.** The BSA does not contain suitable habitat for this species and there are no CNDDB records of this species within 1 mile of the BSA.
Rana draytonii	California red-legged frog	FT/SSC	Lowland streams, wetlands, riparian woodlands, livestock ponds; dense, shrubby or emergent vegetation associated with deep, still or slow-moving water; uses adjacent uplands	**Not expected to occur.** The BSA does not contain suitable habitat for this species. There are no CNDDB records of this species within 1 mile of the BSA.

Scientific Name	Common Name	Status* (Federal/State)	Habitat	Potential to Occur
Reptiles				
Thamnophis sirtalis tetrataenia	San Francisco garter snake	FE/FP, SE	Wide range of habitats including grasslands or wetlands adjacent to ponds, marshes, and sloughs	**Not expected to occur.** The BSA does not contain suitable habitat for this species and the BSA is outside its known range.
Actinemys marmorata	northwestern pond turtle	FPT/SSC	Slow-moving permanent or intermittent streams, ponds, small lakes, and reservoirs with emergent basking sites; adjacent uplands used for nesting and during winter	**Not expected to occur.** The BSA does not contain suitable habitat for this species. There is one CNDDB record of the species within 1 mile of the BSA (CDFW 2025; Occ. No. 1148). However, this record is more than twenty years old.
Birds				
Agelaius tricolor (nesting colony)	tricolored blackbird	None/SSC, ST	Nests near freshwater, emergent wetland with cattails or tules, but also in Himalayan blackberrry; forages in grasslands, woodland, and agriculture	**Not expected to occur.** The BSA does not contain suitable breeding habitat for this species. There is one CNDDB record of this species within 1 mile of the BSA at Neary Lagoon in 2014 (CDFW 2025; Occ. No. 166). However, local experts report the species has been extirpated from the region for the past 20 years (G. Kittleson, personal communication, March 27, 2025).
Aquila chrysaetos (nesting and wintering)	golden eagle	None/FP, WL	Nests and winters in hilly, open/semi-open areas, including shrublands, grasslands, pastures, riparian areas, mountainous canyon land, open desert rimrock terrain; nests in large trees and on cliffs in open areas and forages in open habitats	**Low potential to occur.** The BSA contains suitable foraging habitat for this species, but there are no records of this species breeding in the BSA (G. Kittleson, personal

Scientific Name	Common Name	Status* (Federal/State)	Habitat	Potential to Occur
				communication, March 27, 2025).
Athene cunicularia (burrow sites and some wintering sites)	burrowing owl	None/SSC, SC	Nests and forages in grassland, open scrub, and agriculture, particularly with ground squirrel burrows	**Low potential to occur.** This species is a winter visitor to Santa Cruz County and is not known to breed in the BSA (G. Kittleson, personal communication, March 27, 2025). There are no CNDDB records of this species within 1 mile of the BSA.
Brachyramphus marmoratus (nesting)	marbled murrelet	FT/SE	Nests in old-growth coastal forests, forages in subtidal and pelagic habitats	**Not expected to occur.** The BSA does not contain suitable habitat for this species. There are no CNDDB records of this species within 1 mile of the BSA.
Charadrius nivosus nivosus (nesting)	western snowy plover	FT /SSC	On coasts nests on sandy marine and estuarine shores; in the interior nests on sandy, barren or sparsely vegetated flats near saline or alkaline lakes, reservoirs, and ponds	**Low potential to occur.** The BSA contains suitable habitat for this species and there is one CNDDB record within 1 mile of the BSA at Natural Bridges (CDFW 2025; Occ. No. 62). However, this record is more than twenty years old.
Coturnicops noveboracensis	yellow rail	None/SSC	Nesting requires wet marsh/sedge meadows or coastal marshes with wet soil and shallow, standing water	**Not expected occur.** The BSA does not contain suitable habitat for this species, but there is one CNDDB record of this species within 1 mile of the BSA (CDFW 2025; Occ. No. 42). However, this record is more than twenty years old.
Cypseloides niger (nesting)	black swift	None/SSC	Nests in moist crevices, caves, and cliffs behind or adjacent to waterfalls in deep	**Low potential to occur.** The BSA contains suitable nesting

Scientific Name	Common Name	Status* (Federal/State)	Habitat	Potential to Occur
			canyons; forages over a wide range of habitats	habitat along the coastal bluff south of West Cliff Drive and there are three CNDDB records of this species within 1 mile of the BSA (CDFW 2025; Occ No. 13, 38, and 42). However, these records are more than twenty years old.
Elanus leucurus (nesting)	white-tailed kite	None/FP	Nests in woodland, riparian, and individual trees near open lands; forages opportunistically in grassland, meadows, scrubs, agriculture, emergent wetland, savanna, and disturbed lands	**Known to occur.** The BSA contains suitable nesting and foraging habitat for this species. There is one iNaturalist record of this species within the BSA from 2020 (iNaturalist 2025).
Geothlypis trichas sinuosa	saltmarsh common yellowthroat	None/SSC	Nests and forages in emergent wetlands including woody swamp, brackish marsh, and freshwater marsh	**Not expected to occur.** The BSA does not contain suitable habitat for this species and the BSA is outside its known range. The nearest CNDDB record to the BSA is a 1988 observation from Davenport (CDFW 2025; Occ. No. 60).
Gymnogyps californianus	California condor	FE/FP, SE	Nests in rock formations, deep caves, and occasionally in cavities in giant sequoia trees (*Sequoiadendron giganteus*); forages in relatively open habitats where large animal carcasses can be detected	**Not expected to occur.** The BSA contains suitable foraging habitat for this species, but there are no CNDDB or iNaturalist records of this species in the BSA.
Haliaeetus leucocephalus (nesting and wintering)	bald eagle	FPD/FP, SE	Nests in forested areas adjacent to large bodies of water, including seacoasts, rivers, swamps, large lakes; winters near large bodies of water in lowlands and mountains	**Low potential to occur**. The BSA contains suitable foraging habitat for this species, but there are no records of successful nesting within the BSA (G. Kittleson, personal

Scientific Name	Common Name	Status* (Federal/State)	Habitat	Potential to Occur
				communication, March 27, 2020).
Laterallus jamaicensis coturniculus	California black rail	None/FP, ST	Tidal marshes, shallow freshwater margins, wet meadows, and flooded grassy vegetation; suitable habitats are often supplied by canal leakage in Sierra Nevada foothill populations	**Not expected to occur.** The BSA does not contain suitable habitat for this species, but there is one CNDDB record of this species within 1 mile of the BSA (CDFW 2025; Occ. No. 288). However, this occurrence is more than twenty years old and there are no iNaturalist records of this species within the BSA.
Pandion haliaetus (nesting)	osprey	None/WL	Large waters (lakes, reservoirs, rivers) supporting fish; usually near forest habitats, but widely observed along the coast	**Low potential to occur.** The BSA does not contain suitable habitat for this species and the BSA is outside the breeding range of the species.
Phoebastria albatrus	short-tailed albatross	FE/SSC	Nests on isolated, windswept islands of the western Pacific; extremely rare in migration offshore along the California coast	**Not expected to occur.** Suitable habitat is absent from the BSA.
Riparia riparia (nesting)	bank swallow	None/ST	Nests in riparian, lacustrine, and coastal areas with vertical banks, bluffs, and cliffs with sandy soils; open country and water during migration	**Low potential to occur.** The BSA contains suitable nesting habitat for this species and there is one CNDDB record of this species within 1 mile of the BSA (CDFW 2025; Occ. No. 177). However, this record is more than twenty years old.
Sternula antillarum browni (nesting colony)	California least tern	FE/FP, SE	Forages in shallow estuaries and lagoons; nests on sandy beaches or exposed tidal flats	**Not expected to occur.** The BSA does not contain suitable habitat for this species. There are no CNDDB or iNaturalist records of this species within the BSA.

Scientific Name	Common Name	Status* (Federal/State)	Habitat	Potential to Occur
Vireo bellii pusillus (nesting)	least Bell's vireo	FE/SE	Nests and forages in low, dense riparian thickets along water or along dry parts of intermittent streams; forages in riparian and adjacent shrubland late in nesting season	**Not expected to occur.** The BSA is outside the known range of the species and there are no CNDDB or iNaturalist records of this species in the BSA.
Mammals				
Antrozous pallidus	pallid bat	None/SSC	Grasslands, shrublands, woodlands, forests; most common in open, dry habitats with rocky outcrops for roosting, but also roosts in man-made structures and trees	**Low potential to occur.** The BSA contains suitable habitat for this species, but there have been no modern CNDDB or iNaturalist records of this species in the BSA.
Corynorhinus townsendii	Townsend's big-eared bat	None/SSC	Mesic habitats characterized by coniferous and deciduous forests and riparian habitat, but also xeric areas; roosts in limestone caves and lava tubes, man-made structures, and tunnels	**Low potential to occur.** The BSA does not provide suitable roosting habitat for this species and there have been no modern CNDDB records of this species in the BSA.
Enhydra lutris nereis	southern sea otter	FT/SSC, FP	Nearshore marine environments	**Low potential to occur.** The BSA does not contain suitable nearshore marine environments.
Neotoma fuscipes annectens	San Francisco dusky-footed woodrat	None/SSC	Forest habitats with a moderate canopy and moderate to dense understory	**Low potential to occur.** The BSA contains suitable habitat for this species, however, the species was not observed during the 2025 field survey and there are no CNDDB or iNaturalist observations within the BSA.
Puma concolor	mountain lion - Southern California/Central Coast ESU	None/SC	Scrubs, chaparral, riparian, woodland, and forest; rests in rocky areas and on cliffs and ledges that provide cover; most abundant in	**Low potential to occur.** The BSA does not contain suitable habitat for this species. Mountain lions may pass

Scientific Name	Common Name	Status* (Federal/State)	Habitat	Potential to Occur
			riparian areas and brushy stages of most habitats throughout California, except deserts	through the BSA on rare occasions as they attempt to disperse from the Santa Cruz Mountains, but they are unlikely to den so close to urban development.
Taxidea taxus	American badger	None/SSC	Dry, open, treeless areas; grasslands, coastal scrub, agriculture, and pastures, especially with friable soils	**Low potential to occur.** The BSA contains suitable habitat for this species, however, the habitat is isolated from larger habitat blocks by dense urban development and is unlikely to support the species. Additionally, there are no CNDDB or iNaturalist records of this species within 1 mile of the BSA.
Lasiurus frantzii	western red bat	None/SSC	Forest, woodland, riparian, mesquite bosque, and orchards, including fig, apricot, peach, pear, almond, walnut, and orange; roosts in canopy of broad-leafed trees (cottonwoods, willows, sycamores, etc.)	**Low potential to occur.** The BSA does not contain suitable broad-leaved trees for roosting. The BSA contains Monterey cypress, which has open, scale-like foliage.
Invertebrates				
Bombus crotchii	Crotch's bumble bee	None/SCE	Open grassland and scrub communities supporting suitable floral resources.	**Low potential to occur.** Suitable habitat is present in the BSA. There are no CNDDB or Bumble Bee Watch observations in the BSA.
Bombus occidentalis	western bumble bee	None/SCE	Once common and widespread, species has declined precipitously from central California to southern British Columbia, perhaps from disease	**Low potential to occur.** The BSA contains suitable habitat for this species and there is one CNDDB record of this species within 1 mile of the BSA (CDFW 2025; Occ. No. 265). However,

Scientific Name	Common Name	Status* (Federal/State)	Habitat	Potential to Occur
				this record is more than twenty years old. There are no Bumble Bee Watch observations of this species in the BSA.
Cicindela ohlone	Ohlone tiger beetle	FE/None	Remnant native grasslands with California oatgrass (Danthonia californica) and purple needlegrass (Stipa pulchra) in Santa Cruz County	**Low potential to occur.** The BSA does not contain suitable habitat for this species. While there are several CNDDB records in grasslands near Moore Creek and Pogonip (CDFW 2025; Occ. No. 1, 2 & 3), the species is restricted to relatively level ground in native grasslands with patches of bare Watsonville loam soils (Land Trust of Santa Cruz County 2023). The BSA does not contain these microhabitat characteristics; therefore, Project activities are unlikely to adversely impact the species or its habitat.
Euphilotes enoptes smithi	Smith's blue butterfly	FE/None	Sand dunes, scrub, chaparral, grassland, and their ecotones from the Salinas River south to Ragged Point. Entire life cycle associated with two host plant species: seaside buckwheat (*Eriogonum latifolium*) and seacliff buckwheat (*Eriogonum parvifolium*).	**Not expected to occur.** The BSA is outside the known range of this species, although potential host plants are present in the BSA. There are no CNDDB records of this species within the BSA.
Polyphylla barbata	Mount Hermon (=barbate) June beetle	FE/None	Known only from sand hills in vicinity of Mount Hermon, Santa Cruz County	**Not expected to occur.** The BSA does not contain suitable habitat for this species. There is one historic CNDDB record located near Paradise Park (CDFW 2025; Occ. No. 12).

Scientific Name	Common Name	Status* (Federal/State)	Habitat	Potential to Occur
Trimerotropis infantilis	Zayante band-winged grasshopper	FE/None	Isolated sandstone deposits in the Santa Cruz Mountains (the Zayante Sand Hills ecosystem)	**Not expected to occur.** The BSA does not contain suitable habitat for this species, but there is one CNDDB record of this species within 1 mile of the BSA (CDFW 2025; Occ. No. 6). However, this record is more than twenty years old.
Danaus plexippus plexippus pop. 1	monarch - California overwintering population	FC/None	Wind-protected tree groves with nectar sources and nearby water sources	**Known to occur.** The BSA contains suitable overwintering habitat. There are five modern CNDDB records of this species within 1 mile of the BSA (CDFW 2025; Occ. No. 104, 105, 106, 107, and 240). Lighthouse Field is a known overwintering site (Xerces Society 2025).
Fish				
Entosphenus tridentatus	Pacific lamprey	None/SSC	Freshwater habitat includes lakes, rivers, and creeks; soft substrates in shallow areas along banks.	**Not expected to occur.** Suitable habitat is absent from the BSA.
Eucyclogobius newberryi	tidewater goby	FE/SSC	Brackish water habitats along the California coast from Agua Hedionda Lagoon, San Diego County, to the mouth of the Smith River	**Not expected to occur.** Suitable habitat is absent from the BSA. There are several CNDDB records of this species at the mouth of Moore Creek/Natural Bridges and in lower San Lorenzo River (CDFW 2025; Occ. No. 30 & 113).
Lavinia symmetricus subditus	Monterey roach	None/SSC	Tributaries to Monterey Bay, specifically the Salinas, Pajaro, & San Lorenzo drainages. Generally found in small, intermittent streams, where dense populations are often observed in isolated pools.	**Not expected to occur.** Suitable habitat is absent from the BSA. There are several CNDDB records of this species in the San Lorenzo River (CDFW 2025).

Scientific Name	Common Name	Status* (Federal/State)	Habitat	Potential to Occur
Oncorhynchus kisutch pop. 4	coho salmon - central California coast ESU	FE/SE	Streams and small freshwater tributaries during first half of life cycle and estuarine and marine waters of the Pacific Ocean during the second half of life cycle. Spawns in small streams with stable gravel substrates.	**Not expected to occur.** Suitable habitat is absent from the BSA. There is a CNDDB record of this species in the San Lorenzo River (CDFW 2025; Occ. No. 4).
Oncorhynchus mykiss irideus pop. 8	steelhead - central California coast DPS	FT/SSC	Coastal basins from Redwood Creek south to the Gualala River, inclusive; does not include summer-run steelhead	**Not expected to occur.** Suitable habitat is absent from the BSA. There are CNDDB records of this species in the San Lorenzo River, Pasatiempo Creek, and Arana Gulch (CDFW 2025; Occ. No. 20, 5 & 15). San Lorenzo River, Branciforte Creek, Carbonera Creek, and Arana Gulch Creek are mapped as steelhead streams by County of Santa Cruz (County of Santa Cruz, 2025).
Thaleichthys pacificus	eulachon	FT/SSC	Found in Klamath River, Mad River, and Redwood Creek and in small numbers in Smith River and Humboldt Bay tributaries	**Not expected to occur.** The BSA is outside the known range of the species.

***Status:**
FE: Federally Endangered
FT: Federally Threatened
FP: Fully Protected Species
SE: State Endangered
ST: State Threatened
SSC: Species of Special Concern
WL: CDFW Watch List Species

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Appendix B

Aquatic Resources Delineation Report

DRAFT

Aquatic Resources Delineation Report

800 West Cliff Drive Roadway Realignment Project

MARCH 2026

Prepared for:

CITY OF SANTA CRUZ
809 Center Street
Santa Cruz, California 95060
Contact: Joshua Spangrud

Prepared by:

DUDEK

1904 Franklin Street, Suite 600
Oakland, California 94612
Contact: Laurie Monarres

Ann Sansevero
Project Manager

Matt Ricketts
Biology Technical Lead

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APPENDICES

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Acronyms and Abbreviations

Acronym/Abbreviation	Definition
APT	Antecedent Precipitation Tool
ARC	antecedent runoff condition
ARDR	Aquatic Resources Delineation Report
CDFW	California Department of Fish and Wildlife
FAC	facultative
FACU	facultative upland
FACW	facultative wetland
HTL	high tide line
MHWM	mean high watermark
msl	mean sea level
NL	not listed
NWW	non-wetland water
OHWM	ordinary high-water mark
PDSI	Palmer Drought Severity Index
project	800 West Cliff Drive Road Realignment Project
RWQCB	Regional Water Quality Control Board
US	upland swale
USACE	U.S. Army Corps of Engineers

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1 Executive Summary

This Aquatic Resources Delineation Report (ARDR) was prepared in accordance with the U.S. Army Corps of Engineers (USACE) Minimum Standards for Acceptance of Aquatic Resources Delineation Reports (USACE 2016a). The field delineation was conducted using the Wetlands Delineation Manual (USACE 1987), Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (USACE 2008), and the National Ordinary High Water Mark Field Delineation Manual for Rivers and Streams (USACE 2025a).

Dudek biologists conducted a field delineation on October 30, 2025, to identify aquatic resources in the approximately 13.66-acre review area (9.75 acres within the Project Boundary and 50-ft buffer) potentially subject to regulations in Sections 401 and 404 of the Clean Water Act, the Porter–Cologne Water Quality Control Act, Section 1602 of the California Fish and Game Code, and the California Coastal Act for the proposed 800 West Cliff Drive Road Realignment Project (project).

Approximately 0.072 acres (427 linear feet) of aquatic resources potentially regulated by USACE are present in the review area. A total of 6 features were documented in the review area: 2 ephemeral channels, 1 impounded ephemeral channel/pond, 2 upland swales, and tidal waters of the Pacific Ocean, a traditional navigable water. Some of these features may be considered potentially jurisdictional under Clean Water Act Section 404. Table 1 summarizes the delineation findings.

Table 1. Aquatic Resource Summary for the Review Area

Feature Name	Cowardin[1]	Location (Latitude/ Longitude; Decimal Degrees)	Acres[2]	Linear Feet[2]	USACE Jurisdiction
Non-Wetland Waters Ephemeral					
WCD-NWW-01	R6	36.95245445, -122.0294771	0.008	127	No
WCD-NWW-02	R6	36.95291173, -122.0296156	0.008	186	No
WCD-CCW-01	R6	36.95266948, -122.0294795	0.008	40	No
		Non-Wetland Waters Subtotal	*0.025*	*353*	—
Upland Swales					
WCD-US-01	U	36.95272991, -122.0293151	0.010	75	No
WCD-CCW-02	U	36.95221145, -122.0312314	0.037	NA	No
		Upland Swales Subtotal	*0.047*	*75*	—
Tidal Waters3					
Tidal Waters	M2	36.95167991, -122.03160767	2.017	NA	Yes
		Grand Total	**2.089**	**427**	—

Notes: USACE = U.S. Army Corps of Engineers; CCW = California Coastal Commission Wetland; NWW = non-wetland water; R6 = riverine, ephemeral; US = upland swale; U = upland.

1 Pursuant to Classification of Wetlands and Deepwater Habitats of the United States (Cowardin et al. 1979) and Cowardin Codes for ORM Data Entry (USACE 2024).

2 Acres calculated using the ordinary high-water mark. Totals may not sum due to rounding.

3 Acres calculated using the High Tide Line.

A discussion of waters of the state, lake/streambed, and riparian resources potentially subject to jurisdiction by the California Department of Fish and Wildlife (CDFW) (Bay Delta Region), Regional Water Quality Control Board (RWQCB) (San Francisco Bay Region), and the California Coastal Commission (CCC) is discussed in Chapter 7 of this ARDR.

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2 Introduction

This ARDR was prepared in accordance with the San Francisco District USACE's Minimum Standards for Acceptance of Aquatic Resources Delineation Reports (USACE 2016a). This ARDR presents the results of the jurisdictional aquatic resource delineation conducted by Dudek biologists for the proposed project at 800 West Cliff Drive, Santa Cruz County, California. The delineation was conducted to identify and map existing aquatic resources potentially subject to the regulatory jurisdiction of USACE pursuant to Section 404 of the Clean Water Act (33 USC 1344), waters of the state potentially subject to the regulatory jurisdiction of the RWQCB pursuant to Section 401 of the Clean Water Act and the Porter–Cologne Water Quality Control Act, stream and riparian habitats potentially subject to the jurisdiction of CDFW pursuant to Section 1602 of the California Fish and Game Code, and wetlands potentially subject to the jurisdiction of the CCC pursuant to Section 30121 of the California Coastal Act (CCA), collectively defined as jurisdictional aquatic resources.

2.1 Disclaimer Statement

This ARDR presents Dudek's best effort to quantify the extent of aquatic resources potentially regulated by USACE, RWQCB, CDFW and/or CCC (i.e., regulatory agencies) within the identified review area using the current regulations, written policies, and guidance from the regulatory agencies. The potential jurisdictional boundaries described in this ARDR are subject to verification by the regulatory agencies. Only the regulatory agencies can make a final determination on whether the features present are subject to USACE, RWQCB, CDFW, and/or CCC regulation.

2.2 Contact Information

Contact information for the project applicant and agent are provided in Table 2. Access to the review area is not restricted, but if a site visit is requested, the project applicant or agent will accompany regulatory staff to the review area. The City of Santa Cruz is the project applicant, and the current landowner is the State of California; however, as part of the project, the City of Santa Cruz is pursuing land acquisition from the State of California to allow for the construction and permanent placement of the roadway.

Table 2. Contact Information

Project Applicant	City of Santa Cruz	**Agent**	Dudek
Contact Name	Joshua Spangrud	**Contact Name**	Laurie Monarres
Address	809 Center Street, Room 201 Santa Cruz, California 95060	**Address**	1904 Franklin Street, Suite 600 Oakland, California 94612
Phone	831-420-5160	**Phone**	510.601.2515
Email	JSpangrud@santacruzca.gov	**Email**	Lmonarres@dudek.com

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3 Review Area Description and Landscape Setting

3.1 Location

The approximately 13.66-acre review area is within Lighthouse Field State Beach in Santa Cruz County, California, and consists of the Project Boundary (9.75 acres) and a 50-ft buffer where indirect effects may occur around the Project Boundary (3.91 acres). The review area includes or intersects a total of 17 parcels: Assessor's Parcel Numbers 004-202-42, 004-203-08, 004-291-22, 004-291-24, 004-292-03, 004-292-04, 004-301-14 (004-301-05), 004-301-09, 004-301-10, 004-301-11, 004-301-12, 004-302-04, 004-302-05, 004-381-02, 004-381-20, and 004-401-01, 004-411-01 (Figure 1, Vicinity Map). The review area is in Township 11 South, Range 2 West, Section 24 of the 7.5-minute U.S. Geological Survey Santa Cruz quadrangle (Figure 2, Review Area). The approximate center of the review area corresponds to 36.95217991 latitude and -122.03119617 longitude (decimal degrees).

3.2 Site Access

Regional access from San Francisco to the review area is provided via Interstate 280 South, Highway 85 south, and Highway 17 South. From Highway 17 South, keep right to merge with Highway 1 North for Half Moon Bay/Mission Street, then turn left onto Bay Street and continue for 0.4 miles. Turn right onto California Ave, then after 0.3 miles, turn left onto Errett Circle, turning left onto Woodrow Avenue. After 0.4 miles, turn left onto West Cliff Drive. The review area will be on both sides of the road in approximately 0.4 miles, at 800 West Cliff Drive, Santa Cruz, California 95060.

3.3 Geology and Topography

The review area is on the central coast of California along the northern edge of Monterey Bay. Geology in the review area is dated to the Pleistocene age and classified as older Quaternary alluvium and marine deposits (USGS 2025). Elevation within the review area is approximately 5 feet to 40 feet above mean sea level (Google Earth Pro 2025). The review area has flat coastal terrace topography, with bluffs dropping steeply to the ocean along the high tide line.

3.4 Soils

According to the Natural Resources Conservation Service, there are four soil types mapped in the review area: Pinto loam, 0 to 2 percent slopes; Watsonville loam, thick surface, 0 to 2 percent slopes; Watsonville loam, thick surface, 2 to 15 percent slopes, and beaches. All three of the soil types mapped in the review area are considered hydric (USDA 2025a, 2025b). Soil types within the review area are summarized in Table 3; visually depicted in Figure 3, Soils; and described below (USDA 2025a):

- Pinto Series: Pinto soils consist of terraces of moderately well-drained soils of loam and sandy clay loam formed from alluvium and/or marine deposits.

- **Watsonville Series:** Watsonville soils consist of marine terraces of somewhat poorly drained loam, clay, and sandy clay loam formed from alluvium.
- **Beaches:** Beaches are shallow sands from 0 to 10 feet in elevation along the coast.

Table 3. Soils in the Review Area

Soil Type	Hydric Rating	Acreage
Pinto loam, 0 to 2 percent slopes	Yes	9.08
Watsonville loam, thick surface, 0 to 2 percent slopes	Yes	0.01
Watsonville loam, thick surface, 2 to 15 percent slopes	Yes	4.01
Beaches	Yes	0.56
Total	—	**13.66**

Sources: USDA 2025a, 2025b.

3.5 Vegetation

A total of 39 species of native or naturalized plants, 11 native (28%) and 28 non-native (72%), were recorded in the review area. A list of plant species identified during the field delineation, including the assigned wetland indicator status for each species, is provided as Appendix A, Plant Species Compendium.

Land cover in the review area consists of a variety of natural vegetation communities with some developed and human-altered land cover types. A total of 8 vegetation communities or land cover types were observed in the review area, as listed in Table 4. Vegetation data was mapped in the field during the delineation and concurrent biological reconnaissance survey (Figure 4, Vegetation Communities and Land Covers). Descriptions of each vegetation community can be found in the Biological Resources Technical Memorandum (Dudek 2025) and generally correspond to the classifications described in A Manual of California Vegetation (CNPS 2025). This classification system focuses on mapping vegetation at the two lowest levels of the National Vegetation Classification System hierarchy: associations and alliances. Associations are the most granular level and are grouped into alliances.

Table 4. Vegetation Communities and Land Cover Types in the Review Area

Vegetation Community	Acreage
Urban/Developed	2.14
Wild Oats and Annual Brome Grassland	4.98
Seaside Woolly Sunflower – Seaside Daisy – Seaside Buckwheat Patches	0.38
Monterey Cypress – Monterey Pine Woodland Stands	1.42
Arroyo Willow Thickets	0.06
Hottentot Fig Association	1.37
Ornamental Plantings	0.87
Disturbed Habitat	2.44
Total	**13.66**

Sources: CNPS 2025.

3.6 Hydrology

The review area occurs in the Monterey Bay watershed (Hydrologic Unit Code 1806001503). The review area consists of coastal marine terraces and bluffs along the northern edge of the Monterey Bay. Surface run-off in the review area flows down small drainages to culverts running below West Cliff Drive and discharges directly onto the beach.

The U.S. Fish and Wildlife Service's National Wetlands Inventory identifies estuarine and marine wetland along the beach on the south edge of the review area (USFWS 2025). No freshwater features are identified. According to the Federal Emergency Management Agency, most of the review area is in an area of undetermined flood hazard, with the portions of the review area below the bluffs along the beach listed as 1% annual chance flood hazard (FEMA 2025) (Figure 5, Hydrologic Setting).

3.7 Current and Past Land Use or Alterations

The review area is managed as a state beach and is used as public parkland. The park is used for public outdoor recreation (e.g., hiking, dog-walking, biking, surfing). The land is subject to regular, low-level disturbance from recreational trail users, regular trail construction and maintenance activities, and ongoing vegetation and coastline management. The review area is surrounded by developed, residential land uses.

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4 Precipitation Data and Analysis

4.1 Regional

The USACE-developed Antecedent Precipitation Tool (APT) was used to assess whether the delineation date occurred in a drier, average, or wetter than normal period (USACE 2025b). To determine what constitutes a "typical year," USACE developed the APT. The information generated from the APT can help to determine whether normal hydrologic and/or climatic conditions were present during the site visit, and to assist with completing the Wetland Determination Data Form.

The APT provides three climatological parameters: Palmer Drought Severity Index (PDSI), season, and antecedent precipitation condition. The PDSI is a standardized index calculated on a monthly basis, with PDSI value outputs ranging from -4 (extreme drought) to +4 (very wet) (NOAA 2025a) to assess drought conditions (i.e., PDSI Class). The APT determines wet vs. dry season based on related procedures provided in the applicable regional supplement for the review area (in this case, the Arid West Supplement [USACE 2008]). If the antecedent runoff condition (ARC) score is less than 10, conditions are classified as drier than normal; if the ARC score is 10 to 14 then conditions are normal; if the ARC score is greater than 14 then conditions are wetter than normal (USACE 2025b).

Table 5 summarizes the key data extrapolated from the APT output: estimated drought conditions (PDSI Class), wet or dry season determination, ARC score, and the antecedent precipitation condition. Based on the APT output provided in Appendix B and summarized in Table 5, the precipitation and climatic conditions for the review area were wetter than normal during the time of the delineation. The APT is less likely to consider extreme precipitation events that are highly localized when incorporating data from weather stations outside of the drainage area.

Table 5. Antecedent Precipitation Tool Data for the Review Area

Field Survey Date	PDSI Class	Season	ARC Score	Antecedent Precipitation Condition
October 30, 2025	Not Available (2025-09)	Dry Season	17	Wetter than Normal

Notes: PDSI = Palmer Drought Severity Index; ARC = antecedent runoff condition.

4.2 Local

Based on weather station data from Santa Cruz, the local region receives an average precipitation of 29.33 inches annually, with the highest rainfall occurring in January (WRCC 2025). The weather was dry, partly cloudy, and cool during the site survey, with no rainfall in the 72 hours prior.

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5 Investigation Methods

The aquatic resources delineation was conducted by Dudek biologists Erin Fisher-Colton and Tara Johnson-Kelly on October 30, 2025, from 10:10 a.m. to 5:58 p.m. Temperatures were 64°F to 65°F, with cloud cover ranging from 0% to 50%, and wind speeds of 0 to 3 miles per hour (mph). Prior to conducting the jurisdictional delineation, U.S. Fish and Wildlife Service's National Wetlands Inventory data (USFWS 2025) was reviewed to determine if the review area contained any features mapped by the U.S. Fish and Wildlife Service. Site -specific topographical data was reviewed in conjunction with aerials, both current and historical, to determine the potential presence of non-wetland waters. Jurisdictional boundaries were mapped in the field using ESRI Field Maps on an iOS mobile device along with an EOS Arrow 100 GNSS Unit for sub-meter accuracy. Remote sensing was not used for the delineation.

5.1 U.S. Army Corps of Engineers

The USACE wetlands delineation was conducted in accordance with the 1987 USACE Wetlands Delineation Manual (USACE 1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (USACE 2008). The National Ordinary High Water Mark Field Delineation Manual for Rivers and Streams (USACE 2025a) was used to determine the limits of non-wetland waters. Representative transects were collected to determine hydroperiod using the Streamflow Duration Assessment Methods for the Arid West and Western Mountains of the United States (Mazor et al. 2024). A routine on-site inspection was conducted. While in the field, aquatic resources were mapped and recorded using a digital collection application (ArcGIS Field Maps) with sub-meter accuracy. All figures generated for this ARDR follow the USACE Updated Map and Drawing Standards for the South Pacific Division Regulatory Program (USACE 2016b).

All plant species encountered were identified to the lowest taxonomic level needed to determine wetland plant indicator status. Those species that could not be immediately identified were brought into the laboratory for further investigation. Latin names follow the Jepson Interchange List of Currently Accepted Names of Native and Naturalized Plants of California (Jepson Flora Project 2025), and common names follow the U.S. Department of Agriculture National Resources Conservation Service "PLANTS" database (USDA 2025c). Wetland plant indicator status for each plant was determined using the National Wetland Plant List for the Arid West Region (USACE 2022). Appendix A contains a complete list of plant species observed during the field delineation.

Wetland Determination Forms were completed at certain points within drainages or vegetation communities where a predominance of hydrophytic vegetation was present; hydrology, vegetation, and soils were assessed to determine whether USACE three-parameter wetlands were present. USACE ordinary high-water mark (OHWM) forms were completed at representative cross-sections of non-wetland waters to capture their characteristics and widths at proposed trail crossings. Representative hydroperiod data was collected using standard Stream Duration Assessment Method (SDAM) data forms. All data forms can be found in Appendix C, Data Forms.

Dudek biologists took sample points on standardized wetland determination datasheets at aquatic resource locations to assess the potential for hydric soils, hydrology, and hydrophytic vegetation (see details in Section 5.1.1, Wetland Indicator Assessment). Data at representative stream transects were collected on standardized OHWM Datasheets to assess channel hydrology and geomorphology. A summary of wetland sample points and OHWM transects is provided in Chapter 6, Aquatic Resources, in Tables 6a and 6b. In addition, the sample point Wetland Determination and OHWM Datasheets are included as Appendix C. Wetland sample points and stream transects were recorded in the field using an EOS Arrow 100 GNSS Unit with sub-meter accuracy and ArcGIS Field Map application for iOS. Results of the wetland sample points and stream transect analyses are provided in Chapter 6.

5.1.1 Wetland Indicator Assessment

Pursuant to the USACE protocols, key explicit environmental criteria for determining the presence of potential jurisdictional aquatic resources in the review area are as follows:

- **Soil:** Soil characteristics that result from the influence of periodic or permanent inundation or soil saturation for extended periods that further affect anaerobic conditions (i.e., chemical reduction in the soils or hydric soils).
- **Hydrology:** The presence of inundated or saturated soil conditions resulting from permanent or periodic inundation by groundwater or surface water.
- **Vegetation:** A prevalence of vegetation typically adapted for life in saturated soil conditions (i.e., hydrophytic vegetation).

Positive indicators of all three parameters are normally present in wetlands. Presence of primary and secondary wetland hydrology indicators were documented for each identified aquatic resource feature in the review area. Potential jurisdictional wetlands exhibiting atypical conditions were delineated in accordance with USACE protocols for situations involving vegetation, soil, and hydrology that may be naturally problematic and/or significantly disturbed.

5.1.2 Ordinary High-Water Mark Assessment

The USACE National Ordinary High Water Mark Field Delineation Manual for Rivers and Streams was used to provide technical guidance for delineating the OHWM, which is based on the physical and biological signatures established and maintained at the boundaries of an active channel (USACE 2025a). The OHWM guide addresses the underlying hydrologic and geomorphic concepts pertaining to the OHWM and the field indicators, methods, and additional lines of evidence used to assess and delineate the OHWM. Delineation of the active channel signature (i.e., the OHWM) is based largely on identification of three primary physical or biological indicators (USACE 2025a):

- Topographic break in slope
- Change in sediment characteristics
- Change in vegetation characteristics (species or cover)

5.1.3 Tidal Waters

For tidal waters associated with Monterey Bay, tidal elevation data provided by the two nearest National Oceanic and Atmospheric Administration tidal stations (Tide Station 9413450, Monterey CA, and Tide Station 9414131, Pillar Point Harbor CA) was utilized along with topographic mapping (NOAA 2025b, NOAA 2025c). The extent of waters of the United States, as defined by Section 10 of the Rivers and Harbors Act, was determined to extend up to the mean high water (+4.88 feet above mean sea level [MSL], North American Vertical Datum 88). The extent of waters of the United States/state, as defined by Section 404 of the CWA, the State Porter-Cologne Water Quality Act, and the California Coastal Act, was determined to include all Section 10 waters and additional land up to the highest astronomical tide (+7.25 feet above MSL, North American Vertical Datum 88). In some locations there are bluffs or other vertical features, which results in the estimated mean high watermark (MHWM) and high tide line (HTL) being co-located.

5.2 Regional Water Quality Control Board

Waters of the state regulated by the RWQCB were mapped in accordance with the State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State (SWRCB 2021). As described in these procedures, wetland waters of the state are mapped based on the procedures in USACE's 1987 Corps of Engineers Wetlands Delineation Manual (USACE 1987) and its 2008 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0) (USACE 2008). Non-wetland waters are mapped at the OHWM based on the procedures defined in National Ordinary High Water Mark Field Delineation Manual for Rivers and Streams (USACE 2025a). The extent of waters of the United States/state, as defined by Section 401 of the CWA and the State Porter-Cologne Water Quality Act, was determined to include all Section 10 waters and additional land up to the highest astronomical tide (+7.25 feet above MSL, North American Vertical Datum 88). In some locations there are bluffs or other vertical features, which results in the estimated mean high watermark (MHWM) and high tide line (HTL) being co-located.

5.3 California Department of Fish and Wildlife

The delineation defined areas under the jurisdiction of CDFW pursuant to California Fish and Game Code Sections 1600–1603. CDFW asserts jurisdiction over rivers, streams, and lakes to the extent of the "top of bank." The term "bank" is interpreted to encompass the physical bank of the stream that rises vertically above and horizontally away from it (Vyverberg 2010). The top of bank was mapped as the physical break in slope between the channel and surrounding upland. CDFW also asserts jurisdiction over riparian vegetation associated with these features. A predominance of hydrophytic vegetation, where associated with a stream channel, was used to determine CDFW-regulated riparian areas. Thus, CDFW jurisdictional areas were mapped to include the bank of the stream/channel and outer dripline of adjacent riparian vegetation, as set forth under California Fish and Game Code Section 1602. Streambeds under the jurisdiction of CDFW were delineated using the Cowardin method of waters classification, which defines waters boundaries by a single parameter (i.e., hydric soils, hydrophytic vegetation, or hydrology) (Cowardin et al. 1979). Additionally, waters of the state were delineated based on watercourse characteristics present in the field, which include surface flow, sediment transportation and sorting, physical indicators of channel forms, channel morphology, and riparian habitat associated with a streambed.

5.4 California Coastal Commission

Under the California Coastal Act (CCA), the CCC regulates impacts to wetlands in the "coastal zone." Section 30121 of the CCA defines wetlands as "…lands within the coastal zone which may be covered periodically or permanently with shallow water and include saltwater marshes, swamps, mudflats, and fens…" The CCC essentially uses the Cowardin method of wetlands classification, which defines wetland boundaries by a single parameter (i.e., hydric soils, hydrophytic vegetation, or hydrology) (Cowardin et al. 1979). As a result, the CCC wetland definition is generally more encompassing than other agency definitions in most respects. However, Section 13577(b) of the Administrative Regulations suggests that, where conditions are not capable of supporting hydric soils or hydrophytic vegetation, hydrologic indicators of saturation or surface waters should be expressed on an annual basis ("at some time during each year") rather than under ordinary high water conditions as is the case under the federal regulatory standard. Additionally, CCC regulates tidal waters under the CCA, and the extent of regulated tidal waters was determined to include all Section 10 waters and additional land up to the highest astronomical tide (+7.25 feet above MSL, North American Vertical Datum 88). In some locations there are bluffs or other vertical features, which results in the estimated mean high watermark (MHWM) and high tide line (HTL) being co-located.

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6 Aquatic Resources

6.1 Aquatic Resources Data Summary

Results from 3 OHWM transects, 4 representative data points, and 1 representative SDAM transect provide potentially USACE jurisdictional wetlands and non-wetland waters within the review area based on observable field indicators (Tables 6a, 6b, and 6c). The data collected at each data point or transect are provided in Appendix C. Photos of the potential aquatic features delineated in the review area and additional areas reviewed for the presence of these resources are provided in Appendix D, Review Area Photos.

Table 6a. Aquatic Resources Non-Wetland Waters Summary – Transects

Transect	OHWM Field Indicators	Location (Latitude, Longitude)	Determination
T-01	Break in slope on bank, unvegetated channel, change in vegetation type/density, changes in character of soil, exposed roots, wracking/presence of organic litter, leaf litter disturbed/washed away.	36.95238197, -122.02948769	Ephemeral (WCD-NWW-01)
T-02	Subtle break in slope on bank, changes in character of soil, exposed roots, vegetated matted down/bent, wracking/presence of organic litter, leaf litter disturbed/washed away.	36.95285681, -122.02959174	Ephemeral (WCD-NWW-02)
T-03	No OHWM indicators.	36.95277553, -122.02925597	Upland (WCD-US-01)

Notes: T = transect; OHWM = ordinary high-water mark, NWW = non-wetland water; US = upland swale.

Table 6b. Aquatic Resources Wetland Summary – Data Points

Data Point	Wetland Determination Field Indicators	Location (Latitude/ Longitude)	Determination
WCD-WSP-01	No hydrophytic vegetation, hydric soil, no wetland hydrology.	36.95267424, -122.02949380	Upland (WCD-CCW-01)
WCD-USP-01	No hydrophytic vegetation, no hydric soil, no wetland hydrology.	36.95265636, -122.02947835	Upland
WCD-WSP-02	Hydrophytic vegetation, no hydric soil, no wetland hydrology.	36.95221766, -122.03132123	Upland (WCD-CCW-02)
WCD-USP-02	No hydrophytic vegetation, no hydric soil, no wetland hydrology.	36.95224962, -122.03130228	Upland

Notes: WSP = wetland sampling point; USP = upland sampling point; CCW = California Coastal Commission wetland.

Table 6c. Aquatic Resources Data Summary – SDAM

Reach ID/ Length	Field Indicator Summary	Downstream Latitude, Longitude	Determination
WCD-NWW-01/ 60 meters	Entire reach lacks surface flow, no perennial indicator taxa, 1 hydrophytic plant species within channel, 2 rooted upland plants present in streambed, no algal cover, weak riparian vegetation corridor, no riffle-pool sequence.	36.95209570, -122.02937720	Ephemeral

Notes: SDAM = Streamflow Duration Assessment Method; NWW = non-wetland water.

6.2 Aquatic Resources Narrative

Based on data collected, 6 aquatic resources were documented in the review area: 2 ephemeral channels, 1 impounded ephemeral channel/pond, 2 upland swales, and tidal waters of the Pacific Ocean, a traditional navigable water. Table 7 provides a summary of all aquatic resources delineated in the review area, including Cowardin type (Cowardin et al. 1979; USACE 2024), location, and acreage/linear feet within the review area.

Table 7. Aquatic Resource Summary for the Review Area

Feature Name	Cowardin[1]	Location (Latitude/ Longitude; Decimal Degrees)	Acres[2]	Linear Feet[2]	USACE Jurisdiction
Non-Wetland Waters Ephemeral					
WCD-NWW-01	R6	36.95245445, -122.0294771	0.008	127	No
WCD-NWW-02	R6	36.95291173, -122.0296156	0.008	186	No
WCD-CCW-01	R6	36.95266948, -122.0294795	0.008	40	No
		Non-Wetland Waters Subtotal	*0.025*	*353*	—
Upland Swales					
WCD-US-01	U	36.95272991, -122.0293151	0.010	75	No
WCD-CCW-02	U	36.95221145, -122.0312314	0.037	NA	No
		Upland Swales Subtotal	*0.047*	*75*	—
Tidal Waters[3]					
Tidal Waters	M2	36.95167991, -122.03160767	2.017	NA	Yes
		Grand Total	**2.089**	**427**	—

Notes: USACE = U.S. Army Corps of Engineers; CCW = California Coastal Commission Wetland; NWW = non-wetland water; R6 = riverine, ephemeral; US = upland swale; U = upland.

1 Pursuant to Classification of Wetlands and Deepwater Habitats of the United States (Cowardin et al. 1979) and Cowardin Codes for ORM Data Entry (USACE 2024).

2 Acres calculated using the ordinary high-water mark. Totals may not sum due to rounding.

3 Acres calculated using the High Tide Line.

6.2.1 Non-Wetland Waters - Ephemeral

There are 3 ephemeral non-wetland waters comprising approximately 0.025 acres (353 linear feet) in the review area. Non-wetland waters consist of 2 ephemeral channels connected by a partially impounded ephemeral channel/pond. All non-wetland waters had indicators of an OHWM below the top of bank. Ephemeral drainages

generally have flowing water only in direct response to rainfall events, carrying precipitation runoff downslope to other aquatic features. All documented ephemeral channels lacked standing or flowing water along their mapped reaches and had defined bed and banks, along with a variety of other OHWM indicators. Following are the 3 ephemeral features documented in the review area:

- WCD-NWW-01 is an ephemeral drainage carrying surface runoff from WCD-CCW-01 across the coastal terrace, south to a culvert under West Cliff Drive and then flowing directly to the Pacific Ocean. OHWM indicators include a break in slope at the bank, unvegetated channel bottom, changes in vegetation type/density, changes in soil character, exposed roots, wracking/presence of organic litter, and leaf litter disturbed/washed away. Vegetation below the OHWM is less dense than the surrounding upland, with vegetation consisting of tall flatsedge (*Cyperus eragrostis*; FACW), English ivy (*Hedera helix*; FACU), and curly dock (*Rumex crispus*; FAC). Canopy consists of a grove of Monterey cypress (*Hesperocyparis macrocarpa*; NL). No water was present in the channel at the time of the delineation. Although this feature connects directly to the Pacific Ocean, a navigable water of the U.S. (WOTUS), it lacks continuous surface connectivity and is ephemeral in nature; therefore, WCD-NWW-01 is unlikely to be jurisdictional under USACE.
- WCD-NWW-02 is a drainage carrying surface runoff from the coastal terrace south from a culvert under a gravel trail into WCD-CCW-01. OHWM indicators include a subtle break in slope at the bank, changes in particle-size distribution, exposed roots, vegetation matted down/bent, wracking/presence of organic litter, and leaf litter disturbed or washed away. Vegetation is absent below the OHWM, with surrounding vegetation consisting of Harding grass (*Phalaris aquatica*; FACU), Himalayan blackberry (*Rubus armeniacus*; FAC), and a canopy of Monterey cypress. This feature lacks continuous surface connectivity to downstream WOTUS and is ephemeral in nature; therefore, WCD-NWW-02 is unlikely to be jurisdictional under USACE.
- WCD-CCW-01 is a topographic depression intersecting WCD-NWW-01, WCD-NWW-02, and WCD-US-01. The feature is an oblong low spot on the coastal terrace with outflow restricted by wooden boards anchored to a small concrete footbridge footing, likely creating a temporary pond during rainfall events. WCD-NWW-02 and WCD-US-01 both flow into this feature, and the WCD-NWW-01 is the outflow. OHWM indicators include break in slope at the OHWM and change in vegetation type/density. Soils were determined to be hydric, but the feature failed to meet vegetation and hydrology field indicators for wetland determination. Vegetation within the depression primarily consists of smut grass (*Sporobolus indicus;* FACU), tall flatsedge, curly dock, and small Himalayan blackberry, while the surrounding banks are covered with larger Himalayan blackberry and arroyo willow (*Salix lasiolepus*; FACW), with grassy understory of primarily smut grass. Canopy is mostly open, with some overhanging Monterey cypress. This feature lacks continuous surface connectivity to downstream WOTUS and is ephemeral in nature; therefore, WCD-NWW-02 is unlikely to be jurisdictional under USACE.

6.2.2 Upland Swales

There are two upland swales (USs) (WCD-US-01 and WCD-CCW-02) comprising approximately 0.047 acres in the review area. Upland swales are linear topographic depressions that lack a distinct OHWM or bed and bank. WCD-US-01 was associated with a drainage culvert under a gravel trail that directed surface flow into WCD-CCW-01. This feature was dominated by Harding grass (*Phalaris aquatica*). WCD-CCW-02 is an isolated area of slightly lower elevation than the surrounding grassland. This feature was distinguishable by a greater concentration of curly dock than the surrounding grassland. Both features were characterized by a mild break in slope at the top of the bank

and lack of distinct OHWM. Both swales were dry at the time of the delineation and are likely ephemeral. Both swales are ephemeral in nature, lacking continuous surface connectivity to downstream waters of the United States. Further, swales are excluded from jurisdiction under Section 404 of the Clean Water Act; therefore, WCD-US-01 and WCD-CCW-02 are not considered potentially jurisdictional.

6.2.3 Tidal Waters

There are 2.017 acres of tidal waters on the southern edge of the review area, along the northern shoreline of Monterey Bay. Tidal waters were calculated to the High Tide Line, following rock armoring, coastal bluffs, and sand elevation changes along the shoreline. These waters are characterized by the tidal influence of the Pacific Ocean and are considered traditional navigable waters of the United States; therefore, they are considered jurisdictional waters.

7 Conclusions

7.1 Waters of the United States (USACE)

A total of 6 aquatic resources were documented in the review area: 2 ephemeral channels, 1 impounded ephemeral channel/pond, 2 upland swales, and tidal waters of the Pacific Ocean, a traditional navigable water. Four of the features, WCD-NWW-01, WCD-NWW-02, WCD-CCW-01, and WCD-US-01, are connected into a single system draining a portion of the coastal terrace to the Pacific Ocean immediately downstream. The remaining feature, WCD-CCW-02, is an isolated wetland swale on the coastal terrace and is not connected to any other features.

These freshwater aquatic resources are not likely to be jurisdictional under Clean Water Act Section 404, as all features are ephemeral in nature and lack continuous surface connection to downstream WOTUS. Approximately 2.089 acres (427 linear feet) of aquatic resources are present in the review area, including 2.017 acres of tidal waters that are likely jurisdictional under USACE (Figure 6, Potentially Jurisdictional Aquatic Resources – USACE). Table 8 provides a summary of the aquatic resources delineated in the review area, including Cowardin type (Cowardin et al. 1979; USACE 2024), location, and acreage/linear feet within the review area.

Table 8. Aquatic Resource Summary for the Review Area – USACE

Feature Name	Cowardin[1]	Location (Latitude/ Longitude; Decimal Degrees)	Acres[2]	Linear Feet[2]	USACE Jurisdiction
Non-Wetland Waters Ephemeral					
WCD-NWW-01	R6	36.95245445, -122.0294771	0.008	127	No
WCD-NWW-02	R6	36.95291173, -122.0296156	0.008	186	No
WCD-CCW-01	R6	36.95266948, -122.0294795	0.008	40	No
		Non-Wetland Waters Subtotal	*0.025*	*353*	—
Upland Swales					
WCD-US-01	U	36.95272991, -122.0293151	0.010	75	No
WCD-CCW-02	U	36.95221145, -122.0312314	0.037	NA	No
		Upland Swales Subtotal	*0.047*	*75*	—
Tidal Waters[3]					
Tidal Waters	M2	36.95167991, -122.03160767	2.017	NA	Yes
		Grand Total	**2.089**	**427**	**—**

Notes: USACE = U.S. Army Corps of Engineers; CCW = California Coastal Commission Wetland; NWW = non-wetland water; R6 = riverine, ephemeral; US = upland swale; U = upland.

1 Pursuant to Classification of Wetlands and Deepwater Habitats of the United States (Cowardin et al. 1979) and Cowardin Codes for ORM Data Entry (USACE 2024).

2 Acres calculated using the ordinary high-water mark. Totals may not sum due to rounding.

3 Acres calculated using the High Tide Line.

7.2 Waters of the State (RWQCB)

All waters of the United States are waters of the state. Wetlands, such as isolated seasonal wetlands, that are not generally considered waters of the United States are considered waters of the state if, "under normal circumstances, (1) the area has continuous or recurrent saturation of the upper substrate caused by groundwater,

shallow surface water, or both; (2) the duration of such saturation is sufficient to cause anaerobic conditions in the upper substrate; and (3) the area's vegetation is dominated by hydrophytes or the area lacks vegetation" (SWRCB 2021).

Wetlands subject to RWQCB jurisdiction were delineated based on the methodology described in the U.S. Army Corps of Engineers Wetlands Delineation Manual (USACE 1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0) (USACE 2008). Non-wetland waters subject to RWQCB jurisdiction were delineated based on the presence of an ordinary high-water mark (OHWM), as determined using the methodology in the National Ordinary High Water Mark Field Delineation Manual for Rivers and Streams (USACE 2025a). Approximately 2.229 acres (353 linear feet) of aquatic resources potentially subject to RWQCB jurisdiction are present in the review area (Table 9; Figure 7, Potentially Jurisdictional Aquatic Resources – RWQCB).

Table 9. Aquatic Resource Summary for the Review Area – RWQCB

Feature Name	Cowardin[1]	Location (Latitude/ Longitude; Decimal Degrees)	Acres[2]	Linear Feet[2]	RWQCB Jurisdiction
Non-Wetland Waters Ephemeral					
WCD-NWW-01	R6	36.95245445, -122.0294771	0.107	127	Yes
WCD-NWW-02	R6	36.95291173, -122.0296156	0.089	186	Yes
WCD-CCW-01	R6	36.95266948, -122.0294795	0.016	40	Yes
		Non-Wetland Waters Total	*0.212*	*353*	—
Upland Swales					
WCD-US-01	U	36.95272991, -122.0293151	0.010	75	No
WCD-CCW-02	U	36.95221145, -122.0312314	0.037	NA	No
		Upland Swales Total	*0.047*	*NA*	
Tidal Waters3					
Tidal Waters	M2	36.95167991, -122.03160767	2.017	—	Yes
		RWQCB Grand Total	**2.229**	**427**	**—**

Notes: RWQCB = Regional Water Quality Control Board; CCW = California Coastal Commission Wetland; NWW = non-wetland water; R6 = riverine, ephemeral.

1 Pursuant to Classification of Wetlands and Deepwater Habitats of the United States (Cowardin et al. 1979) and Cowardin Codes for ORM Data Entry (USACE 2024).

2 Acres calculated up to the top of bank. Totals may not sum due to rounding.

3 Acres calculated using the High Tide Line.

7.3 California Department of Fish and Wildlife (CDFW) Aquatic Resources

In Title 14 of the California Code of Regulations, Section 1.56, CDFW's definition of "lake" includes natural lakes and human-created reservoirs. Diversion, obstruction, or change to the natural flow or bed, channel, or bank of any river, stream, or lake that supports fish or other aquatic wildlife requires authorization from CDFW by entering into an agreement pursuant to CFGC Section 1602. In Title 14 of the California Code of Regulations, Section 1.72, CDFW defines a "stream" as "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having a surface or subsurface flow that supports or has supported riparian vegetation."

The delineation defined areas under the jurisdiction of CDFW pursuant to CFGC Sections 1600–1603. CFGC Section 1600 establishes CDFW's jurisdiction over any river, lake, or stream, including those that are perennial, intermittent, or ephemeral. Under CFGC Section 1600, CDFW's jurisdiction extends beyond the boundary of the aquatic resource to include the riparian zone on or adjacent to the bank of the river, stream, or lake. CDFW asserts jurisdiction over rivers, streams, and lakes to the extent of the top of bank. The term "bank" is interpreted to encompass the physical bank of the stream that rises vertically above and horizontally away from it (Vyverberg 2010). The top of bank was mapped as the physical break in slope between the channel or lake and surrounding upland. Streambeds or lakes under the jurisdiction of CDFW were delineated using the Cowardin method of waters classification, which defines waters boundaries by a single parameter (i.e., hydric soils, hydrophytic vegetation, or hydrology) (Cowardin et al. 1979). Approximately 0.222 acres (427 linear feet) of aquatic resources potentially subject to CDFW jurisdiction are present in the review area (Table 10; Figure 8, Potentially Jurisdictional Aquatic Resources – CDFW).

The ephemeral non-wetland waters in the review area do not support a continuous riparian corridor or dominance of riparian or wetland vegetation. However, upland vegetation and trees within 10 feet of the drainages were mapped as riparian because they could provide riparian functions, such as sediment stability, woody debris input, and shade. Non-riparian areas were dominated by Monterey cypress in the canopy, with occasional arroyo willows A total of 1.170 acres of riparian habitat was documented in the review area.

Table 10. Aquatic Resource Summary for the Review Area – CDFW

Feature Name	Cowardin[1]	Location (Latitude/ Longitude; Decimal Degrees)	Acres[2]	Linear Feet[2]	CDFW Jurisdiction
Non-Wetland Waters Ephemeral					
WCD-NWW-01	R6	36.95245445, -122.0294771	0.107	127	Yes
WCD-NWW-02	R6	36.95291173, -122.0296156	0.089	186	Yes
WCD-CCW-01	R6	36.95266948, -122.0294795	0.016	40	Yes
		Non-Wetland Waters Subtotal	*0.212*	*353*	—
Upland Swales					
WCD-US-01	U	36.95272991, -122.0293151	0.010	75	Yes
WCD-CCW-02	U	36.95221145, -122.0312314	0.037	NA	No
		Upland Swales Subtotal	*0.047*	*75*	—
Tidal Waters[3]					
Tidal Waters	M2	36.95167991, -122.03160767	2.017	—	No
Riparian					
Riparian Canopy	N/A	Various	1.170	NA	Yes
		CDFW Grand Total	**1392**	**427**	—

Notes: CDFW = California Department of Fish and Wildlife; CCW = California Coastal Commission Wetland; NWW = non-wetland water; R6 = riverine, ephemeral; US = upland swale; U = upland.

1 Pursuant to Classification of Wetlands and Deepwater Habitats of the United States (Cowardin et al. 1979) and Cowardin Codes for ORM Data Entry (USACE 2024).

2 Acres calculated to the top of bank. Totals may not sum due to rounding.

3 Acres calculated using the High Tide Line.

7.4 California Coastal Commission (CCC)

The CCC wetland definition is generally more encompassing than other agency definitions in most respects, defining wetland boundaries by a single parameter (i.e., hydric soils, hydrophytic vegetation, or hydrology) (Cowardin et al. 1979). Where conditions are not capable of supporting hydric soils or hydrophytic vegetation, hydrologic indicators of saturation or surface waters may be expressed on an annual basis ("at some time during each year") rather than under ordinary high water conditions as is the case under the federal regulatory standard. Thus, all aquatic features identified as potentially jurisdictional for RWQCB and CDFW are also potentially jurisdictional under the CCC. Two features, WCD-CCW-01 and WCD-CCW-02, were identified as one-parameter wetlands. Approximately 2.089 acres (427 linear feet) of aquatic resources potentially subject to CCC jurisdiction are present in the review area (Table 11; Figure 9, Potentially Jurisdictional Aquatic Resources – CCC).

Table 11. Aquatic Resource Summary for the Review Area – CCC

Feature Name	Cowardin[1]	Location (Latitude/ Longitude; Decimal Degrees)	Acres[2]	Linear Feet[2]	CCC Jurisdiction
Non-Wetland Waters Ephemeral					
WCD-NWW-01	R6	36.95245445, -122.0294771	0.107	127	Yes
WCD-NWW-02	R6	36.95291173, -122.0296156	0.089	186	Yes
WCD-CCW-01	R6	36.95266948, -122.0294795	0.016	40	Yes
		Non-Wetland Waters Subtotal	*0.212*	*353*	—
Upland Swales					
WCD-US-01	U	36.95272991, -122.0293151	0.010	75	Yes
WCD-CCW-02	U	36.95221145, -122.0312314	0.037	NA	Yes
		Upland Swales Subtotal	*0.047*	*75*	—
Tidal Waters[3]					
Tidal Waters	M2	36.95167991, -122.03160767	2.017	—	Yes
		CCC Grand Total	**2.089**	**427**	**—**

Notes: CDFW = California Department of Fish and Wildlife; CCW = California Coastal Commission Wetland; NWW = non-wetland water; R6 = riverine, ephemeral; US = upland swale; U = upland.

1 Pursuant to Classification of Wetlands and Deepwater Habitats of the United States (Cowardin et al. 1979) and Cowardin Codes for ORM Data Entry (USACE 2024).

2 Acres calculated to the top of bank. Totals may not sum due to rounding.

3 Acres calculated using the High Tide Line.

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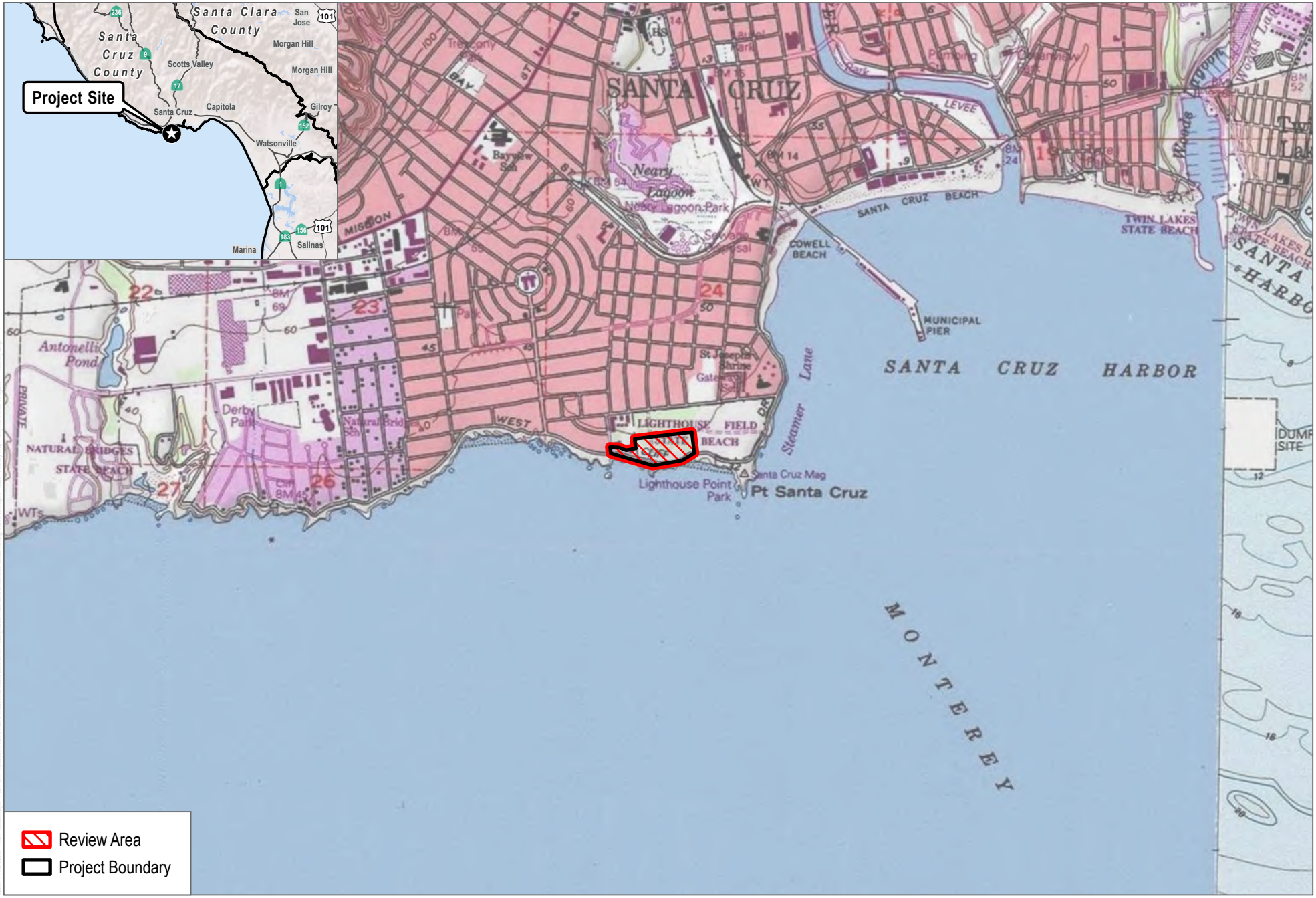
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SOURCE: USGS National Map 2025

DUDEK

0 1,000 2,000 Feet

FIGURE 1

Vicinity Map

Aquatic Resources Delineation Report: 800 West Cliff Drive Road Realignment Project

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SOURCE: Esri Aerial Basemap

DUDEK

0 100 200 Feet

FIGURE 2

Review Area

Aquatic Resources Delineation Report: 800 West Cliff Drive Road Realignment Project

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SOURCE: Esri Aerial Basemap, USDA SSURGO

DUDEK

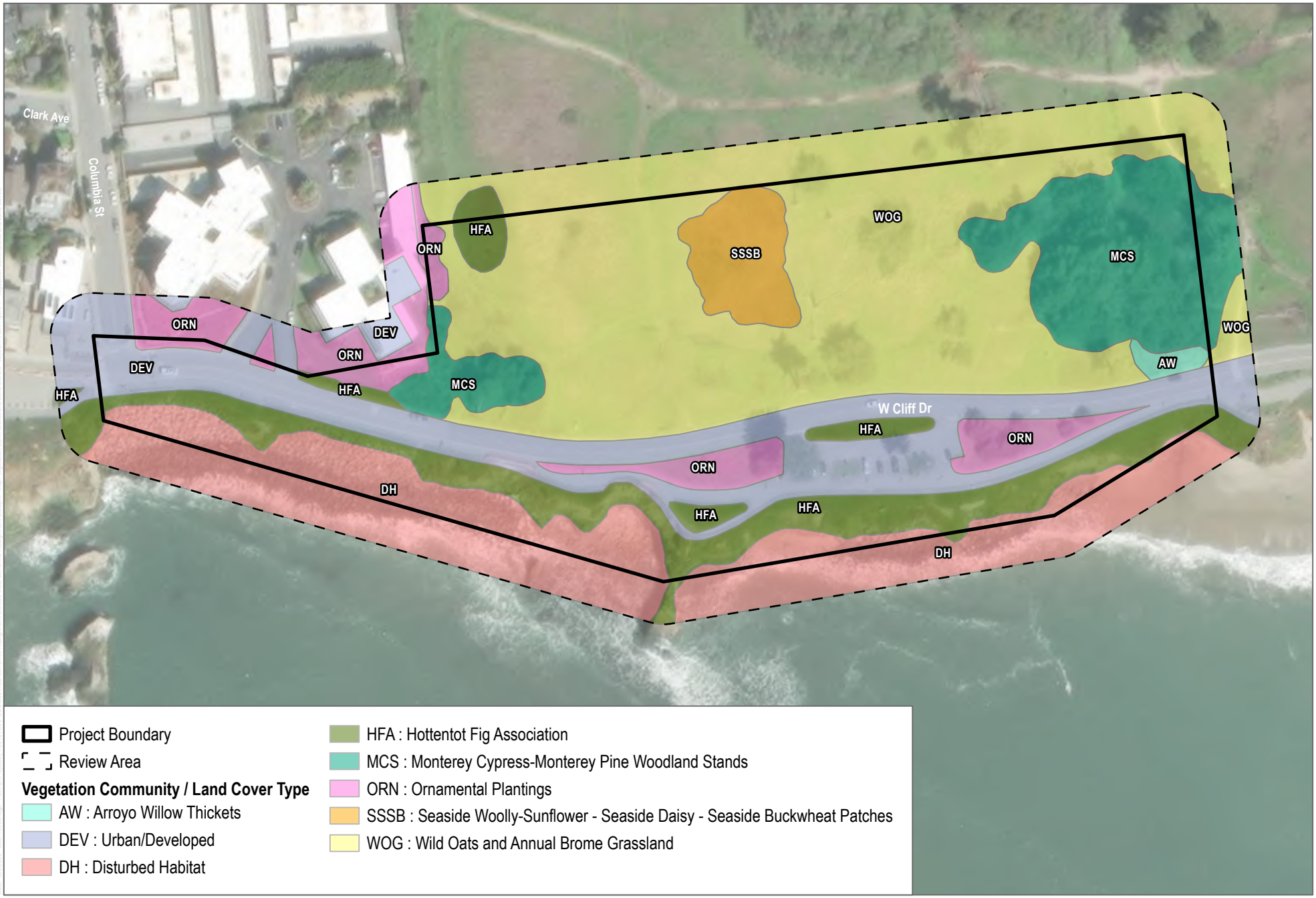
0 70 140 Feet

FIGURE 3

Soils

Aquatic Resources Delineation Report: 800 West Cliff Drive Road Realignment Project

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SOURCE: Esri Aerial Basemap, USDA SSURGO

DUDEK

0 70 140 Feet

FIGURE 4

Vegetation Communities and Land Covers

Aquatic Resources Delineation Report: 800 West Cliff Drive Road Realignment Project

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SOURCE: Esri Aerial Basemap, NHD, NWI

FIGURE 5

Hydrologic Setting

DUDEK

0 1,000 2,000 Feet

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Project Boundary
Review Area
Culvert
Sampling Point
OHWM Transect
SDAM Transect
High Tide Line
NOAA Mean High Tide Line*

Aquatic Resources

Non-Wetland Waters

Non-wetland water - OHWM
Non-wetland water - TOB
Upland swale
Tidal Waters

Coordinate System: NAD 1983 State Plane (Zone III)
Projection: Lambert Conformal Conic
Datum: North American 1983
Vertical Datum: NAVD 88, U.S. Feet
1 inch = 110 feet

Delineated on October 31st, 2025
Updated on December 1st, 2025

Made in accordance with the
Updated Map and Drawing Standards for the South Pacific Division Regulatory Program,
as amended on February 10, 2016, by:
Jason Deters, Project Manager
Enforcement and Special Projects Unit
U.S. Army Corps of Engineers
South Pacific Division
San Francisco District, Regulatory Division
450 Golden Gate Avenue, 4th Floor
San Francisco, California 94102

* OHWM for the Pacific Ocean = 4.88 feet (NAV88) and is based on an average between Tide Station 9413450, Monterey, CA (4.78 feet NAV88) and Tide Station 9414131, Pillar Point Harbor, CA (4.99 feet NAV88).

SOURCE: Esri Aerial Imagery, OpenStreetMap

DUDEK

0 55 110 Feet

FIGURE 6

Potentially Jurisdictional Aquatic Resources - USACE

Aquatic Resources Delineation Report: 800 West Cliff Drive Road Realignment Project

INTENTIONALLY LEFT BLANK

- Project Boundary
- Review Area
- Culvert
- Sampling Point
- OHWM Transect
- SDAM Transect
- High Tide Line
- NOAA Mean High Tide Line*
- Riparian Vegetation

Aquatic Resources

Non-Wetland Waters

- Non-wetland water - OHWM
- Non-wetland water - TOB
- Upland swale
- Tidal Waters



* OHWM for the Pacific Ocean = 4.88 feet (NAV88) and is based on an average between Tide Station 9413450, Monterey, CA (4.78 feet NAV88) and Tide Station 9414131, Pillar Point Harbor, CA (4.99 feet NAV88).

SOURCE: Esri Aerial Imagery, OpenStreetMap

DUDEK

0 55 110 Feet

FIGURE 7

Potentially Jurisdictional Aquatic Resources - RWQCB

Aquatic Resources Delineation Report: 800 West Cliff Drive Road Realignment Project

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- Project Boundary
- Review Area
- Culvert
- Sampling Point
- OHWM Transect
- SDAM Transect
- High Tide Line
- NOAA Mean High Tide Line*
- Riparian Vegetation

Aquatic Resources

Non-Wetland Waters

- Non-wetland water - OHWM
- Non-wetland water - TOB
- Upland swale
- Tidal Waters



* OHWM for the Pacific Ocean = 4.88 feet (NAV88) and is based on an average between Tide Station 9413450, Monterey, CA (4.78 feet NAV88) and Tide Station 9414131, Pillar Point Harbor, CA (4.99 feet NAV88).

SOURCE: Esri Aerial Imagery, OpenStreetMap

DUDEK

0 55 110 Feet

FIGURE 8

Potentially Jurisdictional Aquatic Resources - CDFW

Aquatic Resources Delineation Report: 800 West Cliff Drive Road Realignment Project

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SOURCE: Esri Aerial Imagery, OpenStreetMap

DUDEK

0 55 110 Feet

FIGURE 9

Potentially Jurisdictional Aquatic Resources - CCC

Aquatic Resources Delineation Report: 800 West Cliff Drive Road Realignment Project

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Appendix A
Plant Species Compendium

Plant Species

Vascular Species

EUDICOTS

AIZOACEAE—FIG-MARIGOLD FAMILY

* *Carpobrotus edulis*—hottentot fig (Not Listed)

APIACEAE—CARROT FAMILY

* *Foeniculum vulgare*—fennel (Not Listed)

ARALIACEAE—GINSENG FAMILY

* *Hedera helix*—English ivy (FACU)

ASTERACEAE—SUNFLOWER FAMILY

Achillea millefolium—common yarrow (FACU)
Artemisia californica—California sagebrush (Not Listed)
Baccharis pilularis—coyote brush (Not Listed)
Erigeron glaucus—seaside fleabane (FACU)
Eriophyllum staechadifolium—no common name (Not Listed)
Grindelia stricta—Oregon gumweed (FACW)

* *Hypochaeris radicata*—hairy cat's ear (FACU)

BRASSICACEAE—MUSTARD FAMILY

* *Raphanus raphanistrum*—wild radish (Not Listed)

CONVOLVULACEAE—MORNING-GLORY FAMILY

* *Convolvulus arvensis*—field bindweed (Not Listed)

FABACEAE—LEGUME FAMILY

* *Vicia sativa*—garden vetch (FACU)

GERANIACEAE—GERANIUM FAMILY

* *Geranium molle*—dovefoot geranium (Not Listed)

LAMIACEAE—MINT FAMILY

* *Mentha pulegium*—pennyroyal (OBL)

MALVACEAE—MALLOW FAMILY

* *Malva parviflora*—cheeseweed mallow (Not Listed)

MYRSINACEAE—MYRSINE FAMILY

* *Lysimachia arvensis*—scarlet pimpernel (FAC)

OXALIDACEAE—OXALIS FAMILY

* *Oxalis pes-caprae*—Bermuda buttercup (Not Listed)

PLANTAGINACEAE—PLANTAIN FAMILY

* *Plantago coronopus*—buckhorn plantain (FAC)

POLYGONACEAE—BUCKWHEAT FAMILY

Eriogonum latifolium—seaside buckwheat (Not Listed)

* *Rumex acetosella*—common sheep sorrel (FACU)
* *Rumex crispus*—curly dock (FAC)
* *Rumex pulcher*—fiddle dock (FAC)

ROSACEAE—ROSE FAMILY

* *Rubus armeniacus*—Himalayan blackberry (FAC)

SALICACEAE—WILLOW FAMILY

Salix lasiolepis—arroyo willow (FACW)

GYMNOSPERMS AND GNETOPHYTES

CUPRESSACEAE—CYPRESS FAMILY

Hesperocyparis macrocarpa—Monterey cypress (Not Listed)

MONOCOTS

CYPERACEAE—SEDGE FAMILY

Cyperus eragrostis—tall flatsedge (FACW)

POACEAE—GRASS FAMILY

* *Avena barbata*—slender oat (Not Listed)
* *Briza maxima*—big quakinggrass (Not Listed)
* *Bromus diandrus*—ripgut brome (Not Listed)
* *Bromus hordeaceus*—soft brome (FACU)
* *Cynodon dactylon*—Bermudagrass (FACU)
* *Ehrharta erecta*—panic veldtgrass (Not Listed)

Elymus glaucus—blue wildrye (FACU)

* *Festuca perennis*—perennial rye grass (FAC)
* *Hordeum murinum*—mouse barley (FACU)
* *Phalaris aquatica*—Harding grass (FACU)

* *Polypogon monspeliensis*—annual rabbitsfoot grass (FACW)
* *Sporobolus indicus*—smut grass (FACU)

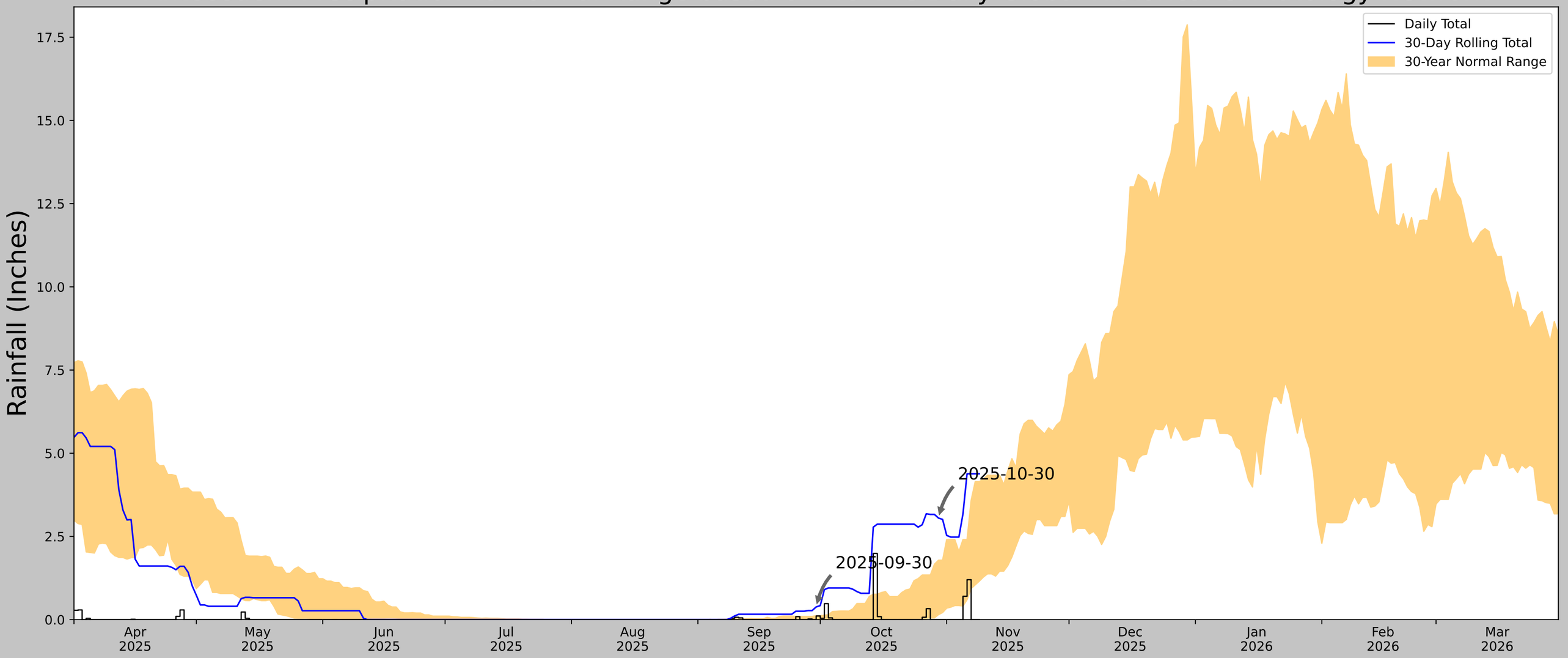
FACU = facultative upland
FAC = facultative
FACW = facultative wetland
UPL = upland
OBL = obligate

* Signifies introduced (non-native) species.

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Appendix B
Antecedent Precipitation Tool Output

Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	36.95218, -122.0312
Observation Date	2025-10-30
Elevation (ft)	41.191
Drought Index (PDSI)	Not available (2025-09)
WebWIMP H_2O Balance	Dry Season

30 Days Ending	30^{th} %ile (in)	70^{th} %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2025-10-30	0.150394	1.786221	3.051181	Wet	3	3	9
2025-09-30	0.0	0.116142	0.38189	Wet	3	2	6
2025-08-31	0.0	0.003543	0.0	Normal	2	1	2
Result							Wetter than Normal - 17

Figures and tables made by the Antecedent Precipitation Tool Version 3.0

US Army Corps of Engineers.
ERDC

Developed by:
U.S. Army Corps of Engineers and
U.S. Army Engineer Research and Development Center

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
BEN LOMOND #4	37.0869, -122.0822	435.039	9.724	393.848	8.206	10800	81
FELTON	37.0506, -122.075	399.934	2.539	35.105	1.232	61	0
FELTON 0.2 WSW	37.0415, -122.0746	333.005	3.165	102.034	1.747	9	0
SCOTTS VALLEY 1.4 W	37.0554, -122.0328	372.047	3.486	62.992	1.788	37	9
SCOTTS VALLEY 1.4 W	37.0552, -122.0333	361.877	3.473	73.162	1.817	254	0
FELTON 4.5 NNE	37.1051, -122.0468	837.927	2.321	402.888	1.98	155	0
SCOTTS VALLEY 1.7 SW	37.0396, -122.0295	573.163	4.373	138.124	2.572	4	0
DAVENPORT 4.2 NW	37.0651, -122.2178	495.079	7.625	60.04	3.889	2	0
LOS GATOS	37.2319, -121.9592	365.157	12.093	69.882	6.287	1	0
SANTA CRUZ	36.9878, -121.9994	69.882	8.23	365.157	6.709	30	0

Appendix C
Data Forms

WCD-T-01

U.S. Army Corps of Engineers (USACE)
RAPID ORDINARY HIGH WATER MARK (OHWM) FIELD IDENTIFICATION DATA SHEET
The proponent agency is Headquarters USACE CECW-COR.

Form Approved -
OMB No. 0710-0024
Expires: 2027-09-30

The Agency Disclosure Notice (ADN)

The Public reporting burden for this collection of information, 0710-0024, is estimated to average 30 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or burden reduction suggestions to the Department of Defense, Washington Headquarters Services, at whs.mc-alex.esd.mbx.dd-dod-information-collections@mail.mil. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.

Project ID #: WCD-NWW-01 | Site Name: 800 West Cliff Drive | Date and Time: 10/30/2025

Location (lat/long): 36.95238197, -122.02948769 | Investigator(s): Tara Johnson-Kelly, Erin Fisher-Cotton

Step 1 Site overview from remote and online resources.
Check boxes for online resources used to evaluate site:

- [ ] gage data
- [ ] LiDAR
- [ ] geologic maps
- [ ] climatic data
- [x] satellite imagery
- [ ] land use maps
- [x] aerial photos
- [ ] topographic maps
- [ ] Other: _____

Describe land use and flow conditions from online resources.
Were there any recent extreme events (floods or drought)?
State Park – RECREATIONAL USE, MAINTAINED W/TRAILS

Step 2 Site conditions during field assessment. First look for changes in channel shape, depositional and erosional features, and changes in vegetation and sediment type, size, density, and distribution. Make note of natural or human-made disturbances that would affect flow and channel form, such as bridges, riprap, landslides, rockfalls, etc.
Channel flows through culverts where trails or roads exist it. NARROW DRAINAGE PASSES THROUGH GRADE OF MESMAC TO OCEAN ON COASTAL TERRACE

Step 3 Mark the boxes next to the indicators used to help identify the location of the OHWM.
OHWM is at a transition point, therefore some indicators used to identify the location of the OHWM may be just below or above the OHWM. Make a slash in boxes next to indicators that are helpful in identifying the OHWM. After the initial assessment, those indicators identified at the OHWM elevation should be changed from slashes to x's. Note, it is not necessary to mark indicators that are present but do not help inform identification of the OHWM.
Go to page 2 to describe overall rationale for location of OHWM, write any additional observations, and attach a photo log.

Geomorphic Indicators

- [x] **Break in slope**
  - [x] *on the bank*
  - [ ] *undercut bank*
  - [ ] *valley bottom*
  - [ ] Other: _____
- [ ] **Shelving**
  - [ ] *shelf at top of bank*
  - [ ] *natural levee*
  - [ ] *human-made berms or levees*
  - [ ] *other berms:* _____
- [ ] **Secondary channels**
- [ ] **Channel bar**
  - [ ] *shelving (berms) on bar*
  - [x] *unvegetated*
  - [x] *vegetation transition (go to veg. indicators)*
  - [ ] *sediment transition (go to sed. indicators)*
  - [ ] *upper limit of deposition on bar*
- [ ] **Instream bedforms and other bedload transport evidence**
  - [ ] *deposition bedload indicators (e.g., imbricated clasts, gravel sheets, etc.)*
  - [ ] *bedforms (e.g., pools, riffles, steps, etc.)*
  - [ ] *Weathered clasts or bedrock*
  - [ ] *erosional bedload indicators (e.g., obstacle marks, scour, smoothing, etc.)*

Sediment Indicators

- [ ] **Soil development**
- [x] **Changes in character of soil**
- [ ] **Mudcracks**
- [ ] **Changes in particle-sized distribution**
  - [x] *transition from* fine *to* gravel
  - [ ] *upper limit of sand-sized particles*
  - [ ] *silt deposits*

Vegetation Indicators (*Consider the vegetation transition looking from the middle of the channel, up the banks, and into the floodplain*)

- [x] **Change in vegetation type from** HEDHEL OR UNVEGETATED **to** CYPERA
- [x] **Change in density of vegetation**
- [x] **Exposed roots below intact soil layer**
- [ ] **Other vegetation observations**
- [ ] **Vegetation matted down and/or bent**

Other physical indicators

- [ ] **Sediment deposited on vegetation or structures**
- [x] **Wracking/presence of organic litter**
- [ ] **Presence of large wood**
- [x] **Leaf litter disturbed or washed away**
- [ ] **Water staining**

Other observed indicators? Describe:
culvert downstream. Defined bed + bank.

Project ID #: WCD - NWW - 01

Step 4 Was additional information used to support identification of the OHWM? ☐ Yes ☒ No

If yes, describe and attach information to data sheet:

Step 5 Is an OHWM present at this site? ☒ Yes ☐ No

Describe rationale for location of OHWM or lack thereof by describing any observed indicators (at, above, and/or below the OHWM location).

DEFINED BED + BANK, BREAK IN SLOPE @ OHWM, UNVEGETATED CHANNEL, CHANGES IN SOIL + VEGETATION, WRACKING / LEAF LITTER DISTURBED

Additional observations or notes

draw more

→ SEE ATTACHED OHWM DATA SHEET W/ TRANSECT SKETCH

Attach an imagery log of the site. ARCGIS FIELD MAPS

Imagery log attached? ☒ Yes ☐ No If no, explain why not: _____

List photographs, or other imagery/sketches, and include descriptions in the table below.

Number photographs in the order that they are taken. Attach imagery and include annotations of features.

Imagery Number	Imagery description

ADDITIONAL DATA FOR WCD-T-01

OHWM DATA SHEET

Project: 800 West Cliff Dr. **Date:** 8/30/2025 **Feature ID:** WCD-NWW-01

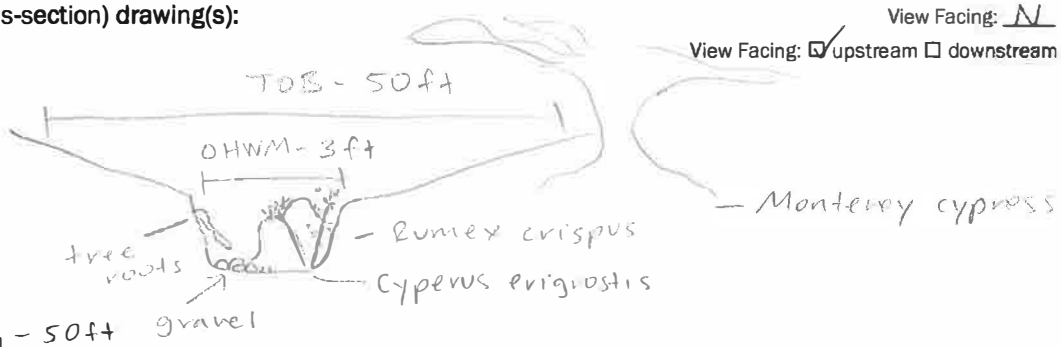
Investigator(s): Tara J-K, Erin F-C **Transect ID:** WCD-T-01

Site Location: Stream near east side of project footprint. Stream flows through culvert out to ocean.

Stream Flow: ☑ Ephemeral ☐ Intermittent ☐ Perennial ☐ Controlled/Other

Transect (cross-section) drawing(s):

View Facing: ☑ upstream ☐ downstream



☑ Transect length – 50ft
☑ OHWM width – 3ft
☑ TOB width – 50ft
☑ Channel depth – 1ft
☐ Photo in Field Maps
☑ Mapped in Field Maps

OHWM Indicators (at OHWM; primary indicators indicated with *)

- ☐ Natural line impressed on the bank
- ☐ Shelving
- ☑ Changes in the character of soil (texture)*
- ☐ Destruction of terrestrial vegetation
- ☑ Presence of litter and debris
- ☑ Wracking
- ☑ Vegetation matted down, bent, or absent
- ☐ Sediment sorting
- ☐ Leaf litter disturbed or washed away
- ☐ Scour
- ☐ Deposition
- ☑ Bed and banks
- ☐ Water staining
- ☐ Change in plant community and/or cover*

☑ Break in Slope at OHWM*: ☑ Sharp (>60°) ☐ Moderate (30-60°) ☐ Gentle (<30°)

Soil Texture

	Clay/Silt (%)	Sand (%)	Gravel (%)	Cobbles (%)	Boulders (%)
Above OHWM	10	90	—	—	—
Below OHWM	—	80	15	5	—

Vegetation Cover

	Tree (%)	Shrub (%)	Herb (%)	Bare (%)
Above OHWM	80	—	20	50
Below OHWM	—	—	10	—

MOSTLY BARE

Veg Stage: ☐ Early (herbs & seedlings) ☐ Mid (herbs, shrubs, saplings) ☑ Late (herbs, shrubs, mature trees)

Upland Species:	*Bank Species:*	*Emergent Species:*
Monterey cypress English ivy	English ivy	Cyperus eriguostis Rumex crispus English ivy

OHWM DATA SHEET

Condition/Disturbances/Anthropogenic Influences (e.g., erosion, grazing, culverts, etc.):

Culverts in a State Park. Evidence of park visitors at TOB to OHWM

Hydrology:		**Riparian:**
☐ Flowing water	Min. depth:	☐ No
☐ Standing water	Max. depth:	☑ Yes ☐ Continuous ☑ Intermittent
☐ Saturated	Avg. depth:	
☑ Dry		

Checklist of resources used to evaluate OHWM:

☐ Aerial photography	☐ Vegetation maps	☐ Other:
☑ GPS unit	☐ Geologic/soil maps	
☐ Rainfall data	☐ Gage data	
☐ Topographic maps	☐ LiDAR	

Other drawings (aerial view):

Connectivity notes:

Other forms related to this feature: ☐ Yes ☐ No

☐ Terrace, fringe, or floodplain wetland (wetland datasheet)

☐ Low flow channel or other representative section (OHWM datasheet)

WCD-T-02

U.S. Army Corps of Engineers (USACE)
RAPID ORDINARY HIGH WATER MARK (OHWM) FIELD IDENTIFICATION DATA SHEET
The proponent agency is Headquarters USACE CECW-COR.

Form Approved -
OMB No. 0710-0024
Expires: 2027-09-30

The Agency Disclosure Notice (ADN)

The Public reporting burden for this collection of information, 0710-0024, is estimated to average 30 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or burden reduction suggestions to the Department of Defense, Washington Headquarters Services, at whs.mc-alex.esd.mbx.dd-dod-information-collections@mail.mil. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.

Project ID #: WCD-NWHO2	Site Name: 800 West Cliff Drive	Date and Time: 10/30/2025
Location (lat/long): 36.95285681, -122.02959174	Investigator(s): Tara Johnson-Kelly, Erin Fisher-Colton	

Step 1 Site overview from remote and online resources.
Check boxes for online resources used to evaluate site:

- [ ] gage data
- [ ] LiDAR
- [ ] geologic maps
- [ ] climatic data
- [x] satellite imagery
- [ ] land use maps
- [x] aerial photos
- [ ] topographic maps
- [ ] Other: _____

Describe land use and flow conditions from online resources.
Were there any recent extreme events (floods or drought)?
State Park - RECREATIONAL USE, MAINTAINED W/TRAILS

Step 2 Site conditions during field assessment. First look for changes in channel shape, depositional and erosional features, and changes in vegetation and sediment type, size, density, and distribution. Make note of natural or human-made disturbances that would affect flow and channel form, such as bridges, riprap, landslides, rockfalls, etc.
Culvert where feature passes under railroad.
NARROW DRAINAGE PASSES THROUGH GRADE OF HESMAC TO OCEAN ON COASTAL TERRACE

Step 3 Mark the boxes next to the indicators used to help identify the location of the OHWM.
OHWM is at a transition point, therefore some indicators used to identify the location of the OHWM may be just below or above the OHWM. Make a slash in boxes next to indicators that are helpful in identifying the OHWM. After the initial assessment, those indicators identified at the OHWM elevation should be changed from slashes to x's. Note, it is not necessary to mark indicators that are present but do not help inform identification of the OHWM.
Go to page 2 to describe overall rationale for location of OHWM, write any additional observations, and attach a photo log.

Geomorphic indicators

- [x] **Break in slope**
  - [x] *on the bank* very subtle
  - [ ] *undercut bank*
  - [ ] *valley bottom*
  - [ ] Other: _____
- [ ] **Shelving**
  - [ ] *shelf at top of bank*
  - [ ] *natural levee*
  - [ ] *human-made berms or levees*
  - [ ] *other berms:* _____
- [ ] **Secondary channels**
- [ ] **Channel bar**
  - [ ] *shelving (berms) on bar*
  - [ ] *unvegetated*
  - [ ] *vegetation transition (go to veg. indicators)*
  - [ ] *sediment transition (go to sed. indicators)*
  - [ ] *upper limit of deposition on bar*
- [ ] **Instream bedforms and other bedload transport evidence**
  - [ ] *depositon bedload indicators (e.g., imbricated clasts, gravel sheets, etc.)*
  - [ ] *bedforms (e.g., pools, riffles, steps, etc.)*
  - [ ] *Weathered clasts or bedrock*
  - [ ] *erosional bedload indicators (e.g., obstacle marks, scour, smoothing, etc.)*

Sediment indicators

- [ ] **Soil development**
- [ ] **Changes in character of soil**
- [ ] **Mudcracks**
- [x] **Changes in particle-sized distribution**
  - [x] *transition from* loam *to* gravel
  - [ ] *upper limit of sand-sized particles*
  - [ ] *silt deposits*

Vegetation indicators (*Consider the vegetation transition looking from the middle of the channel, up the banks, and into the floodplain*)

- [ ] **Change in vegetation type from** _____ **to** _____
- [ ] **Change in density of vegetation**
- [x] **Exposed roots below intact soil layer**
- [x] **Vegetation matted down and/or bent**
- [ ] **Other vegetation observations**

Other physical indicators

- [ ] **Sediment deposited on vegetation or structures**
- [x] **Wracking/presence of organic litter**
- [ ] **Presence of large wood**
- [x] **Leaf litter disturbed or washed away**
- [ ] **Water staining**

Other observed indicators? Describe:

BED + BANK SHALLOW, SOMEWHAT POORLY DEFINED

Project ID #: WCD-NWW-02

Step 4 Was additional information used to support identification of the OHWM? ☐ Yes ☑ No

If yes, describe and attach information to data sheet:

Step 5 Is an OHWM present at this site? ☑ Yes ☐ No

Describe rationale for location of OHWM or lack thereof by describing any observed indicators (at, above, and/or below the OHWM location).

SLIGHT BREAK IN SLOPE @ OHWM, CHANGES IN SOIL, EXPOSED ROOTS, VEGETATION MATTED, WRACKING, LEAF LITTER DISTURBED/WASHED AWAY

Additional observations or notes



Attach an imagery log of the site. ON FIELD MAPS

Imagery log attached? ☑ Yes ☐ No If no, explain why not: _____

List photographs, or other imagery/sketches, and include descriptions in the table below.

Number photographs in the order that they are taken. Attach imagery and include annotations of features.

Imagery Number	Imagery description

WCD - T - 03

U.S. Army Corps of Engineers (USACE)

INTERIM DRAFT RAPID ORDINARY HIGH WATER MARK (OHWM) FIELD IDENTIFICATION DATA SHEET

The proponent agency is Headquarters USACE CECW-COR.

Form Approved -
OMB No. 0710-0024
Expires: 2024-04-30

The Agency Disclosure Notice (ADN)

The Public reporting burden for this collection of information, 0710-0024, is estimated to average 30 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or burden reduction suggestions to the Department of Defense, Washington Headquarters Services, at whs.mc-alex.esd.mbx.dd-dod-information-collections@mail.mil. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.

Project ID #: WCD - US - 01	Site Name: 800 WEST CLIFF DRIVE	Date and Time: 10/30/2025 1145 AM
Location (lat/long): 36.95277553, -122.02925597	Investigator(s): T. JOHNSON-KELLY, E. FISHER-COLTON	

Step 1 Site overview from remote and online resources

Check boxes for online resources used to evaluate site:

- [ ] gage data
- [ ] climatic data
- [x] aerial photos
- [ ] LiDAR
- [x] satellite imagery
- [ ] topographic maps
- [ ] geologic maps
- [ ] land use maps
- [ ] Other: _____

Describe land use and flow conditions from online resources. Were there any recent extreme events (floods or drought)?

STATE PARK - RECREATIONAL USE, MAINTAINED W/TRAILS

Step 2 Site conditions during field assessment. First look for changes in channel shape, depositional and erosional features, and changes in vegetation and sediment type, size, density, and distribution. Make note of natural or man-made disturbances that would affect flow and channel form, such as bridges, riprap, landslides, rockfalls etc.

SMALL CULVERT UNDER TRAIL LEADS TO SWALE THAT CONNECTS W/ WETLAND-LIKE FEATURE. COASTAL TERRACE LANDFORM

Step 3 Check the boxes next to the indicators used to identify the location of the OHWM.

OHWM is at a transition point, therefore some indicators that are used to determine location may be just below and above the OHWM. From the drop-down menu next to each indicator, select the appropriate location of the indicator by selecting either just below 'b', at 'x', or just above 'a' the OHWM.

Go to page 2 to describe overall rationale for location of OHWM, write any additional observations, and to attach a photo log.

Geomorphic indicators NONE

- [ ] **Break in slope:** ∅
  - [ ] *on the bank:*
  - [ ] *undercut bank:*
  - [ ] *valley bottom:*
  - [ ] Other: _____
- [ ] **Shelving:**
  - [ ] *shelf at top of bank:*
  - [ ] *natural levee:*
  - [ ] *man-made berms or levees:*
  - [ ] *other berms:* _____
- [ ] **Channel bar:**
  - [ ] *shelving (berms) on bar:*
  - [ ] *unvegetated:*
  - [ ] *vegetation transition (go to veg. indicators)*
  - [ ] *sediment transition (go to sed. indicators)*
  - [ ] *upper limit of deposition on bar:*
- [ ] **Instream bedforms and other bedload transport evidence:**
  - [ ] *deposition bedload indicators (e.g., imbricated clasts, gravel sheets, etc.)*
  - [ ] *bedforms (e.g., pools, riffles, steps, etc.):*
- [ ] *erosional bedload indicators (e.g., obstacle marks, scour, smoothing, etc.)*
- [ ] **Secondary channels:**

Sediment indicators

- [ ] **Soil development:**
- [ ] **Changes in character of soil:**
- [ ] **Mudcracks:**
- [ ] **Changes in particle-sized distribution:**
  - [ ] *transition from* _____ *to* _____
  - [ ] *upper limit of sand-sized particles*
  - [ ] *silt deposits:*

Vegetation Indicators NO CHANGE IN VEG

- [ ] **Change in vegetation type and/or density:**

  Check the appropriate boxes and select the general vegetation change (e.g., graminoids to woody shrubs). ***Describe the vegetation transition looking from the middle of the channel, up the banks, and into the floodplain.***

  - [ ] *vegetation absent to:*
  - [ ] *moss to:*
  - [ ] *forbs to:*
  - [ ] *graminoids to:*
  - [ ] *woody shrubs to:*
  - [ ] *deciduous trees to:*
  - [ ] *coniferous trees to:*
- [ ] **Vegetation matted down and/or bent:**
- [ ] **Exposed roots below intact soil layer:**

Ancillary indicators

- [ ] **Wracking/presence of organic litter:**
- [ ] **Presence of large wood:**
- [ ] **Leaf litter disturbed or washed away:**
- [ ] **Water staining:**
- [ ] **Weathered clasts or bedrock:**

Other observed indicators? Describe:

NO DEFINED BED/BANK, JUST SHALLOW LINEAR DEPRESSION

Project ID #: _____

Step 4 Is additional information needed to support this determination? ☐ Yes ☑ No If yes, describe and attach information to datasheet:

NO OHWM INDICATORS

Step 5 Describe rationale for location of OHWM

NO OHWM INDICATORS - UPLAND SWALE.

Additional observations or notes

SWALE IS FILLED W/ HARDING GRASS + UPLAND GRASSES

Attach a photo log of the site. Use the table below, or attach separately.

Photo log attached? ☑ Yes ☐ No If no, explain why not: _____

List photographs and include descriptions in the table below.

Number photographs in the order that they are taken. Attach photographs and include annotations of features.

Photo Number	Photograph description

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: 800 West Cliff Drive City/County: Santa Cruz Sampling Date: 10/30/2025

Applicant/Owner: City of Santa Cruz State: CA Sampling Point: WCD-WSP-01

Investigator(s): Tara Johnson-Kelly, Erin F-C. Section, Township, Range: S24, T11S, R2W

Landform (hillslope, terrace, etc.): COASTAL TERRACE Local relief (concave, convex, none): CONCAVE Slope (%): 2%

Subregion (LRR): C Lat: 36.95267424 Long: -122.02949380 Datum: WGS84

Soil Map Unit Name: WATSONVILLE LOAM, THICK SURFACE, 2 TO 5 PERCENT SLOPES NWI classification: NONE

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No ✓	**Is the Sampled Area within a Wetland?** Yes ____ No ✓*
Hydric Soil Present?	Yes ✓	No ____	
Wetland Hydrology Present?	Yes ____	No ✓	

Remarks:
*SINGLE-PARAMETER WETLAND → NOT USACE, BUT WILL BE COASTAL COMMISSION WETLAND

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30-FT)			
1. HESPEROCYPARIS MACROCARPA	25	Y	NL→UPL
2.			
3.			
4.			
	25 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15-FT)			
1. RUBUS ARMENIACUS	30	Y	FAC
2. SALIX LASIOLEPUS	10	Y	FACW
3.			
4.			
5.			
	40 = Total Cover		
Herb Stratum (Plot size: 5-FT)			
1. RUMEX CRISPUS	5	N	FAC
2. RUBUS ARMENIACUS	5	N	FAC
3. Grass sp. - SPOROBOLUS INDICUS	30	Y	FACW
4. CYPERUS ERAGROSTIS	5	N	FACW
5. MENTHA PULEGIUM	1	N	OBL
6.			
7.			
8.			
	46 = Total Cover		
Woody Vine Stratum (Plot size: 30-FT)			
1. Ø			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 70 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	1	x 1 =	1
FACW species	15	x 2 =	30
FAC species	40	x 3 =	120
FACU species	30	x 4 =	120
UPL species	25	x 5 =	125
Column Totals:	111 (A)		396 (B)

Prevalence Index = B/A = 3.57

Hydrophytic Vegetation Indicators: Ø

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks:

FAC or FACW trigger CCC

SOIL

Sampling Point: WCD-WET-01

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
1-4	2.5Y 3/1	100					CLAY LOAM	
4-8	2.5Y 3/1	95	10YR 4/6	5	C	PL	CLAY LOAM	
8-12	10YR 3/2	98	7.5YR 6/8	2	C	M	CLAY LOAM	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR C)**
- ___ 1 cm Muck (A9) **(LRR D)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If present): NOT PRESENT

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks:

CLAY LOAM TEXTURE

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) **(Nonriverine)**
- ___ Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) **(Riverine)**
- ___ Sediment Deposits (B2) **(Riverine)**
- ___ Drift Deposits (B3) **(Riverine)**
- X Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5) NO

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): _____

Water Table Present? Yes ___ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): _____

Wetland Hydrology Present? Yes ___ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

HUMAN-MADE WEIR/DAM IN PLACE @ TRAIL CROSSING (BRIDGE) : ~ 2 FT HIGH AND 5 FT WIDE (2 WOOD BOARDS) — ARTIFICIAL H_2O BLOCKAGE NEAR THIS LOCATION

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: 800 West Cliff Drive City/County: Santa Cruz Sampling Date: 10/30/2025
Applicant/Owner: City of Santa Cruz State: CA Sampling Point: WCD-USP-01
Investigator(s): Tanya Johnson-Kelly, Erin Fisher-Cotta Section, Township, Range: S24, T11S, R2W
Landform (hillslope, terrace, etc.): COASTAL TERRACE Local relief (concave, convex, none): CONCAVE Slope (%): 2%
Subregion (LRR): C Lat: 36.952656366 Long: -122.029478351 Datum: WGS84
Soil Map Unit Name: WATSONVILLE LOAM, THICK SURFACE, 2 TO 5 PERCENT SLOPES NWI classification: NONE
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ___
Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ___	No ✓	**Is the Sampled Area within a Wetland?** Yes ___ No ✓
Hydric Soil Present?	Yes ___	No ✓	
Wetland Hydrology Present?	Yes ___	No ✓	

Remarks:
UPLAND AREA

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 FT)	Absolute % Cover	Dominant Species?	Indicator Status
1. HESPEROCYPARIS MACROCARPA	25	Y	NL→UPL
2.			
3.			
4.			
	25	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15-FT)			
1. RUBUS ARMENIACUS	30	Y	FAC
2. SALIX LASIOLEPUS	10	Y	FACW
3.			
4.			
5.			
	40	= Total Cover	
Herb Stratum (Plot size: 5-FT)			
1. CYPERUS ERAGROSTIS	1	N	FACW
2. RUBUS ARMENIACUS	5	N	FAC
3. CIRSIUM SP. - SPOROBOLUS INDICUS	50	Y	FACU
4. RUMEX CRISPUS	5	N	FAC
5.			
6.			
7.			
8.			
	61	= Total Cover	
Woody Vine Stratum (Plot size: 30-FT)			
1. ⊖			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum 40 % Cover of Biotic Crust 0

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 4 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species 0	x 1 =	0
FACW species 11	x 2 =	22
FAC species 40	x 3 =	120
FACU species 50	x 4 =	200
UPL species 25	x 5 =	125
Column Totals: 126 (A)		467 (B)

Prevalence Index = B/A = 3.71

Hydrophytic Vegetation Indicators:
___ Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ___ No ✓

Remarks:

SOIL

Sampling Point: WCD-USP-01

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	2.5Y 3/2	100					CLAY LOAM	
4-18	2.5Y 3/2	100	5Y 3/4	3	C	M	CLAY LOAM	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR C)**
- ___ 1 cm Muck (A9) **(LRR D)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If present):

Type: NONE

Depth (inches): ___

Hydric Soil Present? Yes ___ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) **(Nonriverine)**
- ___ Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) **(Riverine)**
- ___ Sediment Deposits (B2) **(Riverine)**
- ___ Drift Deposits (B3) **(Riverine)**
- ✓ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5) NO

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): ___

Water Table Present? Yes ___ No ✓ Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): ___

Wetland Hydrology Present? Yes ___ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: 800 West Cliff Drive City/County: Santa Cruz Sampling Date: 10/30/2025

Applicant/Owner: City of Santa Cruz State: CA Sampling Point: WCD-WSP-02

Investigator(s): Terra Johnson-Kelly, Erin Fisher-Collection Township, Range: S24 T11S, R2W

Landform (hillslope, terrace, etc.): COASTAL TERRACE Local relief (concave, convex, none): CONCAVE Slope (%): 2

Subregion (LRR): C Lat: 36.952217666 Long: -122.03132123 Datum: WGS84

Soil Map Unit Name: PINTO LOAM, 0 TO 2 PERCENT SLOPES NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No ____	**Is the Sampled Area within a Wetland?** Yes ____ No ✓*
Hydric Soil Present?	Yes ____	No ✓	
Wetland Hydrology Present?	Yes ____	No ✓	

Remarks: *Coastal Commission Wetland (veg)

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 FT)	Absolute % Cover	Dominant Species?	Indicator Status
1. Ø			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 15 FT)			
1.			
2. Ø			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: 5 FT)			
1. Rumex crispus (FAC)	20	Y	FAC
2. Rumex pulcher (FAC)	5	N	FAC
3. Convolvulus arvensis	1	N	NL-UPL
4. Rumex acetosella (FACU)	5	N	FACU
5. Geranium molle	1	N	NL-UPL
6. RAPHANUS RAHANISTRUM	2	N	NL-UPL
7.			
8.			
	34 = Total Cover		
Woody Vine Stratum (Plot size: 30 FT)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum ____ % Cover of Biotic Crust ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks: Coastal Commission Wetland

SOIL

Sampling Point: WCD-WSP-02

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 3/2	100					Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): _____

Water Table Present? Yes ___ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: 800 West Cliff Drive City/County: Santa Cruz Sampling Date: 10/30/2025

Applicant/Owner: City of Santa Cruz State: CA Sampling Point: WCD-USP-02

Investigator(s): Tanya Johnson-Kelly, Erin Fisher-Collins Section, Township, Range: S24, T11S, R2W

Landform (hillslope, terrace, etc.): COASTAL TERRACE Local relief (concave, convex, none): CONCAVE Slope (%): 2

Subregion (LRR): C Lat: 36.9522496 2 Long: -122.0313022 8 Datum: WGS84

Soil Map Unit Name: PINTO LOAM, 0 TO 2 PERCENT SLOPES NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No ✓	**Is the Sampled Area within a Wetland?** Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ✓	
Wetland Hydrology Present?	Yes ____	No ✓	

Remarks:

UPLAND AREA

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 FT)			
1. Ø			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 15 FT)			
1. Ø			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: 5 FT)			
1. RAPHANUS RAPHANISTRUM	40	Y	NL-UPL
2. RUMEX CRISPUS	2	N	FAC
3. AVENA BARBATA	30	Y	NL-UPL
4.			
5.			
6.			
7.			
8.			
	72 = Total Cover		
Woody Vine Stratum (Plot size: 30 FT)			
1. Ø			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 20 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species 0	x 1 = 0
FACW species 0	x 2 = 0
FAC species 2	x 3 = 6
FACU species 0	x 4 = 0
UPL species 70	x 5 = 350
Column Totals: 72 (A)	356 (B)

Prevalence Index = B/A = 4.86

Hydrophytic Vegetation Indicators: Ø

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks:

SOIL

Sampling Point: WCD - USP - 02

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-14	10YR 3/2	100					CLAY LOAM	NO REDOX

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

NO HYDRIC SOILS

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

DEPRESSION W/DIFF VEG BUT NO HYDRO INDICATORS

Arid West Streamflow Duration Assessment Method

General site information

Project name or number:
800 WEST CLIFF DRIVE ROAD REALIGNMENT

Site code or identifier:
WCD-SDAM-01

Assessor(s):
ERIN FISHER-COLTON, TARA JOHNSON-KELLY

Waterway name:
WCD - NWN - 01

Visit date:
10/30/2025

Current weather conditions (check one):
- ☐ Storm/heavy rain
- ☐ Steady rain
- ☐ Intermittent rain
- ☐ Snowing
- ☒ Cloudy (50 % cover)
- ☐ Clear/sunny

Notes on current or recent weather conditions (e.g., precipitation in prior week):
LIGHT RAIN 10/26

Coordinates at downstream end (decimal degrees):
Lat (N): 36.95209570
Long (E): -122.02937720
Datum: WGS84

Surrounding land-use within 100 m (check one or two):
- ☐ Urban/industrial/residential
- ☐ Agricultural (farmland, crops, vineyards, pasture)
- ☒ Developed open-space (e.g., golf course)
- ☐ Forested
- ☐ Other natural
- ☐ Other: STATE PARK W/RECREATIONAL TRAILS (HIKE/BIKE/DOGS)

Describe reach boundaries:
UPPER WEIR/WOOD DAM @ TRAIL CROSSING W/BRIDGE

LOWER END OF CULVERT DISCHARGES TO BEACH/OCEAN — CULVERT IS ~75FT @ DOWNSTREAM END OF REACH

Mean bankfull channel width (m): 3 FT → 1m
(Indicator 1)

Reach length (m):
40x width
min 40 m
max 200 m
60 M (200 FT)

Site photographs:
Enter photo ID or check if completed.
Top down: ✓ Mid down: ✓
Mid up: ✓ Bottom up: _____

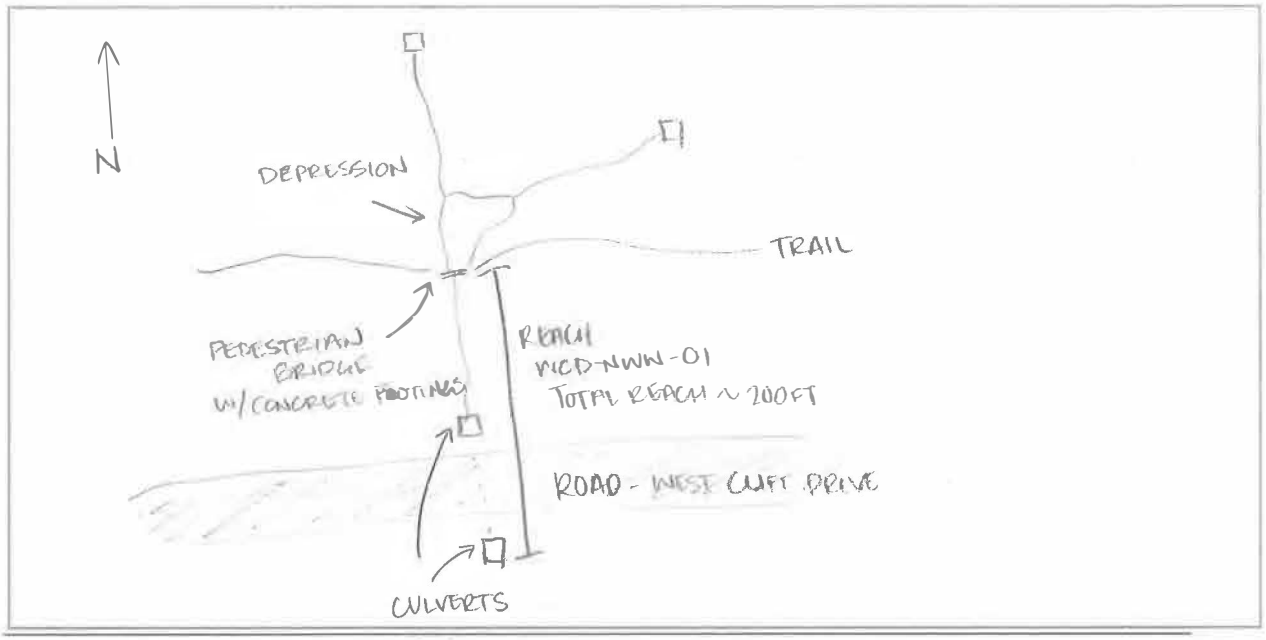
Disturbed or difficult conditions (check all that apply):
- ☐ Recent flood or debris flow
- ☒ Stream modifications (e.g., channelization)
- ☐ Diversions
- ☐ Discharges
- ☐ Drought
- ☐ Vegetation removal/limitations
- ☐ Other (explain in notes)
- ☐ None

Notes on disturbances or difficult site conditions:
UPSTREAM END OF REACH HAS WEIR/DAM OVERFLOW BELOW A PEDESTRIAN BRIDGE CROSSING

Observed hydrology:
0 % of reach with surface flow
0 % of reach with sub-surface or surface flow
0 # of isolated pools

Comments on observed hydrology:
NO H_2O FLOW

Site sketch:



1. Mean bankfull channel width (m) (nearest 0.1 m, copy from first page of field form)

1 METER

Notes about mean bankfull channel width:

2. Aquatic macroinvertebrates: Abundance of perennial indicator taxa

Collect aquatic macroinvertebrates from at least 6 locations in the assessment reach, searching all suitable habitats on the streambed (including dry habitats, if present). Determine total abundance of individuals in perennial indicator families listed below, such that no one family counts for more than 11 individuals in the total.

Ephemeroptera	**Plecoptera**	**Trichoptera**	**Coleoptera**
Ephemerellidae (spiny crawler mayflies)	Chloroperlidae (green stoneflies)	Brachycentridae (humpless casemakers)	Elmidae (riffle beetles)
Heptageniidae (flathead mayflies)	Perlidae (common stoneflies)	Glossosomatidae (saddle casemakers)	
Leptohyphyidae (little stout crawler mayflies)		Hydropsychidae (common netspinners)	
Leptophlebiidae (prong-gilled mayflies)		Rhyacophilidae (free-living caddisflies)	

Mark the appropriate box for the number of perennial indicator individuals observed.

- ☒ No perennial indicator taxa detected
- ☐ 1 to 4 perennial indicator individuals
- ☐ 5 to 9 perennial indicator individuals
- ☐ 10 to 19 perennial indicator individuals
- ☐ 20 or more perennial indicator individuals

Check if applicable: ☒ No aquatic macroinvertebrates in assessment area

Notes on perennial indicator taxa:

NO MACROINVERTEBRATES DETECTED

3. Slope

Using a clinometer or other device, record the slope as a percent, up to the nearest half-percent.

~2%

Notes about slope:

SHALLOW SLOPE W/IN CHANNEL

4. Number of hydrophytic plant species

Record up to 6 hydrophytic plant species (FACW or OBL in the appropriate regional wetland plant list, depending on location) within the assessment area: **within the channel or up to one half-channel width outside the channel**. Explain in notes if species has an odd distribution (e.g., one individual or small patch, long-lived species solely represented by seedlings, or long-lived species solely represented by specimens in decline), or if there is uncertainty about the identification. Enter photo ID or check if photos are taken.

1 Number of hydrophytic plant species identified from the assessment reach without odd distribution. Enter zero if none were found.

Check if applicable: ☐ No vegetation in assessment area

Species	Odd distribution?	Notes	Photo ID
CYPERUS ERAGROSTIS (FACW)	NO	IN CHANNEL BELOW OHWM	

Notes on hydrophytic vegetation:

5. Prevalence of rooted upland plants in the streambed

2 (0-3)

Half-scores (0.5, 1.5, and 2.5) are allowed.

Evaluate the prevalence of rooted upland plants (i.e., plants rated as FAC, FACU, UPL, NI, or not listed in the regionally appropriate National Wetland Plant List) in the streambed.

0 (Poor) Rooted upland plants are *prevalent* within the streambed/thalweg.
1 (Weak) Rooted upland plants are *consistently dispersed* throughout the streambed/thalweg.
(2) (Moderate) There are *a few* rooted upland plants present within the streambed/thalweg.
3 (Strong) Rooted upland plants are *absent* from the streambed/thalweg.

Upland Species	Notes	Photo ID
HEDERA HELIX	SPREADING FROM BANK	
HESPEROCYPARIS MACROCARPA	EXPOSED ROOTS IN CHANNEL	

Notes on rooted upland plants:

6. Algal cover

Mark the appropriate box for the percent of the streambed covered by live or dead algae on the streambed.

- ☒ Not detected
- ☐ ≤2% cover
- ☐ 2 to 10% cover
- ☐ 10 to 40% cover
- ☐ >40% cover
- ☐ Check here if algae *exclusively* appears to have been deposited from an upstream source, and *no* local growth is evident.

Notes on algal cover on the streambed:

NO ALGAL COVER

7. Differences in vegetation

1 (0-3) *Half-scores (0.5, 1.5, 2.5) are allowed.*	Compare the composition and density of plants growing on the banks and riparian areas to plants in the adjacent uplands. For this indicator, an upland species is not defined by its wetland indicator status, but rather by its location relative to the channel. 0 (Poor) No compositional or density differences in vegetation are present between the banks and the adjacent uplands. (1) (Weak) Vegetation growing along the reach may occur in greater densities or grow more vigorously than vegetation in the adjacent uplands, but there are no dramatic compositional differences between the two. 2 (Moderate) A distinct riparian corridor exists along part of the reach. Riparian vegetation is interspersed with upland vegetation along the length of the reach. 3 (Strong) Dramatic compositional differences in vegetation are present between the banks and the adjacent uplands. A distinct riparian vegetation corridor exists along the entire reach. Riparian, aquatic, or wetland species dominate the length of the reach.

Notes on differences in vegetation:

CYPERUS ERAGROSTIS IS ONLY CHANGE IN VEG, BANKS + CHANNEL HAVE EQUAL AMT OF BARE GROUND + SIMILAR PLANT COVER / COMPOSITION

8. Riffle-pool sequence

0 (0-3) *Half-scores (0.5, 1.5, 2.5) are allowed.*	Evaluate the prevalence of riffles, pools, and other microhabitats in the streambed. 0 (Poor) No riffle-pool sequences observed. 1 (Weak) Mostly has areas of pools or riffles. 2 (Moderate) Represented by a less frequent number of riffles and pools. Distinguishing the transition between riffles and pools is difficult to observe. 3 (Strong) Demonstrated by a frequent number of structural transitions (e.g., riffles followed by pools) along the entire reach. There is an obvious transition between riffles and pools.
Notes about riffle-pool sequence: NO RIFFLES	

Photo log

Indicate if any other photographs taken during the assessment: SEE FIELD MAPS PHOTOS

Photo ID	Description

Additional notes about the assessment:

Model classification:

- ☒ Ephemeral
- ☐ At least intermittent
- ☐ Intermittent
- ☐ Less than perennial
- ☐ Perennial
- ☐ Needs more information

Appendix D
Review Area Photos



Photo 1. View of West Cliff Drive Non-Wetland Water 01 (WCD-NWW-01), facing southwest downstream. October 30, 2025.



Photo 2. View of WCD Transect 01 (WCD-T-01) taken across WCD-NWW-01, facing west-southwest. October 30, 2025.



Photo 3. View of culvert at the downstream end of WCD-NWW-01, facing south-southwest. October 30, 2025.



Photo 4. View of WCD-NWW-02, facing south-southeast downstream. October 30, 2025.



Photo 5. View of WCD-T-02 taken across WCD-NWW-02, facing west-southwest. October 30, 2025.



Photo 6. View of WCD Coastal Commission Wetland 01 (WCD-CCW-01), facing northwest. October 30, 2025.



Photo 7. View of WCD-CCW-01, facing north-northeast. October 30, 2025.



Photo 8. View of impoundment at downstream (outflow) end of WCD-CCW-01, facing south. October 30, 2025.



Photo 9. View of WCD-T-03 across WCD Upland Swale 01 (WCD-US-01), facing west. October 30, 2025



Photo 10. View of WCD-CCW-02, facing east-southeast. October 30, 2025.



Photo 11. View of WCD Wetland Sampling Point 01 (WCD-WSP-01) in WCD-CCW-01, facing northwest. October 30, 2025.



Photo 12. View of WCD Upland Sampling Point 01 (WCD-USP-01) in WCD-CCW-01, facing north-northeast. October 30, 2025.



Photo 13. View of WCD-WSP-02 in WCD-CCW-02, facing south-southeast. October 30, 2025.



Photo 14. View of WCD-USP-02 in WCD-CCW-02, facing north-northwest. October 30, 2025.

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Appendix C

Historic Property Survey Report

HISTORIC PROPERTY SURVEY REPORT

1. UNDERTAKING DESCRIPTION AND LOCATION

District	County	Federal Project. Number. (Prefix, Agency Code, Project No.)	Location
5	Santa Cruz	15Y2 (019)	800 West Cliff Drive, Santa Cruz, California 95060

The studies for this undertaking were carried out in a manner consistent with Caltrans' regulatory responsibilities under Section 106 of the National Historic Preservation Act (36 CFR Part 800) and pursuant to the 2024 *Programmatic Agreement among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, the United States Army Corps of Engineers' Sacramento District, San Francisco District, and Los Angeles District, and the California Department of Transportation Regarding Compliance with Section 106 of the National Historic Preservation Act as it Pertains to the Administration of the Federal-Aid Highway Program in California*(Section 106 PA), as well as under Public Resources Code 5024 and pursuant to the 2024 *Memorandum of Understanding Between the California Department of Transportation and the California State Historic Preservation Office Regarding Compliance with Public Resources Code Section 5024 and Governor's Executive Order W-2 6-92*(5024 MOU) as applicable.

Project Description:

In December 2023 and early January 2024, high wave and storm events eroded and collapsed a section of the multiuse pathway across from approximately 800 West Cliff Drive and the Light House Field State Park. The 800 West Cliff Drive Road Realignment Project (Project) aims to eliminate the weakest link in the West Cliff Drive roadway system as an eroded scarp at the location has encroached to within 21 feet of the existing roadway, partially damaging an adjacent multiuse pathway. The project will shift a section of roadway and multiuse pathway nearest to the scarp approximately 50 feet inland, out of the projected 100-year erosion zone. A section of the multiuse path will be relocated approximately 15 feet inland. Other elements of the project include stormwater drainage improvements, relocation of existing signage, new and relocated benches, removal of existing asphalt along existing road and multiuse path and construction site restoration.

See Attachment 1 for a detailed description of the proposed project, and refer to Figure 1, located in Attachment 1, for a Project Location Map.

2. AREA OF POTENTIAL EFFECTS

In accordance with Section 106 PA Stipulation VIII.A, the Area of Potential Effects (APE) for the Project was established in consultation with Krisstin Hadick, Caltrans District 5 PQS Principal Investigator for Prehistoric Archaeology, Sonia Miller, Caltrans District 5 PQS Architectural Historian, and Evelyn Frederic, Local Assistance Engineer, on December 1, 2025. The APE is illustrated in Figure 2, Attachment 1.

The horizontal, geographic extent of the APE encompasses a 45.83-acre area spanning a 0.25-mile segment of West Cliff Drive, Lighthouse Field State Beach, and Lighthouse Point Park in the City of Santa Cruz as depicted in Figure 2, Attachment 1. Within the APE, the Area of Direct Impact (ADI) coincides with the Project footprint, which is limited to the 9.65-acre area delineated by

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the purple hatched overlay in Figure 2, Attachment 1. The ADI is the area where all construction activities, staging activities, and temporary road access would occur. The vertical above ground APE is anticipated to be the same as the existing roadway grade. The vertical underground APE coincides with the maximum depth of excavation, which may be up to 15 feet in depth. Although most of the excavation appears to be through the existing road and culvert and into the bedrock, there may be some excavation into native soil.

3. CONSULTING PARTIES / PUBLIC PARTICIPATION

☒ Native American Heritage Commission: Dudek requested a California Native American Heritage Commission (NAHC) review of its Sacred Lands File (SLF) on September 10, 2025. The NAHC responded on September 11, 2025, with positive results for the SLF and recommended contacting the Costanoan Ohlone Rumsen-Mutsen Tribe for more information. In addition, the NAHC provided a list of Native American representatives who might have additional information about cultural resources.

☒ Native American Tribes, Groups and Individuals: *Redacted*



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☒ Local Historical Society / Historic Preservation Group: On December 8, 2025, Dudek Architectural Historian Fallin Steffen, MA, sent an outreach letter and figure depicting the Project area to the Santa Cruz Museum of Art and History and the Santa Cruz Museum of Natural History. The letter provided a brief description of the proposed Project and requested information about historic and cultural resources in or near the Project area. To date, no responses have been received. Copies of the interested party correspondence are included in Appendix C, Attachment 1.

4. SUMMARY OF IDENTIFICATION EFFORTS

- ☒ National Register of Historic Places (NRHP)
- ☒ California Register of Historical Resources (CRHR)
- ☒ National Historic Landmark (NHL)
- ☒ California Historical Landmarks (CHL)
- ☒ California Points of Historical Interest
- ☒ California Historical Resources Information System (CHRIS)
- ☒ Caltrans Historic Bridge Inventory
- ☐ Caltrans Cultural Resources Database (CCRD)

Other Sources consulted:

☒ Historic newspapers, historic maps, and historic aerial photographs.

Results:

Along with a review of historic newspapers, maps, and aerial photographs, this study's background research involved a California Historical Resources Information System (CHRIS) records search at the Northwestern Information Center (NWIC) conducted on September 11, 2025. The records search was specific to the Project area and included a 0.25-mile surrounding radius to identify any previously identified cultural resources and studies.

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Sources consulted included maps of previous cultural resources studies and known built environment resources, NRHP and CRHR listings, California Historic Landmarks, the Built Environment Resources Directory (BERD), California Points of Historical Interest, and Caltrans State and Local Bridge Surveys.

The CHRIS records search results identified two studies (S-023812 and S-011488) that intersect the Project APE, and one previously recorded resource, West Cliff Drive (P-44-001353), within the Project APE. This resource was previously found to be ineligible for listing in the NRHP, CRHR, and the City of Santa Cruz Historic Resources Inventory and SHPO concurred with this finding in January 2025 (Steffen 2024; FHWA_2024_0722_001). ~~Please see Appendix A located in Attachment 1 for the full results of the CHRIS Records Search and the previous SHPO determination~~. *Redacted*

5. PROPERTIES IDENTIFIED

☒ Caltrans, in accordance with Section 106 PA Stipulation VIII.C.5 has determined there are cultural resources within the APE that were **previously determined not eligible** for inclusion in the NRHP with SHPO concurrence and those determinations remain valid. ~~Copy of SHPO/Keeper correspondence is attached in Appendix A, Attachment 1.~~ *Redacted*

- West Cliff Drive (P-44-001353)

There is one previously recorded built historic resource within or adjacent to the APE, West Cliff Drive (P -44-001353), which a previous 2024 study found to be ineligible for listing in the National Register of Historic Places (NRHP), the California Register of Historical Resources (CRHR), and the Santa Cruz Historic Resources Inventory (SCHRI).

The property known as Lighthouse Field State Beach was acquired by the State of California in 1978 and officially designated a State Beach Park by the California State Parks Commission in 1981 (California State Parks 2010: 30; Santa Cruz Sentinel 1981: 1, 21; 1985: 2). Although it is situated within the APE, it is currently less than 50 years of age—and will still be less than 50 years old even at the anticipated end of project construction in 2027—and, therefore, does not meet the 50-year age threshold for inventory and evaluation. Moreover, research indicates that the Lighthouse Field State Beach lacks a significant association with any events or persons important in history, nor does research suggest that this property possesses design or construction value, or information potential that is not already known or available in the historical record. As such, it lacks the necessary level of exceptional importance to satisfy NRHP Criteria Consideration G for properties that have

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achieved significance within the last fifty years. Therefore, it was not addressed further within this study.

The 4.00-acre parcel comprising Lighthouse Point Park, as shown in Figure 2, Attachment 1, falls within the delineated boundary of the APE, however, it has been excluded from the APE due to its independent development history. Lighthouse Point Park was designed and established by the City of Santa Cruz in 1963 and includes the privately funded Abbot Memorial Lighthouse constructed at the center of the park in 1967 (Santa Cruz Sentinel 1963: 5; 1967: 1). Although the Lighthouse Point Park and Lighthouse Field State Beach are located next to each other, the former was established more than a decade before the later. Each property maintains its own unique development history that remains distinct and separate from the other. As a result, the parcel comprising Lighthouse Point Park will not be considered further in this study. No further historic resources meeting the 50-year age threshold for identification and evaluation were identified within the APE during the intensive survey.

The APE also considered the Project's potential for visual, vibratory, auditory, and atmospheric effects on historic properties. These types of effects would have no potential to cause alterations, directly or indirectly, in the character or use of historic properties because no historic properties were identified within or adjacent to the APE. Since the APE and surrounding areas adjacent to it contain no cultural resources that are considered historic properties as defined under 36 CFR § 800.16(l)(1), and since there are no reasonably foreseeable Project activities that would occur later in time or that would be farther removed in distance that could indirectly cause alterations in the character or use such properties, there are, therefore, no geographic areas under consideration for indirect effects.

Full references for this section are listed in Attachment 1, Section 7.

6. FINDING FOR THE UNDERTAKING

☒ Caltrans, pursuant to Section 106 PA Stipulation IX.A, has determined a Finding of **No Historic Properties Affected** is appropriate for this undertaking because there are no historic properties within the APE.

7. CEQA CONSIDERATIONS

☒ Not applicable; Caltrans is not the lead agency under CEQA.

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8. LIST OF ATTACHED DOCUMENTATION

☒ Project Vicinity, Location, and APE Maps: **Attachment 1**

☒ Archaeological Survey Report (ASR), Dudek, 2025: **Attachment 1**

☒ j ~~Native American Outreach: Attachment 2~~ *Redacted*

9. HPSR PREPARATION AND CALTRANS APPROVAL

Prepared by: _____ 03/19/2026
Sarah Brewer, Archaeologist, Dudek (Santa Cruz, CA) Date

Prepared by: _____ 04/08/2026
Fallin Steffen, Architectural Historian, Dudek (Santa Cruz, CA) Date

Reviewed for
Approval by: _____ 4/21/2026
Krisstin Hadick, District 5 Caltrans PQS Principal Investigator, Prehistoric Archaeology Date

Approval by: _____ 4/21/2026
Kelso Vidal, District 5 Local Assistance, Senior Environment Scientist Specialist Date

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Attachment 1

Archaeological Survey Report

Archaeological Survey Report

800 West Cliff Drive Realignment Project

West Cliff Drive (Santa Cruz USGS Topographic Quadrangle)
City of Santa Cruz, Santa Cruz County, California
Resource: P-44-001353
Acreage: 9.65-acres

FEDERAL-AID PROJECT NO. 15Y2 (019)

Prepared for:

CALIFORNIA DEPARTMENT OF TRANSPORTATION, DISTRICT 5
Local Assistance
50 Higuera Street
San Luis Obispo, California 93401
Contact: Krisstin Hadick, Archaeologist

Prepared by: Sarah Brewer, MA, RPA and Brooke Crumpton, BA, with contributions from Fallin Steffen, MPS and Monte Kim, PhD

Date: 03/06/2026
Sarah Brewer, MA, RPA, Archaeological Principal Investigator
Dudek

Recommended for Approval by: Date: 4/21/2026
Krisstin Hadick
PQS, Principal Investigator - Prehistoric Archaeology
Caltrans District 5

Approved by: Date: 4/21/2026
Kelso Vidal
Senior Environmental Scientist Specialist
Caltrans District 5

CALIFORNIA DEPARTMENT OF TRANSPORTATION

MARCH 2026

Archaeological and other heritage resources can be damaged or destroyed through uncontrolled public disclosure of information regarding their location. This document contains sensitive information regarding the nature and location of archaeological sites that should not be disclosed to the general public or unauthorized persons.

Information regarding the location, character, or ownership of a cultural resource is exempt from the Freedom of Information Act pursuant to 16 U.S.C. 470w-3 (National Historic Preservation Act) and 16 U.S.C. Section 470(h) (Archaeological Resources Protections Act).

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A CHRIS Records Search
B Sacred Lands File Search
C Historical Society Outreach

Acronyms and Abbreviations

Acronym/Abbreviation	Definition
ACHP	Advisory Council on Historic Preservation
ADI	Area of Direct Impact
APE	Area of Potential Effect
ASR	Archaeological Survey Report
Caltrans	California Department of Transportation
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CHRIS	California Historical Resources Information System
City	City of Santa Cruz
CRHR	California Register of Historical Resources
DPR	Department of Parks and Recreation
FHWA	Federal Highway Administration
HRER	Historic Resources Evaluation Report
MOU	Memorandum of Understanding
NAHC	Native American Heritage Commission
NETR	Nationwide Environmental Title Research LLC
NHPA	National Historic Preservation Act
NRHP	National Register of Historic Places
NWIC	Northwest Information Center
PRC	Public Resources Code
SHPO	State Historic Preservation Officer
SLF	Sacred Lands File

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1 Summary of Findings

The City of Santa Cruz (City), with support from the California Department of Transportation (Caltrans), is implementing the 800 West Cliff Drive Realignment Project (Project). The Project aims to reroute a 600-foot section of West Cliff Drive and associated multi-use path inland near a vulnerable portion of the coastline that was damaged in the December 2023 and January 2024 storm events. The proposed road realignment is located on property that is currently managed by the California Department of Parks and Recreation (State Parks), as part of Lighthouse Field State Beach. The realigned road and path would provide for anticipated natural shoreline erosion. Other elements of the project include stormwater drainage improvements, relocation of existing signage, new and relocated benches, removal of existing asphalt along existing road and multiuse path and construction site restoration.

The Caltrans District 5 Local Assistance Branch is the National Environmental Policy Act (NEPA) lead agency responsible for Project review and approval, with federal oversight by the Federal Highway Administration (FHWA). In support of this undertaking, this archaeological survey report (ASR) was prepared to assess whether any historic properties/historical resources of an archaeological nature might be affected by the Project within the 9.65-acre Area of Direct Impact (ADI). Built Environment historic properties/historical resources are considered within the 45.83-acre area of potential effects (APE).

This study was carried out in a manner consistent with Caltrans' regulatory responsibilities under Section 106 of the National Historic Preservation Act (NHPA; 36 CFR Part 800.4) and pursuant to the January 2024 *Programmatic Agreement among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, the United States Army Corps of Engineers' Sacramento District, San Francisco District, and the Los Angeles District, and the California Department of Transportation Regarding Compliance with Section 106 of the National Historic Preservation Act as it Pertains to the Administration of the Federal-Aid Highway Program in California (Section 106 PA),* as well as under Public Resources Code 5024 and pursuant to the 2024 *Memorandum of Understanding Between the California Department of Transportation and the California State Historic Preservation Officer Regarding Compliance with Public Resources Code Section 5024 and Governor's Executive Order W-26-92(5024 MOU)* as applicable.

The archaeological assessment included a records search of the California Historical Resources Information System (CHRIS) at the Northwest Information Center (NWIC), archival research, a Native American Heritage Commission (NAHC) Sacred Lands File (SLF) search, support for AB 52 consultation and tribal outreach for the City (Caltrans will also conduct tribal outreach separately), an intensive pedestrian survey and monitoring of one geotechnical bore within the Project ADI.

The CHRIS records search results (provided September 11, 2025) identified two studies that intersect the Project ADI and one historical resource within the Project ADI. The resource, West Cliff Drive (P-44-001353), was evaluated and found not eligible for listing in the NRHP, CRHR, or the City of Santa Cruz Historic Resources Inventory due to a lack of significant associations and architectural merit (Steffen 2024).

The results of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) search were positive, with the Costanoan Ohlone Rumsen-Mutsen Tribe indicated as the group to contact for more information. The District Native American Coordinator of Caltrans was responsible for Section 106 consultation. Additionally, Dudek has assisted the City in preparing AB 52 and outreach letters to the tribal representatives provided by the NAHC.

A Dudek archaeologist surveyed the entire Project ADI using intensive (minimum 15-meter) transects and found no evidence of cultural deposits. In order to understand the potential for subsurface cultural deposits, since much of the survey area was within paved areas (roads, parking lot, and bike path), the archaeologist implemented periodic boot or trowel scrapes in areas of limited ground visibility when soils were visible. Additionally, the archaeologist was present when Pacific Crest and Central Coast Drilling excavated one geotechnical bore pit within Lighthouse Field State Beach. No cultural material was found within the bore pit.

It is Caltrans' policy to avoid cultural resources whenever possible. If buried cultural materials are encountered during construction, it is Caltrans' policy that work stop in that area until a qualified archaeologist can evaluate the nature and significance of the find. Additional survey work will be required if the Project changes to include areas not previously surveyed.

2 Introduction

The City of Santa Cruz (City), with support from the California Department of Transportation (Caltrans), and State Parks, is implementing the 800 West Cliff Drive Realignment Project (Project). The Project aims to reroute a 600-foot section of West Cliff Drive inland near a vulnerable portion of the coastline that was damaged in the December 2023 and January 2024 storm events (Figures 1 and 2). The new road alignment would be located on property that is currently part of Lighthouse Field State Beach. The realigned road and path would provide for anticipated natural shoreline erosion. Other elements of the project include stormwater drainage improvements, relocation of existing signage, new and relocated benches, removal of existing asphalt along existing road and multiuse path and construction site restoration.

On August 21, 2025, Dudek archaeologist Brooke Crumpton, BA, conducted an intensive survey (minimum of 15-meter transects) for the entirety of the Project ADI. The results of the survey were negative for precontact or historic cultural constituents. Also on August 21, 2025, the Dudek archaeologist also monitored the excavation of one 10-centimeter diameter geotechnical bore probe within State Parks property, which produced negative results (Figure 3).

Brooke Crumpton, BA, an archaeologist with over 18 years' experience in cultural resource management in California, served as the Project Archeologist, leading the field effort and reporting. Sarah Brewer, MA, RPA, with over 24 years' experience in cultural resource management in California, served as the Project Principal Investigator and provided oversight and final edits for this report. The archaeologists meet or exceed the Secretary of the Interior Professional Qualification Standards for archaeology for their roles in the Project. Rachel Strobridge and Carmen Garcia, GIS Analysts, managed the geographic information system data and created the figures in the report.

The Project is overseen by the Caltrans District 5 Local Assistance Branch and requires compliance with the National Environmental Policy Act (NEPA) and Section 106 of the National Historic Preservation Act (NHPA), as well as addressing Section 15064.5(a)(2)– (3) of the California Environmental Quality Act (CEQA) Guidelines, which require identified resources be evaluated in consideration of California Register of Historical Resources (CRHR). The intent of this report is to comply with these federal and state regulatory requirements. This Archaeological Survey Report (ASR) was prepared in accordance with Caltrans' most recent edition of Standard Environmental Reference, Volume 2, Cultural Resources requirements, and Caltrans' Section 106 Programmatic Agreement (PA).

2.1 Project Location

The Project is located on West Cliff Drive between Pelton Avenue and Columbia Street in the City of Santa Cruz, County of Santa Cruz, California (Figures 1 and 2). The Project is situated in a residential area in Section 24 of Township 11 South, Range 2 West of the Santa Cruz 7.5-minute U.S. Geological Survey (USGS) quadrangle map. The Project is in Caltrans District 5. The Federal-Aid Project No. is 15Y2 (019). The Project area consists of a public park (Lighthouse Field State Beach) to the north, the scenic West Cliff Drive and public multiuse path to the east and west, and coastal bluffs and intertidal zone of Monterey Bay to the south. The area is comprised of mostly undeveloped land including grasslands, cypress trees, open water, paved road, and ice plant vegetation. Surrounding land uses are suburban residential development and open ocean.



SOURCE: USGS National Map 2025

DUDEK

0 1,100 2,200 Feet

FIGURE 1

Project Location

800 West Cliff Drive Realignment Project

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Area of Potential Effects Map
Santa Cruz County
800 West Cliff Drive Realignment Project
15Y2(019)

12/01/2025
Krisstin Hadick, PQS Date
Principal Investigator, Prehistoric Archaeology

12/01/2025
Evelyn Sanchez, Local Assistance Engineer Date



SOURCE: Esri Aerial Basemap

DUDEK

1:2,400

0 100 200 Feet
0 25 50 Meters

FIGURE 2
Cultural Resources Area of Potential Effects
800 West Cliff Drive Realignment Cultural

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SOURCE: Bing Maps 2024

DUDEK

1:2,400

0 100 200 Feet

0 25 50 Meters

FIGURE 3

Survey Results Map

800 West Cliff Drive Realignment Project

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The existing roadway consists of 2.63 miles along the Pacific Ocean. This Project aims to reroute a 600-foot section of West Cliff Drive inland near a vulnerable portion of the coastline that was damaged in the December 2023 and January 2024 storm events. The new road alignment would be located on property that is currently part of Lighthouse Field State Beach. The existing subsurface conditions consist of sand underlain by bedrock (sandstone). On the seaward side of West Cliff Drive, the bluff drops off steeply into the Monterey Bay. The recorded road varies between 23 and 30 feet in width and features two-lane design with each lane measuring approximately 12 feet in width. The facilities include informal pedestrian trails along portions of the north side of the roadway as well as utility poles and transmission lines. The south side of the roadway features a multiuse path.

2.2 Project Description

In December 2023 and early January 2024, high wave and storm events eroded and collapsed a section of the multiuse pathway across from approximately 800 West Cliff Drive and the Light House Field State Beach. The 800 West Cliff Drive Road Realignment Project aims to eliminate the weakest link in the West Cliff Drive roadway system as an eroded scarp at the location has encroached to within 21 feet of the existing roadway, partially damaging an adjacent multiuse pathway. The Project will shift a section of roadway approximately 50 feet inland, outside of the projected 100-year erosion zone. A section of the multiuse path will be relocated approximately 15 feet inland. Other elements of the Project include stormwater drainage improvements, relocation of existing signage, installation of new and relocated benches, removal of existing asphalt along existing road and multiuse path and construction site restoration. To accomplish the roadway realignment, a right-of-way property acquisition would be required from State Parks in a small portion of Lighthouse Field State Beach.

2.3 Area of Potential Effects

The Area of Potential Effects (APE) is "the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist. The area of potential effects is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking" (36 Code of Federal Regulations [CFR] § 800.16[d]).

In accordance with the January 2024 *Programmatic Agreement among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, the United States Army Corps of Engineers' Sacramento District, San Francisco District, and the Los Angeles District, and the California Department of Transportation Regarding Compliance with Section 106 of the National Historic Preservation Act as it Pertains to the Administration of the Federal-Aid Highway Program in California (Section 106 PA),* as well as under Public Resources Code 5024 and pursuant to the 2024 *Memorandum of Understanding Between the California Department of Transportation and the California State Historic Preservation Officer Regarding Compliance with Public Resources Code Section 5024 and Governor's Executive Order W-26-92(5024 MOU)* as applicable, the APE for the Project was established in consultation with Krisstin Hadick, Caltrans District 5 PQS Principal Investigator for Prehistoric Archaeology, Sonia Miller, Caltrans District 5 PQS Architectural Historian, and Evelyn Frederic, Local Assistance Engineer, on December 1, 2025. The horizontal, geographic extent of the APE encompasses a 45.83-acre area spanning a 0.25-mile segment of West Cliff Drive, Lighthouse Field State Beach, and Lighthouse Point Park in the City of Santa Cruz as depicted in Figure 2. Within the APE, the Area of Direct Impact (ADI) coincides with the Project footprint, which is limited to the 9.65-acre area delineated by the purple hatched overlay in Figure 2. The ADI is the area where all construction activities, staging activities, and temporary road access would occur. The vertical above ground APE is anticipated to be same as the existing roadway grade. The vertical underground APE coincides with the maximum depth of excavation, which may be up to 15 feet deep.

There is one previously recorded built historic resource within or adjacent to the ADI, West Cliff Drive (P-44-001353), which a previous 2024 study found to be ineligible for listing in the NRHP, CRHR, and the Santa Cruz Historical Resource Inventory (SCHRI) (Steffen 2024).

A potential historic property/historical resource that Dudek considered is the property known as Lighthouse Field State Beach. The State Beach was acquired by the State of California in 1978 and officially designated as a State Beach by the California State Parks Commission in 1981 (California State Parks 2010: 30; Santa Cruz Sentinel 1981: 1, 21; 1985: 2). Although it is situated within the APE, it is currently less than 50 years of age—and will be even at the anticipated end of Project construction in 2027; therefore, the State Beach does not meet the 50-year age threshold for inventory and evaluation. Moreover, research indicates that Lighthouse Field State Beach lacks a significant association with any events or persons important in history, nor does research suggest that this property possesses design or construction value, or information potential that is not already known about the development of this property. As such, it lacks the necessary level of exceptional importance to satisfy NRHP Criteria Consideration G for properties that have achieved significance within the last fifty years. Therefore, it is not addressed further within this study.

The 4.00-acre parcel comprising Lighthouse Point Park, as shown in Figure 2, falls within the delineated boundary of the APE; however, it has been excluded from the APE due to its independent development history. Lighthouse Point Park was designed and established by the City of Santa Cruz in 1963 and includes the privately funded Abbot Memorial Lighthouse constructed at the center of the park in 1967 (Santa Cruz Sentinel 1963: 5; 1967: 1). Although the Lighthouse Point Park and Lighthouse Field State Beach are located next to each other, the former was established more than a decade before the latter. Each property maintains its own unique development history that remains distinct and separate from the other. As a result, the parcel comprising Lighthouse Point Park will not be considered further in this study. No further historic resources meeting the 50-year age threshold for identification and evaluation were identified within the APE during the intensive survey.

The APE also considered the Project's potential for visual, vibratory, auditory, and atmospheric effects on historic properties. These types of effects had no potential to cause alterations, directly or indirectly, in the character or use of historic properties because no historic properties were identified within or adjacent to the APE. Since the APE and surrounding areas adjacent to it contain no cultural resources that are considered historic properties as defined under 36 CFR § 800.16(l)(1), and since there are no reasonably foreseeable Project activities that would occur later in time or that would be farther removed in distance that could indirectly cause alterations in the character or use such properties, there are, therefore, no geographic areas under consideration for indirect effects.

3 Sources Consulted

3.1 CHRIS Records Search

The background research included a California Historical Resources Information System (CHRIS) records search completed at the Northwestern Information Center (NWIC) in Rohnert Park, California, by Dudek subcontractor, Charles Mikulik of Charles Mikulik Archaeological Consulting, LLC, on September 11, 2025. The records search was specific to the ADI and included a 0.25-mile surrounding radius to identify any previously identified cultural resources and studies. Sources consulted included maps of previous cultural resources studies and known built environment resources, NRHP and CRHR listings, California Historic Landmarks, California Points of Historical Interest, and Caltrans State and Local Bridge Surveys. ~~Please see Appendix A for the complete records search results.~~ *Redacted*

3.1.1 Previous Studies

Two previous studies (S-023812 and S-011488) partially intersected the ADI. Study S-023812 was an archaeological assessment for the widening of the West Cliff Bike Path along the southern portion of the ADI (Doane 2001). Study S-011488 was an archaeological assessment for a proposed stabilization and erosion prevention project along West Cliff Drive (Simpson-Smith et al. 1990). Additionally, there have been 25 studies within the 0.25-mile study buffer (Table 1). These studies are predominantly assessments for private landowners with negative results for cultural resources. Less than 25 percent of the 0.25-mile buffer has been previously surveyed for archaeological resources.

Table 1. Previous Studies Conducted within the ADI and 0.25-mile Buffer

Report No.	Authors	Year	Title	Publisher
Studies that intersect the ADI				
S-011488	Charlotte Simpson-Smith, Anna Runnings, and Trudy Haversat	1990	Preliminary Cultural Resources Reconnaissance of West Cliff Drive Repair, City of Santa Cruz, Santa Cruz County, California	Archaeological Consulting
S-023812	Mary Doane	2001	Negative Archaeological Survey Report for the West Cliff Drive Pedestrian Bike Path 2000 Widening Project in the City of Santa Cruz, Santa Cruz County, California	Archaeological Consulting
Studies within 0.25 miles of the ADI				
S-003819	Chester King	1973	Assessment of Archaeological Resources of Lighthouse Field	N/A
S-011488	Charlotte Simpson-Smith, Anna Runnings, and Trudy Haversat	1990	Preliminary Cultural Resources Reconnaissance of West Cliff Drive Repair, City of Santa Cruz, Santa Cruz County, California	Archaeological Consulting
S-023812	Mary Doane	2001	Negative Archaeological Survey Report for the West Cliff Drive Pedestrian Bike Path 2000 Widening Project in the City of Santa Cruz, Santa Cruz County, California	Archaeological Consulting

Report No.	Authors	Year	Title	Publisher
S-040231	Mary Doane and Gary Breschini	2013	Preliminary Archaeological Reconnaissance of APN 003-303-05, Santa Cruz, Santa Cruz County, California	Archaeological Consulting
S-042137	Robert Edwards and Charr Simpson	2013	Archaeological Reconnaissance of Parcel at 921 Pelton Avenue in the City of Santa Cruz, California (APN 004-202-05)	Archaeological Associates of Central California
S-043045	Mary Doane and Gary S. Breschini	2013	Preliminary Archaeological Assessment of APN 004 192-14, in Santa Cruz, Santa Cruz County, California	Archaeological Consulting
S-046004	Robert Cartier	2013	Cultural Resource Evaluation of the Property at 932 West Cliff Drive in the City of Santa Cruz	Archaeological Resource Management
S-049694	Stella D'Oro	2017	Cultural Resources Assessment of Proposed Construction at 1016 West Cliff Drive, Santa Cruz, California	Albion Environmental, Inc.
S-051713	Stella D'Oro	2018	Extended Phase I Archaeological Study for 112 Harvard Street (APN: 041-941-11), Santa Cruz County, California	Albion Environmental, Inc.
S-051964	Stella D'Oro	2018	Extended Phase I Archaeological Study at 169 Alta Avenue, Santa Cruz, California	Albion Environmental, Inc.
S-051964a	Stella D'Oro	2021	Monitoring Report for Construction at 169 Alta Avenue, Santa Cruz, California (letter report)	Albion Environmental, Inc.
S-052205	Patricia Paramoure	2017	Preliminary Archaeological Reconnaissance of Parcel (APN 004-192-01), 123 Princeton Street, Santa Cruz, Santa Cruz County, California	Patricia Paramoure Archaeological Consulting
S-053511	Stella D'Oro	2019	Phase I Archaeological Assessment for 131 Liberty Street, Santa Cruz, Santa Cruz County, California.	Albion Environmental, Inc.
S-053748	Julie Royer and Ryan Brady	2019	Cultural Resources Assessment for 116 Harvard St (APN 004-194-12), City of Santa Cruz, Santa Cruz County, California (letter report)	Dudek
S-054003	Stella D'Oro	2020	Phase I Archaeological Assessment for 212 Liberty Street, Santa Cruz, Santa Cruz County, California.	Albion Environmental, Inc.
S-054004	Stella D'Oro and John Ellison	2019	Extended Phase I Archaeological Assessment at 312 Columbia Street, Santa Cruz, Santa Cruz County, California	Albion Environmental, Inc.
S-054249	Robert Johnson, Stella D'Oro, and Chelsea Blackmore	2020	Phase I Cultural Resource Inventory for 126 Eucalyptus Avenue, Santa Cruz, Santa Cruz County, California.	Albion Environmental, Inc.
S-055358	Patricia Paramoure	2019	Preliminary Archaeological Reconnaissance 121 Oxford Way, Santa Cruz, Santa Cruz County, California (APN 004-194-02)	Patricia Paramoure Archaeological Consulting
S-055691	Patricia Paramoure	2021	Preliminary Archaeological Reconnaissance of Parcel at 122 Oxford Way, Santa Cruz, Santa Cruz County, California (APN 004-191-53)	Patricia Paramoure Archaeological Consulting
S-055692	Patricia Paramoure	2021	Preliminary Archaeological Reconnaissance of Parcel At 142 Liberty Street (APN 004-264-32), Santa Cruz, Santa Cruz County, California	Patricia Paramoure Archaeological Consulting
S-055692a	Patricia Paramoure	2022	Archaeological Monitoring Report of Parcel At 142 Liberty Street, Santa Cruz, Santa Cruz County, California (APN 004-264-32)	Patricia Paramoure Archaeological Consulting
S-055698	Patricia Paramoure	2021	Preliminary Archaeological Reconnaissance of Lighthouse Point Park, 701 West Cliff Drive, Santa Cruz, Santa Cruz County, California (APN 004-302-02)	Patricia Paramoure Archaeological Consulting

Report No.	Authors	Year	Title	Publisher
S-056521	Patricia Paramoure	2022	Preliminary Archaeological Reconnaissance of Parcel at 218 Lighthouse Avenue, Santa Cruz, Santa Cruz County, California (APN 004-283-12)	Patricia Paramoure Archaeological Consulting
S-056988	Chelsea Blackmore, Brenda Arjona, and Stella D'Oro	2023	Phase I Cultural Resource Inventory for 202 Pelton Avenue, Santa Cruz, Santa Cruz County, California	Albion Environmental, Inc.
S-057591	Patricia Paramoure	2023	Phase 1A Archaeological Assessment of Property at 204 Woodrow Avenue, Santa Cruz, Santa Cruz County, California	Patricia Paramoure Archaeological Consulting

3.1.2 Previously Recorded Resources

The CHRIS records search identified one previously recorded resource, West Cliff Drive (P-44-001353), within the ADI. This resource was found to be ineligible for listing in the NRHP, CRHR, and the SCHRI (Steffen 2024). One additional resource, a historic refuse deposit (P-44-001147) was identified within a 0.25-mile radius of the ADI (Table 2).

Table 2. Previously Recorded Resources within the ADI and 0.25-mile Buffer

Primary	Trinomial	Other Name	Description	Recording Events
Resources that intersect the ADI				
P-44-001353	N/A	West Cliff Drive	West Cliff Drive, a two-lane roadway	2024 (Fallin Steffen, Dudek)
Resources within 0.25 miles of the ADI				
P-44-001147	CA-SCR-000448H	169-Alta	Historic refuse deposit	2019 (Stella D'Oro, Albion Environmental, Inc.)

3.2 Historical Topographic Maps and Aerial Photographs Review

Dudek consulted historical topographic maps and aerial photographs through the Nationwide Environmental Title Research LLC (NETR) to better understand any natural or human-made changes to the Project ADI and surrounding properties over time.

Historical Topographic Maps

A review of available topographic maps was conducted and included the following years: 1955, 1961, 1968, 1969, 1978, 1982, 1994, 2012, 2015, 2018, and 2021 (NETR 2025a). Topographic maps depict not only elevation of the study area as well as the areas surrounding it, but they also illustrate the location of roads.

The first topographic map that includes the Project APE dates to 1955 and shows the Project APE as a developed area with West Cliff Drive designated as a light-duty road. The road that is now Pelton Avenue is also present and is parallel to West Cliff Drive. The 1955 map also illustrates 6 to 7 structures within Lighthouse Field State Beach,

although none are within the Project ADI. The 1961 map illustrates West Cliff Drive as a secondary highway and the area surrounding the Project APE appears to be more densely developed. The topographic maps from 1968 and 1972 show an apartment complex along the western boundary of the APE. By the 1982 map, the structures within Lighthouse Field State Beach are no longer depicted. The 1994, 2012, 2015, and 2018 maps illustrate West Cliff Drive as a light-duty road once again, but no other changes are present. The 2021 map once again reclassifies West Cliff Drive as a secondary highway, but no other changes are present.

Historical Aerial Photographs

A review of all available historical aerial photographs was conducted and included 1952, 1956, 1963, 1968, 1982, 1993, 2005, 2009, 2010, 2012, 2014, 2016, 2018, 2020, and 2022 (NETR 2025b). The earliest aerial depicting the Project APE dates to 1952 and it does not show any structures within the Project ADI, although there are a cluster of structures in the northeastern portion of the APE. The 1963 map shows the development of the apartment complex within previously open spaces west of the APE along West Cliff Drive extending north towards Pelton Avenue along Columbia Street. In this image, the structures in the eastern portion of the APE are no longer visible. The 1982 aerial photograph captures the expansion of the apartment complex at Columbia Street; and West Cliff Drive appears to have been widened to accommodate a sidewalk. No significant changes are shown in the 1993 aerial photograph. The 2005 and 2009 aerials indicate an increase in landscape and tree coverage around the Project APE. Aerials from the 2010s and 2020 do not show any significant changes within the Project APE or vicinity.

3.3 Native American Outreach

Dudek requested a California Native American Heritage Commission (NAHC) review of its Sacred Lands File (SLF) on September 10, 2025. The NAHC responded on September 11, 2025, with positive results for the SLF and recommended contacting the Costanoan Ohlone Rumsen-Mutsen Tribe for more information. In addition, the NAHC provided a list of Native American representatives who might have additional information about cultural resources (~~Appendix B~~). *Redacted*

On December 16, 2025, Caltrans Archaeologist, Krisstin Hadick, initiated Section 106 consultation with six tribes listed on the Native American Heritage Commission Sacred Lands File search (Amah Mutsun Tribal Band, Amah Mutsun Tribal Band of Mission San Juan Bautista, Costanoan Ohlone Rumsen-Mutsen Tribe, Costanoan Rumsen Carmel Tribe, Indian Canyon Mutsun Band of Costanoan, and the Wuksachi Indian Tribe/Eshom Valley Band).

Kanyon Sayers-Roods from the Indian Canyon Mutsun Band of Costanoan tribe responded on January 7, 2026, stating that the APE overlaps or is near the management boundary of a potentially eligible cultural site and recommends a Native American Monitor and Archaeologist be present on-site at all times during ground disturbance activities.

On Friday, February 27th, 2026, Dudek Archaeologist, Sarah Brewer, initiated tribal outreach letters to Amah Mutsun Tribal Band of Mission San Juan Bautista, Costanoan Ohlone Rumsen-Mutsun, Indian Canyon Mutsun Band of Costanoan, and the Wuksachi Indian Tribe/Eschom Valley band. On March 4, 2026, the City sent AB 52 letters to the two tribes who have requested AB 52 consultation; the Amah Mutsun Tribal Band had no concerns, but requested the final report, and the City engaged with Costanoan Rumsen Carmel Tribe in a consultation meeting on April 7, 2026.

Dudek's outreach letters received one response from Shelby Brown of the Amah Mutsun Tribal Band of Mission San Juan Bautista on March 2nd, 2026, requesting more information. Dudek shared this request with the client and provided Shelby with a draft report.Kanyon Sayers-Roods also responded and would like to consult about the Project.

3.4 Local Historical Society / Historic Preservation Group Outreach

On December 8, 2025, Dudek Architectural Historian Fallin Steffen, MA, sent an outreach letter and figure depicting the Project area to the Santa Cruz Museum of Art and History and the Santa Cruz Museum of Natural History. The letter provided a brief description of the proposed Project and requested information about historic and cultural resources in or near the Project APE. To date, no responses have been received. Copies of the interested party correspondence are included in Appendix C.

4 Background

4.1 Environment

The Project vicinity consists of suburban residential homes and a public park to the north, the scenic West Cliff Drive and public multiuse path to the east and south, and coastal bluffs and intertidal zone of Monterey Bay to the south. The area is comprised of open grasslands, developed land, open water, and ice plant vegetation. Surrounding land uses are suburban residential development and open ocean.

Topography of the Project site consists of a relatively flat, gentle slope that follows the grade of West Cliff Drive and Columbia Street that reaches a low point at West Cliff Drive. The elevation ranges from approximately 42 to 52 feet above mean sea level, with the highest elevation at the center of Lighthouse Field State Beach, and the lowest elevation at the southwestern boundary by Columbia Street. Santa Cruz County experiences a Mediterranean climate with warm, dry summers and cool, wet winters. The average annual maximum temperature is 68.9°F, and the average minimum temperature is 45.0°F (WRCC 2025). Average annual precipitation is 29.33 inches, most of which falls between December and March (WRCC 2025).

According to the Natural Resources Conservation Service (USDA 2025), two soil types are mapped in the ADI: 1) Watsonville loam, thick surface, 0 to 2 percent slopes and 2) Watsonville loam, thick surface, 2 to 15 percent slopes. The Watsonville loam soil series consists of deep, somewhat poorly drained soils of the thermic Xeric Argialbolls family that formed in sedimentary alluvium found on old marine terraces and valleys. The soils in the Project have been degraded over time from urban activities on adjacent land, including erosion from development or trail use and introduction of petrochemicals from roadway runoff. The Watsonville loam soil series is not characterized as a soil type with buried “A” horizons which may harbor buried cultural deposits.

4.2 Ethnography

The Project APE lies within the traditional tribal territory of the Ohlone (Costanoan) people. Ethnographic accounts of Ohlone at the time of European contact described them as living in permanent villages but also spending time in smaller camps to collect or process seasonal resources such as acorn or shellfish (Levy 1978). The Ohlone were organized under approximately fifty autonomous polities or tribelets and spoke eight separate Penutian dialects. They lived between the vicinity of what is now Richmond in the north to Big Sur in the south (Levy 1978; Milliken 1995). At the time of European contact, many Ohlone dialects were reportedly spoken by those living in the vicinity of the Project (Levy 1978; Milliken 1995). Modern Ohlone descendants still care for and steward their traditional tribal land.

4.3 Precontact

California has a long history of human occupation. Despite scattered claims of earlier presence, the most conservative estimate is that people began traveling from northeastern Asia to North America and inhabiting its vast and varied geography near the end of the Pleistocene. Previously, scholars believed that this slow migration occurred solely through terrestrial journeys inland via the Bering Strait between modern-day Russia and the US state of Alaska. However, evidence of maritime exploration during that similar timeframe has come to light through dated coastal sites along the Pacific coast of the Americas, even without the discovery of any maritime vessel in the archaeological record (Erlandson et al. 2007).

Table 3. California Central Coast Chronology

Temporal Period	Date Range*
Paleo-Indian	Pre-9950 BP
Millingstone	9950–5450 BP
Early	5450–2550 BP
Middle	2550–950 BP
Middle-Late Transition	950–700 BP
Late	700–181 BP

Source: Jones et al. (2007).
Note: *Year Before Present (BP); "Present" is 1950 AD.

Paleo-Indian Period

Lifeways of indigenous groups living within Santa Cruz County followed general patterns identified in the archaeological record of the greater central coast region of California (Jones et al. 2007; Milliken 1995). These patterns represent adaptive shifts in settlement, subsistence strategies, and technological innovation over time. Evidence of human habitation during the *Paleo-Indian Period* (10,000 years ago and older) is not common and generally expressed through isolated flaked stone artifacts or sparse lithic scatters. Fluted projectile points, which characterize this period in other parts of western North America, have not been identified within Santa Cruz County, with the closest found in San Luis Obispo County to the south (Bertrando 2004; Gibson 1996; Mills et al. 2005). Another distinctive flaked stone tool associated with this period, however, the eccentric crescent, was discovered at a site in Scotts Valley, which is situated on the shoreline of a former Pleistocene Lake, providing compelling evidence of Paleo-Indian habitation there (Cartier 1993; Erlandson 2011). Although there are no known coastal sites dating to this time period, they may have been inundated by rising ocean levels throughout the Holocene (Jones and Jones 1992).

Millingstone Period

Human settlement in Santa Cruz County appears more frequently during the *Millingstone Period* (5,500–10,000 years ago). Sites dating to this period are found along creeks, estuaries and coastlines and contain both flaked and ground stone artifacts as well as rectangular shell beads (Fitzgerald and Jones 1999; Hylkema 1991; Jones and Hildebrandt 1990; Jones and Hildebrandt 1994; Newsome et al. 2004). The emergence of ground stone tools, such as millingstones and handstones, suggest a greater reliance on plant resources whereas flaked stone tools are less common. The projectile points found on sites of this antiquity are generally leaf-shaped or large side-notched varieties, although other flaked stone tools, such as core-cobble tools, were also used (Jones et al. 2007). Subsistence is heavily reliant on marine resources and small mammal bones, although terrestrial game, such as deer,

were also on the menu (Newsome et al. 2004). The presence of thick rectangular *Olivella* beads indicate the emergence of exchange networks with neighboring populations.

Early Period

During the *Early Period* (2,600–5,500 years ago) sites are found in more varied geographical landforms than previously, suggesting a more intensive use of the landscape (Jones and Waugh 1997). The shift in site locations and artifact assemblages during this time may represent adaptive shifts or an intrusion of neighboring populations as a result of mid-Holocene climate warming trends (cf. Mikkelsen et al. 2000). The initial use of mortars and pestles during this time reflects a more labor-intensive economy associated with the adoption of acorn processing (cf. Basgall 1987). Similarly, a greater percentage and variety of formalized flaked stone tools, including side-notched, square-stemmed, and contracting-stemmed projectile points indicate a greater reliance on terrestrial hunting. Diversity of *Olivella* bead types also emerge as well as bone tools such as gorges.

Middle Period

During the *Middle Period* (950–2,600 years ago), there was a shift toward more long-term occupation at sites, as well as a greater quantity of smaller "use-specific" localities, such as resource processing or tool manufacturing areas. There is also evidence of a shift toward prey species that are more labor intensive to capture, including small schooling fishes, sea otters, rabbits. Artifacts common to this period include contracting-stemmed projectile points, a greater variety of *Olivella* shell beads and *Haliotis* ornaments, and bone tools and ornaments (Jones 2003). Circular shell fishhooks and grooved stone net weight sinkers are present for the first time, signaling a continued importance on marine resources (Jones and Ferneau 2002a; Jones and Waugh 1995). Similarly, mortars and pestles are more prevalent than millingstones and handstones showing the continued importance of plant resources, such as acorns (Jones et al. 2007).

Middle-Late Transition Period

The *Middle-Late Transition* (700–950 years ago) corresponds with a period of rapid climatic change and social reorganization across the region. The Medieval Climatic Anomaly (cf. Stine 1994), characterized by fluctuations between cool-wet and warm-dry conditions, was likely an impetus for the cultural change (Jones et al. 1999). Archaeological sites dating from this period are rarer, which may reflect a decline in regional population (Jones and Ferneau 2002b). Artifacts associated with the Middle-Late Transition include contracting-stemmed, double-side-notched, and small leaf-shaped projectile points. The latter are thought to represent the introduction of bow and arrow technology to the region. A greater variety of *Olivella* shell bead types are found on sites from this Period, as are notched line sinkers, hopper mortars, and circular shell fishhooks (Jones 1995; Jones et al. 2007).

Late Period

Sites dating to the *Late Period* (700–181 years ago) are found in a variety of contexts, both coastal and interior. Specialized sites devoted to resource acquisition or processing (such as shellfish gathering areas or bedrock milling stations) are common on the coast, while residential occupation is more common inland (Fitzgerald and Ruby 1997; Jones et al. 2007). Artifacts associated with this period include arrow points with the development of bow and arrow technology, flaked stone drills, steatite and clamshell disc beads, *Haliotis* disc beads, and *Olivella* beads. Other artifacts such as millingstones, handstones, mortars, pestles, and circular shell fishhooks continue to be used (Jones et al. 2007).

4.4 History

(adapted from Steffen 2024)

Spanish Period (1769–1822)

In an effort to prevent the establishment of English and Russian colonies in northern Alta California, Don Gaspar de Portolá, the Governor of Baja, embarked on a voyage in 1769 to establish military and religious control over the area. This overland expedition by Portolá marks the beginning of California's Historic period, occurring just after King Carlos III of Spain installed the Franciscan Order to direct religious colonization in assigned territories of the Americas. In July of 1769, Padre-Presidente Franciscan Fr. Junípero Serra founded Mission San Diego de Alcalá at Presidio Hill, the first of the 21 missions that would be established in Alta California by the Spanish and the Franciscan Order between 1769 and 1823, including Mission Santa Cruz (Hoover et al. 2002: 226; Lehmann 2000: 3; Koch 1973: 3).

Father Fermín Lasuén, Corporal Luis Peralta, and five soldiers established Mission Santa Cruz on August 28, 1791, as the twelfth mission in the California Mission system. The Spanish Padres converted local Native Americans to Catholicism against their will, after which they were known as neophytes. Neophytes were forced to build the mission church and auxiliary structures from local timber, limestone, and adobe, as well as to cultivate wheat, barley, beans, corn, and lentils for their captors (Hoover et al. 2002: 448; Lehmann 2000: 3-4).

Mexican Period (1822–1848)

After more than a decade of intermittent rebellion and warfare, New Spain (Mexico and the California territory) won independence from Spain in 1821. In 1822, the Mexican legislative body in California ended isolationist policies designed to protect the Spanish monopoly on trade, and decreed California ports open to foreign merchants. In addition to eliminating the system of Spanish nobility in California, the Spanish missions across the territory were secularized during this period. The secularization of the Spanish Missions meant that all communal mission property was placed in a trust with the intention of being returned to the local Native American population. In Santa Cruz, the land stolen by the Spanish was returned to Native Americans between 1834 and 1839, but a smallpox epidemic in 1838 and reoccurring bouts of syphilis caused a massive decline in the Native American population so that very few eligible recipients survived to receive their property. Records indicate that only 25 Native Americans held property in the Santa Cruz area between 1834 and 1849 (Koch 1973: 10; Lehmann 2000: 4-5).

Extensive land grants were established in the interior during the Mexican Period, in part to increase the population inland from the more settled coastal areas where the Spanish had first concentrated its colonization efforts. Land grants to citizens covered over 150,000 acres of present-day Santa Cruz County (Hoover et al. 2002: 458; Koch 1973: 11).

American Period (1848–Present)

The Mexican–American War ended with the Treaty of Guadalupe Hidalgo in 1848, ushering California into its American Period. Santa Cruz was designated as one of the 27 original counties of California on February 18, 1850, shortly before California officially became a state with the Compromise of 1850. The new State of California recognized the ownership of lands in the state distributed under the Mexican land grants of the previous several decades (Lehman 2000: 5; Koch 1973: 35).

As the Gold Rush was picking up steam in 1849, a massive influx of people seeking gold steadily flooded the rural counties of California. The gold fields quickly dried up, causing new arrivals to refocus on other economic opportunities. In Santa Cruz County, insightful entrepreneurs saw the arrival of opportunity-seeking laborers as a means to harvest the abundant natural resources found in the area. The lumber, mining, fishing, and tanning industries formed the economic foundation of the County. In the central and southern areas of the County, early settlers took advantage of the fertile soil and temperate climate to establish large farms and dairies. Agricultural products including grain and apples were among the County's earliest and most successful (Lehmann 2000: 7).

Interest in the beauty of the Monterey Bay drew visitors to the County as early as the 1860s, causing beach tourism to emerge as a major industry in the County. Tourism was also responsible for quickening the rate of development along the scenic coastal areas of Santa Cruz County. A rail line running from Gilroy to Santa Cruz by way of Watsonville was completed by 1876, followed shortly thereafter by a narrow-gauge line from Santa Cruz to Felton. The completion of the Santa Cruz–Watsonville Railroad allowed for greater mobility to the area from the inland counties of California, by both residents and tourists alike. As the Santa Cruz port altogether declined due to lack of use and the ease of transport by train, the beachfront areas of the city presented savvy entrepreneurs with emerging opportunities (Lehmann 2000: 14, 25-26).

By 1893, Harper's Weekly acknowledged Santa Cruz as a beach destination, promoting beachside institutions like the Neptune Baths built in 1884 by Captain C.F. Miller the push needed to become a national tourist destination. The economic transition away from the early industries of Santa Cruz towards tourism during this period helped to alleviate the strain placed on the forests in the north of the County, which had experienced widespread deforestation as a result of early logging and lime production activities in that area. Few old-growth redwood specimens remained in the forests of the Santa Cruz Mountains, and as it became clear that these trees were capable of drawing crowds on their own, their conservation became a dual effort to both save the trees and simultaneously promote Santa Cruz County as a one-stop tourism destination. A tourist to Santa Cruz County could visit the ocean and the big trees in one day with the help of the train. Conservation groups including the Sempervirens Club of California, advocated for the protection of the remaining clusters of Coastal Redwoods, resulting in the foundation of the present-day Big Basin Redwoods State Park By the time Santa Cruz was acknowledged as a beach destination nationally by *Harper's* in 1893, real estate entrepreneurs in the City were already in the process of purchasing and subdividing large swaths of land in the western section of the City, south of present-day Mission Street. Many of these prominent early sub-developments including the Ocean View (1888), Garfield Park (1889) and Surfside (1889) tracts retain their original lot configurations to this day (Lehmann 2000: 14-15, 21).

Cliff Road (now West Cliff Drive) began in approximately the 1840's as a foot path that passed through the private properties along the edge of the coastal cliffs on the west side of Santa Cruz. The narrow foot path was expanded into a road wide enough to accommodate horse-drawn conveyances in 1880 and first appeared on a map as 'Cliff Road' in 1888. The widening of the road coincided with the overall rise of tourism in Santa Cruz, as well as accelerated residential development on the west side of Santa Cruz. As a result, the Cliff Road quickly gained notoriety as a scenic drive showcasing the rugged beauty of Monterey Bay. As the coastal areas on the eastside of Santa Cruz developed, the road was colloquially termed 'West Cliff Road' to distinguish it from East Cliff Road, which extended eastward along the cliffs from the San Lorenzo River (Weekly Sentinel 1880: 3; Sanborn 1888: 12; Clark 2008: 376).

West Cliff Drive was expanded into a road from a footpath in 1880. Additional alterations to the roadway include: graded and widened in 1884; trestle bridge extension completed in 1888; macadamized (paved) in 1911; connection through the Davis and Cowell property between 1912 and 1923; installation of a bike path between

1973 and 1976; and numerous repairs/expansions of the road resulting from coastal erosion exacerbated by storm surge and heavy rains (Weekly Sentinel 1880: 3; Sentinel 1884: 3; SC Evening News 1911:2).

5 Survey

5.1 Field Methods

On August 21, 2025, Dudek archaeologist Brooke Crumpton, BA, conducted an intensive survey (minimum of 15-meter transects) for archaeological resources over the entirety of the Project ADI. During the survey, the archaeologist inspected the ground surface carefully for evidence of indigenous precontact or historic-period resources. Periodic boot scrapes were employed to better observe the ground surface if vegetation obscured the ground surface. No resources were identified during the survey.

Additionally, on August 21, 2025, Ms. Crumpton monitored one of four 10-centimeter diameter geotechnical bores that were excavated by Pacific Crest and Central Coast Drilling to support geotechnical studies for the Project. The monitored bore was within Lighthouse Field State Beach and was monitored to support the request of State Parks. Bore samples were taken in 1.5-foot increments to a depth of 21 feet. The excavated material was laid out in intervals of 10-centimeter depths to observe. No artifacts, samples, or specimens were collected. Shell was identified along associated with the water table in the bore sample at 14 feet. Subsurface conditions consisted of sandy soils mixed with silt and clay underlain by sandstone bedrock. Figure 3 illustrates survey coverage, and the location of the one monitored subsurface drilling investigation.

5.2 Findings

Dudek did not identify any historic or precontact artifacts during the survey. No artifacts were identified in the monitored subsurface drilling investigation.

6 Summary and Conclusions

The Project aims to reroute a 600-foot section of West Cliff Drive inland into a portion of Lighthouse Field State Beach to account for a vulnerable portion of the eroding coastline. Dudek supported this undertaking by conducting an archaeological assessment to document cultural resources that might be affected by the Project. The archaeological assessment included a records search, a sacred lands file search, background research, and an inventory survey of the Project ADI for archaeological resources. The CHRIS record search identified two studies that intersect the Project ADI and one resource, West Cliff Drive (P-44-001353), within the Project ADI. This resource was found ineligible for federal, state and local registers (Steffen 2024).

The results of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) search were positive, with the Costanoan Ohlone Rumsen-Mutsen Tribe indicated to contact for more information. Caltrans and the City of Santa Cruz are handling tribal consultation for the Project to fulfill state and federal requirements. A Dudek archaeologist surveyed the entire Project ADI using intensive minimum 15-meter transects and found no evidence of precontact or historic cultural remains. Additionally, the archaeologist monitored a geotechnical bore excavation within the Project ADI, which yielded no cultural constituents.

6.1 Unanticipated Discoveries

If previously unidentified cultural materials are unearthed during construction, it is Caltrans' policy that work be halted in that area until a qualified archaeologist can assess the significance of the find. Additional archaeological survey will be needed if project limits are extended beyond the present survey limits. In the event archaeological resources or human remains are encountered once monitoring has been discontinued the following should be implemented:

Unanticipated Discovery of Archaeological Resources

All construction crew should be alerted to the potential to encounter sensitive archaeological material. In the event that archaeological resources (sites, features, artifacts) are exposed during construction activities for the proposed Project, all construction work occurring within 60 feet of the find shall immediately stop until a qualified archaeologist, meeting the Secretary of the Interior’s Professional Qualification Standards, can evaluate the significance of the find and determine whether additional study is warranted. Precontact archaeological deposits may be indicated by the presence of discolored or dark soil, fire-affected material, concentrations of fragmented or whole marine shell, burned or complete bone, non-local lithic materials, or the characteristic observed to be atypical of the surrounding area. Common precontact artifacts may include modified or battered lithic materials; lithic or bone tools that appeared to have been used for chopping, drilling, or grinding; projectile points; fired clay ceramics or non-functional items; and other items. Depending upon the significance of the find under Section 106 of the NHPA and CEQA (14 CCR 15064.5(f); PRC Section 21082), the archaeologist may simply record the find and allow work to continue. If the discovery is potentially significant under Section 106 of the NHPA or CEQA, additional work, such as preparation of an archaeological treatment plan, testing, or data recovery may be warranted.

Unanticipated Discovery of Human Remains

In accordance with Section 7050.5 of the California Health and Safety Code, if human remains are found, the county coroner shall be immediately notified of the discovery. No further excavation or disturbance of the site or

any nearby area reasonably suspected to overlie adjacent remains shall occur until the county coroner has determined, within 2 working days of notification of the discovery, the appropriate treatment and disposition of the human remains. If the county coroner determines that the remains are, or are believed to be, Native American, he or she shall notify the NAHC in Sacramento within 24 hours. In accordance with California Public Resources Code, Section 5097.98, the NAHC must immediately notify the person it believes to be the most likely descendant from the deceased Native American. The most likely descendant shall complete his/her inspection within 48 hours of being granted access to the site. The designated Native American representative would then determine, in consultation with the property owner, the disposition of the human remains.

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Appendix A

CHRIS Records Search

Redacted

Appendix B

Tribal Outreach

Redacted

Appendix C
Historical Society Outreach

Fallin Steffen

From: Fallin Steffen
Sent: Monday, December 8, 2025 6:02 PM
To: Jessie Durant
Cc: Ann Sansevero; Sarah Brewer; Joshua Spangrud
Subject: Request for Information: City of Santa Cruz 800 West Cliff Drive Roadway Realignment Project
Attachments: IPL_MAH.pdf

Hello Jessie,

I am reaching out today on behalf of Dudek and City of Santa Cruz Public Works Department to provide you with some information about the City of Santa Cruz 800 West Cliff Drive Roadway Realignment Project (proposed project). As part of the cultural resources study for the proposed project, Dudek is consulting all regional historical organizations to determine if there are any known historic or cultural resources that may be within the proposed project area. Please see the attached letter and map for more information about the nature and location of the project, and please feel free to contact me should you have questions or information regarding cultural or historical resources in this area.

Thank you,
Fallin Steffen

Fallin Steffen, MPS (She/Her/Hers)
Cultural Resources-Architectural Historian
DUDEK 45 Years of Impactful Projects
O: 916 584 7821 **C:** 831 400 8882
dudek.com

DUDEK
725 FRONT STREET, SUITE 400
SANTA CRUZ, CALIFORNIA 95060
T 831.600.1400 F 831.600.1401

Jessie Durant, Archivist
Santa Cruz Museum of Art and History
705 Front Street
Santa Cruz, CA 95060
jessie@santacruzmah.org

December 8, 2025

Subject: City of Santa Cruz 800 West Cliff Drive Roadway Realignment Project

Dear Jessie Durant,

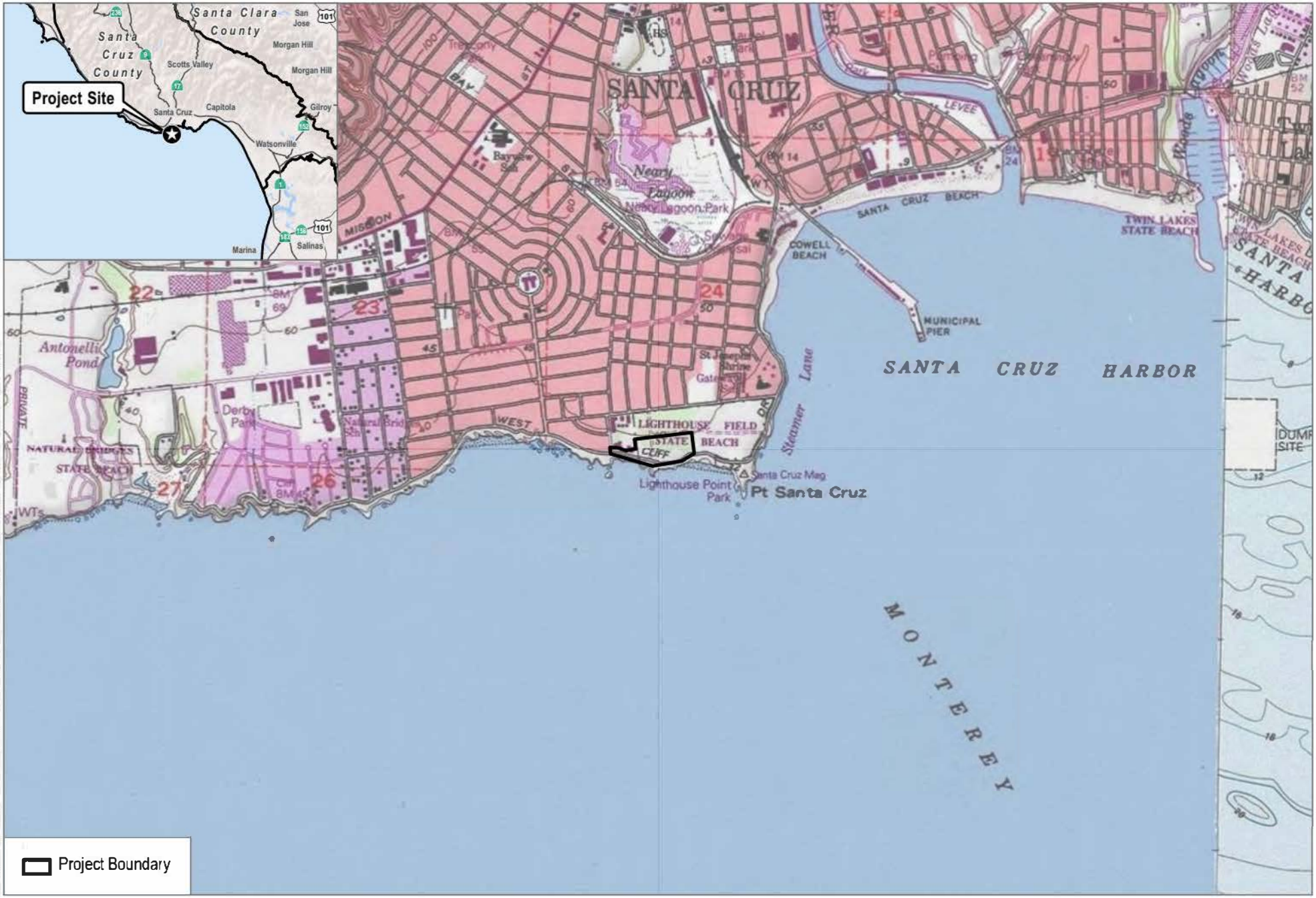
Dudek has been engaged by the City of Santa Cruz Public Works Department to support the City of Santa Cruz 800 West Cliff Drive Roadway Realignment Project (proposed project), which proposes to realign a portion of West Cliff Drive and the adjacent multiuse pathway near approximately 800 West Cliff Drive within Lighthouse Field State Beach (see Figure 1 enclosed). The proposed project is planned in response to significant erosion resulting from severe wave and storm events in December 2023 and early January 2024, which led to the collapse of this section of the pathway. The proposed realignment will move the affected segment approximately 50 feet inland, relocating it outside the designated 100-year erosion zone. Other elements of the proposed project include stormwater drainage improvements, relocation of existing signage, installation of new and relocated benches, and installation of native soil and seed mix.

As part of our study, we are consulting all regional historical organizations to determine if there are any known historic or cultural resources that may be affected by the proposed project. Your efforts in this process will provide invaluable information for the proper identification and treatment of such resources. If you have any information regarding known cultural resources in the proposed project area, please feel free to contact me via phone or email (listed below). All comments, emails, or letters received will be included in the reports generated by this study. Thank you for your time regarding our request.

Sincerely,

Fallin Steffen
Architectural Historian
831.400. 8882 // fsteffen@dudek.com

Att.: *Figure 1, Project Location*
cc: *Ann Sansevero, and Sarah Brewer, Dudek; Joshua Spangrud, City of Santa Cruz Public Works Department*



SOURCE: USGS National Map 2025

DUDEK

0 1,000 2,000 Feet

FIGURE 1

Project Location

City of Santa Cruz 800 West Cliff Drive Roadway Realignment Project

Fallin Steffen

From: Fallin Steffen
Sent: Monday, December 8, 2025 5:59 PM
To: Felicia Van Stolk
Cc: Ann Sansevero; Sarah Brewer; Joshua Spangrud
Subject: Request for Information: City of Santa Cruz 800 West Cliff Drive Roadway Realignment Project
Attachments: IPL_MNH.pdf

Hello Felicia,

I am reaching out today on behalf of Dudek and City of Santa Cruz Public Works Department to provide you with some information about the City of Santa Cruz 800 West Cliff Drive Roadway Realignment Project (proposed project). As part of the cultural resources study for the proposed project, Dudek is consulting all regional historical organizations to determine if there are any known historic or cultural resources that may be within the proposed project area. Please see the attached letter and map for more information about the nature and location of the project, and please feel free to contact me should you have questions or information regarding cultural or historical resources in this area.

Thank you,
Fallin Steffen

Fallin Steffen, MPS (She/Her/Hers)
Cultural Resources-Architectural Historian
DUDEK 45 45 Years of Impactful Projects

O: 916 584 7821 **C:** 831 400 8882
dudek.com

DUDEK
725 FRONT STREET, SUITE 400
SANTA CRUZ, CALIFORNIA 95060
T 831.600.1400 F 831.600.1401

Felicia Van Stolk
Santa Cruz Museum of Natural History
1305 E Cliff Drive
Santa Cruz, CA 95062
felicia@santacruzmuseum.org

December 8, 2025

Subject: City of Santa Cruz 800 West Cliff Drive Roadway Realignment Project

Dear Felicia Van Stolk,

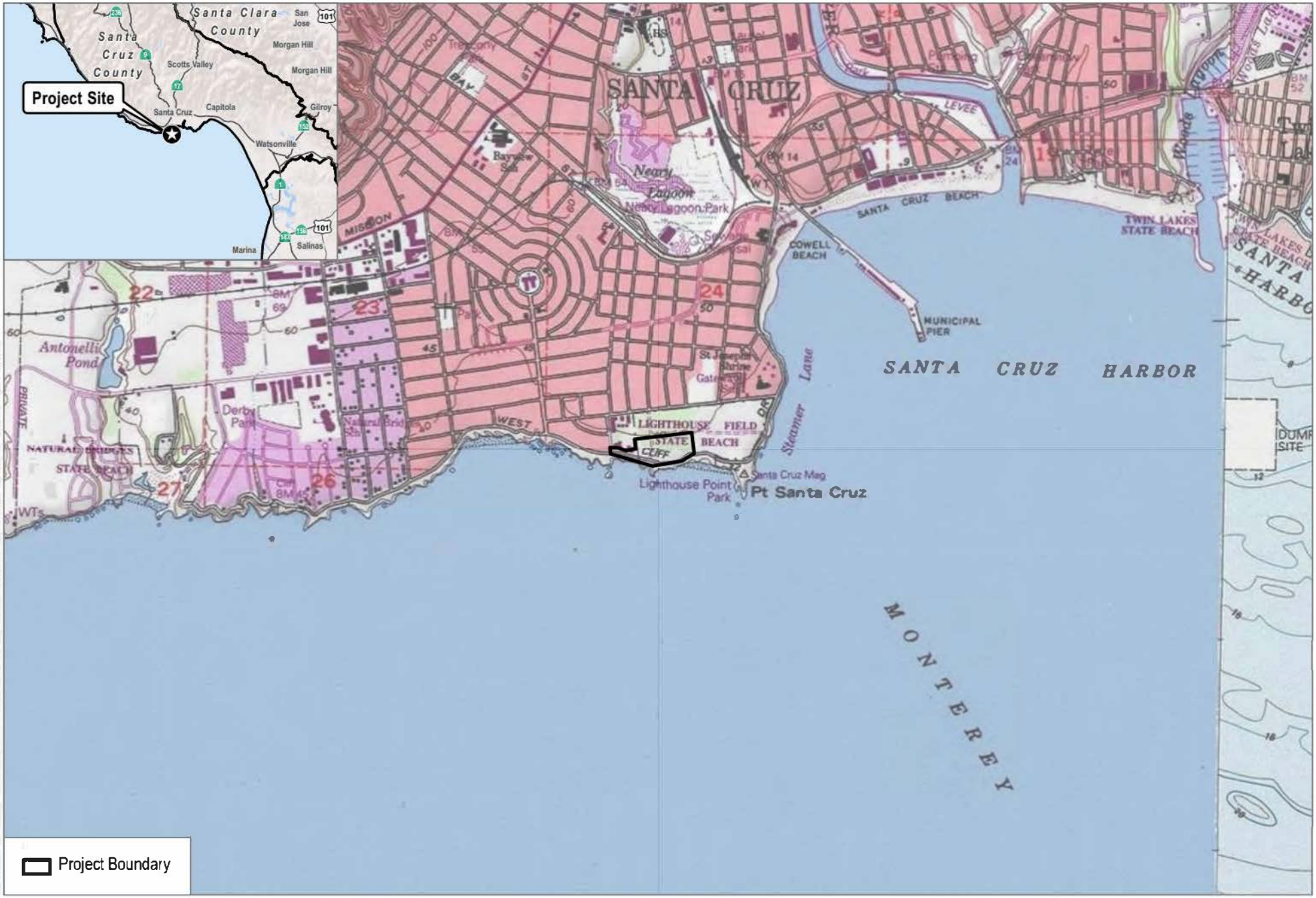
Dudek has been engaged by the City of Santa Cruz Public Works Department to support the City of Santa Cruz 800 West Cliff Drive Roadway Realignment Project (proposed project), which proposes to realign a portion of West Cliff Drive and the adjacent multiuse pathway near approximately 800 West Cliff Drive within Lighthouse Field State Beach (see Figure 1 enclosed). The proposed project is planned in response to significant erosion resulting from severe wave and storm events in December 2023 and early January 2024, which led to the collapse of this section of the pathway. The proposed realignment will move the affected segment approximately 50 feet inland, relocating it outside the designated 100-year erosion zone. Other elements of the proposed project include stormwater drainage improvements, relocation of existing signage, installation of new and relocated benches, and installation of native soil and seed mix.

As part of our study, we are consulting all regional historical organizations to determine if there are any known historic or cultural resources that may be affected by the proposed project. Your efforts in this process will provide invaluable information for the proper identification and treatment of such resources. If you have any information regarding known cultural resources in the proposed project area, please feel free to contact me via phone or email (listed below). All comments, emails, or letters received will be included in the reports generated by this study. Thank you for your time regarding our request.

Sincerely,

Fallin Steffen
Architectural Historian
831.400. 8882 // fsteffen@dudek.com

Att.: Figure 1, Project Location
cc: Ann Sansevero, and Sarah Brewer, Dudek; Joshua Spangrud, City of Santa Cruz Public Works Department



SOURCE: USGS National Map 2025

DUDEK

0 1,000 2,000 Feet

FIGURE 1

Project Location

City of Santa Cruz 800 West Cliff Drive Roadway Realignment Project

Attachment 2

Tribal Outreach

Redacted

Appendix D

Noise and Vibration Technical Memorandum

TECHNICAL MEMORANDUM

To:	Josh Spangrud, PE, Senior Civil Engineer City of Santa Cruz Public Works Evelyn Sanchez, PE, Area Engineer for Santa Cruz Caltrans District 5, Local Assistance
From:	Jonathan V. Leech, INCE, Senior Noise Specialist, Dudek
Subject:	Noise and Vibration Assessment – 800 West Cliff Drive Roadway Realignment, City of Santa Cruz, California
Date:	April 17, 2026
Attachments:	A – Ambient Noise Measurement Data B – Construction Noise Modeling Files C – Traffic Noise Modeling Files D –Construction Vibration Modeling Files

1 Introduction

The purpose of this technical memorandum is to present the results of a noise assessment conducted for the proposed 800 West Cliff Drive Roadway Realignment Project ("project" or "proposed project") in accordance with guidelines adopted by the Federal Highway Administration (FHWA) and implemented by California Department of Transportation (Caltrans). The proposed project would realign an approximately 600-foot section of West Cliff Drive northward by up to approximately 60 feet and would realign an approximately 300-foot section of an adjacent multi-use trail northward by up to approximately 40 feet. The project would not add or remove vehicle travel lanes nor otherwise alter the capacity of West Cliff Drive within the project area.

According to 23 CFR 772.5(h), a Type I project involves "construction on new location or the physical alteration of an existing highway which significantly changes either the horizontal or vertical alignment or increases the number of through-traffic lanes." The proposed project involves the minor realignment (involving a shift no more than 60 horizontal feet) of a 600-foot roadway section. The proposed project would not alter the vertical alignment of the roadway or increase the number of through traffic lanes, nor would it significantly alter the horizontal alignment of the existing roadway. Therefore, the proposed project is not a Type I project and thus does not require a Noise Study Report. The proposed project would involve the removal of two trees, demolition, excavation and grading, and paving during construction. In addition, the minor shift in the alignment would slightly reduce the separation distance between travel lanes and existing nearby residences. This Noise Technical Memorandum summarizes the existing ambient noise environment encompassing the project site and vicinity residences, addresses construction noise and vibration at vicinity residences, evaluates changes to traffic noise exposure from the project at vicinity residences, and presents the conclusions of the noise and vibration analysis to ensure that the project would not result in exceedance of noise standards or a substantial noise increase over ambient conditions.

The contents and organization of this memorandum are as follows:

- Section 1, Introduction
- Section 2, Project Description
- Section 3, Noise and Vibration Background / Terminology
- Section 4, Applicable Noise Regulations
- Section 5, Existing Noise Environment
- Section 6, Noise and Vibration Assessment
- Section 7, References Cited

Figures supporting the discussion in this memorandum are provided at the end of the narrative portion of the memo.

2 Project Description and Setting

2.1 Roadway Realignment Description

The proposed project would shift an approximately 600-foot section of roadway nearest the eroded coastal bluff approximately 60 feet inland, out of the 100-year erosion zone as modeled by Pacific Crest Engineering (PCE 2025). The project area is approximately 3.16 acres extending over two parcels of Lighthouse Field State Beach and the roadway right of way. Due to constraints from existing conditions such as the roadway tie-in points and existing private property, the planned realignment is the furthest back the roadway can be viably shifted landward without the need for substantial engineering modifications such as sharp turns, reduced speed limit, extensive intrusion into Lighthouse Field State Beach, and superelevation banking. The new roadway section will be matched to the existing roadbed on the west and east sides of the project site. The entire new roadway width with embankments, curbs, and the new two-lane road will be approximately 39 feet. The two-lane road itself is estimated at approximately 28 feet wide and will consist of 6 inches of asphalt placed on 7 inches of aggregate base and 12 inches of prepared subgrade. Two existing trees along the north side of the existing road (one fallen and one live) would be removed prior to the commencement of demolition of the roadway.

2.2 Multiuse Pathway Realignment Description

An approximately 300-foot section of the existing multiuse pathway adjacent to the roadway will also be shifted inland by up to approximately 40-feet horizontally. The existing pathway within the project area will be demolished and material removed from the area. The new multiuse pathway is estimated to be 16-feet wide with 3-feet of buffer on either side and will be reconnected to the existing multiuse pathway alignment on both ends of the project area. Similar to the realign road section, the multiuse path will consist of 6 inches of asphalt placed on 7 inches of aggregate base and 12 inches of prepared subgrade.

2.3 Project Setting

The project is located at 800 West Cliff Drive, Santa Cruz, California, and involves an approximately 600-foot segment of this roadway. West Cliff Drive within the project area is adjacent to an existing parking lot and beach cliff south of the existing roadway and Lighthouse Field State Beach to the north. The closest noise sensitive land

uses to the project site are represented by apartment buildings located approximately 100 and 540 feet to the west/northwest and single-family residences approximately 750 feet north (along the north side of Pelton Avenue).

3 Noise and Vibration Background

3.1 Fundamentals of Environmental Noise

Vibrations, traveling as waves through air from a source, exert a force perceived by the human ear as sound. Sound pressure level (referred to as sound level) is measured on a logarithmic scale in decibel (dB) that represents the fluctuation of air pressure above and below atmospheric pressure. Frequency, or pitch, is a physical characteristic of sound and is expressed in units of cycles per second or hertz. The normal frequency range of hearing for most people extends from about 20 to 20,000 hertz.

The human ear is more sensitive to middle and high frequencies, especially when the noise levels are quieter. As noise levels get louder, the human ear starts to hear the frequency spectrum more evenly. To accommodate for this phenomenon, a weighting system to evaluate how loud a noise level is to a human was developed. The frequency weighting, called "A" weighting, is typically used for quieter noise levels, which de-emphasizes the low-frequency components of the sound in a manner similar to the response of a human ear. This A-weighted sound level is called the "noise level" and is referenced in units of A-weighted decibel (dBA). Table 1 presents typical noise levels for common outdoor and indoor activities.

Table 1. Typical Noise Levels Associated with Common Activities

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	110	Rock Band
Jet Flyover at 1,000 feet	105	
	100	
Gas Lawn Mower at three feet	95	
	90	
Diesel Truck at 50 feet, 50 miles per hour	85	Food Blender at 3 feet
	80	Garbage Disposal at 3 feet
Noisy Urban Area, Daytime	75	
	70	Vacuum Cleaner at 10 feet
Commercial Area	65	Normal speech at 3 feet
Heavy Traffic at 300 feet	60	
	55	Large Business Office
Quiet Urban Daytime	50	Dishwasher (in next room)
	45	
Quiet Urban Nighttime	40	Theater, Conference Room (background)
Quiet Suburban Nighttime	35	
	30	Library
Quiet Rural Nighttime	25	Bedroom at Night, Concert Hall (background)
	20	
	15	Broadcast/Recording Studio
	10	
	5	
Lowest Threshold of Human Hearing (Healthy)	0	Lowest Threshold of Human Hearing (Healthy)

Source: Caltrans 2020a. **Notes:** dBA = A-weighted decibel.

Since sound is measured on a logarithmic scale, a doubling of sound energy results in a 3-dBA increase in the noise level. Changes in a community noise level of less than 3 dBA are not typically noticed by the human ear (Caltrans 2020a). Changes from 3 to 5 dBA may be noticed by some individuals who are extremely sensitive to changes in noise. A 5-dBA increase is readily noticeable (EPA 1974). The human ear perceives a 10-dBA increase in sound level as a doubling of the sound level (i.e., 65 dBA sounds twice as loud as 55 dBA to a human ear).

An individual's noise exposure occurs over time; however, noise level is a measure of noise at a given instant in time. Community noise sources vary continuously, being the product of many noise sources at various distances, all of which constitute a relatively stable background or ambient noise environment. The background, or ambient, noise level gradually changes throughout a typical day, corresponding to distant noise sources such as traffic volume and changes in atmospheric conditions. The time-varying character of environmental noise is often described with use of statistical or percentile noise descriptors including L_{10}, L_{50}, and L_{90}. These are the noise levels equaled or exceeded during 10, 50, and 90 percent of the measured time interval. Sound levels associated with L_{10} typically describe transient or short-term events, such as the noise from distinct passing cars and trucks. L_{50} represents the median sound level during the measurement. Levels will be above and below this value exactly one-half of the accumulated measurement time. L_{90} is the sound level exceeded 90 percent of the time, and often is used to describe background noise conditions or sources that are continuous or "steady-state" in character.

Noise levels are generally higher during the daytime and early evening when traffic (including airplanes), commercial, and industrial activity is the greatest. However, noise sources experienced during nighttime hours when background levels are generally lower can be potentially more conspicuous and irritating to the receiver. To evaluate noise in a way that considers periodic fluctuations experienced throughout the day and night, a concept termed "community noise equivalent level" (CNEL) was developed, wherein noise measurements are weighted, added, and averaged over a 24-hour period to reflect magnitude, duration, frequency, and time of occurrence.

Different types of measurements are used to characterize the time-varying nature of sound. These measurements include the equivalent sound level (L_{eq}), the minimum and maximum sound levels (L_{min} and L_{max}, respectively), percentile-exceeded sound level (L_{xx}), and the CNEL. The following list provides brief definitions of noise terminology used in this report.

- **Decibel** (dB) is a unitless measure of sound on a logarithmic scale, which indicates the squared ratio of sound pressure amplitude to a reference sound pressure amplitude. The reference pressure is 20 micropascals.
- **A-weighted decibel** (dBA) is an overall frequency-weighted sound level in decibels that approximates the frequency response of the human ear.
- **Equivalent sound level** (L_{eq}) is the constant level that, over a given time period, transmits the same amount of acoustic energy as the actual time-varying sound. Equivalent sound levels are the basis for both the L_{dn} and CNEL scales.
- **Maximum sound level** (L_{max}) is the maximum sound level measured during the measurement period.
- **Minimum sound level** (L_{min}) is the minimum sound level measured during the measurement period.
- **Percentile-exceeded sound level** (L_{xx}) is the sound level exceeded X% of a specific time period. L_{10} is the sound level exceeded 10% of the time.
- **Community Noise Equivalent Level** (CNEL) is the average equivalent A-weighted sound level during a 24-hour day. CNEL accounts for the increased noise sensitivity during the evening hours (7:00 p.m. to

10:00 p.m.) and nighttime hours (10:00 p.m. to 7:00 a.m.) by adding 5 dB to the recorded hourly average sound levels in the evening and 10 dB to the hourly average sound levels at night.

3.1.1 Exterior Noise Distance Attenuation

Noise sources are classified in two forms: (1) point sources, such as stationary equipment or a group of construction vehicles and equipment working within a spatially limited area at a given time; and (2) line sources, such as a roadway with a large number of pass-by sources (motor vehicles). Sound generated by a point source typically diminishes (attenuates) at a rate of 6.0 dBA for each doubling of distance from the source to the receptor at acoustically "hard" sites and at a rate of 7.5 dBA for each doubling of distance from source to receptor at acoustically "soft" sites (Caltrans 2020a). Sound generated by a line source (i.e., a roadway) typically attenuates at a rate of 3 dBA and 4.5 dBA per doubling distance, for hard and soft sites, respectively (Caltrans 2020a). Sound levels can also be attenuated by human-made or natural barriers. For the purpose of a sound attenuation discussion, a hard or reflective site does not provide any excess ground-effect attenuation and is characteristic of asphalt or concrete ground surfaces, as well as very hard-packed soils. An acoustically soft or absorptive site is characteristic of unpaved loose soil or vegetated ground.

With respect to examples of this distance-attenuation relationship for exterior noise, a 60-dBA noise level measured at 50 feet from an excavator working within a packed earth lot site would diminish to 54 dBA at 100 feet from the source, and to 48 dBA at 200 feet from the source. This scenario is addressed by the point source attenuation for a hard site (6 dBA with each doubling of the distance). For the scenario where soft-site conditions exist between the point source and receptor, represented by natural vegetation, planted row crop, or plowed furrows adjacent to the work area, an attenuation rate of 7.5 dBA per doubling of distance would apply; the excavator noise measured as 60 dBA at 50 feet would diminish to 52.5 dBA at 100 feet from the source and to 45 dBA at 200 feet from the source, where soft ground exists between the sound source and the receptor location.

3.2 Fundamentals of Vibration

Vibration is an oscillatory motion that can be described in terms of displacement, velocity, or acceleration. Heavy equipment operation, including stationary equipment that produces substantial oscillation or construction equipment that causes percussive action against the ground surface, may be experienced by building occupants as perceptible vibration. It is also common for groundborne vibration to cause windows, pictures on walls, or items on shelves to rattle. Although the perceived vibration from such equipment operation can be intrusive to building occupants, the vibration is seldom of sufficient magnitude to cause even minor cosmetic damage to buildings.

Peak particle velocity (PPV) that describes particle movement over time (in terms of physical displacement of mass, expressed as inches/second or in/sec) is generally employed for the discussion of vibration impacts on people and structures. Groundborne vibration generated by construction projects is usually highest during pile driving, rock blasting, soil compacting, jack hammering, and demolition-related activities. Next to pile driving and soil compacting, grading activity has the greatest potential for vibration impacts when earthwork involves large bulldozers, large trucks, or other heavy equipment.

3.3 Health Effects of Noise

Excessively noisy conditions can affect an individual's quality of life, health, and well-being. The effects of noise can be organized into six broad categories: sleep disturbance, permanent hearing loss, human performance and behavior, social interaction or communication, extra-auditory health effects, and general annoyance. An individual's reaction to noise and its level of disturbance depends on many factors such as the source of the noise, its loudness relative to the background noise level, time of day, whether the noise is temporary or permanent, and subjective sensitivity.

4 Noise Regulation and Management

4.1 Federal

4.1.1 Federal Transit Administration (FTA)

In its Transit Noise and Vibration Impact Assessment guidance manual, the FTA recommends a daytime construction noise level threshold of 80 dBA $_{Leq}$ over an eight-hour period when detailed construction noise assessments are performed to evaluate potential impacts to community residences surrounding a project (FTA 2018). Although this FTA guidance is not a regulation, it can serve as a quantified standard in the absence of such limits at the state and local jurisdictional levels. The City of Santa Cruz has not adopted quantitative limits for construction carried out during the daytime, and thus the FTA guidance is employed for assessing daytime construction noise levels at existing vicinity residential land uses.

4.2 State

4.2.1 California Department of Transportation

Construction Noise Standards

Section 14-8 (Noise and Vibration) of the Caltrans Standard Specifications (2024 Edition) establishes a construction noise level limit for construction activities proposed to be conducted in the overnight period where existing residences exist in the vicinity of the project site (Caltrans 2024). The standard is presented below.

14-8.02 NOISE CONTROL

> Control and monitor noise resulting from work activities.
>
> Do not exceed 86 dBA Lmax at 50 feet from the job site from 9:00 p.m. to 6:00 a.m.

Vibration Standards

The California Department of Transportation (Caltrans) conducted extensive research on human annoyance and damage to structures caused by vibration from short term construction activities and from long term highway operations and has published criteria for vibration management (Transportation and Construction Vibration Guidance Manual 2020). These criteria established by Caltrans are commonly used to assess vibration impacts from all types of projects and activities. Caltrans uses a threshold of 0.2 in/sec PPV for annoyance to persons, where a continuous vibration source is involved; for transient sources (represented by construction activities), Caltrans uses a threshold of 0.24 in/sec PPV (which equates to a distinctly perceptible level). For commercial buildings constructed of concrete and steel, Caltrans identifies a damage threshold of 0.5 in/sec PPV. For

residential structures employing concrete foundation and wood frame construction, Caltrans identifies a conservative damage threshold vibration level standard of 0.3 in/sec PPV (Caltrans 2020b).

4.2.2 California Noise Control Act of 1973

Sections 46000 through 46080 of the California Health and Safety Code, known as the California Noise Control Act of 1973, declares that excessive noise is a serious hazard to the public health and welfare and that exposure to certain levels of noise can result in physiological, psychological, and economic damage. It also identifies a continuous and increasing bombardment of noise in the urban, suburban, and rural areas. The California Noise Control Act declares that the State of California has a responsibility to protect the health and welfare of its citizens by the control, prevention, and abatement of noise. It is the policy of the state to provide an environment for all Californians free from noise that jeopardizes their health or welfare.

4.3 Local

4.3.1 City of Santa Cruz General Plan

Applicable noise standards in the City of Santa Cruz General Plan are contained within Chapter 8 of the General Plan (Hazards, Safety, and Noise) (City of Santa Cruz 2012). The Hazards, Safety, and Noise chapter contains specific goals, policies, and standards for use in planning and land compatibility determinations within the City of Santa Cruz. In particular, the Hazards, Safety, and Noise chapter establishes noise/land-use compatibility standards which are applicable to all new residential, commercial, and mixed-use projects (Figure 2 of the Hazards, Safety, and Noise chapter and Goal HZ3.2.1), and the General Plan seeks to ensure that noise standards are met in the siting of noise-sensitive uses (Goal HZ3.2).

The Hazards, Safety, and Noise chapter policies establish a maximum interior noise level threshold of 45 dBA Ldn for all residential uses, consistent with California noise insulation standards. Figure 2 of the Hazards, Safety, and Noise chapter indicates that exterior noise levels up to 60 dBA CNEL are normally acceptable for residential development and exterior noise levels up to 65 dBA CNEL are normally acceptable for multi-family residential and transient residential development; with noise levels up to 70 dBA CNEL considered conditionally acceptable. Hazards, Safety, and Noise chapter Policy HZ3.2.3 reiterates the “noise level target” of 65 dBA CNEL for outdoor activity areas associated with new multi-family residential developments. Policies HZ3.1.3 and HZ3.1.5 qualitatively discuss the management and monitoring of construction noise levels to minimize noise impacts on surrounding land uses. However, while nighttime construction (10:00 PM through 8:00 AM) is generally prohibited, no noise level limits are established for construction activities carried out in the daytime period.

4.3.2 City of Santa Cruz Municipal Code

Chapters 9.36 and 24.14 of the City of Santa Cruz Municipal Code (City of Santa Cruz 2021) include provisions for noise regulations. The former prohibits excessive noise during nighttime hours (10:00 PM through 8:00 AM) (Section 9.36.010, Subsection[a]), but without any quantitative (numerical) limits. For the purposes of construction activities performed in support of public works, the nighttime noise restriction shall not apply during the hours of 7:00 AM to 8:00 AM.

Subsection (d) of Chapter 9.36 states that “Subsection (a) shall not apply to any person engaged in performance of a contract for public works awarded by the City of Santa Cruz, in the event of an emergency and if the city manager of the City of Santa Cruz so authorizes work.”

Subsection (e) of Chapter 9.36 allows for specific construction activities to occur between the hours of 10:00 PM and 8:00 AM where either the chief building inspector, public works director, planning and community development director or water department director have provided written determination and consent that said task is required to commence or be completed between said hours. Additionally, at a minimum, notice of the dates and times such tasks will be undertaken shall be provided to all residents, tenants and property owners who occupy or own property within 300 feet of the construction site at which such tasks will be performed.

Section 9.36.025 states "This chapter shall not apply to refuse collection, recyclable collection or street sweeping activities undertaken by, or pursuant to contract with, the city of Santa Cruz. Similarly, this chapter shall not apply to any other activity undertaken by the city, another governmental agency, or city contractor, for public health and safety purposes when, in the judgment of the city or governmental agency, such activity cannot be undertaken effectively or efficiently in compliance with the regulations set forth in this chapter."

In addition to the Chapter 9.36 regulations, Section 24.14 describes performance standards which limit noise production with respect to noise production from residential and commercial/industrial land uses: up to a 5 dB or 6 dB increase, respectively, above existing outdoor ambient sound levels. These allowable noise standards are adjusted by +5 dB for noise levels that are considered to be "containing piercing", "noise that is impulsive", or "contains speech, music or other information content".

4.4 CEQA Significance Criteria

Appendix G of the CEQA Guidelines contains analysis guidelines related to noise and vibration impacts. These guidelines have been used as thresholds of significance for this analysis. A project would create a significant environmental impact if it would:

- Generate 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;
- Generate excessive groundborne vibration or groundborne noise levels; and
- 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, expose people residing or working in the project area to excessive noise levels.

5 Existing Noise Environment

5.1 Sensitive Receivers

Noise- and vibration-sensitive land uses are locations where people reside or where the presence of unwanted sound or vibration could adversely affect the use of the land. Residences, hospitals, nursing care or assisted living facilities, guest lodging, schools and churches would be considered noise- and vibration-sensitive. Noise and vibration-sensitive receivers in the project vicinity are represented by residences.

Figure 1 illustrates the location of the closest off-site sensitive receivers to the project. As illustrated in Figure 1, an apartment building (R1) to the northwest is the closest noise and vibration sensitive land use to the project site, with the nearest point of the building foundation approximately 100 feet from the project construction limits and the closest outdoor living area (a second floor balcony) at approximately 120 feet. Another apartment building (R2) is located at

approximately 540 feet to the northwest of the project western limits. Residences to the north are the next closest sensitive receivers; as illustrated on Figure 1, R3 is located at approximately 750 feet from the re-aligned roadway segment, while R4 is located at approximately 760 feet. These are just two representative instances for the continuous residential neighborhood along the north side of Pelton Road which generally parallels West Cliff Drive in the project vicinity.

5.2 Ambient Noise Survey

Sound-pressure level measurements of short duration (i.e., less than an hour apiece) were conducted on December 11, 2026, in the vicinity of the project site. These measurements were completed to quantify and characterize the existing outdoor noise levels adjacent to noise-sensitive receivers that could be impacted by project noise. The locations for the short-term sound pressure level measurements are illustrated in Figure 2. As shown in Figure 2, a short-term measurement (ST1) was performed along West Cliff Drive adjacent to an apartment building (the closest off-site noise sensitive land use), to establish ambient noise levels from traffic along West Cliff Drive. Short-term measurement ST2 (Figure 2) was performed along Pelton Ave, adjacent to another apartment building (the second closest off-site noise-sensitive receiver to the project site), while ST3 (Figure 2) was completed adjacent to the single-family residential neighborhood along the north side of Pelton Ave. ST2 and ST3 were performed to establish ambient noise levels associated with traffic along Pelton Ave.

These short-term measurements were primarily intended to characterize ambient noise levels from these roadways at vicinity residences, and in the case of West Cliff Drive, to collect data for calibrating the traffic noise model. The Dudek field investigator conducted manual traffic counts for vehicles passing the short-term measurement point on West Cliff Drive for the duration of the measurements, for the traffic model calibration.

Table 2, Measured Short-Term Baseline Outdoor Noise Levels, provides the location, date, and time at which the short-term baseline noise level measurements were taken. The short-term sound-pressure level measurements were performed by an attending Dudek field investigator using a Rion NL-52 model sound level meter equipped with a 0.5-inch, pre-polarized condenser microphone with pre-amplifier. The sound level meter meets the current American National Standards Institute standard for a Type 1 (precision) sound level meter. The accuracy of the sound level meter was verified using a field calibrator before and after the measurements, and the measurements were conducted with the microphone positioned approximately five feet above the ground.

The L_{eq} noise levels measured at ST1 – ST3 are provided in Table 2. The primary noise source affecting the measurement locations was traffic along adjacent roadways. As shown in Table 2, the highest recorded average sound level over the measurement period was 60 dBA L_{eq} at ST2 (along Pelton Ave). The second-highest recorded ambient noise level of 59 dBA L_{eq} occurred at ST1 (along West Cliff Drive). Noise measurement data summarized in Table 2 is also included in Attachment A. Field investigator notes indicating traffic counts and weather conditions as well as photos of the noise measurement locations, are also included in Attachment A.

Table 2. Measured Short-Term Ambient Outdoor Noise Levels

Receptor	Location/Address	Date	Time	L_{eq} (dBA)
ST1	West Cliff Drive adjacent to apartment building west of the project limits	12/11/26	2:20 to 2:50 PM	59
ST2	Pelton Ave adjacent to apartment building northwest of project limits		3:00 to 3:30 PM	60
ST3	Pelton Ave adjacent to residences north of the project limits		3:37 to 4:07 PM	56

Source: Dudek (Attachment A)
Notes: L_{eq} = equivalent continuous sound level (time-averaged sound level)
dBA = A-weighted decibels
ST = short-term noise measurement locations.

5.3 Existing Traffic Noise Levels

According to City of Santa Cruz Public Works (2025), West Cliff Drive in the vicinity of the project site currently carries approximately 5,300 Average Daily Trips (ADT) during weekdays and 7,300 ADT on weekend-days. Dudek used the identified weekend-day ADT data (worst-case scenario) primarily to model the existing traffic noise associated with the current alignment of West Cliff Drive adjacent to the apartment building northwest of the project limits (R1, refer to Figure 1), since this is the closest off-site receiver and would be the most affected by the proposed re-alignment. Dudek also modeled the contribution of West Cliff Drive traffic noise at the other identified noise-sensitive receivers in the project vicinity (R2-R4, refer to Figure 1), although these traffic noise contributions would not be discernible at R2-R4 due to much higher traffic noise exposure from Pelton Ave.

Dudek used the Federal Highway Administration (FHWA) Traffic Noise Model (TNM 2.5) for the modeling of existing traffic noise exposure associated with the segment of West Cliff Drive included in the project limits. The methodology for traffic noise assessment is explained in further detail in Section 6 of this memo. The traffic noise levels in Table 3 are based upon reported existing ADTs, and not on the manual traffic counts conducted during the short-term ambient noise measurements (the manual counts and measured sound levels were employed to calibrate the noise model).

Table 3. Modeled Existing Traffic Noise Exposure Levels from Current West Cliff Drive Alignment (CNEL dBA)

Receiver Location	Noise Receiver Designation	CNEL (dBA)
Apartment Building (The Carmel) Adjacent to Western Project Limits	R1	57.7
Apartment Building Northwest of Western Project Limits	R2	36.0
Residence Along Pelton Avenue North of Project Limits	R3	33.0
Residence Along Pelton Avenue North of Project Limits	R4	33.3

NOTES: R# = Noise Sensitive Receiver; CNEL = Community Noise Equivalent Level; dBA = A-weighted decibels.

6 Noise & Vibration Assessment

6.1 Methodology

6.1.1 Construction Noise

Construction activities include temporary noise sources with emission levels varying from hour to hour and day to day, depending on the equipment in use, the operations performed, and the distance between the source and receiver. Construction noise modeling was performed using a Microsoft Excel–based noise prediction model. Input variables include the equipment type (backhoe, crane, truck, etc.), the number of pieces of equipment, the duty cycle for each piece of equipment (i.e., percentage of each hour the equipment typically works), and the distance from the sensitive receptor. Sound source information was obtained from the Noise Source Database developed under National Cooperative Highway Research Program 25-49 (NCHRP 25-49), Development of a Highway Construction Noise Prediction Model (NASEM 2022).

Table 4 provides a list of the sound levels generated by various powered equipment that could be associated with construction of the project, measured at a distance of 50 feet using a "slow" response time constant (1 second). Usually, construction equipment operates in alternating cycles of full power and low power, producing average noise levels over time that are less than the maximum noise level. The average sound level of construction activity also depends on the amount of time that the equipment operates (expressed as a percentage of operating time per hour) and the intensity of construction activities during that time.

Noise emissions from the construction phase of the project were estimated based upon construction scenario information typical of a small-scale local roadway demolition and re-alignment project. The construction equipment inventory used for estimating the project-generated construction noise emissions are included in Attachment B.

Table 4. Sound Levels of Typical Construction Equipment

Equipment	Maximum Sound Level (dBA L_{max}) – 50 feet from Source	Equivalent Sound Level (dBA L_{eq}) – 50 feet from Source
Air Compressor	67	66
Backhoe	84	76
Chain Saw	79	N/A
Chipper, Wood	72	N/A
Compactor (Roller)	83	N/A
Concrete Mixer	82	81
Dozer	86	80
Forklift	88	N/A
Generator	68	67
Grader	79	N/A
Loader	81	72
Paving - Asphalt	83	N/A
Paving - Concrete	88	85
Flatbed Truck	74	N/A

Source: NASEM 2022
Notes: dBA = A-weighted decibel; L_{max} = maximum instantaneous noise level. N/A = Equipment without average (L_{eq}) noise levels are non-stationary and best represented only by maximum instantaneous noise level (L_{max}).

A Microsoft Excel–based noise prediction model emulating and using reference data from NCHRP 25-49 was used to estimate average construction noise levels at the nearest noise-sensitive land uses to the project site (i.e., apartment buildings and single-family residences). Aggregate noise emission from project construction activities, broken down by sequential phase of construction activity, was predicted for construction activities at distances between the closest construction boundaries to each target off-site noise-sensitive receiver. Dudek compared predicted construction noise levels at the closest off-site apartments and residences to the FTA recommended daytime residential construction noise exposure standard of 80 dBA L_{eq} and to measured ambient noise levels.

6.1.2 Project-Related Traffic Noise Increases

The proposed project involves a minor re-alignment of an approximately 600-foot section of West Cliff Drive, shifting the alignment a maximum of 60 feet to the north. This shift would marginally decrease the separation distance between the roadway and existing noise-sensitive receivers (i.e., apartment buildings and single-family residences) in the immediate project vicinity. However, neither road segment capacity nor posted speed limits would be altered with the project, and therefore the project would not be anticipated to result in alterations to existing ADT volumes along West Cliff Drive within the project limits (thus eliminating the most common source for increases in project-related traffic noise exposure levels). To evaluate the change in traffic noise levels at existing noise sensitive uses from shifting the road segment alignment, Dudek used the FHWA Transportation Noise Model (TNM 2.5).

For the TNM modeling, Dudek used traffic volume data from the City of Santa Cruz Public Works (2025) for West Cliff Drive in the vicinity of the project site. According to the City, West Cliff Drive currently carries approximately 5,300 Average Daily Trips (ADT) during weekdays and 7,300 ADT on weekend-days. Dudek used the identified weekend-day ADT data (worst-case scenario) to model the existing traffic noise associated with the current alignment of West Cliff Drive and for the proposed realigned 600-foot section of West Cliff Drive that is included in the project.

Inputs for TNM include the spatially accurate alignment of the roadway segment under evaluation, the number and type of vehicles carried by the roadway segment (ADT), and the speed of the vehicles. Receivers can be included in the TNM space to represent noise-sensitive land uses, for which TNM calculates the resulting traffic noise exposure. Since the project would not affect the volume or type of vehicles, nor the speed of such vehicles, project-related changes to traffic noise exposure at local noise-sensitive receivers involved inputting the existing alignment and proposed alignment of West Cliff Drive as separate TNM runs.

6.1.3 Vibration Assessment Methodology

California Department of Transportation (Caltrans) has been assembling data for vibration levels generated by heavy construction equipment operation during the building of transportation projects for many years. According to Caltrans (2020b) the most important equipment relative to generation of vibration, and the vibration levels produced by such equipment, is illustrated in Table 5.

Table 5. Vibration Velocities for Typical Construction Equipment

Equipment	PPV at 25 Feet (Inches Per Second)
Vibratory Roller	0.210
Large Bulldozer	0.089
Loaded Trucks	0.076
Small Bulldozer	0.003

Source: Caltrans 2020b.

Caltrans uses a human annoyance threshold of 0.2 inches-per-second (IPS) PPV, a residential structure damage threshold of 0.3 IPS PPV, and a commercial structure damage threshold (including apartment buildings) of 0.5 IPS PPV. The vibration level value for each of the equipment listed in Table 5 is reported at a uniform distance of 25 feet from the equipment; to determine the vibration level at other distances, the following formula may be used:

Peak particle velocity at distance (d) = peak particle velocity(d_{ref}) * (d_{ref}/d)$^{1.5}$

In the above equation, "d" is the distance between the receiver and a vibration source, "d_{ref}" is the reference distance that applies for the indicated vibration magnitude.

6.2 CEQA Impacts Analysis

6.2.1 Project Impacts – Increases in Ambient Noise Levels

Significance Criteria 1: Would the project result in 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?

6.2.1.1 Construction Noise Levels

As described under Section 5.1.1 (Construction Noise Methodology), construction noise modeling was performed to predict worst-case construction noise levels at the closest noise-sensitive uses to the site (identified as R1-R4 in Figure 1). The modeled construction noise prediction is worst-case because it assumes all the equipment in a given phase is operating along the construction zone boundary that is closest to the identified off-site receiver. In general, all the construction equipment would not be operating along the construction zone boundary closest to the identified receiver, instead the construction activities would be distributed across the construction zone. Thus, the construction noise analysis herein provides conservative, worst-case results in terms of construction noise exposure for the modeled off-site receivers.

Table 6 provides a summary of the construction noise modeling; detailed information is provided in Attachment B. Refer to Figure 1 for the location of the modeled residential receivers (R1 – R4) identified in Table 6.

Table 6. Construction Noise Levels at Nearest Off-Site Receptors by Phase

Phase	Construction Noise Level $L_{eq\ 8\text{-}hr\ /\ 1\ hr}$ (dBA)			
	R1	R2	R3	R4
(0) Tree Removal (2 Trees)	73	55	51	51
(1) Pavement Removal & Demolition	75	59	56	56
(2) Site Preparation – New Alignment	72	57	54	53
(3) Grading – New Alignment	74	58	55	55
(4) Aggregate Base – New Alignment	74	58	55	55
(5) Paving – New Alignment	75	60	56	56
Highest Noise Level Across All Phases	**75**	**60**	**56**	**56**

Source: Dudek (Attachment B)

While the City of Santa Cruz has not adopted construction noise level limits for construction activities conducted during daytime hours, the FTA has adopted a guideline for daytime construction noise exposure at residential land

uses. The FTA guideline is a maximum of 80 dBA L_{eq} which is averaged over a typical 8-hour construction day. Assuming construction activity intensity is similar across the 8-hour construction day, the L_{eq} value for the FTA 8-hour averaging period would be equal to the $L_{eq\ 1hr}$ value for any given hour within the 8-hour construction window (hence the labeling of $L_{eq\ 8\text{-}hr\ /\ 1\ hr}$ in the results columns of Table 6). As reported in Table 6, construction noise levels are not predicted to exceed the FTA recommended maximum of 80 dBA $L_{eq\ 8\text{-}hr}$ at any modeled noise-sensitive receiver.

Table 7 provides a comparison of the highest construction related noise levels from all construction phases to measured daytime ambient traffic noise exposure at the closest noise-sensitive land uses.

Table 7. Highest Construction Noise Levels for any Phase Compared to Daytime Ambient Noise Levels at Modeled Noise-Sensitive Receivers

Receiver	Ambient Measure Loc. Ref.	Noise Level $L_{eq\ 1\ hr}$ (dBA)		
		Highest Construction Noise Level	Daytime Ambient Noise Level	Increase
R1	ST1	75	59	19
R2	ST2	60	60	0
R3	ST3	56	56	0
R4	ST3	56	56	0

Source: Dudek (Attachment B)

As reported in Table 7, noise levels during even the construction phase with the greatest intensity would not result in an increase in the ambient noise environment at noise-sensitive receivers represented by R2-R4. However, as also reported in Table 7, noise levels during the construction phase with the greatest intensity could result in a temporary increase of up to 19 dBA L_{eq} at the apartment complex adjacent to the west end of the project limits (R1). This increase would be readily noticeable and could lead to instances of annoyance. However, for residents that may be outside during construction, noise levels of 75 dBA L_{eq} are not considered hazardous or harmful (hearing protection for construction workers is required for noise levels greater than 80 dBA Leq). Also, the construction noise would likely occur only during the day (avoiding sleep disturbance), and would be temporary, lasting only until construction is completed. In addition, indoor areas of the adjacent apartment complex would experience noise levels approximately 25 dBA L_{eq} less than outdoor levels, or no greater than 50 dBA L_{eq}. These indoor construction-related levels would not be anticipated to interfere with conversation of other daytime indoor activities.

While not specifically proposed, nor anticipated, some elements of the project may need to be constructed in the nighttime period (such as to avoid daytime closure of the roadway segment where the re-alignment connects to the existing alignment). Nighttime noise levels in urban environments tend to be 5-7 dBA lower than daytime levels (Caltrans 2020a). Applying this adjustment to the daytime ambient noise levels reported in Table 7, noise levels from construction activities conducted in the nighttime period could result in increases over ambient noise levels of up to 7 dBA at R2, R3 and R4, and up to 26 dBA at R1. Construction noise levels of at least 7 dBA over ambient (or background) levels would be quite evident and could lead to sleep disturbance for existing nearby residences represented by R1, R2, R3 and R4. However, the following ordinances and regulations would govern any incidental nighttime construction work.

SCMC Chapter 9.36 prohibits excessive noise during nighttime hours (10:00 PM through 8:00 AM) (Section 9.36.010, Subsection[a]), but without any quantitative (numerical) limits. Subsection (e) of Chapter 9.36 allows for specific construction activities to occur between the hours of 10:00 PM and 8:00 AM where either the chief building inspector, public works director, planning and community development director or water department director have provided written determination and consent that said task is required to commence or be completed between said hours. Additionally, at a minimum, notice of the dates and times such tasks will be undertaken shall be provided to all residents, tenants and property owners who occupy or own property within 300 feet of the construction site at which such tasks will be performed.

The above mandatory notice would allow residents to prepare for rare occasions when nighttime construction might be required for technical reasons, In addition, Caltrans has standard noise control requirements for any construction activities that must be carried out at night. Nighttime construction noise is regulated by the Department's provisions in Section 14-8.02, "Noise Control" of the 2024 Standard Specifications and Special Provisions (Caltrans 2024). Section 14-8.02 requirements are applicable when construction noise levels could substantially increase nighttime ambient noise levels at existing noise-sensitive receivers, potentially resulting in sleep disruption. Section 14-08.02 requirements are discussed in detail under Section 6.3.1. Through mandatory adherence to the requirements of Section 14-08.02, significant noise impacts from rare nighttime construction activity would be avoided.

Hence, while construction noise may result in annoyances when compared to existing ambient noise levels, since the maximum daytime levels would not be harmful to outdoor receivers, would not interfere with indoor activities, would be temporary in nature, and rare nighttime construction would comply with ordinances and regulations, short-term construction noise impacts would be **less than significant.**

6.2.1.2 Project-Related Traffic Noise Exposure

As discussed in Section 6.1.2, Dudek used a worst-case weekend-days traffic volume of 7,300 ADT (City of Santa Cruz 2025) to model the existing traffic noise associated with the current alignment of West Cliff Drive and for the proposed realigned 600-foot section of West Cliff Drive that is included in the project.

Since the project would not affect the volume or type of vehicles, nor the speed of such vehicles, project-related changes to traffic noise exposure at local noise-sensitive receivers involved entering the existing alignment and proposed alignment of West Cliff Drive as separate TNM runs. Table 8 presents the results of the traffic noise modeling, detailed information is provided in Attachment C.

Table 8. Project-Related Traffic Noise Level Exposures Compared to Existing

Receiver	Existing Alignment dBA CNEL	Proposed Alignment dBA CNEL	Increase (dBA CNEL)	Noticeable Increase?
R1	57.7	57.6	0	No
R2	36.0	36.4	0.4	No
R3	33.0	33.2	0.2	No
R4	33.3	33.6	0.3	No

Source: Dudek (Attachment C)

As indicated in Table 8, the realignment of a 600-foot portion of West Cliff Drive under the proposed project would result in traffic noise level exposure increases at existing noise-sensitive receivers of no greater than 0.4 dBA CNEL, which would not be a detectable change by the human ear. Consequently, project operational traffic noise impacts would be **less than significant.**

6.2.2 Project Impacts – Vibration Generation

Significance Criteria 2: Would the project result in generation of excessive groundborne vibration or groundborne noise levels?

6.2.2.1 Construction Vibration

As discussed in Section 6.1.3 (Vibration Methodology), groundborne vibration generated from construction equipment can be calculated by employing the vibration attenuation distance equation (Caltrans 2020b) and using the vibration generation levels for various equipment (Table 5), along with the distance between construction equipment and existing off-site structures.

The nearest building to the construction site would be an apartment building, with the closest point of the building foundation located approximately 100 feet from the western project limits. This building is considered to be recent age commercial construction for which Caltrans identifies a building damage vibration standard of 0.5 PPV IPS. The closest corner of the second nearest existing building, an apartment complex that extends southward from Pelton Ave, is located approximately 540 feet northwest from the project construction zone. This building is also considered to be recent age commercial construction for which Caltrans identifies a building damage vibration standard of 0.5 PPV IPS. The next closest structures to the project site are single-family residences along the north side of Pelton Ave, no closer than 750 feet from the future construction zone boundary of the project. These single-family residences each have a damage standard of 0.3 PPV IPS.

Using the distance and building categories described immediately above, and employing the vibration attenuation distance equation (Caltrans 2020) vibration from construction activity was calculated at each of the representative existing buildings in the project vicinity. Results are presented below in Table 9.

Table 9. Calculated Construction Vibration Levels at Vicinity Receivers

Receiver Location	Equipment	Distance to Construction (feet)	Calculated Vibration Level, IPS PPV	Building Damage Standard (IPS PPV)	Below Building Damage Standard (IPS PPV)?
R1 -Apartments (northwest of western project limits)	Small Dozer Heavy Dozer Loaded Trucks Vibratory Roller	100	0.0004 0.011 0.010 0.026	0.5	Y Y Y Y
R2- Apartments (north-northwest of western project limits)	Small Dozer Heavy Dozer Loaded Trucks Vibratory Roller	540	0.00003 0.001 0.001 0.002	0.5	Y Y Y Y

Table 9. Calculated Construction Vibration Levels at Vicinity Receivers

Receiver Location	Equipment	Distance to Construction (feet)	Calculated Vibration Level, IPS PPV	Building Damage Standard (IPS PPV)	Below Building Damage Standard (IPS PPV)?
R3 – Residence (north of project limits across Pelton Ave)	Small Dozer Heavy Dozer Loaded Trucks Vibratory Roller	750	0.00002 0.001 0.0005 0.001	0.3	Y Y Y Y
R4 – Residence (north of project limits across Pelton Ave)	Small Dozer Heavy Dozer Loaded Trucks Vibratory Roller	100	0.00002 0.001 0.0005 0.001	0.3	Y Y Y Y

Source: Dudek (Attachment D).

As reported in Table 9, construction of the project would result in vibration levels well below the identified building damage threshold for all existing structures in the project vicinity. Vibration levels at such structures would also remain well below the annoyance threshold of 0.2 IPS PPV. As such, construction vibration impacts of the project would be **less than significant.**

6.2.2.2 Operation Phase Vibration

Vibration impacts associated with public roadways result from the passage of heavy trucks or buses. The ongoing operation of the proposed project would not alter the existing vehicle composition using the roadway or the overall volume of vehicles. Consequently, long-term operation of the project would have **no impact** on vibration levels associated with the existing roadway.

6.2.3 Project Impacts – Airport Noise

Significance Criteria 3: Would the project result in Exposure of People Residing or Working in the Project Area to Excessive Airport Noise Levels?

The Watsonville Municipal Airport is located approximately 13.25 miles southwest of the project site. There are no mapped airport noise contour maps that include the area of project site. Therefore, the project has no potential to expose people working in the project area to excessive airport noise levels, and there would be **no impact**.

6.3 NEPA Impacts Analysis

6.3.1 Construction Noise Levels

Caltrans has not adopted standards addressing daytime construction noise levels. Therefore, the recommended FTA daytime construction noise limit of 80 dBA L_{eq} would be appropriate to use as the NEPA standard for daytime construction noise. As presented in Section 6.2.1.1, construction noise levels resulting from the project would remain well below the FTA 80 dBA L_{eq} daytime limit. Therefore, project impacts would be less than substantial, and no measures for avoidance would be necessary, nor would examination of project construction alternatives.

While not specifically proposed, nor anticipated, some elements of the project may need to be constructed in the nighttime period (such as to avoid daytime closure of the roadway segment where the re-alignment connects to the existing alignment). Nighttime construction noise is regulated by the Department's provisions in Section 14-8.02, "Noise Control" of the 2024 Standard Specifications and Special Provisions (Caltrans 2024). Section 14-8.02 requirements are applicable when construction noise levels could substantially increase nighttime ambient noise levels at existing noise-sensitive receivers, potentially resulting in sleep disruption.

The implementation of Caltrans Standard Specifications would address potential nighttime construction activities as follows.

14-8.02 NOISE CONTROL

Control and monitor noise resulting from work activities.

Do not exceed 86 dBA Lmax at 50 feet from the job site from 9:00 p.m. to 6:00 a.m.

The following Standard Special Provision (SSP)will be edited specifically for this project during the PS&E phase. The content of SSP 14-8.02 is shown below and can be found at the following link:

https://dot.ca.gov/-/media/dot-media/programs/design/documents/2024_stdspecs-a11y.pdf.

SSP-14-8.02

Use with 2024 Standards.

Use for work in a residential or urban area (1) at night or (2) if night or Sunday noise restrictions exist. Use either par. 1 or 2.

Section 14-8.02. Use for noise control and monitoring for work in a residential or urban area (1) at night or (2) if night or Sunday noise restrictions exist. Use either par. 1 or 2.

Replace the 2nd paragraph of section 14-8.02 with:

1. Edit to include (1) local noise ordinances that the project manager has agreed to comply with or (2) work with noise restrictions that differ from those specified in section 14-3.04. List exceptions in the table. Delete " except . . . table:" and the table if exceptions are not needed. Delete par. 2 if using par. 1.

Noise from job site activities must not exceed 86 dBA Lmax at 50 feet from the job site from _____ p.m. to _____ a.m., except the following activities may exceed this noise restriction during the hours and on the days shown in the following table:

Noise Restriction Exceptions [City to complete, if applicable, following final design]

Activity	Hours		Days	
	From	To	From	Through

2. Use if night or Sunday noise restrictions exist. Delete par. 1 if using par. 2.

Do not operate construction equipment or run equipment engines from 7:00 p.m. to 7:00 a.m. or on Sundays at the job site except to:

1. Service traffic-control facilities
2. Service construction equipment

Add to section 14-8.02:

3. Use if a sound meter is required.

Furnish 1 Type 1 sound-level meter and 1 acoustic calibrator for the Department to use until Contract acceptance to monitor noise.

The sound-level meter must:

1. Be calibrated and certified by the manufacturer or an independent acoustical laboratory before delivery to the Department
2. Be capable of taking measurements using the A-weighting network and the slow-response settings
3. Have a microphone fitted with a windscreen
4. Be recalibrated annually by the manufacturer or an independent acoustical laboratory

Provide training in noise monitoring to 1 Department employee designated by the Engineer. The person delivering the training must be trained in noise monitoring.

Adherence to Caltrans SSP-14-8.02 for any necessary nighttime construction activities would ensure that sleep disturbance is minimized, and that the project is consistent with Caltrans adopted nighttime construction noise limits. Further avoidance measures would not be required to address noise from occasional nighttime construction needs.

6.3.2 Project-Related Traffic Noise Exposure

For roadway realignment projects with Caltrans involvement and/or federal funding, traffic noise impacts are evaluated under FHWA regulations (23 CFR 772) as implemented in California by the Caltrans Traffic Noise Analysis Protocol (2020). Caltrans does not set independent numeric exposure limits; instead, it applies the FHWA Noise Abatement Criteria (NAC) to determine when a traffic noise impact occurs and whether abatement must be considered. For residential uses, the NAC is 67 dBA CNEL.

Under Caltrans/FHWA rules, a roadway realignment project results in a traffic noise impact if either of the following is true:

- Approach or exceed the NAC for the applicable land use, or
- The project results in a substantial increase over existing conditions (generally interpreted by Caltrans as a 3 dBA or greater increase, depending on context and receptor history).

As presented in Section 6.2.1.2, project-related traffic noise exposure levels at the nearest existing residence (R1) would be 58 dBA CNEL, well below the NAC for residential land uses. Additionally, as indicated in Table 8, the re-alignment of a 600-foot portion of West Cliff Drive under the proposed project would result in traffic noise level exposure increases at existing noise-sensitive receivers of no greater than 0.4 dBA CNEL, which would not be a detectable change by the human ear. The 0.4 dBA CNEL increase would also fall well below the 3.0 dBA CNEL

increase threshold. Therefore, project traffic noise impacts would be less than substantial, and no measures for avoidance would be necessary, nor would examination of project construction alternatives.

6.3.3 Construction Vibration

As presented in Section 6.1.3, Caltrans uses a human annoyance threshold of 0.2 inches-per-second (IPS) PPV, a residential structure damage threshold of 0.3 IPS PPV, and a commercial structure damage threshold (including apartment buildings) of 0.5 IPS PPV.

As reported in Table 9, construction of the project would result in vibration levels well below the identified building damage threshold for all existing structures in the project vicinity. Vibration levels at such structures would also remain well below the annoyance threshold of 0.2 IPS PPV. As such, construction vibration impacts of the project would be less than substantial, and no measures for avoidance would be necessary, nor would examination of project construction alternatives

7 References Cited

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Legend

R# - Modeled Receiver Location

Figure 1

Modeled Noise Sensitive Receiver Locations

DUDEK

800 West Cliff Drive Re-Alignment, Santa Cruz, California



Legend

ST# - Short-term Measure Location

Figure 2

Ambient Noise Measurement Locations

DUDEK

800 West Cliff Drive Re-Alignment, Santa Cruz, California

Attachment A

Ambient Noise Measurement Data


800 W. Cliff Drive
Ambient Noise Measure Locations
Legend
Short-term measure site
ST1
ST2
ST3
Peiton Ave
Peiton Ave
Peiton Ave
Harvard St
Liberty St
Laguna St
Pinelan Ct
Lighthouse Ave
Eucalyptus
Clark Ave
Columbia St
W Cliff Dr
W Cliff Dr
W Cliff Dr
Google Earth
400 ft
N

Field Noise Measurement Data

Submitted by: smcguire@dudek.com

Submitted time: Dec 11, 2025, 4:08:28 PM

Project Name

800 West Cliff Dr

Project #

17501

Observer(s)

Simon McGuire

Date

Dec 11, 2025

Meteorological Conditions

Upload NOAA Forecast



uploadnoaa-20251211-142446.PNG

Temp (F°)

68

Humidity % (R.H.)

67

Wind

Calm

Wind Speed (MPH)

0

Wind Direction

North

Sky

Clear

Instrument and Calibrator Information

Instrument Name List

(SAC) NL-62

Manufacturer

Rion

Model

NL-62

Serial Number

350815

Calibration Date

7/16/2025

Calibrator Name

(SAC) Rion NC-74

Calibrator Manufacturer

NC-74

Calibrator Model

Rion

Calibrator Serial #

34167529

Pre-Test (dBA SPL)

93

Post-Test (dBA SPL)

94

Windscreen

Yes

Weighting?

A-WTD

Slow/Fast?

Slow

Monitoring

Record #

{6b14f3c5-cad1-42e6-90dc-dfe29ac2409e}

Site ID

ST1

Begin (Time)

14:20

End (Time)

14:50

Leq

59

Lmax

71

Lmin

44

Other Lx?

Other

Other Lx (Specify Metric)

L10;L50;L90

Other Lx (dBA)

645,545

Primary Noise Source

Traffic

Other Noise Sources (Background)

- **Distant Gardener / Landscape Noise**
- **Distant Conversations / Yelling**

Other Noise Sources Additional Description

Sea lions and waves crashing

Source Info and Traffic Counts

Number of Lanes

2

Lane Width (feet)

10

Roadway Width (feet)

100

Roadway Width (m)

31

Distance to Roadway (feet)

10

Distance to Roadway (m)

3

Distance Measured to Centerline or Edge of Pavement?

Edge of Pavement

Estimated Vehicle Speed (MPH)

25

Estimated Vehicle Speed (km/h)

40

Traffic Counts

Select Method for Recording Count Duration

Enter Manually

Counting Both Directions?

Yes

Count Duration (minutes)

30

Number of Vehicles - Autos

234

Number of Vehicles - Motorcyles

6

Speeds Estimated by:

Driving the Pace

Description / Photos

Terrain

Mixed

Site Photos

Photo



sitephoto-20251211-222853.jpg

Comments / Description

Facing S

Photo



sitephoto-20251211-222913.jpg

Comments / Description

Facing E

Photo



sitephoto-20251211-222929.jpg

Comments / Description

Facing N

Photo



sitephoto-20251211-222946.jpg

Comments / Description

Facing W

Is the same instrument and calibrator being used as previously noted?

Yes

Are the meteorological conditions the same as previously noted?

Yes

Record #

{07316a38-ff89-4f6e-9fa9-453d83c8744b}

Site ID

ST2

Begin (Time)

15:00

End (Time)

15:30

Leq

60

Lmax

62

Lmin

59

Other Lx?

Other

Other Lx (Specify Metric)

L10;L50;L90

Other Lx (dBA)

616,060

Primary Noise Source

Other

Other Primary Noise Source

Tree trimming

Other Noise Sources (Background)

- **Distant Conversations / Yelling**
- **Distant Traffic**

Other Noise Sources Additional Description

Tree trimming approx. 200 ft to the east

Source Info and Traffic Counts

Number of Lanes

2

Lane Width (feet)

10

Roadway Width (feet)

100

Roadway Width (m)

31

Distance to Roadway (feet)

10

Distance to Roadway (m)

3

Distance Measured to Centerline or Edge of Pavement?

Edge of Pavement

Estimated Vehicle Speed (MPH)

25

Estimated Vehicle Speed (km/h)

40

Traffic Counts

Select Method for Recording Count Duration

Enter Manually

Counting Both Directions?

Yes

Count Duration (minutes)

30

Number of Vehicles - Autos

24

Number of Vehicles - Medium Trucks

1

Description / Photos

Terrain

Mixed

Site Photos

Photo



sitephoto-20251211-232237.jpg

Comments / Description

Facing N

Photo



sitephoto-20251211-232256.jpg

Comments / Description

Facing W

Photo



sitephoto-20251211-232315.jpg

Comments / Description

Facing S

Photo



sitephoto-20251211-232419.jpg

Comments / Description

Facing E

Is the same instrument and calibrator being used as previously noted?

Yes

Are the meteorological conditions the same as previously noted?

Yes

Record #

{0792eed5-6867-4dca-becf-79d9957cbd44}

Site ID

ST3

Begin (Time)

15:37

End (Time)

16:07

Leq

56

Lmax

68

Lmin

42

Other Lx?

Other

Other Lx (Specify Metric)

L10;L50;L90

Other Lx (dBA)

614,943

Primary Noise Source

Other

Other Primary Noise Source

Tree trimming

Other Noise Sources (Background)

- **Distant Traffic**
- **Distant Conversations / Yelling**

Other Noise Sources Additional Description

Tree trimming approx. 200 ft west

Source Info and Traffic Counts

Number of Lanes

2

Lane Width (feet)

10

Roadway Width (feet)

100

Roadway Width (m)

31

Distance to Roadway (feet)

5

Distance to Roadway (m)

2

Distance Measured to Centerline or Edge of Pavement?

Edge of Pavement

Estimated Vehicle Speed (MPH)

15

Estimated Vehicle Speed (km/h)

24

Traffic Counts

Select Method for Recording Count Duration

Enter Manually

Counting Both Directions?

Yes

Count Duration (minutes)

30

Number of Vehicles - Autos

21

Number of Vehicles - Motorcyles

1

Speeds Estimated by:

Driving the Pace

Description / Photos

Terrain

Mixed

Site Photos

Photo



sitephoto-20251212-000411.jpg

Comments / Description

Facing N

Photo



sitephoto-20251212-000430.jpg

Comments / Description

Facing W

Photo



sitephoto-20251212-000442.jpg

Comments / Description

Facing S

Photo



sitephoto-20251212-000510.jpg

Comments / Description

Facing E

Is the same instrument and calibrator being used as previously noted?

Yes

Are the meteorological conditions the same as previously noted?

Yes

Comments

Tree trimming noise throughout ST2 and part of ST3 contributed significantly to the recorded ambient noise. Impacts to traffic from the tree trimming are also likely.

Attachment B

Construction Noise Modeling Data

Analysis Type	Nearest
Source to barrier distance (ft)	20
Receiver to barrier distance (ft)	20
Barrier Height (ft)	0
Receiver height (ft)	5

magnitude of threshold (dBA) = 75

allowable hours over which Leq is to be averaged = 8

Construction Activity	Equipment	Total Equipment Qty	Reference Level (Leq or Lmax) @ 50 ft. from FHWA RCNM 2 Table	Air Quality/Client Equipment Description, Data Source and/or Notes	Source to NSR Distance (ft.)	Distance-Adjusted Level	Allowable Operation Time (hours)	Allowable Operation Time (minutes)	Predicted 8-hour Leq
Pavement Removal & Demolition	Pavement Scarifier (Milling Machine)	1	84.0	Pavement Milling Machine	120	73.8	8	480	74
	Excavator	1	75.9	Excavator	120	65.6	8	480	66
	Front End Loader (Cyclical)	1	72.4	Tractors/Loaders/Backhoes	120	62.1	8	480	62
	Dump Truck (Passby)	1	73.1	Dump Truck	120	62.6	8	480	63
							Total for Pavement Removal & Demolition Phase:		**74.9**
Site Preparation - New Alignment	Dozer	1	80.0	Rubber Tired Dozers	120	69.5	8	480	70
	Excavator	1	75.9	Excavator	120	65.6	8	480	66
	Front End Loader (Cyclical)	1	72.4	Tractors/Loaders/Backhoes	120	62.1	8	480	62
	Dump Truck (Passby)	1	73.1	Dump Truck	120	62.6	8	480	63
							Total for Site Preparation - New Alignment Phase:		**72.1**
Grading -New Alignment	Grader (passby)	1	78.5	Grader	120	68.2	8	480	68
	Compactor (Roller)	1	82.4	Vibratory Roller	120	71.8	8	480	72
	Water Spray Truck	1	72.0	Water Truck	120	61.5	8	480	62
							Total for Grading -New Alignment Phase:		**73.6**
Aggregate Base - New Alignment	Grader (passby)	1	78.5	Grader	120	68.2	8	480	68
	Compactor (Roller)	1	82.4	Vibratory Roller	120	71.8	8	480	72
	Dump Truck (Passby)	1	73.1	Dump Truck	120	62.6	8	480	63
							Total for Aggregate Base - New Alignment Phase:		**73.7**
Paving	Paving - Asphalt (Paver + Dump Truck)	1	81.8	Paving Equipment	120	71.3	8	480	71
	Compactor (Roller)	1	82.4	Vibratory Roller	120	71.8	8	480	72
	Dump Truck (Passby)	1	73.1	Dump Truck	120	62.6	8	480	63
							Total for Paving Phase:		**74.8**
Tree Removal	Power Tools - Chainsaw	1	79.4	Chainsaw	80	72.6	8	480	73
	Chipper, Wood	1	72.2	Wood Chipper	80	65.7	8	480	66
							Total for Phase:		**73.4**

Analysis Type	Nearest
Source to barrier distance (ft)	20
Receiver to barrier distance (ft)	20
Barrier Height (ft)	0
Receiver height (ft)	5

magnitude of threshold (dBA) = 75

allowable hours over which Leq is to be averaged = 8

Construction Activity	Equipment	Total Equipment Qty	Reference Level (Leq or Lmax) @ 50 ft. from FHWA RCNM 2 Table	Air Quality/Client Equipment Description, Data Source and/or Notes	Source to NSR Distance (ft.)	Distance-Adjusted Level	Allowable Operation Time (hours)	Allowable Operation Time (minutes)	Predicted 8-hour Leq
Pavement Removal & Demolition	Pavement Scarifier (Milling Machine)	1	84.0	Pavement Milling Machine	540	58.3	8	480	58
	Excavator	1	75.9	Excavator	540	50.2	8	480	50
	Front End Loader (Cyclical)	1	72.4	Tractors/Loaders/Backhoes	540	46.7	8	480	47
	Dump Truck (Passby)	1	73.1	Dump Truck	540	47.4	8	480	47
								Total for Pavement Removal & Demolition Phase:	**59.4**
Site Preparation - New Alignment	Dozer	1	80.0	Rubber Tired Dozers	540	54.2	8	480	54
	Excavator	1	75.9	Excavator	540	50.2	8	480	50
	Front End Loader (Cyclical)	1	72.4	Tractors/Loaders/Backhoes	540	46.7	8	480	47
	Dump Truck (Passby)	1	73.1	Dump Truck	540	47.4	8	480	47
								Total for Site Preparation - New Alignment Phase:	**56.7**
Grading -New Alignment	Grader (passby)	1	78.5	Grader	540	52.8	8	480	53
	Compactor (Roller)	1	82.4	Vibratory Roller	540	56.6	8	480	57
	Water Spray Truck	1	72.0	Water Truck	540	46.3	8	480	46
								Total for Grading -New Alignment Phase:	**58.4**
Aggregate Base - New Alignment	Grader (passby)	1	78.5	Grader	540	52.8	8	480	53
	Compactor (Roller)	1	82.4	Vibratory Roller	540	56.6	8	480	57
	Dump Truck (Passby)	1	73.1	Dump Truck	540	47.4	8	480	47
								Total for Aggregate Base - New Alignment Phase:	**58.5**
Paving	Paving - Asphalt (Paver + Dump Truck)	1	81.8	Paving Equipment	540	56.1	8	480	56
	Compactor (Roller)	1	82.4	Vibratory Roller	540	56.6	8	480	57
	Dump Truck (Passby)	1	73.1	Dump Truck	540	47.4	8	480	47
								Total for Paving Phase:	**59.6**
Tree Removal	Power Tools - Chainsaw	1	79.4	Chainsaw	500	54.2	8	480	54
	Chipper, Wood	1	72.2	Wood Chipper	500	47.1	8	480	47
								Total for Phase:	**55.0**

Analysis Type	Nearest
Source to barrier distance (ft)	20
Receiver to barrier distance (ft)	20
Barrier Height (ft)	0
Receiver height (ft)	5

magnitude of threshold (dBA) = 75

allowable hours over which Leq is to be averaged = 8

Construction Activity	Equipment	Total Equipment Qty	Reference Level (Leq or Lmax) @ 50 ft. from FHWA RCNM 2 Table	Air Quality/Client Equipment Description, Data Source and/or Notes	Source to NSR Distance (ft.)	Distance-Adjusted Level	Allowable Operation Time (hours)	Allowable Operation Time (minutes)	Predicted 8-hour Leq
Pavement Removal & Demolition	Pavement Scarifier (Milling Machine)	1	84.0	Pavement Milling Machine	750	55.1	8	480	55
	Excavator	1	75.9	Excavator	750	47.0	8	480	47
	Front End Loader (Cyclical)	1	72.4	Tractors/Loaders/Backhoes	750	43.5	8	480	43
	Dump Truck (Passby)	1	73.1	Dump Truck	750	44.2	8	480	44
								Total for Pavement Removal & Demolition Phase:	**56.3**
Site Preparation - New Alignment	Dozer	1	80.0	Rubber Tired Dozers	750	51.1	8	480	51
	Excavator	1	75.9	Excavator	750	47.0	8	480	47
	Front End Loader (Cyclical)	1	72.4	Tractors/Loaders/Backhoes	750	43.5	8	480	43
	Dump Truck (Passby)	1	73.1	Dump Truck	750	44.2	8	480	44
								Total for Site Preparation - New Alignment Phase:	**53.6**
Grading -New Alignment	Grader (passby)	1	78.5	Grader	750	49.6	8	480	50
	Compactor (Roller)	1	82.4	Vibratory Roller	750	53.5	8	480	53
	Water Spray Truck	1	72.0	Water Truck	750	43.1	8	480	43
								Total for Grading -New Alignment Phase:	**55.2**
Aggregate Base - New Alignment	Grader (passby)	1	78.5	Grader	750	49.6	8	480	50
	Compactor (Roller)	1	82.4	Vibratory Roller	750	53.5	8	480	53
	Dump Truck (Passby)	1	73.1	Dump Truck	750	44.2	8	480	44
								Total for Aggregate Base - New Alignment Phase:	**55.3**
Paving	Paving - Asphalt (Paver + Dump Truck)	1	81.8	Paving Equipment	750	52.9	8	480	53
	Compactor (Roller)	1	82.4	Vibratory Roller	750	53.5	8	480	53
	Dump Truck (Passby)	1	73.1	Dump Truck	750	44.2	8	480	44
								Total for Paving Phase:	**56.5**
Tree Removal	Power Tools - Chainsaw	1	79.4	Chainsaw	725	50.7	8	480	51
	Chipper, Wood	1	72.2	Wood Chipper	725	43.6	8	480	44
								Total for Phase:	**51.5**

Analysis Type	Nearest
Source to barrier distance (ft)	20
Receiver to barrier distance (ft)	20
Barrier Height (ft)	0
Receiver height (ft)	5

magnitude of threshold (dBA) = 75

allowable hours over which Leq is to be averaged = 8

Construction Activity	Equipment	Total Equipment Qty	Reference Level (Leq or Lmax) @ 50 ft. from FHWA RCNM 2 Table	Air Quality/Client Equipment Description, Data Source and/or Notes	Source to NSR Distance (ft.)	Distance-Adjusted Level	Allowable Operation Time (hours)	Allowable Operation Time (minutes)	Predicted 8-hour Leq
Pavement Removal & Demolition	Pavement Scarifier (Milling Machine)	1	84.0	Pavement Milling Machine	760	55.0	8	480	55
	Excavator	1	75.9	Excavator	760	46.9	8	480	47
	Front End Loader (Cyclical)	1	72.4	Tractors/Loaders/Backhoes	760	43.4	8	480	43
	Dump Truck (Passby)	1	73.1	Dump Truck	760	44.1	8	480	44
								Total for Pavement Removal & Demolition Phase:	**56.1**
Site Preparation - New Alignment	Dozer	1	80.0	Rubber Tired Dozers	760	50.9	8	480	51
	Excavator	1	75.9	Excavator	760	46.9	8	480	47
	Front End Loader (Cyclical)	1	72.4	Tractors/Loaders/Backhoes	760	43.4	8	480	43
	Dump Truck (Passby)	1	73.1	Dump Truck	760	44.1	8	480	44
								Total for Site Preparation - New Alignment Phase:	**53.4**
Grading -New Alignment	Grader (passby)	1	78.5	Grader	760	49.5	8	480	50
	Compactor (Roller)	1	82.4	Vibratory Roller	760	53.3	8	480	53
	Water Spray Truck	1	72.0	Water Truck	760	43.0	8	480	43
								Total for Grading -New Alignment Phase:	**55.1**
Aggregate Base - New Alignment	Grader (passby)	1	78.5	Grader	760	49.5	8	480	50
	Compactor (Roller)	1	82.4	Vibratory Roller	760	53.3	8	480	53
	Dump Truck (Passby)	1	73.1	Dump Truck	760	44.1	8	480	44
								Total for Aggregate Base - New Alignment Phase:	**55.2**
Paving	Paving - Asphalt (Paver + Dump Truck)	1	81.8	Paving Equipment	760	52.8	8	480	53
	Compactor (Roller)	1	82.4	Vibratory Roller	760	53.3	8	480	53
	Dump Truck (Passby)	1	73.1	Dump Truck	760	44.1	8	480	44
								Total for Paving Phase:	**56.3**
Tree Removal	Power Tools - Chainsaw	1	79.4	Chainsaw	735	50.6	8	480	51
	Chipper, Wood	1	72.2	Wood Chipper	735	43.4	8	480	43
								Total for Phase:	**51.4**

Attachment C

Traffic Noise Modeling Files

Dudek
JVL

4 March 2026
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: PN 17501
RUN: Existing
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
R1	1	1	0.0	57.7	66	57.7	10	----	57.7	0.0	8	-8.0
R2	2	1	0.0	36.0	66	36.0	10	----	36.0	0.0	8	-8.0
R3	3	1	0.0	33.0	66	33.0	10	----	33.0	0.0	8	-8.0
R4	4	1	0.0	33.3	66	33.3	10	----	33.3	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction Min	Avg	Max
		dB	dB	dB
All Selected	4	0.0	0.0	0.0
All Impacted	0	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

Dudek 4 March 2026
JVL TNM 2.5

INPUT: ROADWAYS
PROJECT/CONTRACT: PN 17501
RUN: Existing

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with the approval of FHWA

Roadway Name	Width	Points Name	No.	Coordinates (pavement) X	Y	Z	Flow Control Control Device	Speed Constraint	Percent Vehicles Affected	Segment Pvmt Type	On Struct?
	ft			ft	ft	ft		mph	%		
Eastbound West Cliff Drive	12.0	West End	1	150.0	339.0	0.00				Average	
		point2	2	200.0	327.0	0.00				Average	
		point3	3	250.0	316.0	0.00				Average	
		point4	4	300.0	303.0	0.00				Average	
		point5	5	350.0	295.0	0.00				Average	
		point6	6	400.0	292.0	0.00				Average	
		point7	7	450.0	290.0	0.00				Average	
		point8	8	500.0	295.0	0.00				Average	
		point9	9	550.0	303.0	0.00				Average	
		point10	10	600.0	315.0	0.00				Average	
		point11	11	650.0	327.0	0.00				Average	
		point12	12	700.0	338.0	0.00				Average	
		point13	13	750.0	345.0	0.00				Average	
		point14	14	800.0	349.0	0.00				Average	
		East End	15	850.0	349.0	0.00					
Westbound West Cliff Drive	12.0	East End	16	850.0	361.0	0.00				Average	
		point17	17	800.0	361.0	0.00				Average	
		point18	18	750.0	357.0	0.00				Average	
		point19	19	700.0	350.0	0.00				Average	
		point20	20	650.0	339.0	0.00				Average	
		point21	21	600.0	327.0	0.00				Average	
		point22	22	550.0	315.0	0.00				Average	
		point23	23	500.0	307.0	0.00				Average	
		point24	24	450.0	302.0	0.00				Average	
		point25	25	400.0	304.0	0.00				Average	

		point26	26	350.0	307.0	0.00				Average	
		point27	27	300.0	315.0	0.00				Average	
		point28	28	250.0	328.0	0.00				Average	
		point29	29	200.0	339.0	0.00				Average	
		West End	30	150.0	351.0	0.00					

Dudek 4 March 2026
JVL TNM 2.5

INPUT: TRAFFIC FOR LAeq1h Volumes
PROJECT/CONTRACT: PN 17501
RUN: Existing

Roadway	Points		Segment									
Name	Name	No.	Autos		MTrucks		HTrucks		Buses		Motorcycles	
			V	S	V	S	V	S	V	S	V	S
			veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph
Eastbound West Cliff Drive	West End	1	359	35	3	35	0	0	0	0	3	35
	point2	2	359	35	3	35	0	0	0	0	3	35
	point3	3	359	35	3	35	0	0	0	0	3	35
	point4	4	359	35	3	35	0	0	0	0	3	35
	point5	5	359	35	3	35	0	0	0	0	3	35
	point6	6	359	35	3	35	0	0	0	0	3	35
	point7	7	359	35	3	35	0	0	0	0	3	35
	point8	8	359	35	3	35	0	0	0	0	3	35
	point9	9	359	35	3	35	0	0	0	0	3	35
	point10	10	359	35	3	35	0	0	0	0	3	35
	point11	11	359	35	3	35	0	0	0	0	3	35
	point12	12	359	35	3	35	0	0	0	0	3	35
	point13	13	359	35	3	35	0	0	0	0	3	35
	point14	14	359	35	3	35	0	0	0	0	3	35
	East End	15										
Westbound West Cliff Drive	East End	16	359	35	3	35	0	0	0	0	3	35
	point17	17	359	35	3	35	0	0	0	0	3	35
	point18	18	359	35	3	35	0	0	0	0	3	35
	point19	19	359	35	3	35	0	0	0	0	3	35
	point20	20	359	35	3	35	0	0	0	0	3	35
	point21	21	359	35	3	35	0	0	0	0	3	35
	point22	22	359	35	3	35	0	0	0	0	3	35
	point23	23	359	35	3	35	0	0	0	0	3	35

	point24	24	359	35	3	35	0	0	0	0	3	35
	point25	25	359	35	3	35	0	0	0	0	3	35
	point26	26	359	35	3	35	0	0	0	0	3	35
	point27	27	359	35	3	35	0	0	0	0	3	35
	point28	28	359	35	3	35	0	0	0	0	3	35
	point29	29	359	35	3	35	0	0	0	0	3	35
	West End	30										

Dudek						**4 March 2026**					
JVL						**TNM 2.5**					
INPUT: RECEIVERS											
PROJECT/CONTRACT:	**PN 17501**										
RUN:	**Existing**										
Receiver											
Name	**No.**	**#DUs**	**Coordinates (ground)**			**Height**	**Input Sound Levels and Criteria**				**Active**
			X	**Y**	**Z**	**above**	**Existing**	**Impact Criteria**		**NR**	**in**
						Ground	**LAeq1h**	**LAeq1h**	**Sub'l**	**Goal**	**Calc.**
			ft	ft	ft	ft	dBA	dBA	dB	dB	
R1	1	1	160.0	400.0	0.00	4.92	0.00	66	10.0	8.0	Y
R2	2	1	145.0	875.0	0.00	4.92	0.00	66	10.0	8.0	Y
R3	3	1	180.0	1,090.0	0.00	4.92	0.00	66	10.0	8.0	Y
R4	4	1	384.0	1,106.0	0.00	4.92	0.00	66	10.0	8.0	Y

Dudek
JVL

4 March 2026
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: PN 17501
RUN: Proposed Alignment
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
R1	1	1	0.0	57.6	66	57.6	10	----	57.6	0.0	8	-8.0
R2	2	1	0.0	36.4	66	36.4	10	----	36.4	0.0	8	-8.0
R3	3	1	0.0	33.2	66	33.2	10	----	33.2	0.0	8	-8.0
R4	4	1	0.0	33.6	66	33.6	10	----	33.6	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction Min	Avg	Max
		dB	dB	dB
All Selected	4	0.0	0.0	0.0
All Impacted	0	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

Dudek 4 March 2026
JVL TNM 2.5

INPUT: ROADWAYS
PROJECT/CONTRACT: PN 17501
RUN: Proposed Alignment

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with the approval of FHWA

Roadway Name	Width	Points Name	No.	Coordinates (pavement) X	Y	Z	Flow Control Control Device	Speed Constraint	Percent Vehicles Affected	Segment Pvmt Type	On Struct?
	ft			ft	ft	ft		mph	%		
Eastbound West Cliff Drive	12.0	West End	1	150.0	339.0	0.00				Average	
		point2	2	200.0	327.0	0.00				Average	
		point3	3	250.0	316.0	0.00				Average	
		point4	4	300.0	308.0	0.00				Average	
		point5	5	350.0	312.0	0.00				Average	
		point6	6	400.0	323.0	0.00				Average	
		point7	7	450.0	335.0	0.00				Average	
		point8	8	500.0	346.0	0.00				Average	
		point9	9	550.0	349.0	0.00				Average	
		point10	10	600.0	349.0	0.00				Average	
		point11	11	650.0	349.0	0.00				Average	
		point12	12	700.0	349.0	0.00				Average	
		point13	13	750.0	349.0	0.00				Average	
		point14	14	800.0	349.0	0.00				Average	
		East End	15	850.0	349.0	0.00					
Westbound West Cliff Drive	12.0	East End	16	850.0	361.0	0.00				Average	
		point17	17	800.0	361.0	0.00				Average	
		point18	18	750.0	361.0	0.00				Average	
		point19	19	700.0	361.0	0.00				Average	
		point20	20	650.0	361.0	0.00				Average	
		point21	21	600.0	361.0	0.00				Average	
		point22	22	550.0	361.0	0.00				Average	
		point23	23	500.0	358.0	0.00				Average	
		point24	24	450.0	347.0	0.00				Average	
		point25	25	400.0	335.0	0.00				Average	

		point26	26	350.0	324.0	0.00				Average	
		point27	27	300.0	320.0	0.00				Average	
		point28	28	250.0	328.0	0.00				Average	
		point29	29	200.0	339.0	0.00				Average	
		West End	30	150.0	351.0	0.00					

Dudek 4 March 2026
JVL TNM 2.5

INPUT: TRAFFIC FOR LAeq1h Volumes
PROJECT/CONTRACT: PN 17501
RUN: Proposed Alignment

Roadway	Points		Segment									
Name	Name	No.	Autos		MTrucks		HTrucks		Buses		Motorcycles	
			V	S	V	S	V	S	V	S	V	S
			veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph
Eastbound West Cliff Drive	West End	1	359	35	3	35	0	0	0	0	3	35
	point2	2	359	35	3	35	0	0	0	0	3	35
	point3	3	359	35	3	35	0	0	0	0	3	35
	point4	4	359	35	3	35	0	0	0	0	3	35
	point5	5	359	35	3	35	0	0	0	0	3	35
	point6	6	359	35	3	35	0	0	0	0	3	35
	point7	7	359	35	3	35	0	0	0	0	3	35
	point8	8	359	35	3	35	0	0	0	0	3	35
	point9	9	359	35	3	35	0	0	0	0	3	35
	point10	10	359	35	3	35	0	0	0	0	3	35
	point11	11	359	35	3	35	0	0	0	0	3	35
	point12	12	359	35	3	35	0	0	0	0	3	35
	point13	13	359	35	3	35	0	0	0	0	3	35
	point14	14	359	35	3	35	0	0	0	0	3	35
	East End	15										
Westbound West Cliff Drive	East End	16	359	35	3	35	0	0	0	0	3	35
	point17	17	359	35	3	35	0	0	0	0	3	35
	point18	18	359	35	3	35	0	0	0	0	3	35
	point19	19	359	35	3	35	0	0	0	0	3	35
	point20	20	359	35	3	35	0	0	0	0	3	35
	point21	21	359	35	3	35	0	0	0	0	3	35
	point22	22	359	35	3	35	0	0	0	0	3	35
	point23	23	359	35	3	35	0	0	0	0	3	35

	point24	24	359	35	3	35	0	0	0	0	3	35
	point25	25	359	35	3	35	0	0	0	0	3	35
	point26	26	359	35	3	35	0	0	0	0	3	35
	point27	27	359	35	3	35	0	0	0	0	3	35
	point28	28	359	35	3	35	0	0	0	0	3	35
	point29	29	359	35	3	30	0	0	0	0	3	35
	West End	30										

Dudek						**4 March 2026**					
JVL						**TNM 2.5**					
INPUT: RECEIVERS											
PROJECT/CONTRACT:	**PN 17501**										
RUN:	**Proposed Alignment**										
Receiver											
Name	**No.**	**#DUs**	**Coordinates (ground)**			**Height**	**Input Sound Levels and Criteria**				**Active**
			X	**Y**	**Z**	**above**	**Existing**	**Impact Criteria**		**NR**	**in**
						Ground	**LAeq1h**	**LAeq1h**	**Sub'l**	**Goal**	**Calc.**
			ft	ft	ft	ft	dBA	dBA	dB	dB	
R1	1	1	160.0	400.0	0.00	4.92	0.00	66	10.0	8.0	Y
R2	2	1	145.0	875.0	0.00	4.92	0.00	66	10.0	8.0	Y
R3	3	1	180.0	1,090.0	0.00	4.92	0.00	66	10.0	8.0	Y
R4	4	1	384.0	1,106.0	0.00	4.92	0.00	66	10.0	8.0	Y

Attachment D

Construction Vibration Modeling Files

Vibration in PPV

$PPV(D) = PPV_{25} \times (25/D)^{1.5}$

Where PPV(D) is vibration level at distance D
And PPV_{25} is reported vibration level at 25 feet from selected equipment

	PPV_{25}	Distance (D)	PVV @ D
Small Dozer	0.003	100	0.0004
Heavy Dozer	0.089	100	0.011
Loaded Truck	0.076	100	0.010
Vibratory Roller	0.210	100	0.026

BOLD values exceed significance threshold

Distance to Closest Off-site Structure (feet) 100
Direction / Building: NW/The Carmel Apts
Significance Threshold for Structure: (PPV ips) 0.5

Vibration in PPV

$PPV(D) = PPV_{25} \times (25/D)^{1.5}$

Where PPV(D) is vibration level at distance D
And PPV_{25} is reported vibration level at 25 feet from selected equipment

	PPV_{25}	Distance (D)	PVV @ D
Small Dozer	0.003	540	0.00003
Heavy Dozer	0.089	540	0.001
Loaded Truck	0.076	540	0.001
Vibratory Roller	0.210	540	0.002

BOLD values exceed significance threshold

Distance to Second Closest Off-site Structure (feet) 540
Direction / Building: NNW / Ocenside Apartments
Significance Threshold for Structure: (PPV ips) 0.5

Vibration in PPV

$PPV(D) = PPV_{25} \times (25/D)^{1.5}$

Where PPV(D) is vibration level at distance D
And PPV_{25} is reported vibration level at 25 feet from selected equipment

	PPV_{25}	Distance (D)	PVV @ D
Small Dozer	0.003	750	0.00002
Heavy Dozer	0.089	750	0.001
Loaded Truck	0.076	750	0.0005
Vibratory Roller	0.210	750	0.001

BOLD values exceed significance threshold

Distance to Third Closest Off-site Structure (feet) 750
Direction / Building: N / Pelton Avenue Residences
Significance Threshold for Structure: (PPV ips) 0.3

Vibration in PPV

$PPV(D) = PPV_{25} \times (25/D)^{1.5}$

Where PPV(D) is vibration level at distance D
And PPV_{25} is reported vibration level at 25 feet from selected equipment

	PPV_{25}	Distance (D)	PVV @ D
Small Dozer	0.003	750	0.00002
Heavy Dozer	0.089	750	0.001
Loaded Truck	0.076	750	0.0005
Vibratory Roller	0.210	750	0.001

BOLD values exceed significance threshold

Distance to Third Closest Off-site Structure (feet) 760
Direction / Building: N / Pelton Avenue Residences
Significance Threshold for Structure: (PPV ips) 0.3