DRAFT

SUBSEQUENT ENVIRONMENTAL IMPACT REPORT

SANTA BARBARA COUNTY FLOOD CONTROL DISTRICT

UPDATED CARPINTERIA SALT MARSH ENHANCEMENT PLAN

SCH NO. 2003021016

Lead Agency:

Santa Barbara County Flood Control District
130 E. Victoria Street, Suite 200
Santa Barbara, California 93101
Mr. Seth Shank 805/568-3443

November 2019

padre associates, inc.
ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

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Prepared for:
Santa Barbara County Flood Control District
130 E. Victoria Street, Suite 200
Santa Barbara, California 93101

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November 2019

Project No. 1802-3401

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LIST OF ACRONYMS, SYMBOLS AND ABBREVIATIONS

AB	Assembly Bill
ADT	Average Daily Traffic (volume)
BEACON	Beach Erosion Authority for Clean Oceans and Nourishment
bgs	Below Ground Surface
BMP	Best Management Practice
BP	Before Present
CAA	Clean Air Act
CCAA	California Clean Air Act
CAAQS	California Ambient Air Quality Standards
CARB	California Environmental Protection Agency Air Resources Board
CCC	California Coastal Commission
CCR	California Code of Regulations
CCRWQCB	Central Coast Regional Water Quality Control Board
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFC	Chlorinated Fluorocarbon
cfs	Cubic Feet per Second
CH_4	Methane
CNDDB	California Natural Diversity Data Base
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CO	Carbon monoxide
CO_2	Carbon dioxide
CO_2e	Carbon dioxide, equivalent (greenhouse gases)
Corps	U.S. Army Corps of Engineers
CUPA	Certified Unified Program Agency
CVWD	Carpinteria Valley Water District
CWA	Clean Water Act

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LIST OF ACRONYMS, SYMBOLS AND ABBREVIATIONS

dBA	Decibel: A - weighted
DTSC	California Department of Toxic Substances Control
ECAP	Energy and Climate Action Plan
EIR	Environmental Impact Report
ESA	Endangered Species Act
ESHA	Environmentally Sensitive Habitat Area
FHWA	Federal Highway Administration
GHG	Greenhouse Gases
GWP	Global warming potential
HAP	Hazardous Air Pollutants
HDPE	High Density Polyethylene
HFC	Hydrofluorocarbon
Hz	Hertz
IPCC	Intergovernmental Panel on Climate Change
Leq	Equivalent sound level
MPN	Most Probable Number (of bacterial colonies)
mPA	Micro-Pascal
msl	Mean Sea Level
$MTCO_2E$	Metric Tons Carbon Dioxide Equivalent (greenhouse gases)
N_2O	Nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NOAA	National Oceanic and Atmospheric Administration
NOP	Notice of Preparation
NO_x	Oxides of nitrogen
NPDES	National Pollutant Discharge Elimination System
OPR	Governor’s Office of Planning and Research
O_3	Ozone
OHWM	Ordinary High Water Mark

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LIST OF ACRONYMS, SYMBOLS AND ABBREVIATIONS

PAH	Polynuclear Aromatic Hydrocarbons
PERP	Portable Equipment Registration Program
$PM_{2.5}$	Particulate Matter with an aerodynamic diameter of 2.5 microns or less
PM_{10}	Particulate Matter with an aerodynamic diameter of 10 microns or less
PPV	Peak Particle Velocity
PSD	Prevention of Significant Deterioration
ROC	Reactive Organic Compounds
SAP	Sampling and Analysis Plan
SB	Senate Bill
SBCAPCD	Santa Barbara County Air Pollution Control District
SCCAB	South Central Coast Air Basin
SF6	Sulfur hexafluoride
SLAMS	State and Local Air Monitoring Stations
SO_2	Sulfur dioxide
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TSS	Total Suspended Solids
UCSB	University of California, Santa Barbara
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey

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APPENDICES

1.0 INTRODUCTION

1.1 DOCUMENT PURPOSE AND LEGAL AUTHORITY

The California Environmental Quality Act (CEQA) requires that local, regional, and State agencies and special purpose districts prepare an Environmental Impact Report (EIR) for any discretionary action that may have the potential to significantly affect the quality of the environment. As the lead agency, the Santa Barbara County Flood Control District (District) has prepared this Subsequent EIR for the proposed update to the approved Carpinteria Salt Marsh Enhancement Plan (Enhancement Plan) to comply with the provisions of CEQA.

In accordance with Section 15121 of the State CEQA Guidelines, the purpose of this Subsequent EIR is to serve as an informational document that:

> *"...will inform public agency decision-makers and the public generally of the significant environmental effects of a project, identify possible ways to minimize the significant effects, and describe reasonable alternatives to the project..."*

1.2 PREVIOUS ENVIRONMENTAL DOCUMENTATION

The Santa Barbara County Board of Supervisors certified the Final EIR prepared for the Carpinteria Salt Marsh Enhancement Plan (2003 Final EIR) on July 15, 2003. Implementation of the Plan has been ongoing with many components completed (see Section 3.2).

The State CEQA Guidelines provide guidance on the appropriate document for revisions to a previously certified EIR. Section 15162 requires that no subsequent EIR shall be prepared for a project unless the lead agency determines, on the basis of substantial evidence in the light of the whole record, one or more of the following:

(1) Substantial changes are proposed in the project which will require major revisions of the previous EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects;

(2) Substantial changes occur with respect to the circumstances under which the project is undertaken which will require major revisions of the previous EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects; or

(3) New information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the previous EIR was certified as complete, shows any of the following:

    (A) The project will have one or more significant effects not discussed in the previous EIR;

    (B) Significant effects previously examined will be substantially more severe than shown in the previous EIR;

(C) Mitigation measures or alternatives previously found not to be feasible would in fact be feasible, and would substantially reduce one or more significant effects of the project, but the project proponents decline to adopt the mitigation measure or alternative; or

(D) Mitigation measures or alternatives which are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the project proponents decline to adopt the mitigation measure or alternative.

The District has proposed an update to the Enhancement Plan, including hydraulic dredging of lower Franklin Creek and the Main Channel with discharge of the sediment slurry in the surf zone (beach nourishment). Hydraulic dredging of upper Santa Monica Creek and upper Franklin Creek within the Marsh and beach nourishment was included as a project component in the 2003 Final EIR. However, available sediment grain size data (from 1994) indicated the sediment contained a high proportion of fines (silt and clay particles) and the regulatory approach at that time considered fines in excess of 25 percent unsuitable for beach nourishment. Although the 2003 Final EIR assessed the potential impacts of hydraulic dredging and beach nourishment, the assumed sediment fines content was lower than could be encountered during proposed hydraulic dredging. The proposed update to the Enhancement Plan also includes routine maintenance within the South Marsh to reduce the potential for flooding along Avenue Del Mar, which is a new component. These proposed changes to the Enhancement Plan may result in new significant impacts or a substantial increase in the severity of previously identified significant effects. Therefore, the District has determined that a Subsequent EIR is the appropriate CEQA document to address the environmental impacts of the proposed project.

1.3 ENVIRONMENTAL BASELINE

Under CEQA, to accurately assess the potential environmental impacts of a proposed project, an environmental baseline must be selected to which environmental impacts of a proposed project can be compared. Selection of an environmental baseline is critical for proposed changes to ongoing activities such as the implementation of the Enhancement Plan. Generally, when a lead agency is preparing an EIR, the environmental baseline used in the CEQA analysis constitutes the existing physical environmental conditions at the time of the issuance of the Notice of Preparation (NOP) (State CEQA Guidelines Section 15125(a)(1)). The District has determined that the environmental baseline to be used in this Subsequent EIR is the physical conditions present at the Marsh when the NOP was distributed (January 14, 2019).

The existing Enhancement Plan and Final EIR included a project component which would allow excavated sediment to be deposited in the surf zone, provided that sediment is tested and is chemically and physically suitable for surf zone disposal, as discussed in Section 3.3.2. While the existing Final EIR addressed the impacts of surf zone disposal as a potential option, sediment testing from Franklin and Santa Monica Creeks has indicated that grain size has been too fine to meet the standards for “beach quality material”. Therefore, surf-zone sediment disposal has not been performed under the existing routine maintenance program, such that the environmental baseline does not include surf zone disposal.

1.4 LEAD AGENCY AND PROJECT PROPONENT

Santa Barbara County Flood Control District
130 E. Victoria Street, Suite 200
Santa Barbara, California 93101

Contact: Seth Shank (805/568-3443)

1.5 PROJECT PURPOSE

The purpose of the proposed project is to maintain channel capacity by removing sediment on an as-needed basis including lower Franklin Creek and the Main Channel which would reduce the potential for flooding of adjacent properties. In addition, explicitly including hydraulic dredging and beach nourishment in the Updated Enhancement Plan would provide flexibility in disposal of removed sediment and provide sediment to the City of Carpinteria's beach east of the Marsh.

1.6 PROJECT OBJECTIVES

Section 15124(b) of the State CEQA Guidelines states that the project description shall contain "a statement of the objectives sought by the proposed project" and that "the statement of objectives should include the underlying purpose of the project." The objectives of the project proponent facilitate development and evaluation of alternatives, and preparation of findings. Similar to those stated in the 2003 Final EIR, the current flood control objectives of the District are as follows:

- Maintain the channel capacity of Franklin Creek, Santa Monica Creek and the Main Channel in the Marsh to provide flood conveyance of 100-year event flood flows, thereby decreasing the potential for inundation of adjacent land uses.
- Provide sediment management to maintain flood conveyance through the Marsh.
- Maintain the Avenue Del Mar drainage system to avoid inundation of adjacent residences.

The restoration and enhancement objectives of the Land Trust for Santa Barbara County for Basin 1 and the South Marsh as stated in the 2003 Final EIR prepared for the existing Enhancement Plan remain unchanged. Basin 1 and South Marsh enhancement has been completed by the Land Trust as planned. The proposed project includes routine maintenance of the tidal channels in the South Marsh, which would further one of the Land Trust's project objectives to restore/enhance tidal circulation.

The flood control and restoration goals of the University of California as stated in the Management Plan for the Carpinteria Salt Marsh Reserve remain unchanged:

- Protect and maintain the estuarine ecosystem at the Reserve and its physical, biological, and cultural resources, diversity, and functions.
- To the maximum extent feasible, enhance and restore the estuary's natural diversity of resources, habitats, physical processes, and functions through the enhancement and restoration of natural self-sustaining processes.

- Provide for the protection and recovery of endangered and special interest plant and animal species at the Reserve.
- Provide for the control or eradication of invasive species, particularly those that threaten sensitive habitats and endangered and special interest native species.
- Maintain and enhance the wetland functions of Carpinteria Salt Marsh and reduce flooding potential in urban and agricultural areas adjacent to or near the marsh (includes opening the Marsh mouth as needed to address tidal circulation issues).

1.7 NOTICE OF PREPARATION

A NOP (see Appendix A) was prepared for the project and distributed to responsible and trustee agencies and interested members of the public on January 14, 2019. The following four comment letters were received in response to the NOP (attached as Appendix B) and are summarized below. The scope of the Draft Subsequent EIR was developed (in part) to address these concerns.

- **Native American Heritage Commission (NAHC)**. NAHC's January 25, 2019 NOP response letter discusses tribal consultation requirements and related issues listed in Sections 21080.3, 21082.3 and 21084.3 of the Public Resources Code, and provides recommendations for cultural resources assessments and mitigation measures. Project-specific concerns or recommendations were not identified.
- **Santa Barbara Channelkeeper**. A February 14, 2019 NOP response letter expressed concerns that mechanical disturbance of wetland soils may mobilize un-ionized ammonia and result in exceedances of California Ocean Plan and Basin Plan water quality standards, which may adversely affect habitats within the Marsh and adjacent coastal and offshore habitats. This letter requested that the Subsequent EIR address potential impacts of ammonia mobilization, fecal bacteria and turbidity associated with disposal of sediments. Santa Barbara Channelkeeper's NOP response letter also requested impacts to California grunion and wetland buffer vegetation be addressed in the Subsequent EIR.
- **California Department of Fish and Wildlife (CDFW)**. CDFW's February 14, 2019 NOP response letter requested impacts to northern California legless lizard, monarch butterfly, western snowy plover, tidewater goby, Belding's savannah sparrow and Ridgway's rail be addressed in the Subsequent EIR. The NOP response letter also requested wetlands and watercourses be avoided, a biological baseline assessment should be completed, direct, indirect and cumulative impacts to biological resources be addressed, wildlife movement be addressed and the Subsequent EIR should include mitigation measures such as habitat restoration, avoidance of nesting birds, and wildlife relocation during construction.

- **Santa Barbara County Air Pollution Control District (SBCAPCD)**. SBCAPCD's February 15, 2019 NOP response letter requests the Subsequent EIR identify air pollutant emissions for all proposed equipment to address CEQA compliance for SBCAPCD permits, identify any portable equipment requiring permits, address consistency with the Ozone Plan, address land use conflicts and health risk, estimate emissions and compare to the County's significance thresholds, identify construction impacts and global climate change impacts.

1.8 SUBSEQUENT EIR CONTENT

Based on responses to the current NOP and impacts identified in the 2003 Final EIR, this Subsequent EIR is focused on the following issue areas:

- Aesthetics/visual resources
- Air quality and greenhouse gas emissions
- Biological resources
- Cultural resources
- Geologic processes
- Water resources
- Noise and vibration
- Hazards and hazardous materials
- Transportation/traffic

The Alternatives section of this Subsequent EIR (Section 7.0) was prepared in accordance with Section 15126.6 of the State CEQA Guidelines. CEQA also requires an EIR to identify any alternatives that were considered by the Lead Agency but were rejected as infeasible including a brief explanation of the underlying reasons for that determination. This Subsequent EIR also includes an analysis of No Project Alternative. The merits of the various alternatives that would meet most of the basic project objectives are discussed in Section 7.3. Section 7.4 also discusses alternatives considered but determined to be infeasible and identifies the "environmentally superior" alternative.

The level of detail contained throughout this Subsequent EIR is consistent with the requirements of CEQA and recent court decisions. The State CEQA Guidelines provide the standard by which the adequacy of this Subsequent EIR is based.

The Guidelines state:

"*An EIR should be prepared with a sufficient degree of analysis to provide decision-makers with information which enables them to make a decision which intelligently takes account of environmental consequences. An evaluation of the environmental effects of a proposed project need not be exhaustive, but the sufficiency of an EIR is to be reviewed in the light of what is reasonably feasible. Disagreement among experts does not make an EIR inadequate, but the EIR should summarize the main points of disagreement among the experts. The courts have looked not for perfection but for adequacy, completeness, and a good faith effort at full disclosure."* [emphasis added] (Section 15151).

The impacts are classified pursuant to the County's CEQA Guidelines and the Environmental Thresholds and Guidelines Manual (revised 2018) as follows:

Class I Impacts: Significant unavoidable adverse impacts for which the decision-maker must adopt a statement of overriding considerations.

Class II Impacts: Significant environmental impacts that can be feasibly mitigated or avoided for which the decision-maker must adopt findings and recommended mitigation measures.

Class III Impacts: Adverse impacts found not to be significant for which the decision-maker does not have to adopt findings under CEQA.

Class IV Impacts: Impacts beneficial to the environment.

1.9 RESPONSIBLE AND TRUSTEE AGENCIES

The State CEQA Guidelines define "lead", "responsible", and "trustee" agencies. The District, as a public agency, has the principal responsibility for approving the proposed project. Therefore, the District is the lead agency. Responsible agencies are non-Federal public agencies which have discretionary approval power over the project. Responsible agencies for the proposed project may include the California Coastal Commission, California Department of Fish and Wildlife, and the Regional Water Quality Control Board (Central Coast Region).

Trustee agencies refer to agencies having jurisdiction by law over the natural resources affected by a project. Based upon this definition, the California Department of Fish and Wildlife, and U.S. Fish and Wildlife Service, which have jurisdiction over biological and aquatic resources that may be impacted by the proposed project, are trustee agencies.

1.10 PROJECT APPROVALS AND PERMITS

Project implementation will require the District to obtain permits and/or other forms of approval from Federal, State and local agencies. These agencies include, but are not limited to the following:

1.10.1 U.S. Army Corps of Engineers

The existing routine maintenance of the Marsh conducted by the District is covered under Nationwide Permit Authorization no. SPL-2003-00570-TS. Modification of this permit would be required to address proposed sediment removal in the lower desilting area (see Figure 4-1), and maintenance or reestablishment of the tidal channels in the South Marsh.

1.10.2 California Coastal Commission

The existing routine maintenance of the Marsh conducted by the District is covered under Coastal Development Permit no. 04-08-084. Modification of this permit would be required to address proposed sediment removal in the lower desilting area (see Figure 4-1), surf zone sediment disposal, and maintenance or reestablishment of the tidal channels in the South Marsh.

1.10.3 California Department of Fish and Wildlife

The current Lake or Streambed Alteration Agreement (no. 1600-2016-0210-R5) authorizes the existing routine maintenance of the Marsh conducted by the District, as well as proposed maintenance or reestablishment of the tidal channels in the South Marsh. Modification of this Agreement would be required to address proposed hydraulic sediment removal in the lower desilting area (see Figure 4-1).

1.10.4 Central Coast Regional Water Quality Control Board

The existing routine maintenance of the Marsh conducted by the District is covered under the Water Quality Certification 34208WQ22. Modification of this permit would be required to address proposed sediment removal in the lower desilting area (see Figure 4-1), surf zone sediment disposal, and maintenance or reestablishment of the tidal channels in the South Marsh.

1.10.5 City of Carpinteria

To date, the City has not required any permits for emergency disposal of sediments at City Beach. However, the City may require a ministerial roadway encroachment permit for routine maintenance associated with queuing of trucks within the Ash Avenue and Sandyland Road right-of-way.

1.11 MITIGATION MONITORING AND REPORTING PROGRAM

California Public Resources Code Section 21081.6 requires a Mitigation Monitoring and Reporting Program (MMRP) to be developed to ensure the implementation of mitigation measures necessary to reduce or eliminate identified significant impacts. This Subsequent EIR provides sufficient information concerning monitoring and reporting requirements of mitigation measures such that a stand-alone MMRP document is not needed. The Santa Barbara County Board of Supervisors would adopt the mitigation measures in the Subsequent EIR as the MMRP in conjunction with the findings required under CEQA.

1.12 CERTIFICATION OF THE FINAL SUBSEQUENT EIR

The Draft Subsequent EIR will be circulated for review by public agencies and interested members of the public for a minimum 45-day period. Following the review period, the District will prepare responses to all comments received during the review period. Following the end of the review period, a Final Subsequent EIR will be prepared, and will be comprised of the Draft Subsequent EIR and any changes made in response to comments received during circulation of the Draft Subsequent EIR, response to comments, and technical appendices. At the time the project is approved, the mandated CEQA Findings will be adopted. The District is the lead agency and has the responsibility of determining the adequacy of this Subsequent EIR pursuant to CEQA.

2.0 SUMMARY

This section has been prepared in accordance with the Section 15123 of the State CEQA Guidelines and is divided into three components. The first summarizes the characteristics of the proposed project, the second identifies potential environmental impacts, mitigation measures and residual impacts and the third component is a summary and comparison of the alternatives considered.

2.1 PROJECT SYNOPSIS

2.1.1 Lead Agency

Santa Barbara County Flood Control District
130 E. Victoria Street, Suite 200
Santa Barbara, California 93101

Contact: Seth Shank (805/568-3443)

2.1.2 Location

The Carpinteria Salt Marsh is an estuary located on the south coast of Santa Barbara County adjacent to the City of Carpinteria, California. It includes approximately 230 acres of intertidal estuarine wetlands, adjacent palustrine wetlands and subtidal habitat in natural and artificial channels. An aerial overview of the Marsh and its channels is provided in Figures 3-1 and 3-2. Site photographs of the Marsh are provided as Figures 3-3 and 3-4.

The Marsh has been divided into five areas for the purposes of management which include:

- Basin 1: eastern portion of the Marsh, located between Santa Monica Creek and Franklin Creek.
- Basin 2: central portion of the Marsh, located between Santa Monica Creek and Estero Way (unpaved access road).
- Basin 3: western portion of the Marsh, located west of Estero Way.
- South Marsh: located immediately north of Avenue Del Mar.
- Nature Park: located on the eastern margin of the Marsh, adjacent to Ash Avenue.

2.1.3 Project Description

The Marsh has a long history of disturbance related to development of the area as well as maintenance of the channels for flood control purposes. Fragmentation and filling of the Marsh was initiated in the 1880's, and included filling the eastern portion of the Marsh for construction of roadways and residential development in the in the 1940's. The excavation and straightening of the channels in the Marsh occurred about 1965 to form the current artificial channels that convey flow from Franklin Creek and Santa Monica Creek to the Pacific Ocean. These channels have been consistently maintained since that time to avoid flooding of residential areas surrounding the Marsh. Therefore, the Marsh may be considered a managed system.

The Carpinteria Salt Marsh Enhancement Plan was developed to address both flood control needs and habitat enhancement goals. The Enhancement Plan has been under implementation since it was approved in 2003 and the routine maintenance is the last component of the Carpinteria Valley Watershed Plan. Prior to 2003, The Marsh was desilted under emergency response in the 1990s and prior to that on an as-needed basis. Periodic sediment removal is required to maintain channel capacity, estuarine habitat and water quality.

Completed components of the Enhancement Plan include the construction of berms and flood walls to address flood control needs as well as Restoration Actions R1, R3, R4, R5 and R6 which focus on habitat restoration in Basin 1 and the South Marsh. Additional information regarding implementation of the Enhancement Plan is provided in Section 3 of this Subsequent EIR. In addition, routine maintenance is conducted under the Enhancement Plan, focusing on the removal of accumulated sediment from upper Franklin and Santa Monica Creeks.

The District plans to update the Enhancement Plan through the following changes to existing routine maintenance practices (see Figure 4-1):

1. Surf zone disposal (beach nourishment) of sediments removed by drag-line desilting in upper Franklin and Santa Monica Creeks (see upper desilting area in Figure 4-1) by trucking to the terminus of Ash Avenue.
2. Hydraulic dredging in areas where drag-line desilting has been conducted in the past (see upper desilting area in Figure 4-1) with surf zone disposal.
3. Hydraulic dredging in lower Franklin Creek and the Main Channel extending to the Marsh mouth (see lower desilting area in Figure 4-1) with surf zone disposal.
4. Hydraulic dredging of the entire length of major channels within the Marsh (Franklin Creek, Santa Monica Creek, Main Channel) as a single task with surf zone disposal. This is essentially a combination of components 2 and 3 above conducted in the same year.
5. Expansion of the existing Franklin Creek staging/stockpile area.
6. Maintenance and/or reestablishment of the Avenue Del Mar drainage system at the South Marsh.

2.1.3.1 Dragline Desilting with Sediment Disposal by Trucking to the Surf Zone

The existing Enhancement Plan includes surf zone disposal of sediments removed from upper Franklin and Santa Monica Creeks. However, sediment was considered unlikely to be suitable for surf zone disposal due to what regulatory agencies at the time considered to be a high fines content (silt and clay). The Updated Enhancement Plan assessed in this Subsequent EIR addresses impacts of surf zone disposal of sediment removed during routine maintenance activities in light of the current regulatory environment.

This project component consists of surf zone disposal of sediment removed from Franklin Creek and Santa Monica Creek using drag-line desilting (current routine maintenance activity). Sediments would be trucked to City Beach at the terminus of Ash Avenue for surf zone disposal.

All desilting activities would be conducted according to existing routine maintenance practices (see Section 3.3) including sediment sampling, biological surveys, stockpile area silt fencing, drag-line removal of sediments, stockpiling of sediment and in-situ draining of sediments.

A Sampling and Analysis Plan would be required to be submitted to the Corps to authorize surf zone disposal of the sediment and would be reviewed by the Southern California Dredged Material Management Team composed of representatives of the Corps, California Coastal Commission, CCRWQCB and USEPA.

Prior to the initiation of dredging, sediment sampling and analysis would be conducted as per the approved Sampling and Analysis Plan. The extent and depth of sediment removal may be adjusted based on the results of the sediment analysis. Pre-project biological surveys would be conducted as required by regulatory permits. The results of any surveys would be submitted to the regulatory agencies.

De-watered sediment would be loaded from stockpile locations into trucks by wheeled loaders and/or tracked excavators, with an average truck load of about 10 cubic yards. Based on truck queuing logistics at the Ash Avenue disposal site, a maximum of 1,500 to 2,000 cubic yards per day of sediment would be disposed in the surf zone, or about 150 to 200 truck trips per day. However, the number of truck loads per day could be reduced to address potential traffic and beach user conflicts.

Trucks would use existing access roads within the Marsh and exit onto Carpinteria Avenue from Estero Way or Sandyland Cove Road. Full trucks would follow Carpinteria Avenue east, then right on 7th Street, right (south) on Linden Avenue, then right (west) on Sandyland Road to its intersection with Ash Avenue.

Trucks would back onto the beach at the terminus of Ash Avenue and dump the sediment beyond the end of the pavement (see trucking surf zone disposal area in Figure 4-1). Wheeled loaders and tracked dozers would be used to push the sediment into the surf zone for dispersal by surf action. Overall, the use of trucks and heavy equipment would be virtually the same as used for upland disposal of sediment as currently practiced.

Empty outbound trucks would follow the same route as full inbound trucks, right on Sandyland Road, left on Linden Avenue, left on Seventh Street and left on Carpinteria Avenue (see Figure 4-2). An alternative truck route may be developed in consultation with the City of Carpinteria.

It is estimated four on-site workers would be needed for sediment loading and unloading/dispersal, including a foreman and three equipment operators. Additionally, District staff would inspect sediment loading and disposal on a daily basis. Overall, personnel requirements would be virtually the same as used for upland disposal of sediment as currently practiced.

Drag-line desilting would be conducted from September through February (outside of the bird nesting season), with surf zone disposal conducted between October and February. Sediment disposal would be conducted Monday through Friday, up to 10 hours per day (typically 7 a.m. to 5 p.m.). Based on an average of 150 truck loads per day (1,500 cubic yards), it is anticipated that sediment disposal would be completed in 27 work days (or about six weeks, based on a 5 day work week), not including mobilization and demobilization, assuming a total of 40,000 cubic yards of sediment require disposal.

2.1.3.2 Hydraulic Dredging of Upper Franklin and Santa Monica Creeks

As an alternative to drag-line desilting, a hydraulic dredge would be used to remove accumulated sediments with surf zone disposal of the sediment slurry. Hydraulic dredging would occur within existing drag-line desilting areas (see upper desilting area in Figure 4-1), which includes approximately 1,500 feet of Franklin Creek and 1,500 feet of Santa Monica Creek downstream of the Union Pacific Railroad tracks. Equipment and vehicle access would be from Estero Way and Sandyland Cove Road, and existing access roads within the Marsh. Staging of the dredge, pipe and related equipment would occur within the existing staging areas, parallel to and west of the creek channels.

A Sampling and Analysis Plan would be required to be submitted to the Corps to authorize surf zone disposal of the sediment slurry and would be reviewed by the Southern California Dredged Material Management Team composed of representatives of the Corps, California Coastal Commission, CCRWQCB and USEPA.

Prior to the initiation of hydraulic dredging, sediment sampling and analysis would be conducted as per the approved Sampling and Analysis Plan. The extent and depth of sediment removal may be adjusted based on the results of the sediment analysis. Pre-project biological surveys would be conducted as required by regulatory permits. The results of any surveys would be submitted to the regulatory agencies.

The dredge would be placed in the downstream end of the desilting area by a crane and work upstream. Opening of the Marsh mouth to improve tidal circulation may be required to provide sufficient surface water to float the dredge and to produce a sediment slurry that can be pumped through the discharge pipeline. Equipment to be used to open the Marsh mouth would include a tracked excavator or dozer. A discharge pipeline (likely 10-inch diameter high-density polyethylene) would transport the sediment slurry produced by the dredge to the surf zone discharge location near the Marsh mouth. If the sediment slurry accumulates at the discharge point due to insufficient surf action, a tracked excavator would be used to relocate the end of the discharge pipeline to a better location. Additional discharge pipe sections would be added at the upstream end as the dredge moves upstream.

The hydraulic dredge to be used would be similar to that used for emergency debris/sediment removal conducted in March-April 2018 (DSC Wolverine) (see Figure 4-3). These dredges are capable of moving approximately 100 to 300 cubic yards of sediment per hour. The hydraulic dredge would include onboard pumping equipment powered by a diesel engine. The suction pipe would be fitted with a rotating cutter-head that loosens the sediment to allow it to be pumped as a slurry. The dredge may pivot on its spuds (movable integral steel piles) but would primarily be moved by a work platform/assist vessel and shore-based excavator with steel cable working in tandem to push/pull the dredge along the channel.

Due to the distance between the upstream end of the desilting areas and the discharge location (up to 4,500 feet), a booster pump may be required to maintain a suitable slurry discharge rate. If needed, the booster pump would be diesel powered (about 575 HP, Neumann model BST250 or equivalent), mounted on a steel skid and located on the channel bank.

Typically, six on-site workers would be needed for hydraulic dredging activities. Two would operate the dredge, while the other four workers would operate the excavators, move and attach discharge pipe segments as the dredge moves upstream, and monitor the discharge point. Under certain circumstances more labor may be required for short periods of time on specific tasks. Additionally, District staff would inspect desilting operations at least two times per day.

Dredging would be conducted between September 1 and March 1. Hydraulic dredging would typically be conducted about 10 hours per day (typically 7 a.m. to 5 p.m.) but could be extended to up to 24 hours per day during favorable evening/nighttime tidal conditions that allow dredging to be completed in a shorter period. However, nighttime work (7 p.m. to 7 a.m.) would be prohibited on Franklin Creek upstream of the foot bridge. Based on an average dredging rate of 100 cubic yards per hour, it is anticipated that dredging would be completed in 17 work days (24 hours per day) to 40 work days (10 hours per day) (not including mobilization and demobilization), assuming up to 40,000 cubic yards are removed. Based on an anticipated 5 day work week, this equates to a work period of about four to eight weeks.

2.1.3.3 Hydraulic Dredging of Lower Franklin Creek and the Main Channel

A hydraulic dredge would be used to remove accumulated sediments downstream of existing desilting areas (see lower desilting area in Figure 4-1) within lower Franklin Creek and the Main Channel, extending to the Marsh mouth. The proposed desilting area is composed of approximately 1,100 feet of Franklin Creek (Station 21+00 [confluence with Santa Monica Creek] to Station 32+00) and 2,000 feet of the Main Channel (Station 1+00 to 21+00). Equipment and vehicle access would be from Estero Way and Sandyland Cove Road, and existing access roads within the Marsh. Staging of the dredge, pipe and related equipment would occur within the existing staging areas, parallel to and west of the creek channels.

A Sampling and Analysis Plan would be required to be submitted to the Corps to authorize surf zone disposal of the sediment slurry and would be reviewed by the Southern California Dredged Material Management Team composed of representatives of the Corps, California Coastal Commission, CCRWQCB and USEPA.

Prior to the initiation of hydraulic dredging, sediment sampling and analysis would be conducted as per the approved Sampling and Analysis Plan. The extent and depth of sediment removal may be adjusted based on the results of the sediment analysis.

Pre-project biological surveys would be conducted as required by regulatory permits. The results of any surveys would be submitted to the regulatory agencies.

The hydraulic dredge would be placed in the Main Channel at the terminus of Estero Way or Sandyland Cove Road using a crane. Sediment removal would progress generally upstream. Hydraulic dredging methodology and equipment would be the same as discussed for upper Franklin Creek and Santa Monica Creek (see Section 4.2.3).

Typically, six on-site workers would be needed for hydraulic dredging activities. Two would operate the dredge, while the other four workers would operate the excavators, move and attach discharge pipe segments as the dredge moves upstream, and monitor the discharge point. Under certain circumstances more labor may be required for short periods of time on specific tasks. Additionally, District staff would inspect desilting operations at least two times per day.

Dredging would be conducted between September 1 and March 1. Hydraulic dredging would typically be conducted about 10 hours per day (typically 7 a.m. to 5 p.m.) but could be extended to up to 24 hours per day during favorable evening/nighttime tidal conditions that allow dredging to be completed in a shorter period. Based on an average dredging rate of 100 cubic yards per hour, it is anticipated that dredging would be completed in nine work days (24 hours per day) to 20 work days (10 hours per day) (not including mobilization and demobilization), assuming up to 20,000 cubic yards are removed. Based on an anticipated 5 day work week, this equates to a work period of about two to four weeks.

2.1.3.4 Hydraulic Dredging of all Major Channels

This component is comprised of hydraulic dredging of the entire length of major channels in the Marsh in response to a significant reduction in capacity in all major channels. It is anticipated that this would be an infrequent event, occurring on an unpredictable schedule based on annual storm patterns and wildfire in the watersheds. The decision to implement this component would be based on visual assessment by District staff. Essentially, it is hydraulic dredging of the upper desilting area (see Section 2.1.3.2) and the lower desilting area (see Section 2.1.3.3) shown in Figure 4-1, conducted as one task (single work season).

The Corps permit (SPL-2003-00570-TS) authorizes dredging of upper Franklin and Santa Monica Creeks and surf zone disposal of sediments. CCRWQCB Certification no. 34214WQ18 and Coastal Development Permit 4-14-0492 do not authorize surf zone disposal of sediments, which is required for hydraulic dredging. Hydraulic dredging of the Main Channel appears to be authorized in part (as Restoration Action R6 of the 2003 EIR) by the Corps permit (SPL-2003-00570-TS).

A single hydraulic dredge (and associated support equipment) would be used. The dredge would be placed in the downstream end of the upper desilting area by a crane and work upstream. To access the lower desilting area, the hydraulic dredge would be placed in the Main Channel at the terminus of Estero Way or Sandyland Cove Road using a crane. Sediment removal would progress generally upstream. Hydraulic dredging methodology and equipment would be the same as discussed for upper Franklin Creek and Santa Monica Creek (see Section 2.1.3.2).

Dredging would be conducted between September 1 and March 1. Hydraulic dredging would typically be conducted about 10 hours per day (typically 7 a.m. to 5 p.m.) but could be extended to up to 24 hours per day during favorable evening/nighttime tidal conditions that allow dredging to be completed in a shorter period. Based on an average dredging rate of 100 cubic yards per hour, it is anticipated that dredging would be completed in 25 days (24 hours per day) to 60 days (10 hours per day) (not including mobilization and demobilization), assuming up to 60,000 cubic yards are removed. Based on an anticipated 5 day work week, this equates to a work period of about five to 12 weeks.

2.1.3.5 Franklin Creek Staging/Stockpile Area Expansion

The existing staging/stockpile area adjacent to the west bank of Franklin Creek (about 200 feet south of the Union Pacific Railroad tracks) is proposed to be expanded by approximately 0.5 acres to provide additional stockpile area (see Figure 4-1). The expanded stockpile area would be used for drag-line desilting operations to stockpile/dewater sediment prior to trucking to an upland disposal site or to the surf zone for disposal. Following the use of this area for drag-line desilting, excess fill material would be removed, and the expansion area would be restored to approximately the same elevation as adjacent salt marsh. The proposed expansion area would be naturally recolonized by salt marsh vegetation between infrequent desilting events (typically greater than 5 years apart).

2.1.3.6 Avenue Del Mar Drainage System Routine Maintenance

A flood wall was constructed along the north side of Avenue Del Mar (South Marsh) west of the Sandyland Cove Road bridge as part of the current Enhancement Plan (see Figures 3-4 and 4-1). The flood wall was provided with a drainage system consisting of three pipes that drain local run-off through the flood wall into tidal channels of the South Marsh created in 2005 as part of the existing Enhancement Plan (Restoration Action R3). Debris/sediment deposited in the South Marsh as a result of extremely intense rain events on January 9, 2018 following the Thomas Fire completely filled in the tidal channels and resulted in flooding of Avenue Del Mar during a March 2018 storm event. Limited excavation of pilot channels within the filled-in tidal channels was conducted in October 2018. Routine maintenance of the drainage system is needed to reduce the potential for future flooding.

Pre-project biological surveys would be conducted as required by regulatory permits. The results of any surveys would be submitted to the regulatory agencies.

Proposed as-needed routine maintenance of this drainage system would consist of excavating a pilot channel within the existing tidal channels between the three flood wall drain pipe outlets and Franklin Creek and the Main Channel (see pilot channels in Figure 4-1). If these pilot channels do not provide adequate drainage and flooding may occur, the tidal channels constructed in 2005 within the South Marsh would be re-established. This is anticipated to be a rare event as the tidal channels only needed maintenance since they were constructed due to the effects of the unprecedented debris flows in January 2018.

Pilot Channel Excavation. A small excavator or dozer (Caterpillar D6 or equivalent) would be used to excavate a trench (pilot channel) within the footprint of the existing filled-in tidal channels starting at the drain outlet and daylighting into Franklin Creek or the Main Channel. The pilot channels would be excavated along the shortest route possible within the existing tidal channels to avoid disturbance to native vegetation. The pilot channels would have a bottom width of approximately two feet, with tapered sides to avoid sloughing and further blockages. The pilot channel gradient would be about one percent to allow drainage into the Main Channel.

Excavated material would be side-cast within the original 25-foot-wide tidal channel footprint to avoid disturbance of Marsh vegetation. Silt fence would be installed along both sides of the tidal channels prior to any excavation to avoid any inadvertent loss of saltmarsh habitat outside the channels. Equipment access between the three pilot channels would be within the footprint of the channels (where feasible) excavated in 2005 to minimize loss of saltmarsh habitat.

Tidal Channel Re-establishment. Re-establishment of the South Marsh tidal channels would require a backhoe (Caterpillar 440, or equivalent), small dozer (Caterpillar D6, or equivalent), one or more large tracked excavators (Caterpillar 330, or equivalent), an off-highway dump truck (Volvo A25, or equivalent) and approximately five 10-wheeled dump trucks. Equipment access between the three pilot channels would be within the footprint of the channels (where feasible) excavated in 2005 to minimize loss of saltmarsh habitat. Silt fence would be installed to delineate the work area prior to any excavation to avoid any inadvertent loss of saltmarsh habitat. Excavated material would be pushed into the Main Channel for removal by hydraulic dredging or loaded into the off-highway dump truck, stockpiled in designated stockpile areas and loaded into 10-wheeled dump trucks. Any stockpiled material would be hauled away for upland disposal at an approved site or taken to City Beach (Ash Avenue) for surf zone disposal (if compatible). It is anticipated that approximately 400 truck trips would be required to transport stockpiled material to the disposal site, with up to 30 round trips on a peak day. A wheeled loader would be used at the disposal site to handle and spread excavated material.

It is estimated two on-site workers would be needed for pilot channel excavation, including a foreman and equipment operator. Approximately four additional personnel would be required for re-establishment of the South Marsh tidal channels. District staff would inspect maintenance activities on a periodic basis.

Channel excavation would be conducted about 10 hours per day (typically 7 a.m. to 5 p.m.). Excavation of pilot channels would require approximately one week (five to seven working days) to complete. Re-establishment of drainage channels in the South Marsh would require approximately six weeks (30 working days). Channel excavation would be conducted during the dry season (August-November) and avoid the bird breeding season (February through August). Surf zone disposal of excavated sediment (if needed) would be conducted between October and February to avoid the summer peak season at City Beach.

2.2 ALTERNATIVES

2.2.1 No Project Alternative

The purpose of describing and analyzing the No Project Alternative is to allow the decision-makers to compare the impacts of approving the proposed project with the impacts of not approving the proposed project. Under the No Project Alternative, the Carpinteria Salt Marsh Enhancement Plan would not be updated and implementation of components of the Plan would not be modified. Mitigation measures identified in the 2003 Final EIR to address significant impacts would continue to be implemented as appropriate.

The No Project Alternative does not meet the purpose of the project or any of the District's project objectives listed in Section 1.6. The routine maintenance program at the Marsh as described in the existing Enhancement Plan is not adequate to maintain capacity and 100-year flood conveyance in the major channels and the South Marsh, and may result in inundation of adjacent land uses including residences along Avenue Del Mar. In addition, the existing routine maintenance program is not adequate to maintain tidal circulation which benefits estuarine habitat and water quality.

2.2.2 Alternatives Considered

2.2.2.1 Alternatives Selection Methodology

The selection of alternatives is consistent with Section 15126.6 of the State CEQA Guidelines and focuses on those that would meet most of project's basic objectives, avoid or reduce environmental impacts and provide a reasonable range of alternatives for analysis and comparison.

The proposed project involves updates/additions to an Enhancement Plan that has already been implemented and addresses site-specific flood control issues at the Marsh. Therefore, the range of alternatives to be considered is very limited.

2.2.2.2 Alternatives of the 2003 Final EIR

Eight alternative projects were identified in the 2003 Final EIR, with Alternative 4a identified as the environmentally superior alternative and ultimately adopted as the Carpinteria Salt Marsh Enhancement Plan. Alternatives 1, 2 and 3 were eliminated from further consideration due to substantially greater impacts to biological resources (primarily loss of coastal salt marsh wetlands) as compared to other alternatives. Alternative 8 (flood wall within the Nature Park) was eliminated from further consideration due to substantially greater aesthetics impacts. Four alternative projects (Alternative 4, 5, 6 and 7, with sub-alternatives) were carried forward in the alternatives analysis provided in the 2003 Final EIR.

Alternatives 4b, 5b, 6b and 7 would not meet the project objective of providing 100-year flood protection to adjacent land uses and are not considered further in this Subsequent EIR.

Alternative 5a is the same as Alternative 4a, except the floodwall along the north side of Avenue Del Mar would be replaced with a berm (approximately 20-foot top width, 40-foot bottom width). Alternative 6a is the same as Alternative 4a, except the floodwall along the north side of Avenue Del Mar would be replaced with berm along the south side of the Main Channel approximately 20-foot top width, 40-foot bottom width). Alternatives 5a and 6a were not selected because the berms would be much wider than the floodwall and result in substantially greater loss of coastal salt marsh and wetlands. In any case, the floodwall has already been constructed according to the design proposed in Alternative 4a.

2.2.2.3 Off-site Alternatives

Debris basins could be considered in the watersheds serving the Marsh to capture sediment, which would reduce the need for periodic sediment removal (routine maintenance) within the Marsh. The Franklin Creek watershed has a small debris basin (about 0.2 acres) located approximately 1.9 stream miles upstream of the Marsh. The Santa Monica Creek watershed includes a large debris basin (about 2.5 acres) located approximately 1.5 stream miles upstream of the Marsh.

Expansion of the capacity of the existing debris basins could be considered. However, costs of acquiring land for the debris basins may be prohibitive, and construction and maintenance of these basins would result in environmental impacts potentially including aesthetics, biological resources, air quality, greenhouse gases and agriculture. In addition, this alternative would result in potentially significant geologic processes impacts as larger debris basins may reduce the amount of sediment reaching the beaches and exacerbate beach erosion. These debris basins would not entirely replace sediment removal in the Marsh because they would not be 100 percent effective in retaining sediment and sediment would be transported to the Marsh from watershed areas not served by the basins. In addition, the debris basins would not substantially reduce the need for maintenance of the Avenue Del Mar drainage system. Since this off-site alternative may not be feasible due to economic considerations and would not have reduced impacts as compared the proposed project, it is not considered further in this Subsequent EIR.

2.2.2.4 Sediment Removal Alternative

The proposed project includes sediment removal in lower Franklin Creek and the Main Channel using hydraulic dredging. Drag-line desilting in these channels with surf zone disposal could be considered as an alternative. Lower Franklin Creek and the Main Channel currently have no staging or access areas for drag-line cranes and trucks, which would need to be constructed within the Marsh to facilitate access for this alternative. Such an alternative would result in greater impacts as compared to the proposed project, including:

- Potentially significant long-term loss of coastal salt marsh and wetlands associated with providing an access road and sediment storage areas along lower Franklin Creek and the Main Channel for the drag-line operation.
- Less than significant air quality, traffic noise, aesthetics and recreation impacts associated with sediment trucking and disposal at City Beach.

Consistent with the State CEQA Guidelines, this alternative would not avoid or lessen impacts of the proposed project and is not considered further in this Subsequent EIR.

2.3 IMPACTS OF THE ALTERNATIVES

Due to the lack of any feasible alternatives that would meet most of the basic project objectives and/or avoid or lessen environmental impacts of the proposed project, only the No Project Alternative is assessed in this Subsequent EIR.

2.3.1 Aesthetics/Visual Resources

Aesthetics impacts of the existing Enhancement Plan would continue to occur, primarily associated with drag-line desilting and opening the mouth of the Marsh. Based on the environmental baseline (see Section 1.3), surf zone disposal of sediments removed from the Marsh would not occur.

2.3.2 Air Quality/Greenhouse Gas Emissions

Air quality and greenhouse gas emissions impacts of the existing Enhancement Plan would continue to occur, associated with air pollutant and greenhouse gas emissions generated by drag-line desilting, trucking and disposal of sediments in an upland area, channel excavation in Basin 3 (Restoration Action R2), culvert replacement under Estero Way, and opening the mouth of the Marsh. Based on the environmental baseline (see Section 1.3), air pollutant and greenhouse gas emissions generated by surf zone disposal of sediments removed from the Marsh would not occur.

2.3.3 Biological Resources

Biological resources impacts of the existing Enhancement Plan would continue to occur, associated with temporary vegetation and habitat disturbance caused by drag-line desilting, disposal of sediments in an upland area, channel excavation in Basin 3 (Restoration Action R2), culvert replacement under Estero Way, and opening the mouth of the Marsh. Based on the environmental baseline (see Section 1.3), surf zone sediment disposal has not been performed, therefore turbidity and siltation of nearshore waters generated by surf zone disposal would not occur. The benefits to coastal salt marsh, special-status species and fish habitat caused by improved tidal circulation associated with maintenance of channels in the South Marsh would not be realized under the No Project Alternative.

2.3.4 Geologic Processes

Geologic processes impacts of the existing Enhancement Plan would continue to occur, associated with sediment stockpiling during drag-line desilting and other changes in topography. Based on the environmental baseline (see Section 1.3), siltation caused by surf zone disposal of sediments removed from the Marsh would not occur.

2.3.5 Water Resources

Water resources impacts of the existing Enhancement Plan would continue to occur, associated with temporary water quality degradation caused by drag-line desilting, channel excavation in Basin 3 (Restoration Action R2), culvert replacement under Estero Way, and opening the mouth of the Marsh. Water quality benefits of the Enhancement Plan would also continue to occur caused by improved tidal circulation. Based on the environmental baseline (see Section 1.3), turbidity and contaminant impacts associated with surf zone disposal of sediments removed from the Marsh would not occur. The benefits to water quality caused by improved tidal circulation associated with maintenance of channels in the South Marsh would not be realized under the No Project Alternative.

2.3.6 Noise and Vibration

Noise impacts of the existing Enhancement Plan would continue to occur, associated with noise generated by drag-line desilting, trucking and disposal of sediments in an upland area, channel excavation in Basin 3 (Restoration Action R2), culvert replacement under Estero Way, and opening the mouth of the Marsh. Based on the environmental baseline (see Section 1.3), noise generated by surf zone disposal of sediments removed from the Marsh would not occur.

2.3.7 Hazards and Hazardous Materials

Hazardous materials impacts of the existing Enhancement Plan would continue to occur, associated with inadvertent discharge of fuels, lubricants and hydraulic fluid during drag-line desilting, trucking and disposal of sediments in an upland area, channel excavation in Basin 3 (Restoration Action R2), culvert replacement under Estero Way, and opening the mouth of the Marsh. In addition, disposal of sediment with elevated concentrations of toxic substances could occur. Based on the environmental baseline (see Section 1.3), contaminant discharge associated with surf zone disposal of sediments removed from the Marsh would not occur.

2.3.8 Recreation

Noise and heavy equipment activity associated with the existing Enhancement Plan (primarily drag-line desilting) may disrupt wildlife viewing from the Nature Park. Based on the environmental baseline (see Section 1.3), disruption of City Beach users associated with surf zone disposal of sediments removed from the Marsh would not occur.

2.3.9 Transportation

Traffic associated with the existing Enhancement Plan may result in safety impacts and temporarily inconvenience traffic along Sandyland Cove Road, Del Mar Avenue and access road intersections with Carpinteria Avenue.

2.4 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

The proposed project is the only feasible alternative that meets the District's project objectives (see Section 1.6). Other alternatives that were considered (see Section 2.2.2) are infeasible or fail to meet the project objectives and/or would not avoid or lessen significant impacts.

The No Project Alternative is considered environmentally superior because it would avoid impacts associated with new components of the proposed Updated Enhancement Plan. If the No Project Alternative is considered environmentally superior, Section 15126.6(e)(2) of the State CEQA Guidelines requires identification of the environmentally superior alternative among the other feasible alternatives. Due to the lack of any other feasible alternatives that would meet the objectives of the project and that would avoid or lessen significant impacts, the proposed project is considered the environmentally superior alternative.

2.5 SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Tables 2-1, 2-2 and 2-3 summarize the identified significant and unavoidable, significant and less than significant environmental impacts for each resource/issue area analyzed in this Subsequent EIR and proposed mitigation measures. Table 2-4 provides a summary of the beneficial impacts of the proposed project.

Table 2-1. Summary of Project-Specific Significant and Unavoidable Environmental Impacts, Mitigation Measures and Residual Impacts

DESCRIPTION OF IMPACT	MITIGATION MEASURES
Impact UP-NOI-2: Noise generated by proposed 24-hour hydraulic dredging of upper Franklin and Santa Monica Creeks would exceed the 65 dBA CNEL standard at nearby residences and the Aliso Elementary School. As discussed under Impact UP-NOI-3, the 65 dBA CNEL standard would be exceeded within approximately 1,000 feet of proposed 24-hour dredging operations, which includes residences along the eastern portion of Avenue Del Mar, residences on the eastern side of Ash Avenue, residences of Silver Sands Village, residences along the western end of Fourth Street, residences at the Chapel Court Apartments, residences along Carpinteria Avenue north of the Marsh, and the Aliso Elementary School. Exceedances of the 65 dBA CNEL standard would be short-term (a few weeks); however, a large number of residences would be adversely affected. Mitigation measure NOI-1 is not applicable due to proposed 24-hour dredging. The mobile nature of dredging and surrounding sensitive habitats renders typical mitigation measures such as noise barriers impractical which would result in impacts to visual resources (blocking views) and biological resources (habitat disturbance). Therefore, 24-hour dredging noise impacts are considered significant and unavoidable (Class I). **Residual Impact**: 24-hour noise generated by hydraulic dredging cannot be mitigated below the significance threshold; therefore, residual impacts are considered significant and unavoidable.	**NOI-2**. Nearby residents shall be notified at least two weeks in advance of construction and routine maintenance activities, as shall the manager of the Carpinteria Salt Marsh Reserve and the Nature Park. The District representative's telephone number shall be provided with the notification so that community concerns can be communicated. **Plan Requirements and Timing**: This notification requirement shall be implemented at least two weeks prior to planned construction or routine maintenance activities. **MONITORING**: The District shall verify compliance.
Impact UP-NOI-3: Noise generated by proposed 24-hour hydraulic dredging of lower Franklin Creek and the Main Channel would exceed the 65 dBA CNEL standard at nearby residences. The 65 dBA CNEL standard would be exceeded within approximately 1,000 feet of proposed dredging operations, which includes all residences on Avenue Del Mar, residences at the southern terminus of Sand Point Road, residences along the western terminus of Sandyland Road and residences along the southern terminus of Ash Avenue. Exceedances of the 65 dBA CNEL standard would be short-term (a few weeks); however, a large number of residences would be adversely affected. Mitigation measure NOI-1 is not applicable due to proposed 24-hour dredging. The mobile nature of dredging and surrounding sensitive habitats renders typical mitigation measures such as noise barriers impractical which would result in impacts to visual resources (blocking views) and biological resources (habitat disturbance). Therefore, 24-hour dredging noise impacts are considered significant and unavoidable (Class I). **Residual Impact**: 24-hour noise generated by hydraulic dredging cannot be mitigated below the significance threshold; therefore, residual impacts are considered significant and unavoidable.	See **NOI-2** above.

Table 2-2. Summary of Project-Specific Significant but Mitigable Environmental Impacts and Mitigation Measures

DESCRIPTION OF IMPACT	MITIGATION MEASURES
Impact UP-BIO-1: Surf zone disposal of sediments removed by drag-line desilting as a routine maintenance component would adversely impact marine organisms. Surf zone disposal of finer sediment would result in increased total suspended solids (TSS) and related turbidity, which would temporarily reduce light penetration and primary productivity in the water column, and may clog gills and feeding apparatus of fish, planktonic larvae and filter-feeding organisms. Increased turbidity may also reduce foraging success for fish species, as prey is more difficult to find. Eventual settling of TSS causes siltation, which may bury bottom-dwelling invertebrates and result in some mortality in less mobile species. Operation of heavy equipment on the beach to push sediment into the surf zone would result in some mortality of beach macroinvertebrates through sand compaction. The intertidal area directly affected by heavy equipment activity would be small (about 0.1 acres). Therefore, direct impacts would vary limited in magnitude and not substantially affect local populations of beach macroinvertebrates. Disposal of Marsh sediment in the surf zone would result in short-term siltation and turbidity of adjacent ocean waters. In addition, long-term changes in beach sediment composition may occur. Perturbations in the intertidal sandy beach community can have cascading effects on higher trophic levels, reducing prey availability for shorebirds, juvenile fish and many other organisms (McLachlan and Brown, 2006). Potential adverse effects to fish associated with surf zone sediment disposal include altered distribution, potential for gill clogging, temporary removal of benthic prey and potential burial of soft bottom-dwelling fish. Impacts to fish associated with disposal of high fines content fill material is not well known, but is expected to be short-term and limited to areas of elevated TSS, which is typically 500 meters from the sediment discharge site (Van Dolah et al., 1992). Fish are known to avoid turbid water (Collin and Hart, 2015) such that exposure to project-related elevated levels of TSS is not likely to be fatal. Reduced foraging success by fish may occur due to avoidance behavior (turbid waters), reduced visibility and reduced prey levels.	**BIO-10**. The purpose of this mitigation measure is to provide a preliminary outline of long-term monitoring to be conducted to identify potential project-related impacts to marine and estuarine habitats. The monitoring tasks listed below may be considered preliminary pending review by regulatory agencies (Corps of Engineers, Regional Water Quality Control Board, California Coastal Commission) conducted as part of permit issuance. It is anticipated that a more detailed Long-Term Biological Monitoring Program would be developed in response to permit conditions. The review of the monitoring reports would be conducted in coordination with regulatory agencies to determine if any significant negative trends can be attributed to the project. The decision to implement any action to address these trends would also be coordinated with affected regulatory agencies. Giant Kelp Bed Habitat Monitoring. The purpose of this task is to identify potential changes in giant kelp (*Macrocystis pyrifera*) bed density and biomass that could be attributable to project-related turbidity and siltation. Two kelp beds to be monitored (including a reference site) are the nearest kelp beds monitored by the University of California, Santa Barbara as part by the Santa Barbara Coastal Long-Term Ecological Research (LTER) Project. Surfgrass Habitat Monitoring. The purpose of this task is to identify potential changes in surfgrass (*Phyllospadix* sp.) cover that could be attributable to project-related turbidity and siltation. The nearest surfgrass bed is located approximately 1.0 miles southeast of the Ash Avenue sediment disposal site and is monitored as part of the Multi-Agency Rocky Intertidal Network (MARINe). Existing line transects established for the MARINe project would be used to monitor percent surfgrass cover annually in the summer/fall regardless of any project-related surf zone disposal of sediments. Sandy Beach Habitat Monitoring. The purpose of this task is to identify potential changes in intertidal benthic invertebrate populations that could be attributable to project-related turbidity and siltation, and heavy equipment activity at the Ash Avenue disposal site. Three sites would be sampled; a reference site, the Marsh mouth dredging discharge location and the Ash Avenue disposal site. Marsh Channel Habitat Monitoring. The purpose of this task is to identify potential changes in benthic invertebrate populations that could be attributable to drag-line desilting, hydraulic dredging and associated turbidity and siltation. At least two sites would be sampled annually within the proposed desilting areas; a reference site outside potential dredging areas and an impact site located within a recently desilted or dredged area. An additional impact site may be sampled, if more than one channel has been recently desilted or dredged.

Table 2-2. Continued

DESCRIPTION OF IMPACT	MITIGATION MEASURES
Impact UP-BIO-1 continued: As discussed under Impact UP-HYDRO-2, Marsh sediments contain ammonia and surf zone discharge of sediments may result in elevated concentrations of ammonia in areas adjacent to the surf zone disposal site. Contact with oxygenated waters of the surf zone would rapidly oxide the ammonia to nitrates and forms of organic nitrogen. Therefore, significant ammonia-related impacts on marine organisms are not anticipated. Based on the lack of substantial contamination found during the analysis of Marsh sediments and anticipated compliance with California Ocean Plan water quality objectives (see Section 5.6.2.3), contaminant release into the water column following sediment disposal is not expected to be a substantial source of mortality for invertebrates or fish of affected intertidal and nearshore habitats. Based on a brief review of beach nourishment studies, recovery of intertidal invertebrate abundance may be greater than one year when sediment with a high fines content (substantially greater than the receiver beach) is disposed on the beach. However, beach nourishment projects studied typically consist of disposal of millions of cubic yards of sediments over thousands of feet of beaches. The large scale of these projects is anticipated to increase recovery time because recolonization is limited by the distance to source populations of invertebrates. Due to the relatively small amount of sediment disposal proposed (up to 40,000 cubic yards per year), and the fact that the proposed project would place material into the active surf zone for dispersal, rather than depositing it across large areas of the beach, recovery is anticipated to be faster than observed in beach nourishment studies. Winter storm waves would return areas affected by project-related siltation and any changes in beach grain size to near pre-disposal conditions given sufficient time between discharge events. However, the impacts of ocean disposal of sediments containing up to 60 percent fines on intertidal and nearshore habitats and animal populations have not been well studied. Overall, project turbidity and siltation impacts to intertidal and nearshore habitats would be temporary and localized, but repeated discharges of sediment could have substantial long-term impacts to populations of marine organisms in the Carpinteria area. Due to the higher fines content, surf zone sediment disposal impacts would be greater than identified in the 2003 Final EIR. The magnitude of impacts to intertidal and nearshore habitats associated with surf zone disposal of sediment with up to 60 percent fines cannot be fully predicted and are considered potentially significant (Class II).	**BIO-10** continued: <u>Beach Grain Size Monitoring</u>. The purpose of this monitoring task is to detect changes (trends) in beach grain size potentially attributable to project-related discharge of fine-grained sediment. Collection of two grab samples would be conducted at one reference site and up to two impact sites. The sediment samples would be processed to determine the grain size distribution. <u>Actions to Mitigate Adverse Effects</u>. Following a consensus among regulatory agencies and the District that any significant negative trends identified in annual monitoring reports are attributable to the project, the following actions may be taken to mitigate adverse effects. The decision of which action(s) to implement would be based on the significant negative trend identified and coordination with regulatory agencies. • Limitation on the maximum fines content (percentage) of sediment discharged to the surf zone. • Reduction in the maximum daily rate of sediment discharged to the surf zone. • Development and implementation of a restriction on the maximum daily rate (tons per day) of fines (silt and clay) discharged to the surf zone. • Reduction in the total annual amount of sediment discharged to the surf zone. • Development and implementation of a restriction on the maximum annual amount (tons) of fines (silt and clay) discharged to the surf zone. • Development and implementation of a restriction on the length of channels dredged in a season (significant negative trend in channel invertebrate diversity or abundance). • Restriction of the surf zone discharge period to the winter months (December-March) when high wave energy would minimize siltation of the beach and nearshore habitats. **Plan Requirements and Timing**: A Long-Term Biological Monitoring Program would be developed for review by the Regulatory agencies and the Southern California Dredged Material Management Team as part of obtaining regulatory permits for approval of surf zone disposal. **<u>MONITORING</u>**. District staff would ensure the approved Long-Term Biological Monitoring Program is fully implemented and monitoring reports are prepared as required.

Table 2-2. Continued

DESCRIPTION OF IMPACT	MITIGATION MEASURES
Impact UP-BIO-2: The proposed use of hydraulic dredging instead of drag-line desilting of upper Franklin and Santa Monica Creeks during routine maintenance would adversely impact marine organisms associated with turbidity and siltation of nearshore waters. The project description of the 2003 Final EIR explicitly stated sediment from Franklin Creek and Santa Monica Creek is not suitable for surf zone disposal. As hydraulic dredging (including surf zone disposal of sediments) of the Marsh is not part of the environmental baseline, this is considered a new component. Overall, surf zone disposal of sediment with a fines content as high as 60 percent would increase the nearshore area affected, and duration of turbidity and siltation as compared to drag-line desilting and surf zone disposal of "beach quality material" as assessed in the 2003 Final EIR. Based on field observations and aerial photographs taken during emergency hydraulic dredging of lower Franklin Creek and the Main Channel on April 12, 2018, the area of noticeably increased turbidity was about 25 acres (up to 500 feet offshore and about 3,800 feet along the shoreline). Observations by District staff indicate the increased turbidity declined to near background levels within 12 to 24 hours of the termination of sediment slurry discharge. It is expected that the subtidal area affected by siltation would be much less than the observed turbidity plume. As discussed under Impact UP-BIO-1, dredging-related increased turbidity and siltation of intertidal and nearshore ocean waters would reduce the abundance of intertidal invertebrates which would also affect the foraging success of birds and fish that feed on these invertebrates. The proposed sediment slurry disposal in the surf zone would result in increased turbidity and siltation of intertidal and nearshore ocean waters. As discussed under Impact UP-BIO-1, adverse effects to fish would occur. As discussed under Impact UP-HYDRO-2, Marsh sediments contain nitrogen in the form of ammonia from decaying organic material, and discharge of a sediment slurry in the surf zone may result in elevated concentrations of ammonia in areas adjacent to the discharge site. Sediments removed by the dredge would be diluted at least 2:1 with overlying water and discharged in the surf zone, where the sediment/water slurry would immediately contact waters of the surf zone or run down the wet sand to the surf zone. The contact with ambient air and oxygenated waters of the surf zone would rapidly oxide the ammonia to nitrates and forms of organic nitrogen. Therefore, significant ammonia-related impacts on marine organisms are not anticipated. Based on the lack of substantial contamination found during the analysis of Marsh sediments and anticipated compliance with California Ocean Plan water quality objectives (see Section 5.6.2.3), contaminant release into the water column following sediment disposal is not expected to be a substantial source of mortality for invertebrates or fish of affected intertidal and nearshore habitats. Based on a brief review of beach nourishment studies, recovery of intertidal invertebrate abundance may be greater than one year when sediment with a high fines content is disposed in the surf zone. However, beach nourishment projects studied typically consist of disposal of millions of cubic yards of sediments over thousands of feet of beaches. Due to the relatively small amount of sediment disposal proposed (up to 40,000 cubic yards per year) and surf zone disposal rather than direct beach placement, recovery is anticipated to be faster than observed in beach nourishment studies. Winter storm waves would return areas affected by project-related siltation and any changes in beach grain size to near pre-disposal conditions given sufficient time between discharge events. However, the impacts of ocean disposal of sediments containing up to 60 percent fines on intertidal and nearshore habitats and animal populations have not been well studied. Overall, project turbidity and siltation impacts to intertidal and nearshore habitats would be temporary and localized, but repeated discharges of sediment could have substantial long-term impacts to populations of marine organisms in the Carpinteria area. The magnitude of impacts to intertidal and nearshore habitats associated with surf zone disposal of sediment with up to 60 percent fines cannot be fully predicted and are considered potentially significant (Class II).	See **BIO-10** above

Table 2-2. Continued

DESCRIPTION OF IMPACT	MITIGATION MEASURES
Impact UP-BIO-3: The addition of hydraulic dredging of lower Franklin Creek and the Main Channel as a routine maintenance component would result in adverse impacts to marine organisms associated with turbidity and siltation of nearshore waters. Proposed hydraulic dredging would include discharge of a sediment/water slurry in the surf zone near the Marsh mouth. Up to 20,000 cubic yards would be disposed in the surf zone, with a fines content up to 60 percent, which is substantially greater than the maximum of 25 percent assumed in the 2003 Final EIR. Therefore, impacts to marine organisms associated with turbidity and siltation are anticipated to be greater than disposal of sediments addressed under Impact BIO-1 of the 2003 Final EIR. The extent of the turbidity plume and area affected by siltation would be same as discussed under Impact UP-BIO-2. As discussed under Impact UP-BIO-1, the increased turbidity and siltation of intertidal and nearshore ocean waters would reduce the abundance of intertidal invertebrates which would also affect the foraging success of birds and fish that feed on these invertebrates. As discussed under Impact UP-BIO-1, the increased turbidity and siltation of intertidal and nearshore ocean waters would adversely affect fish. As discussed under Impact UP-BIO-2, significant ammonia-related impacts to marine organisms is not anticipated. Based on the lack of substantial contamination found during the analysis of Marsh sediments and anticipated compliance with California Ocean Plan water quality objectives (see Section 5.6.2.3), contaminant release into the water column following sediment disposal is not expected to be a substantial source of mortality for invertebrates or fish of affected intertidal and nearshore habitats. Winter storm waves would return areas affected by project-related siltation and any changes in beach grain size to near pre-disposal conditions given sufficient time between discharge events. However, the impacts of ocean disposal of sediments containing up to 60 percent fines on intertidal and nearshore habitats and animal populations have not been well studied. Overall, project turbidity and siltation impacts to intertidal and nearshore habitats would be temporary and localized, but repeated discharges of sediment could have substantial long-term impacts to populations of marine organisms in the Carpinteria area. The magnitude of impacts to intertidal and nearshore habitats associated with surf zone disposal of sediment with up to 60 percent fines cannot be fully predicted and are considered potentially significant (Class II).	See **BIO-10** above

Table 2-2. Continued

DESCRIPTION OF IMPACT	MITIGATION MEASURES
Impact UP-BIO-4: The addition of hydraulic dredging of all major channels (Franklin Creek, Santa Monica Creek, Main Channel) in single year as a routine maintenance component would result in adverse impacts to marine organisms associated with turbidity and siltation of nearshore waters. Proposed hydraulic dredging would include discharge of a sediment/water slurry in the surf zone near the Marsh mouth. Up to 60,000 cubic yards would be disposed in the surf zone, with a fines content up to 60 percent, which is substantially greater than the maximum of 25 percent assumed in the 2003 Final EIR. Therefore, impacts to marine organisms associated with turbidity and siltation are anticipated to be greater than disposal of sediments addressed under Impact BIO-1 of the 2003 Final EIR. The extent of the turbidity plume and area affected by siltation would be same as discussed under Impact UP-BIO-2. As discussed under Impact UP-BIO-1, the increased turbidity and siltation of intertidal and nearshore ocean waters would reduce the abundance of intertidal invertebrates which would also affect the foraging success of birds and fish that feed on these invertebrates. As discussed under Impact UP-BIO-1, the increased turbidity and siltation of intertidal and nearshore ocean waters would adversely affect fish. As discussed under Impact UP-BIO-2, significant ammonia-related impacts to marine organisms are not anticipated. Based on the lack of substantial contamination found during the analysis of Marsh sediments and anticipated compliance with California Ocean Plan water quality objectives (see Section 5.6.2.3), contaminant release into the water column following sediment disposal is not expected to be a substantial source of mortality for invertebrates or fish of affected intertidal and nearshore habitats. Winter storm waves would return areas affected by project-related siltation and any changes in beach grain size to near pre-disposal conditions given sufficient time between discharge events. However, the impacts of ocean disposal of sediments containing up to 60 percent fines on intertidal and nearshore habitats and animal populations have not been well studied. Overall, project turbidity and siltation impacts to intertidal and nearshore habitats would be temporary and localized, but repeated discharges of sediment could have substantial long-term impacts to populations of marine organisms in the Carpinteria area. The magnitude of impacts to intertidal and nearshore habitats associated with surf zone disposal of sediment with up to 60 percent fines cannot be fully predicted and are considered potentially significant (Class II).	See **BIO-10** above

Table 2-2. Continued

DESCRIPTION OF IMPACT	MITIGATION MEASURES
Impact UP-BIO-6: The addition of hydraulic dredging of lower Franklin Creek and the Main Channel as a routine maintenance component may impact special-status species near the affected channels. Periodic hydraulic dredging of lower Franklin Creek and the Main Channel is proposed as a new routine maintenance component of the Enhancement Plan. Special-status species that are known to or may occur adjacent to the affected channels include saltmarsh bird's beak, Watson's salt-scale, alkali barley, Coulter's goldfields, marsh rosemary, shore-grass, wooly sea-blite, seaside arrow-grass, three-ribbed arrow-grass, Belding's savannah sparrow and California least tern. Other special-status bird species reported from the Marsh (see Table 5.3-6) would not be adversely affected because dredging would be limited to previously maintained channels and would avoid the breeding season. Dredging activities including launching the dredge, discharge pipe assembly and installation, dredge and booster pump operation and movement of the dredge (using excavators) have the potential to result in mortality of special-status plant species and adversely affect breeding and/or foraging of Belding's savannah sparrow and California least tern. These impacts are considered potentially significant (Class II).	**BIO-4**. Schedule construction activities and other ground disturbance in salt marsh habitat to avoid the Belding's savannah sparrow breeding season from March 15 through August 1. At other times of the year, surveys shall be conducted immediately prior to vegetation clearing in suitable habitat and a qualified monitor will be present during such clearing to ensure none are present in the work area. **Plan Requirements and Timing**: A construction and routine maintenance schedule that avoids work during the Belding's savannah sparrow breeding season shall be established by the District prior to any land disturbance in salt marsh habitat. A survey and monitoring plan shall be prepared prior to any construction or routine maintenance activities and approved by the District and regulatory agencies. **MONITORING**: Verification that the construction schedule, surveys, and monitoring are being implemented shall be sent to the regulatory agencies as required in their permit conditions. **BIO-7**. Should any routine maintenance activities be planned near the Marsh mouth between April and August, a qualified avian biologist shall conduct field surveys of suitable habitat for California least tern within 500 feet of the planned activity. The field survey shall be conducted no more than 24 hours prior to the initiation of the routine maintenance activity. If California least terns are found within 200 feet of planned heavy equipment activity during this survey, the routine maintenance activity shall be postponed until the birds have left the area or the least terns shall be monitored to identify any adverse effects of the activity and the activity postponed if needed to avoid adverse effects. **Plan Requirements and Timing**: The California least tern field survey shall be conducted no more than 24 hours before the planned activity, and the results of the survey provided to the appropriate District staff. **MONITORING**: Verification that the construction schedule is being implemented shall be sent to the regulatory agencies as required in their permit conditions. **BIO-9**. Botanical surveys shall be conducted by a qualified biologist prior to any routine maintenance activities within or adjacent to coastal salt marsh. The botanical surveys shall be timed to maximize the detection of any special-status plant species occurring along affected channels in the Marsh, including saltmarsh bird's beak, Watson's salt-scale, alkali barley, Coulter's goldfields, marsh rosemary, shore-grass, wooly sea-blite, seaside arrow-grass and three-ribbed arrow-grass. Routine maintenance shall be conducted to entirely avoid impacts to endangered and CNPS List 1B species (saltmarsh bird's beak, Coulter's goldfields) and minimize impacts to other special-status plant species (including Watson's salt-scale, alkali barley, marsh rosemary, shore-grass, wooly sea-blite, seaside arrow-grass and three-ribbed arrow-grass) to the extent feasible. If special-status plant species cannot be feasibly avoided while meeting the project objectives, individuals (not including saltmarsh birds-beak) within work areas shall be salvaged and relocated to suitable habitat within the Marsh. Salvage of saltmarsh birds-beak shall be conducted only if take of this endangered species is authorized under the District's Corps permit. If take of saltmarsh birds-beak is not authorized, affected individuals shall be flagged and avoided during sediment removal activities. **Plan Requirements and Timing**: Botanical surveys shall be timed to maximize detection of special-status plant species. A rare plant salvage plan shall be prepared if special-status plant species are found within work areas during the botanical surveys and submitted to regulatory agencies for approval. **MONITORING**. District staff shall ensure botanical surveys are completed and special-status plant species are avoided through review of botanical survey reports and field inspection during routine maintenance activities. Implementation of the rare plant salvage plan shall be monitored by District staff.

Table 2-2. Continued

DESCRIPTION OF IMPACT	MITIGATION MEASURES
Impact UP-BIO-8: The addition of channel excavation in the South Marsh as routine maintenance of the Avenue Del Mar drainage system may result in impacts to rare, threatened and endangered species. Short-term impacts to rare, threatened and endangered species related to construction of these tidal channels was addressed under Impact BIO-17 of the 2003 Final EIR and found to be significant but mitigable (Class II). The proposed Updated Enhancement Plan would not modify this impact as channel excavation activities would be the same as described in the 2003 Final EIR. Long-term impacts related to establishment of these tidal channels was addressed under Impact BIO-15b of the 2003 Final EIR and found to be ultimately beneficial due to the increased habitat value. Impact UP-BIO-8 addresses recurring adverse effects to rare, threatened and endangered species associated with periodic excavation (routine maintenance) to maintain channel capacity. Periodic short-term impacts to Belding's savannah sparrow and other special-status species associated with channel excavation in the South Marsh are considered significant (Class II).	See **BIO-4, BIO-7** and **BIO-9** above.
Impact UP-BIO-11: Surf zone disposal of material excavated from tidal channels in the South Marsh would result in impacts to marine organisms associated with turbidity and siltation of nearshore waters. Material excavated to periodically re-establish tidal channels in the South Marsh may be trucked to City Beach and disposed in the surf zone. Material excavated during creation of these channels in 2005 (Restoration Action R3 of the Enhancement Plan) was used to construct berms within the Marsh. Excavated material would very similar in volume and composition as that removed from Franklin Creek and Santa Monica Creek by drag-line desilting, and surf zone disposal would have the same impacts as discussed under Impact UP-BIO-1 (Class II).	See **BIO-10** above.
Impact UP-GEO-1: The addition of hydraulic dredging as a routine maintenance component may modify the grain size composition of local beaches. Since surf zone sediment disposal is not part of the environmental baseline, periodic hydraulic dredging is proposed as a new routine maintenance component of the Enhancement Plan. Hydraulic dredging (with surf zone disposal) is also proposed in the upper desilting area. Sediment to be removed in these areas may have a fines content up to 60 percent. The rate of sediment disposal is relatively low (typically about 1,000 cubic yards per day) and would be dispersed by wave action. However, repeated hydraulic dredging events that discharge to the same location may reduce the grain size at affected beaches over time such that reduced beach suitability for public use may occur. Therefore, geologic processes impacts associated with disposal of high fines content sediment on the beach is considered potentially significant (Class II).	**GEO-3**. Dredged or excavated sediment proposed for surf zone disposal shall be sampled and tested as per an approved Sampling and Analysis Plan. The sediment shall be approved for ocean disposal by the proper regulatory agencies and reviewed by the Southern California Dredged Material Management Team. **Plan Requirements and Timing**: The Sampling and Analysis Plan shall be completed and submitted to the Southern California Dredged Material Management Team sufficiently prior to planned disposal to allow review and approval. **MONITORING**: The District shall conduct monitoring and reporting as required by the approved Sampling and Analysis Plan. Also see **BIO-10** above.

Table 2-2. Continued

DESCRIPTION OF IMPACT	MITIGATION MEASURES
Impact UP-HYDRO-1: The proposed addition of surf zone disposal of sediments removed by drag-line desilting as a routine maintenance component would result in exceedances of the Ocean Plan water quality objective for turbidity-based aesthetic discoloration. The water quality impacts of surf zone disposal of sediments were addressed under Impact HYDRO-4 in the 2003 Final EIR. However, this analysis was based on disposal of "beach quality material", which was assumed to be a maximum of 25 percent fines. The project description of the 2003 Final EIR stated sediment from Franklin Creek and Santa Monica Creek is not suitable for surf zone disposal. As surf zone disposal of sediment removed from the Marsh is not part of the environmental baseline, this is considered a new component. Surf zone disposal would include a maximum of 40,000 cubic yards per year with a fines content of up to 60 percent. Based on February 9, 2019 oblique aerial photographs taken by a drone during surf zone disposal of sediment from local debris basins, the area of noticeably increased turbidity extended up to 500 feet offshore and about 1,500 feet along the shoreline. Observations by District staff indicate the increased turbidity declined to near background levels within 12 to 24 hours of the termination of disposal. Ocean Plan water quality objectives for bacteria, siltation, dissolved oxygen, pH and numerical water quality objectives are unlikely to be exceeded by this activity because: • Based on available ocean water quality data, discharge of a sediment slurry to the surf zone would not cause bacteria water quality objectives to be exceeded (see Section 5.6.1.5). • The rate of deposition of inert solids is not anticipated to degrade benthic communities due to rapid dispersal by surf action. • Changes in dissolved oxygen concentration or pH are not anticipated due to rapid dispersal of sediments by surf action. • Numerical water quality objectives (including ammonia and nickel) would not be exceeded (see discussion under Impact UP-HYDRO-2). However, surf zone disposal of sediments may exceed Ocean Plan water quality objectives by causing aesthetically undesirable discoloration of the ocean surface and reduce natural light outside the dilution zone. Consistent with the findings of Impact HYDRO-4 of the 2003 Final EIR, water quality impacts associated with surf zone disposal of higher fines content sediment is considered potentially significant (Class II).	See **GEO-3** and **BIO-10** above.
Impact UP-HYDRO-2: The proposed use of hydraulic dredging instead of drag-line desilting of upper Franklin and Santa Monica Creeks during routine maintenance would result in exceedances of the Ocean Plan water quality objective for turbidity-based aesthetic discoloration. The maximum amount of sediment to be removed from upper Franklin and Santa Monica Creeks during routine maintenance and disposed of would be the same as assessed in the 2003 Final EIR (40,000 cubic yards). Under the Updated Enhancement Plan, dredged sediment with a fines content of up to 60 percent would be disposed in the surf zone as a sediment/water slurry. Ammonia. Testing of Marsh sediments from the Main Channel (see Table 5.6-6) indicates these sediments contain reduced forms of nitrogen associated with decaying organic material in an anoxic (low oxygen) environment. Unionized ammonia (NH_3) can be harmful to aquatic life (as noted in the Ocean Plan) and may be released to the water column during discharge of the sediment/water slurry to the surf zone. Sediments removed by the dredge would be diluted at least 2:1 with overlying water and discharged in the surf zone, where the sediment/water slurry would immediately contact waters of the surf zone or run down the wet sand to the surf zone, to be agitated and distributed by wave action. The contact with ambient air and oxygenated waters of the surf zone would rapidly oxide the ammonia to nitrates and forms of organic nitrogen.	See **GEO-3** and **BIO-10** above.

Table 2-2. Continued

DESCRIPTION OF IMPACT	MITIGATION MEASURES
Impact UP-HYDRO-2 continued Tramontano and Bohlen (1984) studied the geochemistry of dredge discharge plumes and found that ammonia concentrations exceeded background levels by as much as two to nine times, but water column concentrations of ammonia did not exceed 291.2 micrograms per liter, which is substantially less than daily maximum water quality objective of the Ocean Plan (2,400 micrograms per liter). Dredge plume modeling of sediment disposal with an average concentration of 110.9 mg/kg ammonia yielded an average dissolved water column concentration of 770 micrograms per liter, which is much less than the Ocean Plan daily maximum water quality objective (San Francisco Estuary Institute, 2008). As the ammonia concentration of Main Channel sediments (see Table 5.6-6) is 54 mg/kg or less, water column concentrations are expected to be much less than 770 micrograms per liter. Since project-related elevated ammonia concentrations in receiving waters are not expected to exceed the daily maximum water quality objective for ammonia, impacts are considered less than significant (Class III). Nickel. Testing of Marsh sediments from the Main Channel indicates these sediments contain concentrations of nickel that slightly exceed the NOAA screening table values for "Effects Range-Low" (see Table 5.6-6) for sediments (not ocean water). This benchmark is based on a data base of marine sediment chemistry and bioassay data. Dredging and disposal of Marsh sediment in the surf zone has the potential to increase nickel concentrations in the water column. Heavy metals such as nickel mostly occur as sulfides in anoxic sediments, which have a low solubility. When the sediment is removed by dredging and discharged to the ocean, these sulfides are slowly oxidized then quickly scavenged by iron and manganese hydroxides or complexed with organic matter. Overall, only a small fraction of heavy metals present in sediment becomes dissolved in the water column (San Francisco Estuary Institute, 2008). Dredge plume modeling of sediment disposal where 94 percent of the samples exceeded the Effects Range-Medium screening value for nickel (51.6 mg/kg) yielded an average dissolved water column concentration of 2.31 micrograms per liter, which is much less than the daily maximum water quality objective (20 micrograms per liter) (San Francisco Estuary Institute, 2008). Due to relatively low concentrations of nickel (below the Effects Range-Medium screening value) in affected sediments, relatively low discharge rate (average of 100 cubic yards per hour), high rate of dispersal and dilution in the surf zone and very low solubility of nickel, Ocean Plan water quality objectives for nickel are not anticipated to be exceeded. Therefore, the potential impacts of elevated nickel concentrations in receiving waters is considered less than significant (Class III). Other Water Quality Objectives. Based on aerial photographs taken during emergency dredging of lower Franklin Creek and the Main Channel on April 12, 2018, the area of noticeably increased turbidity was about 25 acres (up to 500 feet offshore and about 3,800 feet along the shoreline). Observations by District staff indicate the increased turbidity declined to near background levels within 12 to 24 hours of the termination of sediment slurry discharge. Ocean Plan water quality objectives for bacteria, siltation, dissolved oxygen and pH are unlikely to be exceeded by this activity because: • Based on available ocean water quality data, discharge of a sediment slurry to the surf zone would not cause bacteria water quality objectives to be exceeded (see Section 5.6.1.5). • The rate of deposition of inert solids is not anticipated to degrade benthic communities due to rapid dispersal by surf action. • Changes in dissolved oxygen concentration or pH are not anticipated due to rapid dispersal of sediments by surf action. However, surf zone disposal of a sediment slurry may exceed Ocean Plan water quality objectives by causing aesthetically undesirable discoloration of the ocean surface and reduce natural light outside the dilution zone. Therefore, turbidity-related water quality impacts are considered potentially significant (Class II).	See **GEO-3** and **BIO-10** above.

Table 2-2. Continued

DESCRIPTION OF IMPACT	MITIGATION MEASURES
Impact UP-HYDRO-4: The addition of hydraulic dredging of lower Franklin Creek and the Main Channel and dredging all major channels in a single year as new routine maintenance components would result in exceedances of the Ocean Plan water quality objective for turbidity-based aesthetic discoloration. Recent testing (see Table 5.6-6) indicate Marsh sediments contain nickel and reduced forms of nitrogen such that discharge of a sediment slurry to the ocean could result in elevated ammonia and nickel concentrations. However, as discussed under Impact UP-HYDRO-2, dredging-related exceedances of Ocean Plan water quality objectives for ammonia and nickel are not anticipated. However, surf zone disposal of a sediment slurry may exceed Ocean Plan water quality objectives by causing aesthetically undesirable discoloration of the ocean surface and reduce natural light outside the dilution zone. Therefore, water quality impacts are considered potentially significant (Class II).	See **GEO-3** and **BIO-10** above.
Impact UP-HYDRO-6: Surf zone disposal of sediments generated by re-establishment of tidal channels in the South Marsh would result in exceedances of the Ocean Plan objective for turbidity-based aesthetic discoloration. As discussed under Impact UP-HYDRO-1, surf zone disposal of sediments may exceed Ocean Plan water quality objectives by causing aesthetically undesirable discoloration of the ocean surface and reduce natural light outside the dilution zone. Consistent with the findings of Impact HYDRO-4 of the 2003 Final EIR, water quality impacts associated with surf zone disposal of higher fines content sediment is considered potentially significant (Class II).	See **GEO-3** and **BIO-10** above.

Table 2-2. Continued

DESCRIPTION OF IMPACT	MITIGATION MEASURES
Impact UP-NOI-4: Noise generated by proposed re-establishment of tidal channels in the South Marsh as part of the maintenance of the Avenue del Mar drainage system would exceed the 65 dBA CNEL standard at nearby residences. The FHWA Roadway Construction Noise Model was used to estimate channel excavation noise at the nearest residence along Avenue Del Mar. The estimated hourly noise level is 75.2 dBA Leq, which equates to a CNEL value of 71.6 dBA based on 7 a.m. to 5 p.m. operation. The 65 dBA CNEL standard would be exceeded within approximately 205 feet of proposed channel excavation operations, which includes approximately 24 residences on Avenue Del Mar. Channel re-establishment noise impacts would be significant, but feasibly mitigated (Class II).	**NOI-1**. Construction activities shall be limited to the hours between 7:00 A.M. and 5:00 P.M., Monday through Friday. No construction shall occur on State holidays (e.g., Thanksgiving, Labor Day). Routine maintenance activities shall also comply with these hours of operation, to the extent feasible. Vehicle and equipment maintenance shall be limited to the approved operating hours. All internal combustion engine-driven vehicles and equipment shall be properly muffled. **Plan Requirements and Timing**: Vehicle and equipment operational hours restrictions shall be included in contracts with companies providing routine maintenance services. **MONITORING**: District staff shall verify construction and routine maintenance activities comply with operating hours restrictions. **NOI-2**. Nearby residents shall be notified at least two weeks in advance of construction and routine maintenance activities, as shall the manager of the Carpinteria Salt Marsh Reserve and the Nature Park. The District representative's telephone number shall be provided with the notification so that community concerns can be communicated. **Plan Requirements and Timing**: This notification requirement shall be implemented at least two weeks prior to planned construction or routine maintenance activities. **MONITORING**: The District shall verify compliance.
Impact UP-NOI-5: noise generated by proposed routine dredging of lower Franklin Creek and the Main Channel may exacerbate current adverse effects on the recreational and scientific use of the Marsh. As discussed under Impact NOI-7 from the 2003 Final EIR, construction activity may result in wildlife temporarily leaving the area which may adversely affect persons that observe wildlife for recreational or scientific purposes. The addition of routine dredging of lower Franklin Creek and the Main Channel to the Updated Enhancement Plan would add a new area within the Marsh that may be affected by temporary adverse effects on recreational and scientific use. However, simultaneous desilting and/or dredging is not proposed such that the area affected by routine maintenance activities on any one day would not substantially increase. Similar to construction equipment noise impacts on the recreational and scientific use of the Marsh addressed in the 2003 Final EIR, hydraulic dredging noise impacts would be significant, but feasibly mitigated (Class II).	See **NOI-1** and **NOI-2** above.

Table 2-2. Continued

DESCRIPTION OF IMPACT	MITIGATION MEASURES
Impact UP-HAZ-2: Hydraulic dredging activities may result in accidental discharge of fuel, lubricants and coolant from the dredge, booster pump, vessels and associated equipment. Accidental spillage of these materials during routine maintenance may contaminate soil and surface water, possibly resulting in exceedances of water quality standards of the Water Quality Control Plan (Franklin and Santa Monica Creeks) and California Ocean Plan which is considered a potentially significant impact (Class II).	**HAZ-1**. Fueling and maintenance of equipment and vehicles used for construction and routine maintenance shall be completed at least 100 feet from the nearest channel or wetland area. The dredge and booster pump may be fueled in place (within or adjacent to channels) provided a containment area is provided to collect any spillage and spill response kits are located at the fueling site. Spill containment and clean-up procedures shall be developed as part of the District's Standard Maintenance Practices. All District field staff shall be trained in the appropriate procedures. The contractor shall be held responsible for compliance with spill containment and clean-up procedures and removing and properly disposing of any hazardous materials that are brought onto the site as a result of construction or routine maintenance activities and removing and properly disposing of any soils that become contaminated on-site through spillage or leakage. All such contaminated areas shall be cleaned up prior to completion of any construction or routine maintenance. **Plan Requirements and Timing**: Fueling areas shall be identified and spill containment and clean-up procedures shall be noted on construction plans. These plans shall be reviewed and approved by the District. Spill containment and clean-up procedures for routine maintenance shall be included in the District's Standard Maintenance Practices. **MONITORING**: District staff shall verify equipment fueling and maintenance is properly conducted, and any contaminated soil is removed.
Impact UP-HAZ-3: Excavation of channels in the South Marsh may result in accidental discharge of fuel, lubricants and coolant from heavy equipment (backhoe, dozer, excavators) and trucks. Accidental spillage of these materials during routine maintenance may contaminate soil and surface water, possibly resulting in exceedances of water quality standards of the Water Quality Control Plan and California Ocean Plan which is considered a potentially significant impact (Class II).	See **HAZ-1** above

Table 2-3. Summary of Project-Specific Less than Significant Environmental Impacts

DESCRIPTION OF IMPACT

Impact UP-AES-1: The high fines content of sediments removed by drag-line and disposed in the surf zone may result in greater aesthetics impacts associated with turbidity of nearshore waters than were anticipated in the existing Enhancement Plan. The aesthetics impacts of surf zone disposal of sediments were addressed under Impact AESTH-4 in the 2003 Final EIR. As surf zone disposal of sediment removed from the Marsh is not part of the environmental baseline, this is considered a new component. The project (Updated Enhancement Plan) proposes surf zone disposal of sediments from upper Franklin and Santa Monica Creeks with a fines content as high as 60 percent (see Section 4.1). Based on observations by District staff during surf zone disposal of sediment from debris basins on February 9, 2019, the turbidity plume is likely to affect about 1,500 linear feet of the surf zone and immediately adjacent nearshore waters (roughly 20 acres).

Surf zone disposal is proposed to occur between October and February and may occur during or following storm events when ambient nearshore turbidity levels would be high due to storm water discharge from local drainages (including Toro Canyon Creek, Arroyo Paredon, the Marsh mouth and Carpinteria Creek). Nearshore turbidity caused by surf zone sediment disposal would be more evident to the public during periods without recent storm flows. The total duration of increased turbidity may extend for about six weeks (27 work days, five days per week).

Public views potentially affected include City Beach and Nature Park users, and motorists near the southern terminus of Ash Avenue, Holly Avenue, Elm Avenue and Linden Avenue. However, a berm is typically in place from mid-November through March along the upper beach to protect land uses from storm waves. This berm would block public views of nearshore areas from these roadways during most of the period surf zone disposal of sediment would occur.

Public views of City Beach and nearshore areas from U.S. Highway 101 and the Union Pacific Railroad tracks are blocked by intervening structures. The project-related increase in turbidity of nearshore waters (as compared to the existing Enhancement Plan) would be perceived as a degradation of the visual quality of the beach environment. However, impacts would occur during off-peak season (reduced number of viewers) and during a period when storm-related turbidity is common. Therefore, impacts would remain less than significant (Class III).

Impact UP-AES-2: The use of hydraulic dredging instead of drag-line desilting of upper Franklin and Santa Monica Creeks during routine maintenance would result in greater aesthetics impacts associated with turbidity of nearshore waters. As surf zone disposal of sediment removed from the Marsh is not part of the environmental baseline, this is considered a new component. Surf zone disposal would occur near the Marsh mouth for a period of about four to eight weeks between September 1 and March 1. The fines content of sediment to be disposed may be as high as 60 percent (see Section 4.2). Based on aerial photographs taken during dredging of lower Franklin Creek and the Main Channel on April 12, 2018, the area of noticeably increased turbidity was about 25 acres (up to 500 feet offshore and about 3,800 feet along the shoreline). The sediment/water slurry would be discharged in the surf zone near the Marsh mouth, approximately 2,500 feet from the nearest public viewing location (City Beach). The increase in turbidity of nearshore waters (as compared to the existing Enhancement Plan) would be perceived as a degradation of the visual quality of the beach environment. However, impacts would occur primarily during off-peak season, would be more distant from public viewing locations and during a period when storm-related turbidity is common. Therefore, impacts would remain less than significant (Class III).

Impact UP-AES-3: The addition of hydraulic dredging of lower Franklin Creek and the Main Channel as a routine maintenance component would result in greater aesthetics impacts associated with turbidity of nearshore waters. Periodic hydraulic dredging of lower Franklin Creek and the Main Channel is proposed as a new routine maintenance component of the Enhancement Plan. Proposed hydraulic dredging would include discharge of a sediment/water slurry in the surf zone near the Marsh mouth for a period of about two to four weeks between September 1 and March 1. The fines content of sediment to be disposed may be as high as 60 percent (see Section 4.3), which would generate a turbidity plume likely visible from public viewing locations at the Nature Park and City Beach. The increase of turbidity of nearshore waters would be perceived as a degradation of the visual quality of the beach environment. However, impacts would occur primarily during off-peak season, the turbidity source (dredge discharge pipe) would be distant from public viewing locations (about 2,500 feet from City Beach) and during a period when storm-related turbidity is common. Therefore, impacts would be less than significant (Class III).

Table 2-3. Continued

DESCRIPTION OF IMPACT

Impact UP-AES-4: The addition of hydraulic dredging of all major channels in the Marsh as a routine maintenance component would result in greater aesthetics impacts associated with turbidity of nearshore waters. The daily amount and characteristics of the sediment slurry discharged and resulting nearshore turbidity increases would be the same as addressed under Impacts UP-AES-2 and UP-AES-3. However, due to the larger volume of sediments disposed (up to 60,000 cubic yards), the duration of sediment discharge and associated turbidity increase would be longer (about five to 12 weeks). Impacts would occur primarily during off-peak season, the turbidity source (dredge discharge pipe) would be distant from public viewing locations (about 2,500 feet from City Beach) and during a period when storm-related turbidity is common. Therefore, impacts would be less than significant (Class III).

Impact UP-AES-5: Routine maintenance of the Avenue Del Mar drainage system may adversely affect public views. Heavy equipment activity associated with excavation of channels in the South Marsh may be visible to Nature Park users (from the eastern portion of Basin 1). However, the local population is accustomed to equipment activity in the Marsh associated with routine maintenance as described in the existing Enhancement Plan. Therefore, the short-term use (up to six weeks) of a relatively small amount of heavy equipment is not anticipated to substantially degrade the visual quality of public views of the Marsh. Aesthetics impacts would be less than significant (Class III).

Impact UP-AES-6: Surf zone disposal of excavated sediment from routine maintenance of the Avenue Del Mar drainage system may result in aesthetics impacts associated with turbidity of nearshore waters. Sediment excavated from channels in the South Marsh may be disposed in the surf zone at City Beach and cause increased turbidity. Related aesthetics impacts would be the same as discussed under Impact UP-AES-1 and would be less than significant (Class III).

Impact UP-AQ-1: The proposed change in sediment disposal sites from an upland site to surf zone disposal at City Beach would reduce transportation-related air pollutant emissions. The air quality impacts of routine maintenance were addressed under Impact AQ-4 in the 2003 Final EIR. This analysis was based on hourly usage of dump trucks and did not specify a disposal site. In any case, the proposed City Beach disposal site is closer than past upland disposal sites (Santa Monica Debris Basin stockpile) such that sediment transportation emissions would be reduced as compared to existing conditions (upland disposal) (see Table 5.2-3). Re-calculation of drag-line emissions using updated emissions factors indicate air quality impacts associated with routine drag-line desilting of upper Franklin Creek and Santa Monica Creek are less than significant under both existing and proposed conditions (Class III).

Impact UP-AQ-2: The proposed change from drag-line desilting to hydraulic dredging would increase peak day air pollutant emissions. The air quality impacts of routine maintenance were addressed under Impact AQ-4 in the 2003 Final EIR. Peak day (24-hour operations) hydraulic dredging emissions were re-calculated using the CARB OFFROAD 2017 model (two excavators, dredge engine, booster pump, generator) and 2010 emissions standards for outboard motors (assist vessel, crew boat) and found to be less than significant (see Table 5.2-4), but greater than drag-line desilting (Table 5.2-3) which would be limited to 10 hours per day.

Impact UP-AQ-3: The proposed change from drag-line desilting to hydraulic dredging would reduce total ozone precursor emissions. The environmental baseline (existing conditions) includes drag-line desilting (with upland disposal) of the upper desilting area (see Figure 4-1). The proposed use of hydraulic dredging in this area would reduce total ozone precursor emissions (NOx + ROC) from 0.59 tons to 0.49 tons per event (see Table 5.2-5) as trucking of sediment would not be required. Total ozone precursor emissions would be less than significant under both existing and proposed conditions (Class III).

Table 2-3. Continued

DESCRIPTION OF IMPACT

Impact UP-AQ-4: The addition of hydraulic dredging of lower Franklin Creek and the Main Channel to routine maintenance activities would generate air pollutant emissions. Estimated peak day (24-hour operations) hydraulic dredging air pollutant emissions are provided in Table 5.2-4 and would be less than significant (Class III).

Impact UP-AQ-5: Routine maintenance activities (as modified by the proposed Updated Enhancement Plan) would generate annual air pollutant emissions. Annual air pollutant emissions estimates provided in Table 5.2-6 indicate the SBCAPCD Rule 202 D.16 tons per 12-month period threshold would not be exceeded by existing or proposed activities (Class III).

Impact UP-AQ-6: The addition of maintenance of the Avenue Del Mar drainage system to routine maintenance activities would generate air pollutant emissions. Estimated peak day (10 hours) air pollutant emissions associated with re-establishing tidal channels in the South Marsh and disposal of excavated sediments at Ash Avenue (30 round trips per day) are provided in Table 5.2-7 and would be less than significant (Class III).

Impact UP-AQ-7: Routine maintenance activities (as modified by the proposed Updated Enhancement Plan) would generate HAP emissions (diesel particulate matter). The Updated Enhancement Plan would modify existing components (changes in desilting methods and disposal sites) and add several components to the routine maintenance program. However, diesel engines currently in use incorporate control measures (including particulate filters) that substantially reduce diesel particulate matter as compared to trucks and equipment assessed in the 2003 Final EIR. Therefore, impacts associated with HAP emissions would remain less than significant (Class III).

Impact UP-AQ-8: Routine maintenance activities (as modified by the proposed Updated Enhancement Plan) would generate greenhouse gas emissions. Greenhouse gas emissions estimates provided in Table 5.2-8 indicate the adopted annual significance threshold would not be exceeded by any existing or proposed activities (Class III).

Table 2-3. Continued

DESCRIPTION OF IMPACT

Impact UP-BIO-5: The addition of hydraulic dredging of lower Franklin Creek and the Main Channel as a routine maintenance component would impact estuarine organisms residing within the affected channels. Periodic hydraulic dredging of lower Franklin Creek and the Main Channel is proposed as a new routine maintenance component of the Enhancement Plan. Most organisms (including shrimp, clams, snails) residing in areas where sediments are removed by hydraulic dredging perish during suction of sediments using a cutter head, hydraulic transport and surf zone disposal. However, studies conducted in dredged channels in the United States indicate affected benthic communities recover in one to six months (Wilber and Clarke, 2007). Project factors that would benefit recovery include:

- Affected areas are shallow with a history of disturbance (emergency dredging).
- Affected sediments are fine-grained.
- The spatial scale of disturbance (dredging) would be very small.
- Dredging would be timed to avoid the spring-summer larval recruitment period.

Fish residing in lower Franklin Creek and the Main Channel would be affected by proposed hydraulic dredging including hydraulic entrainment (pulled into the dredge suction inlet), direct effects of suspended sediment, reduced foraging success and contaminant release from the sediments (hydrophobic organics, metals). Adult fish are unlikely to be affected by hydraulic entrainment, as most would avoid the dredge suction inlet, but some proportion of the larval fish population may be entrained.

Suspended solids exposure resulting in 10 percent mortality in common fish of the Marsh varies from a one-day exposure of 23,770 mg/l TSS for killifish to a four-day exposure of 1,000 mg/l TSS for shiner surfperch (Wilber and Clarke, 2001). However, fish are known to avoid turbid water (Collin and Hart, 2015) such that exposure to elevated levels of suspended solids is not likely to reach fatal concentrations. Reduced foraging success by fish may occur due to avoidance behavior (turbid waters and dredging-related water disturbance), reduced visibility and reduced prey levels. Sediment removal by hydraulic dredge would prevent the release of any contaminants from the sediments to the water column, and would not be a source of mortality for fish and invertebrates of affected channels.

Overall, dredging-related impacts to benthic organisms and fish in the Marsh would be temporary, localized and timed to minimize impacts, such that substantial long-term impacts to populations of estuarine organisms of the Marsh would not occur. No rare, declining, threatened or endangered species would be affected. Therefore, these impacts are considered less than significant (Class III).

Impact UP-BIO-7: Expansion of the Franklin Creek staging/stockpile area would result in temporary loss of coastal salt marsh vegetation and coastal wetlands. South coastal salt marsh is considered a rare natural community by CDFW and an environmentally sensitive habitat area under the Coastal Act. The proposed expansion area is located adjacent to the existing area used for stockpiling sediment removed by drag-line desilting. Utilization of this area for staging and stockpiling materials would result in the temporary loss of approximately 0.3 acres of sensitive habitats (south coastal salt marsh and coastal wetlands) and potential breeding habitat for Belding's savannah sparrow. Following proposed removal of excess fill and restoration of topography after infrequent desilting events, salt marsh vegetation is anticipated to recolonize the expansion area. This impact would be offset through routine maintenance of the tidal channels in the South Marsh which would benefit south coastal salt marsh in the long-term (see Impact UP-BIO-10). Therefore, the temporary loss of vegetation/wildlife habitat is considered a less than significant impact (Class III).

Table 2-3. Continued

DESCRIPTION OF IMPACT

Impact UP-BIO-9: The addition of tidal channel excavation in the South Marsh as routine maintenance of the Avenue Del Mar drainage system may result in temporary impacts to south coastal salt marsh (also considered coastal wetlands). Short-term impacts to vegetation related to the construction of these tidal channels was addressed under Impact BIO-15a of the 2003 Final EIR. The proposed Updated Enhancement Plan would not modify this impact as channel excavation activities would be very similar as described in the 2003 Final EIR. Impact UP-BIO-9 addresses periodic excavation (routine maintenance) to maintain channel capacity.

Proposed excavation would occur in channels established in 2005 with limited sediment removal in October 2018 in response to debris flows in January 2018. Therefore, south coastal salt marsh is mostly lacking in areas that would be affected by channel excavation. However, vegetation would colonize some of the affected areas between maintenance events and temporary removal of salt marsh vegetation may occur. Additional south coastal salt marsh may be adversely affected by transporting excavated material to existing stockpile areas. The area of affected south coastal salt marsh would be small (likely less than one acre) and would have relatively low density and species diversity (reduced habitat value). No special-status species would be affected, including saltmarsh birds-beak. This habitat loss would be offset through routine maintenance of the tidal channels in the South Marsh which would benefit south coastal salt marsh in the long-term (see Impact UP-BIO-10). Therefore, periodic channel excavation impacts to south coastal salt marsh vegetation are considered less than significant (Class III).

Impact UP-HYDRO-3: The addition of hydraulic dredging of lower Franklin Creek and the Main Channel and dredging all major channels in a single year as new routine maintenance components would increase the channel area affected by short-term turbidity impacts. Impact HYDRO-7 of the 2003 Final EIR addressed short-term turbidity impacts within dredged channels. Periodic hydraulic dredging of lower Franklin Creek and the Main Channel is proposed as a new routine maintenance component of the Enhancement Plan and would increase the area affected by these impacts. In addition, hydraulic dredging of all major channels in a single year is proposed as a new component of the Enhancement Plan. As discussed in the 2003 Final EIR, turbidity generated by channel dredging would be localized, short-term and similar to conditions present following storm run-off events. Therefore, this impact is considered less than significant (Class III).

Impact UP-NOI-1: Noise generated by proposed increased truck traffic associated with disposal of sediment may exceed the City's temporary construction traffic noise threshold along the proposed truck route. Project peak day truck traffic (up to 200 round trips per 10-hour day) would increase traffic noise along the proposed truck route in the City of Carpinteria (Carpinteria Avenue, Seventh Street, Linden Avenue, Sandyland Road). Traffic noise modeling was conducted using the Federal Highway Administration's (FHWA) Traffic Noise Model to determine the increase in traffic noise associated with sediment trucking (40 one-way trips per hour) to City Beach. Traffic noise modeling was conducted on Carpinteria Avenue (Plum Street to Santa Ynez Avenue) because the highest truck speeds (and traffic noise) would be expected along this portion of the truck route. The average daily traffic volume (9,900) used in traffic noise modeling for Carpinteria Avenue west of Linden Avenue was taken from the traffic study prepared by Fehr & Peers Transportation Consultants (2007) for the U.S. 101/Linden Avenue and Casitas Pass Road Interchange Improvement Project. Noise-sensitive receptors were selected based on close proximity to Carpinteria Avenue. Modelled existing noise levels are close to the City of Carpinteria's 65 dBA Leq construction traffic noise threshold, and project-related traffic noise may result in exceedances of this threshold. However, project-related traffic noise increases would not be noticeable as they do not exceed 3 dBA Leq. Therefore, sediment trucking noise impacts associated with the Updated Enhancement Plan would remain less than significant (Class III).

Table 2-3. Continued

DESCRIPTION OF IMPACT

Impact UP-NOI-6: Vibration generated by proposed increased truck traffic associated with the disposal of sediment would not result in structural damage or substantial human annoyance along the proposed truck route. Project truck traffic (up to 200 round trips per day) would increase truck-generated vibration along the proposed truck routes (Carpinteria Avenue, Seventh Street, Linden Avenue, Sandyland Road). Commercial and residential structures are located within 30 feet of the proposed truck route. Truck-related vibration was estimated at a PPV of 0.062, using the Caltrans Transportation and Construction Vibration Guidance Manual. This value is slightly greater than the 0.04 PPV needed to be distinctly perceptible by humans, but much less than 0.1 PPV needed to be strongly perceptible to humans. The 0.062 PPV value is much less than 0.3 which may cause damage to older residential structures. Therefore, the project-related increase in vibration associated with truck transportation of sediments would not be significant (Class III).

Impact UP-REC-1: Proposed disposal of Marsh sediment in the surf zone would preclude recreational use of a portion of City Beach. Surf zone disposal of Marsh sediments was not fully addressed in the 2003 Final EIR because sediments were not considered "beach quality material" and would not be discharged. As surf zone disposal of sediments removed from the Marsh is not part of the environmental baseline, this is a new component. Proposed changes to the Enhancement Plan include surf zone disposal of trucked sediment from upper Franklin and Santa Monica Creeks removed by drag-line desilting and surf zone disposal of trucked sediment from re-established tidal channels in the South Marsh removed by excavation. Queuing of trucks and disposal of sediment at the terminus of Ash Avenue would temporarily preclude the use of about 100 linear feet of beachfront and may disrupt parking of beach users. This impact to recreational use of City Beach is considered less than significant (Class III) because it would not occur during peak season, it would be temporary (up to about six weeks) and affect only a small portion of the beach.

Impact UP-TRANS-1: Trucking of Marsh sediment to City Beach for disposal would contribute to traffic congestion on City streets. The intersection with the greatest traffic volumes along the trucking route is the Carpinteria Avenue/Seventh Street intersection which operates at LOS B during a.m. peak hour and LOS C during p.m. peak hour. Other affected intersections (along Seventh Street) handle much lower volumes and are anticipated to operate at LOS C or better. The proposed Updated Enhancement Plan would generate up to 40 peak hour trips (see Table 5.10-2) (20 round trips per hour). However, due to the lack of space for queuing trucks and limited operating area for heavy equipment unloading trucks and spreading sediment at City Beach, typical hourly truck trips would be less. Affected turning movements at the Carpinteria Avenue/Seventh Street intersection are eastbound right and northbound left, which comprise only 7 percent of the total vehicle turning movements during a.m. peak hour and 10 percent during p.m. peak hour. The addition of up to 40 hourly truck trips to this intersection would affect total turning movements by up to 4 percent during a.m. peak hour and 3 percent during p.m. peak hour. Due to the short-term nature of proposed sediment trucking to City Beach and relatively low traffic generation rates, potential traffic congestion impacts are considered less than significant (Class III).

Table 2-4. Summary of Beneficial Impacts

DESCRIPTION OF IMPACT

Impact UP-BIO-10: The addition of tidal channel excavation in the South Marsh as routine maintenance of the Avenue Del Mar drainage system would benefit south coastal salt marsh and coastal wetlands. In the long-term, routine maintenance of these channels would improve tidal circulation and maintain saturated soils beneficial to south coastal salt marsh. In general, tidal channels are critical to the structure and function of coastal salt marshes (Vivian-Smith, 2001). Therefore, periodic channel excavation would be beneficial to south coastal salt marsh and coastal wetlands in the long-term (Class IV).

Impact UP-BIO-12: Surf zone disposal of sediments removed from upper Franklin and Santa Monica Creeks, Lower Franklin Creek, Main Channel, and tidal channels in the South Marsh would contribute to beach nourishment and increase the intertidal habitat area. In contrast to the environmental baseline, the proposed project includes surf zone disposal of sediment at City Beach consistent with the Coastal Regional Sediment Management Plan, which would contribute to a wider beach and associated intertidal habitat area. Beach nourishment of about 100,000 cubic yards conducted as part of the San Diego Regional Beach Sand Project enhanced intertidal invertebrate populations at least 2,500 feet down-current of receiver sites (SAIC, 2006). Beach nourishment may also improve intertidal invertebrate habitat quality and species diversity at affected beaches as persistent sandy beach habitat replaces seasonally eroded habitat (SAIC, 2007). These beneficial impacts would also contribute to greater invertebrate prey availability to shorebirds, juvenile fish and other species (Class IV).

Impact UP-GEO-2: Surf zone disposal of sediments removed from upper Franklin and Santa Monica Creeks, Lower Franklin Creek, Main Channel, and tidal channels in the South Marsh would contribute to beach nourishment and address local beach erosion. In contrast to the environmental baseline, the proposed project includes surf zone disposal of sediment at City Beach consistent with the Coastal Regional Sediment Management Plan, which would replace sediments lost to coastal erosion and contribute to reducing seasonal shoreline retreat at City Beach. This impact is considered beneficial (Class IV).

Impact UP-HYDRO-5: The addition of channel excavation in the South Marsh as routine maintenance of the Avenue Del Mar drainage system would reduce flood risk and improve tidal circulation. Proposed routine maintenance of the tidal channels in the South Marsh would reduce flood risk for residences on Avenue Del Mar. This activity would also improve tidal circulation which would benefit water quality in the Main Channel and possibly reduce flood water elevations in the Main Channel and lower Franklin Creek during periods of storm run-off. These impacts to flood risk and water quality are considered beneficial (Class IV).

Impact UP-REC-2: Proposed surf zone disposal of sediments removed from major channels (Franklin Creek, Santa Monica Creek, Main Channel) and tidal channels in the South Marsh would contribute to beach nourishment and increase the beach width. In contrast to the environmental baseline, the proposed project includes surf zone disposal of sediment at City Beach consistent with the Coastal Regional Sediment Management Plan, which would contribute to a wider beach. This action would increase the beach area available for recreation and is considered a beneficial impact (Class IV).

3.0 CURRENT CONDITIONS

3.1 OVERVIEW OF THE CARPINTERIA SALT MARSH

The Marsh is an estuary located on the south coast of Santa Barbara County covering approximately 230 acres, and includes intertidal estuarine wetlands, adjacent palustrine wetlands and subtidal habitat in natural and artificial channels. The estuary provides habitat for a rich assemblage of native plants, fish, and wildlife. In June 1977, approximately 120 acres of the Marsh was incorporated into the University of California Natural Reserve System. A management plan was developed for the Carpinteria Salt Marsh Reserve by Ferren et al. in 1997, to protect and enhance natural and cultural resources and promote research programs, education programs and public stewardship. Along the eastern margin of the Marsh is the Carpinteria Salt Marsh Nature Park, an interpretive park with public access and nature viewing areas. An aerial overview of the Marsh and its channels is provided in Figures 3-1 and 3-2. Site photographs of the Marsh are provided as Figures 3-3 and 3-4.

The Marsh has been divided into five areas for the purposes of management which include:

- Basin 1: eastern portion of the Marsh, located between Santa Monica Creek and Franklin Creek.
- Basin 2: central portion of the Marsh, located between Santa Monica Creek and Estero Way (unpaved access road).
- Basin 3: western portion of the Marsh, located west of Estero Way.
- South Marsh: located immediately north of Avenue Del Mar.
- Nature Park: located on the eastern margin of the Marsh, adjacent to Ash Avenue.

3.2 STATUS OF ENHANCEMENT PLAN COMPONENTS

3.2.1 Completed Components of the Enhancement Plan

The following components described in the Final EIR prepared for the Carpinteria Salt Marsh Enhancement Plan (2003 Final EIR) have been completed:

- Vertical extension of the flood wall on the east side of Franklin Creek downstream of the Union Pacific Railroad tracks.
- Construction of a berm along the east bank of Franklin Creek downstream of the concrete channel to the Sandyland Cove Road bridge.
- Construction of a floodwall along the north side of Avenue Del Mar west of the Sandyland Cove Road bridge.
- Restoration of Basin 1 by the Land Trust (Restoration Action R1 in the 2003 Final EIR).
- Restoration of the South Marsh (Restoration Action R3 in the 2003 Final EIR).
- Sediment removal south of the Union Pacific Railroad tracks and west of Estero Way (Restoration Action R4 in the 2003 Final EIR).

- Sediment removal within the eastern edge of Basin 2 to match elevations of the balance of the Basin (Restoration Action R5 in the 2003 Final EIR).
- Hydraulic dredging of about 600 linear feet of the Main Channel south of the terminus of Estero Way (Restoration Action R6 in the 2003 Final EIR). This Enhancement Plan component was completed as part of emergency hydraulic dredge operations in the Main Channel following the January 2018 debris flow.

3.2.2 Ongoing Components of the Enhancement Plan

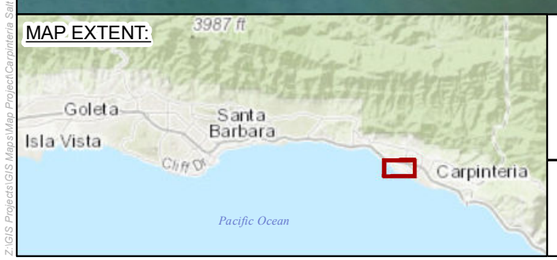
3.2.2.1 Routine Maintenance Sediment Removal

On an as-needed basis, sediment is removed in upper Franklin Creek and upper Santa Monica Creek. The sediment removal area extends from the Union Pacific Railroad bridges approximately 1,500 feet downstream to provide sufficient width (approximately 45 feet) to establish an in-channel sediment basin. Routine sediment removal was conducted in 2005, 2013 and 2018 (see Table 3-1).

Table 3-1. Summary of Routine Drag-line Desilting Activities (cubic yards)

Year	Franklin Channel	Santa Monica Channel	Main Channel	Disposal Site
2005	10,000	0	0	Upland
September-December 2013	0	14,160	0	Upland
August-October 2018	15,000	20,000	0	Upland

Drag-line desilting has been used for routine sediment removal, which involves using a crane rigged with a drag-line bucket, located on the existing access road along the channel (see Figures 3-3 and 3-5). The target elevation is four feet below mean sea level, or approximately 3 to 4 feet lower than the upstream concrete channel. Sediment volumes removed range from approximately 3,000 to 20,000 cubic yards from each creek channel, which are temporarily stockpiled on the access road for dewatering. Silt fencing is placed along the access road to contain the recently removed sediment. Sediment is typically hauled to upland disposal locations. More detail concerning routine maintenance is provided in Section 3.3.3.



LEGEND:

- Creek Channel
- Carpinteria Salt Marsh Reserve
- City of Carpinteria Boundary

0 250 500
FEET

Source: NAIP Imagery 2016, Google Earth Imagery May 2018, Esri Online Topo Basemap, County of Santa Barbara
Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet
Notes: This map was created for informational and display purposes only.

padre associates, inc.
ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

PROJECT NAME: CARPINTERIA SALT MARSH ENHANCEMENT PLAN
SANTA BARBARA COUNTY, CA

PROJECT NUMBER: 1802-3401

DATE: November 2019

MARSH OVERVIEW MAP

FIGURE 3-1

Z:\GIS Projects\GIS Maps\Map Project\Carpinteria Salt Marsh Enhancement Plan\Marsh Overview Map.mxd 11/13/2019

Back of Figure 3-1

Photo a. Franklin Creek (left), Santa Monica Creek (upper-right), Main Channel (background)

Photo b. Santa Monica Creek (center-left), Basin 2 (center), Estero Way and Basin 3 (upper-right)

OBLIQUE AERIAL PHOTOGRAPHS OF THE MARSH
FIGURE 3-2

Back of Figure 3-2

Photo a. Santa Monica Creek with access road/stockpile area (left), facing north

Photo b. Lower Franklin Creek from Sandyland Cove Road, facing west

SITE PHOTOGRAPHS (1 of 2)
FIGURE 3-3

Back of Figure 3-3

Photo c. South Marsh with Avenue Del Mar flood wall (foreground)

Photo d. Confluence of the Main Channel (right) with the Basin 3 channel

SITE PHOTOGRAPHS (2 of 2)
FIGURE 3-4

Back of Figure 3-4

Figure 3-5. Drag-line Desilting Operation on Santa Monica Creek

3.2.2.2 Marsh Mouth Opening

The University of California, Santa Barbara (UCSB) breaches the mouth of the Marsh when it closes and the measured dissolved oxygen levels within the sub-tidal/inter-tidal channels fall below 2.0 milligrams/liter (mg/L) and remain below 2.0 mg/L for more than 24 hours. Typical trench dimensions are approximately 10 feet by 150 feet, and four to six feet deep, but may vary greatly based on the size of the sand berm at the mouth. The Marsh mouth closed in late March 2012, and a 200-foot-long trench was excavated in an attempt to restore circulation with the ocean. This attempt was unsuccessful, but the Marsh mouth opened naturally on April 2, 2012. The Marsh mouth had remained open since 2012 until massive debris/sediment flows closed the Marsh mouth in January 2018. The Marsh mouth was then opened as part of emergency debris/sediment removal conducted in March-April 2018 (see Section 3.4).

3.2.3 Uncompleted Components of the Enhancement Plan

The following components described in the 2003 Final EIR have not been completed:

- Excavation of the primary channel in Basin 3 using a hydraulic dredge from the Marsh mouth about 800 feet upstream to reach a streambed elevation of two feet below mean sea level (Restoration Action R2 in the 2003 Final EIR). Implementation of this component by UCSB has not been scheduled, pending acquisition of adequate funding.

- Replacement of six 36-inch-diameter corrugated metal culverts under Estero Way that carry surface water between Basins 2 and 3 with high-density polyethylene culverts of the same diameter. This component is anticipated to be completed by November 2019.
- Modification/removal of five berms (B1 through B5 as identified in the 2003 Final EIR) in the vicinity of the South Marsh. This Enhancement Plan component is not currently planned for implementation.

3.3 ROUTINE MAINTENANCE PROGRAM

3.3.1 Program Objectives

Similar to those stated in the 2003 Final EIR, the current flood control objectives of the District are as follows:

- Maintain the channel capacity of Franklin Creek, Santa Monica Creek and the Main Channel in the Marsh to provide flood conveyance of 100-year event flood flows, thereby decreasing the potential for inundation of adjacent land uses.
- Provide sediment management to maintain flood conveyance through the Marsh.

3.3.2 Regulatory Permits and Limitations

Current Enhancement Plan activities are conducted under the authorization of the following regulatory permits.

3.3.2.1 California Department of Fish and Wildlife (CDFW)

Lake or Streambed Alteration Agreement (LSAA) No. 1600-2003-0052-R5 was issued by CDFW for the Enhancement Plan on September 7, 2004. The LSAA was extended yearly until 2016 when the District requested a long-term LSAA. The LSAA expired on November 1, 2016. A new LSAA was issued by CDFW on June 7, 2019 (No. 1600-2016-0210-R5) and authorizes the following routine maintenance activities until February 28, 2037:

- Drag-line desilting of Franklin and Santa Monica Creeks up to 1,500 feet downstream of the Union Pacific Railroad tracks to a maximum width of 45 feet (up to 20,000 cubic yards per creek).
- Basin 3 dredging (Restoration Action R2 in the 2003 Final EIR).
- Estero Way culvert replacement (Restoration Action R4 in the 2003 Final EIR).
- Marsh mouth opening (when dissolved oxygen falls below 2 milligrams/liter).

In addition, the LSAA authorizes proposed excavation of the South Marsh channels to maintain capacity and avoid flooding of residences on Avenue Del Mar.

Routine maintenance activity requirements and restrictions include:

- No activities shall occur between February 15 and August 1 to avoid take of light-footed Ridgway's (clapper) rail; if this species is not detected, the work restriction shall be March 15 to August 1 to avoid the Belding's savannah sparrow breeding period.

- Vegetation shall not be disturbed between February 1 and September 1, unless breeding bird surveys do not detect active bird nests.
- Night work requiring artificial lighting within jurisdictional streambeds is prohibited.

3.3.2.2 U.S. Army Corps of Engineers (Corps)

The Corps issued an individual permit (SPL-2003-00570-TS) on February 24, 2010 which expired on February 28, 2015. A letter from the Corps dated February 26, 2015 extended the permit completion date to February 28, 2020. This permit authorizes the following routine maintenance activities:

- Periodic maintenance dredging of 3,000 to 20,000 cubic yards from the upper 1,500 feet of Franklin Creek and Santa Monica Creek with surf zone disposal of sediments.
- Periodic maintenance dredging of the Main Channel with surf zone disposal of sediments (6,200 cubic yards). This activity is Restoration Action R6 as described in the 2003 Final EIR.
- Periodic maintenance dredging to maintain the Marsh mouth open to tidal circulation.

Routine maintenance activity requirements and restrictions include:

1. Vegetation removal is prohibited between February 15 and August 31 to avoid take of migratory birds, unless bird surveys indicate no nesting birds are present in the work area.
2. A Sampling and Analysis Plan (SAP) must be submitted and approved by the Corps in consultation with the Environmental Protection Agency (USEPA), Regional Water Quality Control Board (CCRWQCB) and Coastal Commission to authorize surf zone disposal of sediments. The District must implement the approved SAP and demonstrate that dredged sediments are chemically and physically suitable for surf zone disposal according the USEPA and Corps 1998 Inland Testing Manual.
3. A pre-dredging and post-dredging bathymetric condition survey is required to identify the proposed and actual depth and width of dredging.

3.3.2.3 Central Coast Regional Water Quality Control Board (CCRWQCB)

The CCRWQCB issued Water Quality Certification no. 34214WQ18 on May 1, 2015 under Section 401 of the Clean Water Act. The Water Quality Certification expires when the Corps permit expires (February 28, 2020). This permit authorizes the following routine maintenance activities:

- Periodic maintenance dredging of the upper 1,500 feet of Franklin Creek and Santa Monica Creek with off-site disposal of sediments.
- Periodic maintenance dredging to open the Marsh mouth to address low dissolved oxygen levels.

Routine maintenance activity requirements and restrictions include:

1. Work in creek channels is prohibited between November 30 and May 30, without prior written approval.
2. Work in creek channels is prohibited on any day with a predicted 25 percent chance of at least 0.1 inches of rain in 24 hours.
3. Work activities in salt marsh habitat is prohibited during the Belding's savannah sparrow breeding period (mid-March to June 1).

3.3.2.4 California Coastal Commission (CCC)

The CCC issued Coastal Development Permit no. 4-14-0492 on April 17, 2015. This permit expires on April 17, 2020. This permit authorizes the following routine maintenance activities:

- Periodic drag-line desilting (up to 40,000 cubic yards) of Franklin Creek and Santa Monica Creek with off-site disposal of sediments.
- As per an approved plan, trenching to open the Marsh mouth to address low dissolved oxygen levels.

Routine maintenance activity requirements and restrictions include:

1. All maintenance activities must be conducted between September 1 and February 28 to avoid impacts to breeding birds, including Belding's savannah sparrow and snowy plover.

3.3.3 Recent Routine Maintenance Program Activities

Routine maintenance of Santa Monica Creek was conducted between September 27 and December 18, 2013. The sediment removal work was comprised of approximately 1,100 linear feet of the approved 1,500-foot-long work area within Santa Monica Creek (downstream of the Union Pacific Railroad tracks), as the southernmost 400 feet of the typical work area did not need desilting. Sediment had not been removed from the affected channel area since 1998. Approximately 14,160 cubic yards (based on truck loads) was removed from Santa Monica Creek using a crane equipped with a drag-line bucket.

Routine maintenance of Santa Monica Creek and Franklin Creek was also conducted between August 1 and November 1, 2018 due continual sediment delivery from the burned watersheds. The District conducted breeding bird surveys of the affected area to accommodate the earlier start date. The sediment removal area was limited to the approved 1,500-foot reach of Santa Monica and Franklin Creeks downstream of the Union Pacific Railroad tracks. Approximately 20,000 cubic yards of sediment was removed from Santa Monica Creek, and 15,000 cubic yards was removed from Franklin Creek (see Table 3-1).

Specific activities associated with routine maintenance include:

- Sediment sampling within the planned sediment removal area and grain size analysis to determine suitability for surf zone sediment disposal, if surf zone disposal is being pursued.

- Pre-project biological surveys to detect foraging bird activity in and near the project area, particularly mallards and other waterfowl, and any transient Belding's savannah sparrows and other resident songbirds in the surrounding saltmarsh/shrub habitat. Sediment removal is conducted outside of the bird nesting season, when feasible.
- Marking locations of sensitive plants along the access roads using pin flags and flagging tape.
- Clearing branches and encroaching vegetation from the existing access roads (work areas, to be used for equipment access and sediment de-watering).
- Installation of silt fencing along the entire length of both sides of the work areas, to keep sediment away from the channel and salt marsh vegetation.
- Environmental briefings for equipment operators and supervisors.
- Installation of "rumble strips" (metal plates with a rough textured surface) along the access road to shake loose dirt from the tires and underbody of the trucks before they enter City streets. A street sweeper typically patrols City streets near the access road entrance to remove any materials falling from trucks.
- Drag-line desilting to remove sediments from the channel and stockpiling them in the staging/stockpile area (existing access roads) for dewatering.
- Daily inspection of equipment for cleanliness and leaks.
- Inspections and photo-monitoring to assess the level of turbidity within Santa Monica Creek, the Main Channel and Marsh mouth.
- Following several days of in-situ sediment drying, loading sediment into heavy-duty trucks using a wheeled loader and transportation to an upland disposal site.
- A second session of drag-line desilting and trucking as needed if the staging/stockpile areas are not large enough to accommodate all of the sediment to be removed.
- Collection of native plant seeds from the habitats along the access roads, and broadcast over disturbed areas in and along the edges of the access roads to assist in re-colonization.

3.4 EMERGENCY DEBRIS/SEDIMENT REMOVAL

A summary of emergency debris/sediment removal activities following major storm events is provided in Table 3-2. In response to loss of property and human life caused by debris flows in watersheds affected by the Thomas Fire, the Federal Emergency Management Agency declared a Major Disaster with an Incident period starting on December 4, 2017 for Santa Barbara and Ventura Counties. Emergency maintenance of upper Santa Monica Creek and Franklin Creek using drag-line desilting methods was conducted in January 2018 within the routine permitted sediment removal area, which included approximately 1,500 linear feet of the Santa Monica Creek and 1,500 linear feet of Franklin Creek downstream of the Union Pacific Railroad tracks. Approximately 22,512 cubic yards (based on truck loads) of sediment was removed and disposed in the surf zone at the City Beach (terminus of Ash Avenue).

In addition, debris and sediment was removed from lower Franklin Creek and the Main Channel in March-April 2018 using hydraulic dredging methods. The sediment slurry was disposed in the surf zone at the Marsh mouth. This event was unique and is not part of routine maintenance of the Marsh.

Table 3-2. Summary of Emergency Desilting Activities (cubic yards)

Year	Method	Franklin Channel	Santa Monica Channel	Main Channel	Disposal Site
1995	Drag-line	15,000	0	0	Upland
1998	Drag-line	10,000	8,000	0	Upland
2001	Drag-line	5,000-9,000	0	0	City Beach
2018	Drag-line	22,512*	*	0	City Beach
2018	Hydraulic dredge	0	0	20,000	Surf zone at Marsh mouth

*Total from both channels

3.5 FLUVIAL SEDIMENT SAMPLING

The District plans to conduct fluvial sediment sampling to characterize sediments discharged from Franklin Creek and Santa Monica Creek into the Marsh and the Pacific Ocean during storm flow events. Aerial photographs show extensive turbidity plumes off the coast after storm events and the District's goal is to characterize natural storm-related sediment discharge for comparison to sediment discharge to the ocean environment as a result of routine maintenance of the Marsh (surf zone disposal of sediment removed by drag-line desilting and hydraulic dredging).

Fluvial sediment sampling is planned to be initiated during the 2019/2020 rainy season and will be conducted for several years, depending on the results of the sampling. Sampling will be conducted from the Carpinteria Avenue Bridge at Santa Monica Creek and the Seventh Avenue Bridge at Franklin Creek. A suspended sediment sampler (most likely model D-74) will be mounted on a small wheeled hand-crane and lowered into storm flows to collect suspended sediment samples. Samples will be collected using the equal-width increment method, where the channel cross-section is divided into sample areas of equal width and the sampler is placed in the center of each sample area. Sediment samples will be processed and analyzed by the U.S. Geological Survey laboratory in Santa Cruz, California.

4.0 PROPOSED UPDATED CARPINTERIA SALT MARSH ENHANCEMENT PLAN

The intent of the District is to prepare a Subsequent EIR to update the 2003 Carpinteria Salt Marsh Enhancement Plan EIR. Activities and methodology proposed for the Updated Enhancement Plan (Project) are similar to the original Enhancement Plan implemented following certification of the 2003 Final EIR. Current routine maintenance activities of Franklin Creek and Santa Monica Creek are described in Section 3.3. The District proposes the following changes to existing routine maintenance at the Carpinteria Salt Marsh (see Figure 4-1):

1. Surf zone disposal (beach nourishment) of sediments removed by drag-line desilting in upper Franklin and Santa Monica Creeks (see upper desilting area in Figure 4-1) by trucking to the terminus of Ash Avenue.
2. Hydraulic dredging in areas where drag-line desilting has been conducted in the past (see upper desilting area in Figure 4-1) with surf zone disposal.
3. Hydraulic dredging in lower Franklin Creek and the Main Channel extending to the Marsh mouth (see lower desilting area in Figure 4-1) with surf zone disposal. This task would not be conducted in the same year as desilting or hydraulic dredging of upper Franklin and Santa Monica Creeks.
4. Hydraulic dredging of the entire length of major channels within the Marsh (Franklin Creek, Santa Monica Creek, Main Channel) as a single task with surf zone disposal. This is essentially a combination of components 2 and 3 above conducted in the same year.
5. Expansion of the existing Franklin Creek desilting staging/stockpile area.
6. Maintenance of the Avenue Del Mar drainage system at the South Marsh.

4.1 DRAG-LINE DESILTING WITH SEDIMENT DISPOSAL BY TRUCKING TO THE SURF ZONE

The project assessed in the 2003 Final EIR included beach or surf zone disposal of sediments removed from upper Franklin and Santa Monica Creeks. However, sediment was considered unlikely to be suitable for surf zone disposal due to what regulatory agencies at the time considered to be a high fines content (silt and clay). The Updated Enhancement Plan assessed in this Subsequent EIR addresses impacts of surf zone disposal of sediment removed during routine maintenance activities in light of the current regulatory environment.

Table 5.5-1 provides a summary of grain size analysis of sediments within upper Franklin and Santa Monica Creeks which range from 18 to 58 percent fines. However, these data pre-date the January 2018 debris flows and desilting events conducted in January 2018 and August-October 2018. The percent fines of sediments to be removed and disposed in the surf zone as part of routine maintenance cannot be fully known until sediment sampling is conducted as part of a Sampling and Analysis Plan (see Section 4.1.2). For the purposes of this Subsequent EIR, it is assumed sediments removed from upper Franklin and Santa Monica Creeks and disposed in the surf zone may have a fines content of up to 60 percent.

4.1.1 Overview

This project component consists of surf zone disposal of sediment removed from Franklin Creek and Santa Monica Creek using drag-line desilting (current routine maintenance activity). Sediments would be trucked to City Beach at the terminus of Ash Avenue for surf zone disposal.

Drag-line desilting of upper Franklin and Santa Monica Creeks is specifically authorized by current permits issued by the CCRWQCB (Certification no. 34214WQ18), Corps (SPL-2003-00570-TS), the Coastal Commission (Coastal Development Permit 4-14-0492) and California Department of Fish and Wildlife (SAA No. 1600-2016-0210-R5). However, CCRWQCB Certification no. 34214WQ18 and Coastal Development Permit 4-14-0492 do not authorize surf zone disposal of sediments. Regulatory permits would be amended to reflect proposed changes to the Enhancement Plan.

4.1.2 Pre-Dredging Preparation

A Sampling and Analysis Plan would be required to be submitted to the Corps to authorize surf zone disposal of the sediment slurry and would be reviewed by the Southern California Dredged Material Management Team composed of representatives of the Corps, California Coastal Commission, CCRWQCB and USEPA.

Prior to the initiation of hydraulic dredging, sediment sampling and analysis would be conducted as per the approved Sampling and Analysis Plan. The extent and depth of sediment removal may be adjusted based on the results of the sediment analysis.

Pre-project biological surveys would be conducted as required by regulatory permits. The results of any surveys would be submitted to the regulatory agencies.

4.1.3 Desilting Activities

All desilting activities would be conducted according to existing routine maintenance practices (see Section 3.3) including sediment sampling, biological surveys, stockpile area silt fencing, drag-line removal of sediments, stockpiling of sediment and in-situ draining of sediments.

4.1.4 Sediment Disposal

De-watered sediment would be loaded from stockpile locations into trucks by wheeled loaders and/or tracked excavators, with an average truck load of about 10 cubic yards. Based on truck queuing logistics at the Ash Avenue disposal site, a maximum of 1,500 to 2,000 cubic yards per day of sediment would be disposed in the surf zone, or about 150 to 200 truck trips per day. However, the number of truck loads per day could be reduced to address potential traffic and beach user conflicts.

Trucks would use existing access roads within the Marsh and exit onto Carpinteria Avenue from Estero Way or Sandyland Cove Road. Full trucks would follow Carpinteria Avenue east, then right on 7th Street, right (south) on Linden Avenue, then right (west) on Sandyland Road to its intersection with Ash Avenue.

BASIN 3

BASIN 2

BASIN 1

ESTERO WAY

UNION PACIFIC RAILROAD

SEVENTH ST

Santa Monica Creek

SANDYLAND COVE RD

Main Channel

SOUTH MARSH

Franklin Creek

AVENUE DEL MAR

SILVER SANDS MHP

FOURTH ST

CITY OF CARPINTERIA

NATURE PARK

THIRD ST

ASH AVE

HOLLY AVE

SANDYLAND RD

ELM AVE

Pacific Ocean

N

MAP EXTENT:

LEGEND:

- Avenue Del Mar Drainage System Pilot Channel
- South Marsh Tidal Channel Re-establishment
- Floodwall
- Lower Desilting Area
- Upper Desilting Area
- Staging/Stockpile Area Expansion
- Surf Zone Disposal Area (Hydraulic Dredging)
- Surf Zone Disposal Area (Trucking)
- City of Carpinteria Boundary
- Assessor Parcel Boundary

0 150 300
FEET

Source: Google Earth Imagery May 2018, Esri Online Topo Basemap, County of Santa Barbara
Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet
Notes: This map was created for informational and display purposes only.

padre associates, inc.
ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

PROJECT NAME: CARPINTERIA SALT MARSH ENHANCEMENT PLAN
SANTA BARBARA COUNTY, CA

PROJECT NUMBER: 1802-3401

DATE: November 2019

PROJECT COMPONENT MAP

FIGURE 4-1

project/Carpinteria Salt Marsh Enhancement Plan/Project Component Map.mxd 11/18/2019

Back of Figure 4-1

LEGEND:

- Outbound Trucks (Full)
- Inbound Trucks (Empty)
- City of Carpinteria Boundary
- Surf Zone Disposal Area (Trucking)

MAP EXTENT:

0 200 400
FEET

Source: NAIP 2016 Imagery, Esri Online Topo Basemap, County of Santa Barbara
Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet
Notes: This map was created for informational and display purposes only.

padre associates, inc.
ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

PROJECT NAME:	UPDATED CARPINTERIA SALT MARSH ENHANCEMENT PLAN SANTA BARBARA COUNTY, CA
PROJECT NUMBER:	1802-3401
DATE:	June 2019

SEDIMENT DISPOSAL TRUCK ROUTE MAP

FIGURE 4-2

Carpinteria Salt Marsh Enhancement Plan Truck Route Map.mxd 6/21/2019

Back of Figure 4-2

Trucks would back onto the beach at the terminus of Ash Avenue and dump the sediment beyond the end of the pavement (see trucking surf zone disposal area in Figure 4-1). Wheeled loaders and tracked dozers would be used to push the sediment into the surf zone for dispersal by surf action. Overall, the use of trucks and heavy equipment would be virtually the same as used for upland disposal of sediment as currently practiced.

Empty outbound trucks would follow the same route as full inbound trucks, right on Sandyland Road, left on Linden Avenue, left on Seventh Street and left on Carpinteria Avenue (see Figure 4-2). An alternative truck route may be developed in consultation with the City of Carpinteria.

4.1.5 Personnel

It is estimated that four on-site workers would be needed for sediment loading and unloading/dispersal, including a foreman and three equipment operators. Additionally, District staff would inspect sediment loading and disposal on a daily basis. Overall, personnel requirements would be virtually the same as used for upland disposal of sediment as currently practiced.

4.1.6 Schedule and Timing

Drag-line desilting would be conducted from September through February (outside of the bird nesting season), with surf zone disposal conducted between October and February. Sediment disposal would be conducted up to 10 hours per day (typically 7 a.m. to 5 p.m.). Based on an average of 150 truck loads per day (1,500 cubic yards), it is anticipated that sediment disposal would be completed in 27 work days (or about six weeks, based on a 5 day work week), not including mobilization and demobilization, assuming a total of 40,000 cubic yards of sediment require disposal.

4.2 HYDRAULIC DREDGING OF UPPER FRANKLIN AND SANTA MONICA CREEKS

The project assessed in the 2003 Final EIR included desilting of upper Franklin and Santa Monica Creeks using drag-line methods. The Updated Enhancement Plan assessed in this Subsequent EIR addresses impacts of desilting using hydraulic dredging with surf zone disposal. The impact assessment for this component is based on non-sequential implementation, such that hydraulic dredging of upper Franklin and Santa Monica Creeks would not be conducted in the same year as sediment removal in lower Franklin Creek and the Main Channel.

The percent fines of sediments to be removed and disposed in the surf zone as part of routine maintenance cannot be fully known until sediment sampling is conducted as part of a Sampling and Analysis Plan (see Section 4.2.2). For the purposes of this Subsequent EIR, it is assumed sediments removed from upper Franklin and Santa Monica Creeks and disposed in the surf zone may have a fines content of up to 60 percent.

4.2.1 Overview

As an alternative to drag-line desilting, a hydraulic dredge would be used to remove accumulated sediments with surf zone disposal of the sediment slurry. Hydraulic dredging would occur within existing drag-line desilting areas (see upper desilting area in Figure 4-1), which includes approximately 1,500 feet of Franklin Creek and 1,500 feet of Santa Monica Creek downstream of the Union Pacific Railroad tracks. Equipment and vehicle access would be from Estero Way and Sandyland Cove Road, and existing access roads within the Marsh. Staging of the dredge, pipe and related equipment would occur within the existing staging areas parallel to and west of the creek channels.

The Corps permit (SPL-2003-00570-TS) authorizes dredging of upper Franklin and Santa Monica Creeks and surf zone disposal of sediments. CCRWQCB Certification no. 34214WQ18, CDFW LSAA no. 1600-2016-0210-R5 and Coastal Development Permit 4-14-0492 do not authorize surf zone disposal of sediments, which is required for hydraulic dredging.

4.2.2 Pre-Dredging Preparation

A Sampling and Analysis Plan would be required to be submitted to the Corps to authorize surf zone disposal of the sediment slurry and would be reviewed by the Southern California Dredged Material Management Team composed of representatives of the Corps, California Coastal Commission, CCRWQCB and USEPA.

Prior to the initiation of hydraulic dredging, sediment sampling and analysis would be conducted as per the approved Sampling and Analysis Plan. The extent and depth of sediment removal may be adjusted based on the results of the sediment analysis. Pre-project biological surveys would be conducted as required by regulatory permits. The results of any surveys would be submitted to the regulatory agencies.

4.2.3 Methodology and Equipment

The dredge would be placed in the downstream end of the desilting area by a crane and work upstream. Opening of the Marsh mouth to improve tidal circulation may be required to provide sufficient surface water to float the dredge and to produce a sediment slurry that can be pumped through the discharge pipeline. Equipment to be used to open the Marsh mouth would include a tracked excavator or dozer. A discharge pipeline (likely 10-inch diameter high-density polyethylene) would transport the sediment slurry produced by the dredge to the beach discharge location near the Marsh mouth. If the sediment slurry accumulates at the discharge point due to insufficient surf action, a tracked excavator would be used to relocate the end of the discharge pipeline to a better location. Additional discharge pipe sections would be added at the upstream end as the dredge moves upstream.

The hydraulic dredge to be used would be similar to that used for emergency debris/sediment removal conducted in March-April 2018 (DSC Wolverine) (see Figure 4-3). These dredges are capable of moving approximately 100 to 300 cubic yards of sediment per hour. The hydraulic dredge would include onboard pumping equipment powered by a diesel engine. The suction pipe would be fitted with a rotating cutter-head that loosens the sediment to allow it to be pumped as a slurry. The dredge may pivot on its spuds (movable integral steel piles) but would primarily be moved by a work platform/assist vessel and shore-based excavator with steel cable working in tandem to push/pull the dredge along the channel.

Figure 4-3. Hydraulic Dredging Operation at the Marsh

Equipment/vessels to be used for hydraulic dredging (based on 2018 emergency debris/sediment removal) would include:

- Hydraulic cutter-head dredge (DSC Wolverine, or equivalent) with a 440-horsepower (HP) diesel engine powering the dredge pump, cutter drive and hydraulic winches.
- Work platform/assist vessel used to push (re-position) the dredge powered by a gasoline outboard motor.
- Small crew boat (12 to 16 feet-long) powered by a small gasoline outboard motor.
- Amphibious excavator (Caterpillar 308E2, or equivalent) powered by a diesel engine used to remove sediments in critical localized areas and re-position the dredge.
- Tracked excavator (Deere 225D LC, or equivalent) with grasping (thumb) attachment powered by a diesel engine used to pull (re-position) the dredge using a steel cable, place and move discharge pipe and re-position the beach discharge point.
- An electrical high-density polyethylene pipe fuser with a small gasoline-powered portable generator (5-10 kilowatt).

The dredge and associated mobile equipment would be provided with lighting to allow nighttime dredging. Such lighting would be shielded, and focused downward to illuminate the work areas. In addition, heavy-duty trucks would be used to deliver the dredge, other associated equipment and discharge pipe. A 30-ton (minimum) crane would be used to unload the dredge and place it in the channel.

Due to the distance between the upstream end of the desilting areas and the discharge location (up to 4,500 feet), a booster pump may be required to maintain a suitable slurry discharge rate. If needed, the booster pump would be diesel powered (about 575 HP, Neumann model BST250 or equivalent), mounted on a steel skid and located on the channel bank.

4.2.4 Personnel Requirements

Typically, six on-site workers would be needed for hydraulic dredging activities. Two would operate the dredge, while the other four workers would operate the excavators, move and attach discharge pipe segments as the dredge moves upstream, and monitor the discharge point. Under certain circumstances more labor may be required for short periods of time on specific tasks. Additionally, District staff would inspect desilting operations at least two times per day.

4.2.5 Schedule and Timing

Dredging would be conducted between September 1 and March 1. Hydraulic dredging would typically be conducted about 10 hours per day (typically 7 a.m. to 5 p.m.) but could be extended to up to 24 hours per day during favorable evening/nighttime tidal conditions that allow dredging to be completed in a shorter period. However, nighttime work (7 p.m. to 7 a.m.) would be prohibited on Franklin Creek upstream of the foot bridge. Based on an average dredging rate of 100 cubic yards per hour, it is anticipated that dredging would be completed in 17 days (24 hours per day) to 40 days (10 hours per day) (not including mobilization and demobilization), assuming up to 40,000 cubic yards are removed. Based on an anticipated 5 day work week, this equates to a work period of about four to eight weeks.

4.3 HYDRAULIC DREDGING OF LOWER FRANKLIN CREEK AND THE MAIN CHANNEL

The Enhancement Plan assessed in the 2003 Final EIR included one-time desilting of 600 linear feet of the Main Channel (Station 7+00 to 13+00) as Restoration Action R6 using hydraulic dredging with surf zone disposal. The Updated Enhancement Plan assessed in this Subsequent EIR expands this desilting area to include ongoing routine maintenance of the entire Main Channel and lower Franklin Creek.

The impact assessment for this component is based on non-sequential implementation, such that hydraulic dredging of lower Franklin Creek and the Main Channel would not be conducted in the same year as drag-line desilting (see Section 4.1) or hydraulic dredging of upper Franklin and Santa Monica Creeks (see Section 4.2).

Table 5.5-1 provides a summary of grain size analysis of sediments within lower Franklin Creek and the Main Channel which range from 0.8 to 39 percent fines. However, these data pre-date hydraulic dredging conducted in March-April 2018. The percent fines of sediments to be removed and disposed in the surf zone as part of routine maintenance cannot be fully known until sediment sampling is conducted as part of a Sampling and Analysis Plan (see Section 4.3.2). For the purposes of this Subsequent EIR, it is assumed sediments removed from lower Franklin Creek and the Main Channel and disposed in the surf zone may have a fines content of up to 60 percent.

4.3.1 Overview

A hydraulic dredge would be used to remove accumulated sediments downstream of existing desilting areas (see lower desilting area in Figure 4-1) within lower Franklin Creek and the Main Channel, extending to the Marsh mouth. The proposed desilting area is composed of approximately 1,100 feet of Franklin Creek (Station 21+00 [confluence with Santa Monica Creek] to Station 32+00) and 2,000 feet of the Main Channel (Station 1+00 to 21+00). Equipment and vehicle access would be from Estero Way and Sandyland Cove Road, and existing access roads within the Marsh. Staging of the dredge, pipe and related equipment would occur within the existing staging areas parallel to and west of the creek channels.

This component is not authorized by current permits issued by the CCRWQCB (Certification no. 34214WQ18), CDFW (LSAA no. 1600-2016-0210-R5) or the Coastal Commission (Coastal Development Permit 4-14-0492) but appears to be authorized in part (as Restoration Action R6 of the 2003 Final EIR) by the Corps permit (SPL-2003-00570-TS).

4.3.2 Pre-Dredging Preparation

A Sampling and Analysis Plan would be required to be submitted to the Corps to authorize surf zone disposal of the sediment slurry and would be reviewed by the Southern California Dredged Material Management Team composed of representatives of the Corps, California Coastal Commission, CCRWQCB and USEPA.

Prior to the initiation of hydraulic dredging, sediment sampling and analysis would be conducted as per the approved Sampling and Analysis Plan. The extent and depth of sediment removal may be adjusted based on the results of the sediment analysis.

Pre-project biological surveys would be conducted as required by regulatory permits. The results of any surveys would be submitted to the regulatory agencies.

4.3.3 Methodology and Equipment

The hydraulic dredge would be placed in the Main Channel at the terminus of Estero Way or Sandyland Cove Road using a crane. Sediment removal would progress generally upstream. Hydraulic dredging methodology and equipment would be the same as discussed for upper Franklin Creek and Santa Monica Creek (see Section 4.2.3).

4.3.4 Personnel Requirements

Typically, six on-site workers would be needed for hydraulic dredging activities. Two would operate the dredge, while the other four workers would operate the excavators, move and attach discharge pipe segments as the dredge moves upstream, and monitor the discharge point. Under certain circumstances, more labor may be required for short periods of time on specific tasks. Additionally, District staff would inspect desilting operations at least two times per day.

4.3.5 Schedule and Timing

Dredging would be conducted between September 1 and March 1. Hydraulic dredging would typically be conducted about 10 hours per day (typically 7 a.m. to 5 p.m.) but could be extended to up to 24 hours per day during favorable evening/nighttime tidal conditions that allow dredging to be completed in a shorter period. Based on an average dredging rate of 100 cubic yards per hour, it is anticipated that dredging would be completed in about nine days (24 hours per day) to 20 days (10 hours per day) (not including mobilization and demobilization), assuming up to 20,000 cubic yards are removed. Based on an anticipated 5 day work week, this equates to a work period of about two to four weeks.

4.4 HYDRAULIC DREDGING OF ALL MAJOR CHANNELS

4.4.1 Overview

This component is comprised of hydraulic dredging of the entire length of major channels in the Marsh (Franklin Creek, Santa Monica Creek, Main Channel) in response to a significant reduction in capacity of these channels. It is anticipated that this would be an infrequent event, occurring on an unpredictable schedule based on annual storm patterns and wildfire in the watersheds. The decision to implement this component would be based on visual assessment by District staff. Essentially, it is hydraulic dredging of the upper desilting area (see Section 4.2) and the lower desilting area (see Section 4.3) shown in Figure 4-1, conducted as one task (single work season).

The Corps permit (SPL-2003-00570-TS) authorizes dredging of upper Franklin and Santa Monica Creeks and surf zone disposal of sediments. CCRWQCB Certification no. 34214WQ18, CDFW LSAA no. 1600-2016-0210-R5 and Coastal Development Permit 4-14-0492 do not authorize surf zone disposal of sediments, which is required for hydraulic dredging. Hydraulic dredging of the Main Channel appears to be authorized in part (as Restoration Action R6 of the 2003 EIR) by the Corps permit (SPL-2003-00570-TS).

4.4.2 Pre-Dredging Preparation

See Section 4.2.2.

4.4.3 Methodology and Equipment

A single hydraulic dredge (and associated support equipment) would be used. The dredge would be placed in the downstream end of the upper desilting area by a crane and work upstream. To access the lower desilting area, the hydraulic dredge would be placed in the Main Channel at the terminus of Estero Way or Sandyland Cove Road using a crane. Sediment removal would progress generally upstream. Hydraulic dredging methodology and equipment would be the same as discussed for upper Franklin Creek and Santa Monica Creek (see Section 4.2.3).

4.4.4 Personnel Requirements

See Section 4.2.4.

4.4.5 Schedule and Timing

Dredging would be conducted between September 1 and March 1. Hydraulic dredging would typically be conducted about 10 hours per day (typically 7 a.m. to 5 p.m.) but could be extended to up to 24 hours per day during favorable evening/nighttime tidal conditions that allow dredging to be completed in a shorter period. Based on an average dredging rate of 100 cubic yards per hour, it is anticipated that dredging would be completed in 25 days (24 hours per day) to 60 days (10 hours per day) (not including mobilization and demobilization), assuming up to 60,000 cubic yards are removed. Based on an anticipated 5 day work week, this equates to a work period of about five to 12 weeks.

4.5 FRANKLIN CREEK STAGING/STOCKPILE AREA EXPANSION

The existing staging/stockpile area adjacent to the west bank of Franklin Creek (about 200 feet south of the Union Pacific Railroad tracks) is proposed to be expanded by approximately 0.5 acres to provide additional stockpile area (see Figure 4-1). The expanded stockpile area would be used for drag-line desilting operations to stockpile/dewater sediment prior to trucking to an upland disposal site or to the surf zone for disposal. Following the use of this area for drag-line desilting, excess fill material would be removed, and the expansion area would be restored to approximately the same elevation as adjacent salt marsh. The proposed expansion area would be naturally recolonized by salt marsh vegetation between infrequent desilting events (typically greater than 5 years apart).

4.6 AVENUE DEL MAR DRAINAGE SYSTEM ROUTINE MAINTENANCE

4.6.1 Overview

A flood wall was constructed along the north side of Avenue Del Mar (South Marsh) west of the Sandyland Cove Road bridge as part of the current Enhancement Plan (see Figures 3-4 and 4-1). The flood wall was provided with a drainage system consisting of three pipes that drain local run-off through the flood wall into tidal channels of the South Marsh created in 2005 as part of the existing Enhancement Plan (Restoration Action R3). Debris/sediment deposited in the South Marsh as a result of extremely intense rain events on January 9, 2018 following the Thomas Fire completely filled in the tidal channels and resulted in flooding of Avenue Del Mar during a March 2018 storm event. Limited excavation of pilot channels within the filled-in tidal channels was conducted in October 2018. Routine maintenance of the drainage system is needed to reduce the potential for future flooding.

4.6.2 Pre-Construction Preparation

Pre-project biological surveys would be conducted as required by regulatory permits. The results of any surveys would be submitted to the regulatory agencies.

4.6.3 Methodology and Equipment

Proposed as-needed routine maintenance of this drainage system would consist of excavating a pilot channel within the existing tidal channels between the three flood wall drain pipe outlets and Franklin Creek and the Main Channel (see pilot channels in Figure 4-1). If these pilot channels do not provide adequate drainage and flooding may occur, the tidal channels constructed in 2005 within the South Marsh would be re-established. This is anticipated to be a rare event as the tidal channels have only needed maintenance since they were constructed due to the effects of the unprecedented debris flows in January 2018.

4.6.3.1 Pilot Channel Excavation

A small excavator or dozer (Caterpillar D6 or equivalent) would be used to excavate a trench (pilot channel) within the footprint of the existing filled-in tidal channels starting at the drain outlet and daylighting into Franklin Creek or the Main Channel. The pilot channels would be excavated along the shortest route possible within the existing tidal channels to avoid disturbance to native vegetation. The pilot channels would have a bottom width of approximately two feet, with tapered sides to avoid sloughing and further blockages. The pilot channel gradient would be about one percent to allow drainage into the Main Channel.

Excavated material would be side-cast within the original 25-foot-wide tidal channel footprint. Silt fence would be installed along both sides of the tidal channels prior to any excavation to avoid any inadvertent loss of saltmarsh habitat outside the channels. Equipment access between the three pilot channels would be within the footprint of the channels (where feasible) excavated in 2005 to minimize loss of saltmarsh habitat.

4.6.3.2 Tidal Channel Re-establishment

Re-establishment of the South Marsh tidal channels would require a backhoe (Caterpillar 440, or equivalent), small dozer (Caterpillar D6, or equivalent), one or more large tracked excavators (Caterpillar 330, or equivalent), an off-highway dump truck (Volvo A25, or equivalent) and approximately five 10-wheeled dump trucks. Equipment access between the three pilot channels would be within the footprint of the channels (where feasible) excavated in 2005 to minimize loss of saltmarsh habitat. Silt fence would be installed to delineate the work area prior to any excavation to avoid any inadvertent loss of saltmarsh habitat. Excavated material would be pushed into the Main Channel for removal by hydraulic dredging or loaded into the off-highway dump truck, stockpiled in designated stockpile areas and loaded into 10-wheeled dump trucks. Any stockpiled material would be hauled away for upland disposal at an approved site or taken to City Beach (Ash Avenue) for surf zone disposal (if compatible). It is anticipated that approximately 400 truck trips would be required to transport stockpiled material to the disposal site, with up to 30 round trips on a peak day. A wheeled loader would be used at the disposal site to handle and spread excavated material.

4.6.4 Personnel Requirements

It is estimated two on-site workers would be needed for pilot channel excavation, including a foreman and equipment operator. Approximately four additional personnel would be required for re-establishment of the South Marsh tidal channels. District staff would inspect maintenance activities on a periodic basis.

4.6.5 Schedule and Timing

Channel excavation would be conducted about 10 hours per day (typically 7 a.m. to 5 p.m.). Excavation of pilot channels would require approximately one week (five to seven working days) to complete. Re-establishment of drainage channels in the South Marsh would require approximately six weeks (30 working days). Channel excavation would be conducted during the dry season (August-November) and avoid the bird breeding season (February through August). Surf zone disposal of excavated sediment (if needed) would be conducted between October and February to avoid the summer peak season at City Beach.

4.7 CUMULATIVE PROJECTS

Section 15130 of the State CEQA Guidelines requires a discussion of cumulative impacts, and determination of the project's contribution to identified cumulative impacts. The project's contribution must be viewed when added to the effects of past projects, the effects of other current projects and the effects of reasonably foreseeable future projects.

The discussion of cumulative impacts must reflect the severity of the impacts and their likelihood of occurrence, but the discussion need not provide as great of detail as is provided for the effects attributable to the project alone. The discussion should be guided by standards of practicality and reasonableness, and should focus on the cumulative impact to which the identified other projects contribute rather than the attributes of other projects which do not contribute to the cumulative impact. The following elements are necessary for an adequate discussion of significant cumulative impacts:

- A list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency, or
- A summary of projections contained in an adopted general plan or related planning document, or in a prior environmental document which has been adopted or certified, which described or evaluated regional or area-wide conditions contributing to the cumulative impact. Any such planning document shall be referenced and made available to the public at a location specified by the Lead Agency.

The cumulative impacts discussion of this Subsequent EIR is based on a list of other projects that may generate impacts to which the proposed project may also incrementally contribute. The following is a list of other projects in the project area that may be implemented at about the same time as the proposed project.

4.7.1 Regional Transportation Projects

- U.S. Highway 101 HOV Lanes: adds one high occupancy vehicle (HOV) lane in each direction on U.S. 101 from 0.2 miles south of the Bailard Avenue interchange in the City of Carpinteria to Sycamore Creek in the City of Santa Barbara (under Caltrans design and review, construction planned to start 2023).

4.7.2 Santa Barbara County Flood Control District Projects

Other District projects proposed in the project area include:

- **San Ysidro Debris Basin Improvements Project**. Modification of the existing debris basin embankment on San Ysidro Creek to enhance fish passage and improve sediment transport (under design). This project site is located approximately 5.4 miles northwest of the Marsh.
- **Cold Springs Debris Basin Improvements Project**. Modification of the existing debris basin on Cold Springs Creek to expand the basin catchment area, improve sediment transport and enhance fish passage (under design). This project site is located approximately 6.9 miles northwest of the Marsh.
- **Romero Debris Basin Improvements Project**. Modification of the existing debris basin embankment on Romero Creek to improve sediment transport and enhance fish passage (under design). This project site is located approximately 3.9 miles northwest of the Marsh.
- **Randall Road Debris Basin Project**. Construction and maintenance of a new debris basin on San Ysidro Creek in Montecito approximately 0.5 miles downstream of the existing debris basin (under design). This project site is located approximately 4.9 miles northwest of the Marsh.

4.7.3 Other Santa Barbara County Projects

The Santa Barbara County Planning & Development Department's cumulative project list (last updated December 27, 2018) was reviewed and recently approved and proposed projects that are anticipated to result in a substantial physical change in the environment (excludes small projects such as a single residence, additions, agricultural conversion to cannabis) in the project area (Montecito, Summerland, Toro Canyon, Carpinteria) are:

- Westmont College Master Plan: 314,500 square feet of new or replacement buildings (under construction).
- Crane School Updated Master Plan: 66,060 square feet new or replacement buildings (under construction).
- Montecito YMCA Master Plan: redevelopment with net increase of 19,954 square feet (in process).
- Tract Map 14,831 (Via Real): 40 new residential units (in process).
- Cate School Master Plan Amendment: new structures and additions (under initial review).
- Summerland Elementary School improvements: new classrooms, library, administration building (in process).

4.7.4 City of Carpinteria

The City of Carpinteria Planning Department's cumulative project list (last updated January 2019) was reviewed and projects that are anticipated to result in a physical change in the environment in the City are:

- Lagunitas Mixed Use: 85,000 square feet of commercial space (approved).
- U.S. 101/Linden Avenue and Casitas Pass Road Interchanges (under construction).
- M3 Mixed Use: Two apartments and 6,488 square feet of commercial space (approved).
- Schildknecht Residence: one new single-family residence (approved).
- Gobbell Second Unit: one new single-family residence (approved).
- Habitat for Humanity: three new condominiums (approved).
- Carpinteria Avenue Bridge Replacement: replacement of the Carpinteria Avenue bridge over Carpinteria Creek (approved).
- Wells Residence: convert church to one new single-family residence (approved).
- Green Heron Spring: demolish two residential units, construct 31 condominiums (approved).
- Faith Lutheran: five new single-family residences (approved).
- Gobuty Condos: two new condominiums (approved).
- Carpinteria Sanitary District: demolish and reconstruct headquarters building (approved).
- Wood Residence: one new single-family residence (proposed).
- Cruz Mixed Use: two one-bedroom apartments and 500 square feet of commercial space (proposed).
- Freeman Storage Building: 115 square foot storage building (proposed).
- Hawkins Residence: one new single-family residence (proposed).
- Martinez Apartments: three new apartment units (proposed).
- Via Real Hotel: new 102 room hotel (proposed).
- Phari, LLC Apartments: five new apartments (proposed).
- Katzenstein Condos: convert two commercial condominiums to residential condominiums (proposed).
- GranVida Phase II Expansion: new 50 unit assisted living facility (proposed).
- Able Secondary Dwelling Unit: new single-family residence (proposed).
- Verizon Wireless: new roof-top communications facility (proposed).
- AT&T Wireless: new roof-top communications facility (proposed).
- Procore: storefront expansion (proposed).
- Sanctuary Beach Condos: four new condominiums (proposed).

5.0 ENVIRONMENTAL IMPACT ANALYSIS

5.1 AESTHETICS/VISUAL RESOURCES

This section presents a discussion of aesthetics/visual resources issues associated with the proposed project. The analysis serves as an update to the information provided within the original 2003 Final EIR and addresses proposed changes to the Enhancement Plan.

5.1.1 Setting

5.1.1.1 Applicable Standards

Santa Barbara County policies and guidelines that relate to visual resources are contained in the Land Use (adopted 1980, amended 2016), Open Space (adopted 1979, republished 2009) and Scenic Highway Elements (adopted 1975, republished 2009) of the County Comprehensive Plan, and the Coastal Zoning Ordinance (2018). Policies and Guidelines that are applicable to the proposed project are described in Section 6.0.

5.1.1.2 Regional Visual Environment

In general, the whole of Santa Barbara County is considered to be of high visual quality. As stated in the County Comprehensive Plan Environmental Resources Management Element, “the County’s scenic beauty is one of the principal factors that has attracted its residents and visitors” (Santa Barbara County, adopted 1980, republished 2009). The Carpinteria Salt Marsh (Marsh) is within an area identified as having a high level of scenic value as shown on the Santa Barbara County Scenic Values Map of the Santa Barbara Comprehensive Plan Open Space Element.

Important visual features along the coast near Carpinteria include views of the Pacific Ocean and the Channel Islands, sandy beaches, bluffs, and coastal terraces to the south, as well as the Santa Ynez Mountains to the north. Topography ranges from sea level at the Pacific Ocean to over 3,800 feet within the Santa Ynez Mountains north of the Marsh.

5.1.1.1 Visual Characteristics of the Marsh Area

The Marsh is one of only a few coastal estuaries of substantial size left in the region, and an ecological reserve (in part) managed by the University of California, Santa Barbara. As such, the Marsh is considered an important visual resource. In general, the 230-acre Marsh in undeveloped and has a natural appearance. However, the Marsh is traversed by two north-south access roads (Estero Way, Sandyland Cove Road) and has adjacent residential development (along Sand Point Road and Avenue Del Mar) located along the southern margin. In addition, periodic sediment removal activities result in widening and straightening of the Franklin Creek and Santa Monica Creek channels within the Marsh, which imparts a slightly artificial appearance to the Marsh.

Periodic sediment removal in the northern portions of Franklin Creek and Santa Monica Creek within the Marsh results in temporary storage of sediment stockpiles, which may adversely affect the visual character of the Marsh. However, the stockpiles are temporary (typically less than 8 weeks), linear, relatively small (about two acres, spread over about 1,500 feet) and less than 10 feet tall.

The Marsh is largely surrounded by development (see Figures 3-1 and 3-2), although the Carpinteria Salt Marsh Nature Park (Nature Park) lies just east of Franklin Creek and includes approximately 14 acres of salt marsh and upland habitats, along with trails, a small amphitheater, low walls and benches, and interpretive signs. The trails are located on the eastern and northern upland areas of the park.

A mobile home park is located immediately adjacent to the Marsh and Franklin Creek (see lower left in Figure 3-2, Photo a). Residential development is present along the southern margin of the Marsh (see upper left in Figure 3-2, Photo a). Both U.S. Highway 101 (Basin 3 only) the Union Pacific Railroad tracks lie immediately north of the Marsh. Condominiums, commercial development, and Aliso School are also located immediately north of the Marsh. Commercial and residential developments near Santa Claus Lane border the Marsh on the west.

5.1.1.3 Viewer Groups

Appendix G of the State CEQA Guidelines and the County's Visual Aesthetic Impact Guidelines address public views, rather than private views. Therefore, views from private roadways (Sand Point Road, Avenue Del Mar, Sandyland Cove Road) and residences are not considered in this impact analysis.

Public access to the Marsh is restricted as there is a locked gate at the Estero Way entrance and other private access roads adjacent to the Marsh are gated. However, the public may access the eastern portion of the Marsh (Basin 1) from trails at the Nature Park and the pedestrian bridge over Franklin Creek.

Affected viewer groups are identified as portions of the population that are likely to encounter aesthetic effects of the proposed project, including proposed sediment disposal sites. Viewer groups addressed in this analysis include visitors to the Nature Park (including public trails), beach users, motorists on public roadways and Amtrak passengers on the Union Pacific Railroad tracks.

Nature Park. This viewer group is comprised of the public visiting the Nature Park (including trails to Basin 1) and motorists on Ash Avenue. Figure 5.1-1 provides public views of Basin 1 and Franklin Creek from a trail in the western portion of the Nature Park.

Carpinteria City Beach. This viewer group is comprised of users of Carpinteria City Beach (between Ash Avenue and Linden Avenue) and motorists on Sandyland Road. Figure 5.1-2 provides public views of Carpinteria City Beach near Ash Avenue, including the surf zone sediment disposal area.

Photo a. Franklin Creek and Basin 1 (background) from the Nature Park, facing West

Photo b. Franklin Creek (center) and Basin 1 (background) from the Nature Park, facing Northwest

PUBLIC VIEWS OF THE MARSH FROM THE NATURE PARK
FIGURE 5.1-1

Photo a. City Beach at Ash Avenue, facing West

Photo b. Surf zone sediment disposal area at City Beach, facing East

PUBLIC VIEWS OF CARPINTERIA CITY BEACH AT ASH AVENUE
FIGURE 5.1-2

Photo a. Basin 3 (background) from U.S. Highway 101 near Sand Point Road, facing Southeast

Photo b. Basin 3 (background) from U.S. Highway 101 near Sand Point Road, facing South-Southeast

PUBLIC VIEWS OF THE MARSH FROM U.S. HIGHWAY 101
FIGURE 5.1-3

Photo a. Basin 2 (foreground) from the Union Pacific Railroad tracks, facing Southeast

Photo b. Basin 1 (foreground) from the Union Pacific Railroad tracks, facing Southeast

PUBLIC VIEWS OF THE MARSH FROM THE UNION PACIFIC RAILROAD
FIGURE 5.1-4

U.S. Highway 101. This viewer group is comprised of motorists on adjacent U.S. Highway 101, which is considered eligible for designation as a scenic highway. From northbound U.S. Highway 101, the Marsh (primarily the westerly portion of Basin 3), is visible for approximately 10 seconds. From the southbound lanes, this area is visible for about 8 seconds. The remainder of the Marsh is either largely or completely hidden from the Highway by vegetation growing along the edge of the Marsh or buildings. Figure 5.1-3 provides public views of Basin 3 from U.S. Highway 101 near Sand Point Road.

Union Pacific Railroad. This viewer group is comprised of passengers on Amtrak trains. The Marsh is more highly visible to passengers on trains since the tracks are immediately adjacent to the entire Marsh and seats are elevated. Based on an average speed of 50 mph, the Marsh is visible to Amtrak passengers for about 1.5 minutes. Typically, six southbound and six northbound Amtrak trains pass by the Marsh each day. Figure 5.1-4 provides public views of Basins 1 and 2 from Union Pacific Railroad tracks.

5.1.2 Impact Analysis and Mitigation Measures

5.1.2.1 Thresholds of Significance

Significance criteria for aesthetics impacts were determined based on the 2019 State CEQA Guidelines (Appendix G), the County's Environmental Thresholds and Guidelines Manual (Visual Aesthetics Impact Guidelines).

State CEQA Guidelines. The State CEQA Guidelines suggest that a project may have a significant impact with respect to aesthetics if it results in any of the following:

- Have a substantial adverse effect on a scenic vista.
- Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.
- In a non-urbanized area, substantially degrade the existing visual character or quality of public views of the site and its surroundings. If in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality.
- Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

Santa Barbara County Environmental Thresholds and Guidelines Manual. The Santa Barbara County Environmental Thresholds and Guidelines Manual (Guidelines Manual, updated 2018) provides guidance for the evaluation of aesthetic impacts but does not provide formal significance thresholds. The guidance is based upon the State CEQA Guidelines and "directs the evaluator to the questions which predict the adversity of impacts to visual resources".

The Guidelines Manual states that the assessment of visual impacts of a project involve two major steps: 1) evaluating the visual resources of the project site; and 2) identifying the potential impact of the project on the visual resources located onsite and on views in the project vicinity which may be partially or fully obstructed. Significant visual resources which have aesthetic value are identified in the Comprehensive Plan Open Space Element and are referenced in the Guidelines Manual. They include:

- Scenic highway corridors.
- Parks and recreational areas.
- Views of coastal bluffs, streams, lakes, estuaries, rivers, watersheds, mountains, and cultural resources sites.
- Scenic areas.

All views addressed in the Guidelines Manual are public views, not private views.

The Guidelines Manual indicates that affirmative answers to the following questions indicate potentially significant impacts to visual resources.

1a. Does the project site have significant visual resources by virtue of surface waters, vegetation, elevation, slope or other natural or man-made features which are publicly visible?

1b. If so, does the proposed project have the potential to degrade or significantly interfere with the public's enjoyment of the site's existing visual resources?

2a. Does the project have the potential to impact visual resources of the Coastal Zone or other visually important area (i.e., mountainous area, public park urban fringe, or scenic travel corridor)?

2b. If so, does the project have the potential to conflict with the policies set forth in the Coastal Land Use Plan, the Comprehensive Plan or any applicable community plan to protect the identified views?

3. Does the project have the potential to create a significantly adverse aesthetic impact through the obstruction of public views, incompatibility with surrounding uses, or intensity of development, removal of significant amounts of vegetation, loss of important open space, substantial alteration of natural character, lack of adequate landscaping, or extensive grading visible from public areas?

5.1.2.2 Impacts of the Existing Carpinteria Salt Marsh Enhancement Plan

The following summarizes the aesthetics/visual resources impacts identified in the 2003 Final EIR prepared for the existing Enhancement Plan.

Impact AESTH-1: The berm along Franklin Creek would be visible from the Nature Park. This area already is bermed, and this berm would not be out of character and would not perceptibly change long-term views of the Marsh from the Nature Park, nor would the increase in height be noticeable from other public viewpoints. The berm would be highly noticeable from the Nature Park until the vegetation became established. This short-term impact is considered adverse but less than significant (Class III).

The berm has been completed such that no additional impacts would occur.

Impact AESTH-2: Visual changes would result from floodwalls being constructed along Sandyland Cove Road and Del Mar Avenue. The floodwall would be 3 to 5 feet above the existing grade and would not be visually incompatible with the surrounding uses. The floodwall would not be visible from other public viewpoints, nor would the portion of the floodwall along Del Mar Avenue be visible from the Nature Park. Impacts would be adverse but less than significant (Class III).

The floodwall has been completed such that no additional impacts would occur.

Impact AESTH-3: Visual changes would result from sediment being removed from Franklin and Santa Monica creeks on an annual or as-needed basis, temporarily stockpiled on the existing access roads for dewatering, and removed by truck. Some visual disturbance would result from the desilting activities every 3 to 5 years, including the stockpiled sediment, and the heavy trucks required to remove the sediment. The only public view corridor from which the sites would be readily apparent is the Union Pacific Railroad tracks, but passengers would be able to see the site only for a brief period of time (less than a minute). Stockpiles of material along Franklin Creek could be visible from the Nature Park, but would not further obstruct views. The stockpiled material would likely be present for several months only. Access roads next to the creeks traditionally have been used for dewatering sediment removed from the creeks. Thus, this is consistent with the historic use of the site. Impacts of desilting, dewatering, and sediment removal would be short-term and sporadic and are considered adverse but less than significant (Class III).

De-silting of upper Franklin and Santa Monica Creeks is an ongoing component of routine maintenance and associated environmental impacts would not be changed by the proposed Updated Enhancement Plan.

Impact AESTH-4: Dredged material could be disposed of on the beach or in the surf zone, creating short-term turbidity. Material disposed of on the beach would cause temporary discoloration of nearshore waters due to runoff or the turbid waters associated with the excavated/dredged material and would temporarily alter the appearance of the beach. Material disposed of in the nearshore area would cause a temporary plume, similar to that which occurs in the ocean near the mouth of a river after a major storm. This plume would dissipate quickly (hours to days). Impacts would be adverse but less than significant (Class III).

The fines content of discharged sediment may be greater than assessed in the 2003 Final EIR and associated aesthetics impacts are addressed in Section 5.1.2.3.

Impact AESTH-5: The mouth of the Marsh would be modified (opened) by carving out a new channel to the east through an existing material stockpile. Impacts of pumping the material to be surf zone were described under Impact AESTH-4. The sediment under the stockpile would be dredged to make a new, larger inlet channel to the Main Channel. The mouth of the Marsh also would be opened periodically with a dozer/loader. Neither creating a new channel nor removing the stockpile would be considered an adverse impact and could be considered beneficial by some. No significant impacts would occur.

Opening of the Marsh mouth is an existing maintenance activity and associated environmental impacts would not be changed by the proposed Updated Enhancement Plan and are fully addressed in the 2003 Final EIR.

Impact AESTH-6: Restoration actions would enhance the visual characteristics of the Marsh by eliminating exotic species and improving the quality of native habitat. Improvements in Basin 1 that are intended to provide passive recreational and educational opportunities would be compatible with the types of improvements that already exist at the Nature Park. They would not obstruct scenic views and would allow public access to this scenic area. Overall, the impacts of the restoration actions would be beneficial (Class IV).

Restoration actions R1, R3, R4, and R5 have been completed such that no additional impacts would occur. Restoration actions R2 and R6 have not been completed to date. The proposed Updated Enhancement Plan would not modify these components, such that associated environmental impacts would remain the same and are fully addressed in the 2003 Final EIR.

5.1.2.3 Impacts of the Proposed Updated Enhancement Plan

The primary changes proposed as part of the Updated Enhancement Plan or changes in the regulatory or environmental setting or environmental baseline that would modify or result in new aesthetics/visual resources impacts include:

- Surf zone disposal instead of upland disposal during drag-line desilting of upper Franklin Creek and Santa Monica Creek.
- Hydraulic dredging of upper Franklin Creek and Santa Monica Creek with surf zone disposal instead of drag-line desilting with upland disposal.
- Hydraulic dredging of lower Franklin Creek and the Main Channel with surf zone disposal.
- Hydraulic dredging of all major channels in the Marsh (Franklin Creek, Santa Monica Creek and the Main Channel) with surf zone disposal.
- Avenue Del Mar drainage system maintenance.

Impact UP-AES-1: The fines content of sediments removed by drag-line desilting may be higher than anticipated in the existing Enhancement Plan and surf zone disposal may result in greater aesthetics impacts associated with turbidity of nearshore waters. The aesthetics impacts of surf zone disposal of sediments were addressed under Impact AESTH-4 in the 2003 Final EIR. However, this analysis was based on the disposal of "beach quality material" which was considered a maximum of 25 percent fines (see Impact HYDRO-4). Based on sediment grain size data provided by Fugro West (1994) utilized in the 2003 Final EIR, sediments in upper Franklin Creek and Santa Monica Creek were silty clay, clayey silt, sandy clay, clayey sand and silty sand. The project description of the 2003 Final EIR explicitly stated sediment from Franklin Creek and Santa Monica Creek is not suitable for surf zone disposal. As surf zone disposal of sediment removed from the Marsh is not part of the environmental baseline, this is considered a new component.

The project (Updated Enhancement Plan) proposes surf zone disposal of sediments from upper Franklin and Santa Monica Creeks with a fines content as high as 60 percent (see Section 4.1). These finer sediments are anticipated to stay in suspension longer and subsequently spread over a larger area as compared to coarser sediments addressed in the 2003 Final EIR. Based on observations by District staff during surf zone disposal of sediment from debris basins on February 9, 2019, the turbidity plume is likely to affect about 1,500 linear feet of the surf zone and immediately adjacent nearshore waters (roughly 20 acres).

Surf zone disposal is proposed to occur between October and February and may occur during or following storm events when ambient nearshore turbidity levels would be high due to storm water discharge from local drainages (including Toro Canyon Creek, Arroyo Paredon, the Marsh mouth and Carpinteria Creek). Nearshore turbidity caused by surf zone sediment disposal would be more evident to the public during periods without recent storm flows.

The impact analysis in the 2003 Final EIR was based on up to 20,000 cubic yards of sediment per creek, or an overall maximum of 40,000 cubic yards. The proposed project would not modify the maximum volume of sediments, but would increase the duration of nearshore turbidity evident to the public by the longer period of suspension in the water column (greater fines content). The total duration of increased turbidity may extend for about six weeks (27 work days, five days per week).

Public views potentially affected include City Beach and Nature Park users, and motorists near the southern terminus of Ash Avenue, Holly Avenue, Elm Avenue and Linden Avenue. However, a berm is typically in place from mid-November through March along the upper beach to protect land uses from storm waves. This berm would block public views of nearshore areas from these roadways during most of the period surf zone disposal of sediment would occur.

Public views of City Beach and nearshore areas from U.S. Highway 101 and the Union Pacific Railroad tracks are blocked by intervening structures. The project-related increase in turbidity of nearshore waters (as compared to the existing Enhancement Plan) would be perceived as a degradation of the visual quality of the beach environment. However, impacts would occur during off-peak season (reduced number of viewers) and during a period when storm-related turbidity is common. Therefore, impacts would remain less than significant (Class III).

Impact UP-AES-2: The use of hydraulic dredging instead of drag-line desilting of upper Franklin and Santa Monica Creeks during routine maintenance would result in greater aesthetics impacts associated with turbidity of nearshore waters. The aesthetics impacts of surf zone disposal of sediments were addressed under Impact AESTH-4 in the 2003 Final EIR. The maximum amount of sediment to be removed from upper Franklin and Santa Monica Creeks during routine maintenance and disposed of would be the same as assessed in the 2003 Final EIR (40,000 cubic yards). As discussed under Impact UP-AES-1, the fines content of sediment to be disposed in the surf zone (as a sediment/water slurry) would be higher than assumed in the 2003 Final EIR, as sediments to be removed from upper Franklin and Santa Monica Creeks may not be “beach quality material” as discussed in the 2003 Final EIR. As surf zone disposal of sediment removed from the Marsh is not part of the environmental baseline, this is considered a new component.

Surf zone disposal would occur near the Marsh mouth for a period of about four to eight weeks between September 1 and March 1. The fines content of sediment to be disposed may be as high as 60 percent (see Section 4.2).

Based on aerial photographs taken during dredging of lower Franklin Creek and the Main Channel on April 12, 2018, the area of noticeably increased turbidity was about 25 acres (up to 500 feet offshore and about 3,800 feet along the shoreline). Overall, the nearshore area affected, and duration of readily visible turbidity would likely increase as compared to drag-line desilting and disposal of “beach quality material” as assessed in the 2003 Final EIR. However, the sediment/water slurry would be discharged in the surf zone near the Marsh mouth, approximately 2,500 feet from the nearest public viewing location (City Beach).

The increase in turbidity of nearshore waters (as compared to the existing Enhancement Plan) would be perceived as a degradation of the visual quality of the beach environment. However, impacts would occur primarily during off-peak season, would be more distant from public viewing locations and during a period when storm-related turbidity is common. Therefore, impacts would remain less than significant (Class III).

Impact UP-AES-3: The addition of hydraulic dredging of lower Franklin Creek and the Main Channel as a routine maintenance component would result in greater aesthetics impacts associated with turbidity of nearshore waters. Impact AESTH-4 of the 2003 Final EIR addressed beach sediment disposal associated with one-time hydraulic dredging of 600 linear feet of the Main Channel which was completed as part of the emergency debris and sediment removal associated with the emergency desilting after the debris flow. Periodic hydraulic dredging of lower Franklin Creek and the Main Channel is proposed as a new routine maintenance component of the Enhancement Plan.

Proposed hydraulic dredging would include pressurized discharge of a sediment/water slurry in the surf zone near the Marsh mouth for a period of about two to four weeks between September 1 and March 1. The fines content of sediment to be disposed may be as high as 60 percent (see Section 4.3), which would generate a turbidity plume likely visible from public viewing locations at the Nature Park and City Beach. The increase of turbidity of nearshore waters would be perceived as a degradation of the visual quality of the beach environment.

However, impacts would occur primarily during off-peak season, the turbidity source (dredge discharge pipe) would be distant from public viewing locations (about 2,500 feet from City Beach) and during a period when storm-related turbidity is common. Therefore, impacts would be less than significant (Class III).

Impact UP-AES-4: The addition of hydraulic dredging of all major channels in the Marsh as a routine maintenance component would result in greater aesthetics impacts associated with turbidity of nearshore waters. The daily amount and characteristics of the sediment slurry discharged and resulting nearshore turbidity increases would be the same as addressed under Impacts UP-AES-2 and UP-AES-3. However, due to the larger volume of sediments disposed (up to 60,000 cubic yards), the duration of sediment discharge and associated turbidity increase would be longer (about five to 12 weeks). Impacts would occur primarily during off-peak season, the turbidity source (dredge discharge pipe) would be distant from public viewing locations (about 2,500 feet from City Beach) and during a period when storm-related turbidity is common. Therefore, impacts would be less than significant (Class III).

Impact UP-AES-5: Routine maintenance of the Avenue Del Mar drainage system may adversely affect public views. Heavy equipment activity associated with excavation of channels in the South Marsh may be visible to Nature Park users (from the eastern portion of Basin 1). However, the local population is accustomed to equipment activity in the Marsh associated with routine maintenance as described in the existing Enhancement Plan. Therefore, the short-term use (up to six weeks) of a relatively small amount of heavy equipment is not anticipated to substantially degrade the visual quality of public views of the Marsh. Aesthetics impacts would be less than significant (Class III).

Impact UP-AES-6: Surf zone disposal of excavated sediment from routine maintenance of the Avenue Del Mar drainage system may result in aesthetics impacts associated with turbidity of nearshore waters. Sediment excavated from channels in the South Marsh may be disposed in the surf zone at City Beach and cause increased turbidity. Related aesthetics impacts would be the same as discussed under Impact UP-AES-1 and would be less than significant (Class III).

The use of hydraulic dredging instead of drag-line desilting of upper Franklin and Santa Monica Creeks during routine maintenance would eliminate aesthetics impacts associated with sediment disposal at City Beach. Under the existing Enhancement Plan, routine maintenance of upper Franklin and Santa Monica Creeks is conducted using drag-line desilting with potential surf zone disposal at City Beach (if considered "beach quality material"). Surf zone disposal may require over 40 truck trips per day, with trucks queuing and dumping their loads in full view of beach users, which may be perceived as a degradation of the visual quality of the beach environment. Proposed hydraulic dredging would eliminate the aesthetics impacts associated with trucking and disposal of sediments at City Beach which may occur under the existing Enhancement Plan. However, surf zone sediment disposal at City Beach is not part of the environmental baseline (see Section 1.3).

Mitigation Measures:

The only aesthetics mitigation measure (AESTH-1) provided in the 2003 Final EIR addresses the color of the floodwall along Avenue Del Mar which has been completed. Therefore, this measure has been deleted. No significant aesthetics impacts were identified in the 2003 Final EIR or this Subsequent EIR. Therefore, no additional measures are needed.

5.1.2.4 Cumulative Impacts of the Proposed Updated Enhancement Plan

None of the cumulative projects listed in Section 4.6 would adversely affect public views of the Marsh or City Beach. Therefore, the proposed project would not affect the same viewsheds as these other projects and would not incrementally contribute to cumulative aesthetics impacts, such that cumulative impacts would be the same as project-specific impacts.

5.1.2.5 Residual Impacts

As significant aesthetics impacts were not identified, mitigation is not required, and residual impacts would be the same as project impacts.

5.1.3 References

Fugro West, Inc. 1994. *Field Sampling and Geotechnical Evaluation, Channel Improvement and Wetland Enhancement Project Carpinteria Salt Marsh, Carpinteria, CA*.

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5.2 AIR QUALITY/GREENHOUSE GAS EMISSIONS

This section presents a discussion of the regional air quality within the County of Santa Barbara (County). It identifies the sources and quantities of air pollutant and greenhouse gas emissions associated with the proposed project located in the southern coastal portion of the County. The analysis serves as an update to the information provided within the original 2003 Final EIR and addresses proposed changes to the Enhancement Plan.

5.2.1 Environmental Setting

5.2.1.1 Climatological Setting

The project area is characterized by cool winters and moderate summers typically tempered by cooling sea breezes. Summer, spring and fall weather is generally a result of the movement and intensity of the semi-permanent high pressure area located several hundred miles to the west. Winter weather is generally a result of the size and location of low pressure weather systems originating in the North Pacific Ocean.

The Carpinteria Salt Marsh (Marsh) is located in unincorporated Santa Barbara County and the City of Carpinteria (Salt Marsh Nature Park). In Carpinteria, the maximum average monthly temperature is 76 degrees Fahrenheit (^{o}F) in August, and the minimum average monthly temperature is 46 ^{o}F in January. The average monthly maximum precipitation is 3.80 inches in February, and the average monthly minimum is 0.02 inches in July, with an average annual precipitation of 17.35 inches. Air quality in the County is directly related to emissions and regional topographic and meteorological factors.

5.2.1.2 Criteria Pollutants

Criteria air pollutants are those contaminants for which State and Federal ambient air quality standards have been established for the protection of public health and welfare. Criteria pollutants include: ozone (O_3) carbon monoxide (CO), oxides of nitrogen (NO_X), sulfur dioxide (SO_2), particulate matter with a diameter of 10 microns or less (PM_{10}) and particulate matter with a diameter of 2.5 microns or less ($PM_{2.5}$).

Ozone (O_3). Ozone (O_3) is formed in the atmosphere through a series of complex photochemical reactions involving oxides of nitrogen (NO_X), reactive organic gases (ROG) (also known as ROCs or reactive organic compounds), and sunlight occurring over several hours. Since ozone is not emitted directly into the atmosphere, but is formed as a result of photochemical reactions, it is classified as a secondary or regional pollutant. Because these ozone-forming reactions take time, peak ozone levels are often found downwind of major source areas. Ozone is considered a respiratory irritant and prolonged exposure can reduce lung function, aggravate asthma, and increase susceptibility to respiratory infections. Children and those with existing respiratory diseases are at greatest risk from exposure to ozone.

Carbon Monoxide (CO). Carbon monoxide (CO) is primarily formed through the incomplete combustion of organic fuels. Higher CO ambient concentrations generally occur during winter when dispersion of vehicle emissions is limited by morning surface inversions. Seasonal and diurnal variations in meteorological conditions lead to lower values in summer and in the afternoon. CO is an odorless, colorless gas. CO affects red blood cells in the body by binding to hemoglobin and reducing the amount of oxygen that can be carried to the body's organs and tissues. CO can cause health effects to those with cardiovascular disease, and also can affect mental alertness and vision.

Nitric Oxides (NO and NO_2). Nitric oxide (NO) is a colorless gas formed during combustion processes which rapidly oxidizes in the atmosphere to form NO_2, a brownish gas. The highest nitrogen dioxide values are generally measured in urbanized areas with heavy traffic. Exposure to NO_2 may increase the potential for respiratory infections in children and cause difficulty in breathing even among healthy persons and especially among asthmatics.

Sulfur Dioxide (SO_2). Sulfur dioxide (SO_2) is a colorless, reactive gas that is produced from the combustion of sulfur-containing fuels such as coal and oil, and by other industrial processes. Generally, the highest concentrations of SO_2 are found near large industrial sources. SO_2 is a respiratory irritant that can cause narrowing of the airways, leading to wheezing and shortness of breath. Long-term exposure to SO_2 can cause respiratory illness and aggravate existing cardiovascular disease.

Particulate Matter (PM). Ambient air quality standards have been set for two classes of particulate matter: PM_{10} (coarse particulate matter less than 10 microns in aerodynamic diameter) and $PM_{2.5}$ (fine particulate matter 2.5 microns or less in aerodynamic diameter). Both consist of different types of particles suspended in the air, such as: metal, soot, smoke, dust and fine mineral particles. Depending on the source of particulates, toxicity and chemical activity can vary. Particulate matter is a health concern because when inhaled it can cause permanent damage the lungs. The primary source of PM_{10} emissions appears to be soil via roads, construction, agriculture, and natural windblown dust. Other sources of PM_{10} include sea salt, particulate matter released during combustion processes, such as those in gasoline or diesel vehicles, and wood burning. Fugitive emissions from construction sites, wood stoves, fireplaces and diesel truck exhaust are primary sources of $PM_{2.5}$. Both sizes of particulates can be dangerous when inhaled, however $PM_{2.5}$ tends to be more damaging because it remains in the lungs once it is inhaled.

5.2.1.3 Regulatory Overview

Air pollution control is administered on three governmental levels. The U.S. Environmental Protection Agency (USEPA) has jurisdiction under the Clean Air Act, the California Air Resources Board (CARB) has jurisdiction under the California Health and Safety Code and the California Clean Air Act, and local districts (Santa Barbara County Air Pollution Control District [SBCAPCD]) share responsibility with the CARB for ensuring that all State and Federal ambient air quality standards are attained.

California is divided geographically into air basins for the purpose of managing the air resources of the State on a regional basis. An air basin generally has similar meteorological and geographic conditions throughout. The Marsh is situated in the South Central Coast Air Basin (SCCAB), which encompasses the counties of Ventura, Santa Barbara and San Luis Obispo. The USEPA, CARB, and the local air districts classify an area as attainment, unclassified, or nonattainment depending on whether or not the monitored ambient air quality data show compliance, insufficient data available, or non-compliance with the ambient air quality standards, respectively. The National and California Ambient Air Quality Standards (NAAQS and CAAQS) relevant to the proposed project are provided in Table 5.2-1.

Table 5.2-1. Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards	Federal Standards (NAAQS)	
			Primary	Secondary
Ozone (O_3)	1-hour	0.09 ppm (180 µg/m^3)	--	--
	8-hour	0.07 ppm (137 µg/m^3)	0.070 ppm* (137 µg/m^3)	Same as primary
Respirable Particulate Matter (PM_{10})	24-hour	50 µg/m^3	150 µg/m^3	Same as primary
	Annual	20 µg/m^3	--	--
Fine Particulate Matter ($PM_{2.5}$)	24-hour	--	35 µg/m^3	Same as primary
	Annual	12 µg/m^3	12 µg/m^3	Same as primary
Carbon Monoxide (CO)	1-hour	20 ppm (23 µg/m^3)	35 ppm (40 mg/m^3)	--
	8-hour	9.0 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)	--
Nitrogen dioxide (NO_2)	1-hour	0.18 ppm (339 µg/m^3)	0.10 ppm (188 µg/m^3)	Same as primary
	Annual	0.030 ppm (57 µg/m^3)	0.053 ppm (100 µg/m^3)	Same as primary
Sulfur dioxide (SO_2)	1-hour	0.25 ppm (655 µg/m^3)	0.075 ppm (196 µg/m^3)	--
	3-hour	--	--	0.50 ppm (1300 µg/m^3)
	24-hour	0.04 ppm (105 µg/m^3)	0.14 ppm (for certain areas)	--
	Annual Arithmetic Mean		0.030 ppm (for certain areas)	

*The 2008 (0.075 ppm) Federal 8-hour ozone standard was revised to 0.070 ppm in 2015

5.2.1.4 Air Quality Planning

Federal. The Federal government first adopted the Clean Air Act (CAA) in 1963 to improve air quality and protect citizens' health and welfare, which required implementation of the NAAQS. The NAAQS are revised and changed when scientific evidence indicates a need. The CAA also requires each state to prepare an air quality control plan referred to as a State Implementation Plan (SIP). The CAA Amendments of 1990 added requirements for states with non-attainment areas to revise their SIPs to incorporate additional control measures to reduce air pollution. The SIP is modified periodically to reflect the latest emissions inventories, planning documents, and rules and regulations of the air basins as reported by their jurisdictional agencies.

The USEPA has been charged with implementing Federal air quality programs, which includes the review and approval of all SIPs to determine conformation to the mandates of the CAA and its amendments, and to determine whether implementation of the SIPs will achieve air quality goals. If the USEPA determines that a SIP is inadequate, a Federal Implementation Plan that imposes additional control measures may be prepared for the non-attainment area. Failure to submit an approvable SIP or to implement the plan within the mandated time frame may result in application of sanctions to transportation funding and stationary air pollution sources within the air basin.

Pursuant to the CAA, State and local agencies are responsible for planning for attainment and maintenance of the NAAQS. The USEPA classifies air basins (i.e., distinct geographic regions) as either "attainment" or "non-attainment" for each criteria pollutant, based on whether the NAAQS have been achieved. Some air basins have not received sufficient analysis for certain criteria air pollutants and are designated as "unclassified" for those pollutants. The SBCAPCD and the CARB are the responsible agencies for providing attainment plans and for demonstrating attainment of these standards within the proposed project area.

A 2001 Clean Air Plan was prepared by the SBCAPCD to address the requirements of the CAA to demonstrate how the County will maintain attainment of the Federal 1-hour ozone standard. The Federal 1-hour ozone standard was revoked in 2005, and an 8-hour ozone standard was implemented. The County was found to be in attainment of the 8-hour ozone standard and a 2007 Clean Air Plan was prepared to demonstrate maintenance of this standard.

State. The California Clean Air Act (CCAA), signed into law in 1988, requires all areas to achieve and maintain attainment with the CAAQS by the earliest possible date. The CCAA mandates that every three years areas update their clean air plans to attain the State ozone standard. The SBCAPCD Board adopted the 2016 Ozone Plan on October 20, 2016. The 2016 Ozone Plan is the eighth triennial update to the initial Air Quality Attainment Plan adopted by the SBCAPCD Board of Directors in 1991 (other updates were done in 1994, 1998, 2001, 2004, 2007, 2010, and 2013). Each of the SBCAPCD clean air plan updates have recommended implementation of "every feasible measure" to ensure continued progress toward attainment of the State ozone standards.

Since 1992, Santa Barbara County has adopted or amended rules implementing more than 25 control measures aimed at reducing emissions at stationary sources. These measures have substantially reduced ozone precursor pollutants (NO_x and ROC). Air quality improvement is also seen in the declining number of State 1-hour and 8-hour ozone exceedances that have occurred in the County between 1990 and 2015. One-hour ozone exceedances have decreased from a high of 37 days in 1990 and 1991 to zero days in 2005, 2010, 2012, 2013, 2015 and 2016. The number of 8-hour ozone exceedance days range from a high of 97 days during 1991 to just two days in 2017. These significant improvements in air quality have occurred despite a 20 percent increase in County-wide population.

The 2016 Ozone Plan documents progress toward the State 1-hour and 8-hour ozone standards. Although Santa Barbara County violates the State 8-hour standard, recent data show that the County continues to attain the State 1-hour standard of 0.09 ppm.

Local Authority. The SBCAPCD is the local agency that has primary responsibility for regulating stationary sources of air pollution located within the County. To this end, the SBCAPCD implements air quality programs required by State and Federal mandates, develops and enforces local rules and regulations based on air pollution laws, and educates businesses and residents about their role in protecting air quality. The SBCAPCD is also responsible for managing and permitting existing, new, and modified stationary sources of air emissions within the County.

5.2.1.5 Applicable Regulatory Requirements

Statewide Portable Equipment Registration Program. The Portable Equipment Registration Program (PERP) establishes a uniform State-wide program to regulate portable engines and portable engine-driven equipment units. The term “portable” is defined as not residing at a location for more than 12 consecutive months. Once registered in the PERP, engines and equipment units may operate throughout California without the need to obtain individual permits from local air districts. To be eligible for the PERP, an engine must be certified to the current emission tier (non-road, on-highway or marine). The PERP does not apply to self-propelled equipment such as a drag-line crane, but would apply to the diesel engine used to drive the pumps and cutter-head on a hydraulic dredge, and the booster pump.

SBCAPCD Rules. SBCAPCD rules and regulations applicable to activities conducted under the existing and proposed Updated Enhancement Plan are limited to potential nuisances (typically dust and odors):

- Rule 303 (Nuisance): A person shall not discharge from any source whatsoever such quantities of air contaminants or other material in violation of Section 41700 of the Health and Safety Code which cause injury, detriment, nuisance or annoyance to any considerable number of persons or to the public or which endanger the comfort, repose, health or safety or any such persons or the public or which cause or have a natural tendency to cause injury or damage to business or property.

5.2.1.6 Air Quality Monitoring

The ambient air quality of Santa Barbara County is monitored by a network of 18 stations. The nearest air quality monitoring station to the Marsh is the Carpinteria station, located approximately 3.9 miles to the east. The nearest air quality monitoring station providing particulate matter data is the Santa Barbara station, located approximately 8.5 miles to the west of the Marsh. As shown in Table 5.2-2, State and Federal 8-hour ozone standards were not exceeded at the Carpinteria station from 2016 through 2018. Concentrations of PM_{10} and $PM_{2.5}$ monitored at the Santa Barbara station exceeded the State and Federal standards primarily as a result of smoke generated by the regional Thomas Fire in December 2017.

Table 5.2-2. Summary of Ambient Air Pollutant Data Collected at the Carpinteria and Santa Barbara Monitoring Stations

Parameter	Standard	Year		
		2016	2017	2018
Ozone – parts per million (ppm): Carpinteria				
Maximum 1-hr concentration monitored		0.072	0.072	0.084
Number of days exceeding CAAQS	0.09	0	0	0
Maximum 8-hr concentration monitored		0.065	0.061	0.070
Number of days exceeding 8-hour ozone NAAQS & CAAQS	0.070	0	0	0
PM_{10} – micrograms per cubic meter ($\mu g/m^3$): Santa Barbara*				
Maximum 24-hour average sample (California sampler)		--	355.2	128.3
Number of samples exceeding CAAQS	50	--	18	11
Number of samples exceeding NAAQS	150	--	7	0
$PM_{2.5}$ – micrograms per cubic meter ($\mu g/m^3$): Santa Barbara*				
Maximum 24-hour sample		--	231.6	37.1
Number of samples exceeding NAAQS	35	--	13	1

*The Santa Barbara station did not monitor PM in 2016 or in 2017 prior to August 1
2017 PM data reflects smoke produced by the Thomas Fire in December

5.2.1.7 Sensitive Receptors

Some land uses are considered more sensitive to air pollution than others due to population groups and/or activities involved. Sensitive population groups include children, the elderly, the acutely ill and the chronically ill, especially those with cardio-respiratory diseases. Residential areas are also considered to be sensitive to air pollution because residents (including children and the elderly) tend to be at home for extended periods of time, resulting in sustained exposure to any pollutants present.

Recreational land uses may be considered moderately sensitive to air pollution. Although exposure periods are generally short, exercise places a high demand on respiratory functions, which can be impaired by air pollution. In addition, noticeable air pollution can detract from the enjoyment of recreation. Industrial and commercial areas are considered the least sensitive to air pollution. Exposure periods are relatively short and intermittent, as the majority of the workers tend to stay indoors most of the time. In addition, the working population is generally the healthiest segment of the public.

Residential land uses occur adjacent to the Marsh including Sand Point Road, Avenue Del Mar, Sandyland Road, Carpinteria Avenue and Ash Avenue. In addition, Aliso School is located adjacent to Franklin Creek and current Marsh desilting areas.

5.2.1.8 Health Risk Issues

The combustion of diesel fuel in truck engines (as well as other internal combustion engines) produces exhaust containing a number of compounds that have been identified as hazardous air pollutants by USEPA and toxic air contaminants by the CARB. Particulate matter from diesel exhaust has been identified as a toxic air contaminant, which has prompted CARB to develop a Final Risk Reduction Plan (released October 2000) for exposure to diesel particulate matter. Based on ARB Resolution 00-30, full implementation of emission reduction measures recommended in the Final Risk Reduction Plan would result in an 85 percent reduction by 2020 in the diesel particulate matter inventory and potential cancer risk.

5.2.1.9 Greenhouse Gases and Global Climate Change

GHG emissions are a global issue, as climate change is not a localized phenomenon. Eight recognized GHGs are described below. The first six are commonly analyzed for projects, while the last two are often excluded for reasons described below.

- Carbon Dioxide (CO_2): natural sources include decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungus; evaporation from oceans; and volcanic degassing; anthropogenic sources of CO_2 include burning fuels such as coal, oil, natural gas, and wood.
- Methane (CH_4): natural sources include wetlands, permafrost, oceans and wildfires; anthropogenic sources include fossil fuel production, rice cultivation, biomass burning, animal husbandry (fermentation during manure management), and landfills.
- Nitrous Oxide (N_2O): natural sources include microbial processes in soil and water, including those reactions which occur in nitrogen-rich fertilizers; anthropogenic sources include industrial processes, fuel combustion, aerosol spray propellant, and use of racing fuels.
- Chlorofluorocarbons (CFCs): no natural sources, synthesized for use as refrigerants, aerosol propellants, and cleaning solvents.
- Hydrofluorocarbons (HFCs): no natural sources, synthesized for use in refrigeration, air conditioning, foam blowing, aerosols, and fire extinguishing.

- Sulfur Hexafluoride (SF6): no natural sources, synthesized for use as an electrical insulator in high voltage equipment that transmits and distributes electricity. SF6 has a long lifespan and high global warming potency.
- Ozone: unlike the other GHGs, ozone in the troposphere is relatively short-lived and, therefore, is not global in nature. Due to the nature of ozone, and because this project is not anticipated to contribute a significant level of ozone, it is excluded from consideration in this analysis.
- Water Vapor: the most abundant and variable GHG in the atmosphere. It is not considered a pollutant and maintains a climate necessary for life. Because this project is not anticipated to contribute significant levels of water vapor to the environment, it is excluded from consideration in this analysis.

The primary GHGs that would be emitted during construction and operation of the proposed project are CO_2, CH_4 and N_2O. The project is not expected to have any associated use or release of HFCs, CFCs or SF6.

The heat absorption potential of a GHG is referred to as the "Global Warming Potential" (GWP). Each GHG has a GWP value based on the heat-absorption properties of the GHG relative to CO_2. This is commonly referred to as CO_2 equivalent (CO_2E). The GWP of the three primary GHGs associated with the proposed project are defined by the Intergovernmental Panel on Climate Change (IPCC): CO_2 – GWP of 1, CH_4 – GWP of 28, and N_2O – GWP of 265.

International Authority. The IPCC is the leading body for the assessment of climate change. The IPCC is a scientific body that reviews and assesses the most recent scientific, technical, and socio-economic information produced worldwide relevant to the understanding of climate change. The scientific evidence brought up by the first IPCC Assessment Report of 1990 unveiled the importance of climate change as a topic deserving international political attention to tackle its consequences; it therefore played a decisive role in leading to the creation of the United Nations Framework Convention on Climate Change, the key international treaty to reduce global warming and cope with the consequences of climate change.

On March 21, 1994, the United States joined a number of countries around the world in signing the United Nations Framework Convention on Climate Change. Under the Convention, governments gather and share information on GHG emissions, national policies, and best practices; launch national strategies for addressing GHG emissions and adapting to expected impacts, including the provision of financial and technological support to developing countries; and cooperate in preparing for adaptation to the impacts of climate change.

The Kyoto Protocol is an international treaty which extends the United Nations Framework Convention on Climate Change and commits governments to reduce greenhouse gas emissions, based on the premise that (a) global warming exists and (b) human-made CO_2 emissions have caused it. The Kyoto Protocol was adopted in Kyoto, Japan on December 11, 1997 and entered into force on February 16, 2005. There are currently 192 signatory parties to the Protocol including the United States; however, the United States has not ratified the Protocol and is not bound by its commitments.

At the 2015 United Nations Climate Change Conference in Paris, a global agreement was initiated, which represented a consensus of the representatives of the 196 parties attending it. On April 22, 2016 (Earth Day), 174 countries signed the Paris Agreement in New York, and began adopting it within their own legal systems (through ratification, acceptance, approval, or accession). As of September 2019, 197 United Nations Climate Change Conference members have signed the agreement, 185 of which have ratified it. The United States ratified the Paris Agreement on September 3, 2016.

On June 1, 2017, President Trump announced that the U.S. would cease participation in the Paris Agreement. However, in accordance with Article 28 of the Paris Agreement, the earliest possible effective withdrawal date by the United States cannot be before November 4, 2020, four years after the Agreement came into effect in the United States and one day after the 2020 U.S. presidential election.

Federal Authority. On September 22, 2009, the USEPA released its final GHG Reporting Rule (Reporting Rule), in response to the fiscal year 2008 Consolidated Appropriations Act (H.R. 2764; Public Law 110-161) that required the USEPA to develop "… mandatory reporting of GHGs above appropriate thresholds in all sectors of the economy". The Reporting Rule applies to most entities that emit 25,000 metric tons CO_2E or more per year. On September 30, 2011, facility owners were required to submit an annual GHG emissions report with detailed calculations of facility GHG emissions. The Reporting Rule mandates recordkeeping and administrative requirements for the USEPA to verify annual GHG emissions reports but does not regulate GHG as a pollutant.

The CAA defines the USEPA's responsibilities for protecting and improving the nation's air quality and the stratospheric ozone layer. On May 13, 2010, USEPA set greenhouse gas emissions thresholds to define when permits under the New Source Review Prevention of Significant Deterioration and Title V Operating Permit programs are required for new and existing industrial facilities. This final rule "tailors" the requirements of these CAA permitting programs to limit covered facilities to the nation's largest greenhouse gas emitters: power plants, refineries, and cement production facilities.

State Authority. In efforts to reduce and mitigate climate change impacts, State and local governments are implementing policies and initiatives aimed at reducing GHG emissions. California, one of the largest state contributors to the national GHG emission inventory, has adopted significant reduction targets and strategies. The primary legislation affecting GHG emissions in California is the California Global Warming Solutions Act (Assembly Bill [AB] 32). AB 32 focuses on reducing GHG emissions in California, and requires the CARB to adopt rules and regulations that would achieve GHG emissions equivalent to statewide levels in 1990 by 2020. In addition, two State-level Executive Orders have been enacted by the Governor (Executive Order S-3-05, signed June 1, 2005, and Executive Order S-01-07, signed January 18, 2007) that mandate reductions in GHG emissions.

In June 2008, CARB developed a Draft Scoping Plan for Climate Change, pursuant to AB 32. The Scoping Plan was approved at the Board hearing on December 12, 2008. The Scoping Plan proposes a comprehensive set of actions designed to reduce overall carbon emissions in California, improve our environment, reduce our dependence on oil, diversify our energy sources, save energy, and enhance public health while creating new jobs and enhancing the growth in California's economy. Key elements of the Scoping Plan for reducing California's greenhouse gas emissions to 1990 levels by 2020 include:

- Expansion and strengthening of existing energy efficiency programs and building and appliance standards.
- Expansion of the Renewables Portfolio Standard to 33 percent.
- Development of a California cap-and-trade program that links with other Western Climate Initiative Partner programs to create a regional market system.
- Implementation of existing State laws and policies, including California's clean car standards, goods movement measures, and the Low Carbon Fuel Standard.
- Targeted fees to fund the State's long-term commitment to AB 32 administration.

The Climate Change Scoping Plan was updated in May 2014, and again in November 2017. In 2016, the State Legislature passed Senate Bill (SB) 32, which codifies a 2030 GHG emissions reduction target of 40 percent below 1990 levels. With SB 32, the Legislature passed companion legislation AB 197, which provides additional direction for developing the Scoping Plan. The 2017 update to the Scoping Plan indicates the State is on track to reduce GHG emissions to 1990 levels by the 2020 target, and focuses on strategies to achieve the 2030 target set by Executive Order B-30-15 and codified by SB 32.

The CARB developed regulations for mandatory reporting of greenhouse gas emissions in 2007, which incorporated by reference certain requirements promulgated by the USEPA in its Final Rule on Mandatory Reporting of Greenhouse Gases (Title 40, Code of Federal Regulations, Part 98). These regulations were revised in 2010, 2012, 2013, and 2014, with the current regulations becoming effective on January 1, 2015. The proposed project would not be subject to these regulations, as it does not involve any industrial processes and does not meet the 10,000-metric ton CO_2E reporting threshold.

SB 97, enacted in 2007, amends the CEQA statute to clearly establish that greenhouse gas emissions and the effects of GHG emissions are appropriate for CEQA analysis. It directs the California Office of Planning and Research (OPR) to develop guidelines "for the mitigation of greenhouse gas emissions or the effects of greenhouse gas emissions as required by this division." (Pub. Res. Code § 21083.05(a)).

In December of 2009, the California Natural Resources Agency adopted amendments to the CEQA Guidelines (Title 14, Cal. Code of Regulations, §15000 et seq.) to comply with the mandate set forth in Public Resources Code §21083.05. These revisions became effective March 18, 2010. According to GHG amendments to the CEQA Guidelines, each public agency that is a CEQA lead agency needs to develop its own approach to performing a climate change analysis for projects that generate GHG emissions. A consistent approach should be applied for the analysis of all such projects, and the analysis must be based on best available information.

Local Climate Change Planning. Santa Barbara County completed the first phase (Climate Action Study) of its climate action strategy in September 2011. The Climate Action Study provides a County-wide GHG inventory and an evaluation of potential emission reduction measures. The second phase of the County's climate action strategy is an Energy and Climate Action Plan (ECAP), which was adopted by the County Board of Supervisors on June 2, 2015. The ECAP includes a base year (2007) GHG inventory for unincorporated areas of the County, which identifies total GHG emissions of 1,192,970 metric tons CO_2E and 28,560 metric tons CO_2E for construction and mining equipment (primary project-related GHG source). Note that the base year inventory does not include stationary sources and energy use (natural gas combustion and electricity generation).

The focus of the ECAP is to establish a 15 percent GHG reduction target from baseline (by 2020) and develop source-based and land use-based strategies to meet this target. However, the 2017 ECAP Progress Report indicates GHG emissions have increased by 14 percent since 2007, and GHG emissions must be reduced by 26 percent from 2016 levels to meet the ECAP's 2020 target.

5.2.2 Impact Analysis and Mitigation Measures

5.2.2.1 Thresholds of Significance

Significance thresholds for air emissions are derived from the State CEQA Guidelines, the Santa Barbara County Environmental Thresholds and Guidelines Manual (revised 2018), and rules and regulations of the SBCAPCD.

Criteria Pollutants. Short-term/Construction Emissions. Short-term air quality impacts generally occur during project construction. CEQA requires a discussion of short-term impacts of a project in the environmental document. However, the County generally considers temporary construction emissions insignificant and quantitative thresholds for construction emissions have not been established.

Under SBCAPCD Rule 202 D.16, if the combined emissions from all construction equipment used to construct a stationary source which requires an Authority to Construct permit have the potential to exceed 25 tons of any pollutant, except carbon monoxide, in a 12-month period, the owner of the stationary source shall provide offsets under the provisions of Rule 804 and shall demonstrate that no ambient air quality standard will be violated.

Long-term/Operational Emissions Thresholds. Long-term air quality impacts occur during project operation and include emissions from any equipment or process used in the project (e.g., residential water heaters, engines, boilers, and operations using paints or solvents) and motor vehicle emissions associated with the project. These emissions must be summed in order to determine the significance of the project's long-term impact on air quality. Although project-related activities may utilize typical construction equipment, the routine maintenance program is a long-term operation and subject to long-term thresholds.

A significant adverse air quality impact may occur when a project, individually or cumulatively, triggers any one of the following:

- Emits (from all sources, except registered portable equipment) greater than the daily trigger for offsets in the SBCAPCD New Source Review Rule (55 pounds per day for NO_x or ROC; 80 pounds per day for PM_{10}).
- Emits greater than 25 pounds per day of NO_x or ROC (motor vehicle trips only).
- Causes or contributes to a violation of a State or Federal air quality standard (except ozone).
- Is inconsistent with adopted State and Federal Air Quality Plans (2016 Ozone Plan).

Toxic Air Contaminants. A significant impact related to toxic air contaminants may occur when a project, individually or cumulatively, exceeds the SBCAPCD health risk significance thresholds (10 excess cancer cases per million and/or an acute or chronic hazard index of 1.0 or greater) at a location of an existing or planned residence or work place. Additionally, an acute hazard index of 1.0 or greater at any off-site location that is reasonably accessible to the public is also considered a significant impact.

Greenhouse Gas Emissions. There is currently much debate about appropriate threshold levels of significance with suggestions associated with either “bright-line” (numeric) thresholds or “business as usual” thresholds. With few exceptions, bright-line thresholds offer more stringent and rigid constraints on proposed projects, while the details of “business as usual” thresholds currently leave room for a large range of interpretation.

An EIR was prepared to assess the potential impacts of the proposed ECAP (PMC 2015). At the May 19, 2015 EIR certification hearing, the Santa Barbara County Board of Supervisors approved the Final EIR for the ECAP and passed a resolution to adopt the ECAP and amend the County’s Energy Element. Also at the May 19, 2015, the Board of Supervisors approved a resolution amending the Santa Barbara County’s Environmental Thresholds and Guidelines Manual by adding a threshold of significance to guide the County’s environmental analysis of greenhouse gas emissions from industrial stationary sources associated with projects subject to CEQA.

The Board adopted a 1,000 $MTCO_2e$/year bright-line threshold and the County's Environmental Thresholds and Guidelines Manual was subsequently revised in July 2015 to reflect the new GHG significance threshold for industrial stationary sources. Due to the absence of any other applicable threshold, the 1,000 $MTCO_2e$/year bright-line threshold will used to determine the significance of GHG emissions. In addition, consistency with GHG emissions reduction measures of the ECAP will be used to assess the potential impacts of the proposed project to global climate change.

5.2.2.2 Impacts of the Existing Carpinteria Salt Marsh Enhancement Plan

The following summarizes the air quality impacts identified in the 2003 Final EIR prepared for the existing Enhancement Plan and provides an update based on the status of completion of Plan components.

Impact AQ-1: Ground disturbances and equipment operation during construction activities would produce adverse, but less than significant, short-term PM_{10} emissions. Impacts from proposed PM_{10} emissions during construction would be adverse, but less than significant (Class III).

<u>Construction-related activities have been completed or would not be modified by the proposed Updated Enhancement Plan such that no additional air quality impacts would occur.</u>

Impact AQ-2: Heavy equipment used during proposed construction activities would produce adverse, but less than significant, combustive NO_x and ROC emissions. Impacts of ROC and NO_x emissions from construction equipment would be adverse, but less than significant (Class III).

<u>Construction-related activities have been completed or would not be modified by the proposed Updated Enhancement Plan such that no additional air quality impacts would occur.</u>

Impact AQ-3: Ground disturbances and equipment operation during maintenance activities would produce significant, but feasibly mitigated, short-term PM_{10} emissions. Fugitive dust emissions could cause a public nuisance or exacerbate the existing PM_{10} nonattainment status within the County unless the standard SBCAPCD emission reduction measures are applied. Impacts from proposed PM_{10} emissions during maintenance activities would be significant, but feasibly mitigated (Class II).

<u>These impacts are related to handling of sediment during and following drag-line desilting, which would not be modified as part of the Updated Enhancement Plan. Therefore, no additional impacts would occur.</u>

Impact AQ-4: Heavy equipment used during proposed maintenance activities would produce significant, but feasibly mitigated, combustive NO_x and ROC emissions. Use of the crane would produce daily NO_x emissions that exceed the SBCAPCD threshold of 240 pounds, while use of either the crane or the dredge would produce daily NO_x emissions greater than the P&D threshold of 25 pounds. Impacts of ROC and NO_x emissions from construction equipment would be significant, but feasibly mitigated (Class II).

Heavy equipment used during drag-line desilting would not be modified as part of the Updated Enhancement Plan. Therefore, no additional NO_x and ROC emissions would occur. Modified impacts associated with substituting hydraulic dredging for drag-line desilting of upper Franklin and Santa Monica Creeks and the addition of hydraulic dredging of lower Franklin Creek and the Main Channel are addressed in Section 5.2.2.3.

Impact AQ-5: Heavy equipment used during proposed construction and maintenance activities would produce adverse, but less than significant, hazardous air pollutant (HAP) emissions. Given the relatively small amounts of particulate produced, the mobile nature of the activities, and the lack of nearby sensitive receptors to the activity areas, impacts of HAP emissions from construction equipment would be adverse, but less than significant (Class III).

Heavy equipment used during drag-line desilting would not be modified as part of the Updated Enhancement Plan. Therefore, no additional HAP emissions would occur. Modified impacts associated with substituting hydraulic dredging for drag-line desilting of upper Franklin and Santa Monica Creeks and the addition of hydraulic dredging of lower Franklin Creek and the Main Channel are addressed in Section 5.2.2.3.

Impact AQ-6: PM_{10} emissions from project construction or maintenance activities, in combination with other cumulative project sources of PM_{10} emissions in the region, would produce an adverse, but less than significant, impact. Implementation of standard SBCAPCD dust control measures and inclusion of construction emissions in the 1998 CAP ensures that the project's contribution to the cumulative PM_{10} impact would be less than significant (Class III).

Project-related changes to cumulative air quality impacts are addressed in Section 5.2.2.4.

Impact AQ-7: NO_x and ROC emissions from project construction, in combination with other cumulative project sources of NO_x and ROC emissions in the region, would produce adverse, but less than significant, impacts. Implementation of standard SBCAPCD emission reduction measures and inclusion of construction emissions in the 1998 CAP ensures that the project's contribution to the cumulative ozone impact would be less than significant (Class III).

Construction-related activities have been completed or not modified as part of the Updated Enhancement Plan such that the incremental contribution to cumulative air quality impacts would not change.

Impact AQ-8: Emissions of NO_x and ROC from project maintenance activities, in combination with other cumulative project sources of NO_x and ROC emissions in the region, would produce significant, but feasibly mitigated, impacts. Because project ROC emissions would be less than the SBCAPCD or P&D significance thresholds and because ROC emissions have been accounted for in the 1998 CAP, the project's ROC contribution to the cumulative ozone impact would be less than significant (Class III). NO_x emissions have also been accounted for in the 1998 CAP, but NO_x emissions exceed the SBCAPCD and P&D significance thresholds. The project's NO_x contribution to the cumulative ozone impact would therefore be significant, but feasibly mitigated (Class II) by the implementation of SBCAPCD standard emission reduction measures.

<u>Project-related changes to cumulative air quality impacts are addressed in Section 5.2.2.4.</u>

5.2.2.3 Impacts of the Proposed Updated Enhancement Plan

The primary changes proposed as part of the Updated Enhancement Plan or changes in the regulatory or environmental setting or environmental baseline that would modify or result in additional air quality or global climate change impacts include:

- Surf zone disposal instead of upland disposal during drag-line desilting of upper Franklin Creek and Santa Monica Creek.
- Hydraulic dredging of upper Franklin Creek and Santa Monica Creek with surf zone disposal instead of drag-line desilting with upland disposal.
- Hydraulic dredging of lower Franklin Creek and the Main Channel with surf zone disposal.
- Hydraulic dredging of all major channels in the Marsh (Franklin Creek, Santa Monica Creek and the Main Channel) with surf zone disposal.
- Avenue Del Mar drainage system maintenance.

Impact UP-AQ-1: The proposed change in sediment disposal sites from an upland site to surf zone disposal at City Beach would reduce transportation-related air pollutant emissions. The air quality impacts of routine maintenance were addressed under Impact AQ-4 in the 2003 Final EIR. This analysis was based on hourly usage of dump trucks and did not specify a disposal site. In any case, the proposed City Beach disposal site is closer than past upland disposal sites (Santa Monica Debris Basin stockpile) such that sediment transportation emissions would be reduced as compared to existing conditions (upland disposal) (see Table 5.2-3). Re-calculation of drag-line emissions using updated emissions factors indicate air quality impacts associated with routine drag-line desilting of upper Franklin Creek and Santa Monica Creek are less than significant under both existing and proposed conditions (Class III).

Impact UP-AQ-2: The proposed change from drag-line desilting to hydraulic dredging would increase peak day air pollutant emissions. The air quality impacts of routine maintenance were addressed under Impact AQ-4 in the 2003 Final EIR. Peak day (24-hour operations) hydraulic dredging emissions were re-calculated using the CARB OFFROAD 2017 model (two excavators, dredge engine, booster pump, generator) and 2010 emissions standards for outboard motors (assist vessel, crew boat) and found to be less than significant (see Table 5.2-4), but greater than drag-line desilting (Table 5.2-3) which would be limited to 10 hours per day.

Table 5.2-3. Daily Drag-line Desilting Emissions

Source	NO_x pounds/day	ROC pounds/day	CO pounds/day	PM_{10} pounds/day
Upland Disposal (existing)				
Heavy equipment	29.3	2.5	15.6	1.1
Motor vehicles*	9.9	2.5	43.1	0.3
Total	**39.2**	**5.0**	**58.7**	**1.4**
Surf Zone Disposal at City Beach (proposed)				
Heavy equipment	29.3	2.5	15.6	1.1
Motor vehicles*	6.3	2.4	42.9	0.2
Total	**35.6**	**4.9**	**58.5**	**1.3**
Threshold	*55*	*55*	*-*	*80*

*Motor vehicle NOx and ROC emissions would not exceed the 25 pounds per day threshold

Table 5.2-4. Peak Day (24 hours) Hydraulic Dredging Emissions

Source	NO_x pounds/day	ROC pounds/day	CO pounds/day	PM_{10} pounds/day
Equipment and vessels	44.3	18.5	370.9	6.9
Motor vehicles*	0.2	<0.1	1.2	<0.1
Total	**44.5**	**18.5**	**372.1**	**6.9**
Threshold	*55*	*55*	*-*	*80*

*Motor vehicle NOx and ROC emissions would not exceed the 25 pounds per day threshold

Impact UP-AQ-3: The proposed change from drag-line desilting to hydraulic dredging would reduce total ozone precursor emissions. The environmental baseline (existing conditions) includes drag-line desilting (with upland disposal) of the upper desilting area (see Figure 4-1). The proposed use of hydraulic dredging in this area would reduce total ozone precursor emissions (NO_x + ROC) from 0.59 tons to 0.49 tons per event (see Table 5.2-5) as trucking of sediment would not be required. Total ozone precursor emissions would be less than significant under both existing and proposed conditions (Class III).

Table 5.2-5. Comparison of Drag-line Desilting to Hydraulic Dredging Emissions

Source	NO_x tons	ROC tons	CO tons	PM_{10} tons
Drag-line Desilting (existing)				
Heavy equipment	0.40	0.03	0.21	0.01
Motor vehicles	0.13	0.03	0.58	0.01
Total	**0.53**	**0.06**	**0.79**	**0.02**
Hydraulic Dredging (proposed)				
Equipment and vessels	0.36	0.13	2.52	0.05
Total	**0.36**	**0.13**	**2.52**	**0.05**

Impact UP-AQ-4: The addition of hydraulic dredging of lower Franklin Creek and the Main Channel to routine maintenance activities would generate air pollutant emissions. Estimated peak day (24-hour operations) hydraulic dredging air pollutant emissions are provided in Table 5.2-4 and would be less than significant (Class III).

Impact UP-AQ-5: Routine maintenance activities (as modified by the proposed Updated Enhancement Plan) would generate annual air pollutant emissions. Annual air pollutant emissions estimates provided in Table 5.2-6 indicate the SBCAPCD Rule 202 D.16 tons per 12-month period threshold would not be exceeded by existing or proposed activities (Class III).

Table 5.2-6. Annual Air Pollutant Emissions (tons)

Activity	NO_x	ROC	PM_{10}
Baseline: Drag-line desilting (upland disposal)	0.53	0.06	0.02
Drag-line desilting (surf zone disposal)	0.49	0.06	0.02
Hydraulic dredging (upper Santa Monica & Franklin Creeks)	0.36	0.13	0.05
Hydraulic dredging (lower Franklin Creek & Main Channel)	0.18	0.06	0.02
Hydraulic dredging all major channels	0.54	0.19	0.07
Re-establish tidal channels in the South Marsh with surf zone disposal (Avenue Del Mar drainage system maintenance)	0.40	0.05	0.02
SBCAPCD Significance Threshold	*25*	*25*	*25*

Impact UP-AQ-6: The addition of maintenance of the Avenue Del Mar drainage system to routine maintenance activities would generate air pollutant emissions. Estimated peak day (10 hours) air pollutant emissions associated with re-establishing tidal channels in the South Marsh and disposal of excavated sediments at Ash Avenue (30 round trips per day) are provided in Table 5.2-7 and would be less than significant (Class III).

Table 5.2-7. Peak Day Avenue Del Mar Drainage System Maintenance Emissions

Source	NO_x pounds/day	ROC pounds/day	CO pounds/day	PM_{10} pounds/day
Heavy equipment	25.2	2.5	16.8	1.2
Motor vehicles*	1.3	0.5	9.1	<0.1
Total	**26.5**	**3.0**	**25.9**	**1.2**
Threshold	*55*	*55*	*-*	*80*

*Motor vehicle NOx and ROC emissions would not exceed the 25 pounds per day threshold

Impact UP-AQ-7: Routine maintenance activities (as modified by the proposed Updated Enhancement Plan) would generate HAP emissions (diesel particulate matter). The Updated Enhancement Plan would modify existing components (changes in desilting methods and disposal sites) and add several components to the routine maintenance program. However, diesel engines currently in use incorporate control measures (including particulate filters) that substantially reduce diesel particulate matter as compared to trucks and equipment assessed in the 2003 Final EIR. Therefore, impacts associated with HAP emissions would remain less than significant (Class III).

Impact UP-AQ-8: Routine maintenance activities (as modified by the proposed Updated Enhancement Plan) would generate greenhouse gas emissions. Greenhouse gas emissions estimates provided in Table 5.2-8 indicate the adopted annual significance threshold would not be exceeded by any existing or proposed activities (Class III).

Table 5.2-8. Greenhouse Gas Annual Emissions ($MTCO_2E$)

Activity	Equipment	Motor Vehicles	Total
Baseline: Drag-line desilting (upland disposal)	55.8	34.7	90.5
Drag-line desilting (surf zone disposal)	55.8	16.8	72.6
Hydraulic dredging (upper Santa Monica & Franklin Creeks)	84.5	2.8	87.3
Hydraulic dredging (lower Franklin Creek & Main Channel)	42.3	1.4	43.7
Hydraulic dredging all major channels	126.8	4.2	131.0
Re-establish tidal channels in the South Marsh with surf zone disposal (Avenue Del Mar drainage system maintenance)	59.9	5.4	65.3
Adopted Annual Significance Threshold			*1,000*

The Updated Enhancement Plan would remain consistent with adopted air quality plans (2016 Ozone Plan) as no change in land use would occur and proposed changes to the Plan would have no effect on population projections upon which the Ozone Plan is based. The proposed project is also consistent with the ECAP (see Section 6.5).

Mitigation Measures:

Air quality mitigation provided in the 2003 Final EIR to address Class II impacts (AQ-3, AQ-4, AQ-8) was based on standard conditions required by the SBCAPCD for development projects. These measures have been updated based on the *2017 Scope and Content of Air Quality Sections in Environmental Documents* and are provided below.

AQ-1. The following measures shall be fully implemented during all construction and routine maintenance activities conducted under the Updated Enhancement Plan.

- During construction, use water trucks or sprinkler systems to keep all areas of vehicle movement damp enough to prevent dust from leaving the site. At a minimum, this should include wetting down such areas in the late morning and after work is completed for the day. Increased watering frequency should be required whenever the wind speed exceeds 15 mph. Reclaimed water should be used whenever possible.
- Minimize amount of disturbed area and reduce on site vehicle speeds to 15 miles per hour or less.

- If importation, exportation and stockpiling of fill material is involved, soil stockpiled for more than two days shall be covered, kept moist, or treated with soil binders to prevent dust generation. Trucks transporting fill material to and from the site shall be tarped from the point of origin.
- Gravel pads or rumble plates shall be installed at all access points to prevent tracking of mud onto public roads.
- After clearing, grading, earth moving or excavation is completed, treat the disturbed area by watering, or revegetating, or by spreading soil binders until the area is paved or otherwise developed so that dust generation will not occur.
- The contractor shall designate a person or persons to monitor the dust control program and to order increased watering, as necessary, to prevent transport of dust offsite. Their duties shall include holiday and weekend periods when work may not be in progress. The name and telephone number of such persons shall be provided to the SBCAPCD prior to grading/building permit issuance and/or map clearance.
- All portable diesel-powered construction equipment shall be registered with the state's portable equipment registration program OR shall obtain an SBCAPCD permit.
- Fleet owners of mobile construction equipment are subject to the CARB Regulation for In-Use Off-Road Diesel Vehicles (Title 13, California Code of Regulations (CCR), §2449), the purpose of which is to reduce NO_x emissions, diesel particulate matter (DPM), and other criteria pollutant emissions from in-use off-road diesel-fueled vehicles. Project-related mobile equipment shall comply with the State Off-Road Regulation.
- Fleet owners of mobile construction equipment are subject to the CARB Regulation for In-Use (On-Road) Heavy-Duty Diesel-Fueled Vehicles (Title 13, CCR, §2025), the purpose of which is to reduce DPM, NO_x and other criteria pollutants from in-use (on-road) diesel-fueled vehicles. On-road heavy-duty trucks shall comply with the State On-Road Regulation.
- All commercial off-road and on-road diesel vehicles are subject, respectively, to Title 13, CCR, §2449(d)(3) and §2485, limiting engine idling time. Idling of heavy-duty diesel construction equipment and trucks during loading and unloading shall be limited to five minutes; electric auxiliary power units should be used whenever possible.

Plan Requirements and Timing: These measures shall be included in contracts with companies providing routine maintenance services and implemented during routine maintenance activities.

MONITORING: District staff shall conduct periodic inspections to ensure these measures are implemented by all construction and routine maintenance contractors. Compliance with these measures shall be documented in the post maintenance report.

5.2.2.4 Cumulative Impacts

The cumulative projects as listed in Section 4.6 would generate both short-term (demolition and construction) and long-term NO_x and ROC emissions (primarily from motor vehicles). Project-related routine maintenance emissions would contribute to short-term emissions of other projects that are under construction when routine maintenance occurs. Overall, the project contribution may be cumulatively considerable. Consistent with Impact AQ-8 of the 2003 Final EIR, the cumulative impact of the Updated Enhancement Plan would remain significant, but mitigable (Class II).

The proposed project would also generate PM_{10} emissions that would incrementally contribute to emissions of other projects. Consistent with Impact AQ-6 of the 2003 Final EIR, with implementation of standard dust control measures, the cumulative impact of the Updated Enhancement Plan would remain less than significant (Class III).

5.2.2.5 Residual Impacts.

Implementation of the above mitigation measures would reduce air quality impacts of the Enhancement Plan (as modified by the proposed update) to a level of less than significant.

5.2.3 References

California Air Resources Board (CARB). 2008a. *Climate Change Scoping Plan, A Framework for Change*. Prepared pursuant to AB 32.

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PMC, Inc. 2015. *Final Environmental Impact Report for the Energy and Climate Action Plan*. Prepared for the Santa Barbara County Planning & Development Department, Long Range Planning Division.

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Santa Barbara County Planning & Development Department, Long Range Planning Division. 2015. *County of Santa Barbara Energy and Climate Action Plan*.

Santa Barbara County Community Services Department, Sustainability Division. 2018. *County of Santa Barbara Energy and Climate Action Plan 2017 Progress Report.*

5.3 BIOLOGICAL RESOURCES

The focus of this Subsequent EIR is to address proposed changes to routine maintenance activities conducted by the District in the Carpinteria Salt Marsh (Marsh), and changes in the known distribution of special-status species in the area. The characterization of biological resources provided in the 2003 Final EIR has been updated and supplemented with information and data that has been collected since that analysis was completed.

5.3.1 Environmental Setting

5.3.1.1 Terrestrial and Aquatic Biological Resources

Overview of the Carpinteria Salt Marsh. The Marsh is an estuary located on the south coast of Santa Barbara County covering approximately 230 acres, and includes intertidal estuarine wetlands, adjacent palustrine wetlands and subtidal habitat in natural and artificial channels. The estuary provides habitat for a rich assemblage of native plants, fish and wildlife. In June 1977, approximately 120 acres of the Marsh was incorporated into the University of California Natural Reserve System (see Figure 3-1). A management plan was developed for the Carpinteria Salt Marsh Reserve by Ferren et al. in 1997, to protect and enhance natural and cultural resources and promote research programs, education programs and public stewardship. Along the eastern margin of the Marsh is the Carpinteria Salt Marsh Nature Park, an interpretive park with public access and nature viewing areas.

The Marsh has been divided into five areas for the purposes of management (see Figure 3-1), which include:

- Basin 1: eastern portion of the Marsh, located between Santa Monica Creek and Franklin Creek.
- Basin 2: central portion of the Marsh, located between Santa Monica Creek and Estero Way (unpaved access road).
- Basin 3: western portion of the Marsh, located west of Estero Way.
- South Marsh: located immediately north of Avenue Del Mar.
- Nature Park: located on the eastern margin of the Marsh, adjacent to Ash Avenue.

Vegetation. The Marsh is a geologic structural basin containing large deltaic deposits of sediments. The vegetation in the Marsh is greatly influenced by physical factors, including elevation, frequency of tidal inundation, and salinity. The wetland vegetation of the Marsh generally ranges from 2.6 feet above mean sea level (msl) to 4.2 feet above msl, with a variable transition area between wetland and upland vegetation occurring from about 4.2 to 4.9 feet above msl. Upland vegetation is generally dominant in areas higher than 4.9 feet above msl. Wetland vegetation in a salt marsh is divided into vegetation “zones” that typically correspond to elevation gradients and hydrologic regime. These zones are classified as low, middle, and high marsh; and are further described below (adapted from Moffat & Nichol & SAIC, 2002):

- Low salt marsh habitats are inundated by tidal action at least daily and include estuarine intertidal mudflats and tidal channels. The tidal mudflats within the Marsh are flooded and exposed daily and do not support vegetation but provide an abundance of invertebrates and are considered important foraging habitat for birds that frequent the salt marsh. Tidal mudflats in the Marsh typically occur between 2.2 and 2.6 feet above msl.
- Middle coastal salt marsh is regularly inundated during high tides and is dominated by monotypic stands of pickleweed (*Salicornia pacifica*). This is the dominant habitat type in the Marsh and typically occurs above 2.6 feet above msl.
- High salt marsh is found in association with the middle coastal salt marsh but at slightly higher elevations and is inundated only during extreme high tide events. Pickleweed is still present, with alkali heath (*Frankenia salina*) and jaumea (*Jaumea carnosa*) co-dominant. Parish's glasswort (*Arthrocnemum subterminalis*) often replaces pickleweed in the higher elevations. In the Marsh, high salt marsh habitat typically occurs at the fringes of the middle marsh, often within the same elevation range, but the topography and hydrology prevent these areas from being inundated except during extreme high-tide events (monthly or seasonally). Salt pans or unvegetated saline flats that are above the reach of most or all lunar tides are interspersed with the vegetation within the high salt marsh habitats. Spearscale (*Atriplex triangularis*), an annual species commonly found in salt marshes or alkali flats, is also present in patches, especially around the upper margins of the high salt marsh areas.

Seasonal changes in soil salinity greatly influence the distribution of vegetation at the Marsh, as the low marsh has high salinity throughout the year, the salt flat zone is hypersaline (more saline than the ocean) throughout the year, and the transition zone (low to high marsh) is hypersaline in summer and fall and low in salinity in winter and spring (Callaway et al., 1990).

A vegetation map of the Marsh was prepared in 1996 as part of the Carpinteria Salt Marsh Reserve Management Plan, and was updated in 2014 by Padre using the same classification system. The updated vegetation maps are provided as Figures 5.3-1 and 5.3-2. Table 5.3-1 provides a summary of the vegetation and cover types of the Marsh from the 2014 vegetation mapping as shown in Figures 5.3-1 and 5.3-2.

0 - - Larger channels, unvegetated
1 - Upland Habitats - Myoporum (*Myoporum laetum*), and mixed exotics
2 - Upland Habitats - Freeway iceplant (*Carpobrotus edulis*)
3 - Upland Habitats - Disturbed coastal habitat/palustrine transition
4 - Upland Habitats - Non-native grasses, and black mustard
5 - Upland Habitats - Coastal scrub (*Artemisia, Baccharis, Atriplex, Isocoma, Salix, Malacothamnus, Myoporum*)
6 - Estuarine Wetlands, Non-Vegetated - Mudflats, and small channels
7 - Estuarine Wetlands, Non-Vegetated - Sand flats, spoils, sand bars
8 - Estuarine Wetlands, Non-Vegetated - Salt flats
9 - Estuarine Wetlands: Emergent - Pickleweed (*Salicornia pacifica*)
10 - Estuarine Wetlands: Emergent - Glasswort (*Arthrocnemum subterminale*)
11 - Estuarine Wetlands: Emergent - *Arthrocnemum, Atriplex, Distichlis spicata, Frankenia, Jaumea, Salicornia*
12 - Estuarine Wetlands: Emergent - *Arthrocnemum, Avena, Bromus, Frankenia, Lolium, Salicornia*
13 - Estuarine Wetlands: Emergent - Mixed associations, linear associations along berms
14 - Palustrine Wetlands: Emergent - *Arthrocnemum, Atriplex, Frankenia, Salicornia*
15 - Palustrine Wetlands: Emergent - Mixed emergent/upland, *Bromus, Euthamia, Lolium, Polypogon, Salicornia, Scirpus*
16 - Palustrine Wetlands: Forested - Willow (*Salix* ssp.)

Vegetation and Habitats Mapped in 2014

0 150 300
FEET

Source: NAIP Imagery 2018
Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet
Notes: This map was created for informational and display purposes only.

padre associates, inc.
ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

PROJECT NAME: UPDATED CARPINTERIA SALT MARSH ENHANCEMENT PLAN SANTA BARBARA COUNTY, CA

PROJECT NUMBER: 1802-3401

DATE: June 2019

VEGETATION OF THE MARSH WESTERN PORTION

FIGURE 5.3-1

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Back of Figure 5.3-1

0 - - Larger channels, unvegetated
1 - Upland Habitats - Myoporum (*Myoporum laetum*), and mixed exotics
2 - Upland Habitats - Freeway iceplant (*Carpobrotus edulis*)
3 - Upland Habitats - Disturbed coastal habitat/palustrine transition
4 - Upland Habitats - Non-native grasses, and black mustard
5 - Upland Habitats - Coastal scrub (*Artemisia, Baccharis, Atriplex, Isocoma, Salix, Malacothamnus, Myoporum*)
6 - Estuarine Wetlands, Non-Vegetated - Mudflats, and small channels
7 - Estuarine Wetlands, Non-Vegetated - Sand flats, spoils, sand bars
8 - Estuarine Wetlands, Non-Vegetated - Salt flats
9 - Estuarine Wetlands: Emergent - Pickleweed (*Salicornia pacifica*)
10 - Estuarine Wetlands: Emergent - Glasswort (*Arthrocnemum subterminale*)
11 - Estuarine Wetlands: Emergent - *Arthrocnemum, Atriplex, Distichlis spicata, Frankenia, Jaumea, Salicornia*
12 - Estuarine Wetlands: Emergent - *Arthrocnemum, Avena, Bromus, Frankenia, Lolium, Salicornia*
13 - Estuarine Wetlands: Emergent - Mixed associations, linear associations along berms
14 - Palustrine Wetlands: Emergent - *Arthrocnemum, Atriplex, Frankenia, Salicornia*
15 - Palustrine Wetlands: Emergent - Mixed emergent/upland, *Bromus, Euthamia, Lolium, Polypogon, Salicornia, Scirpus*
16 - Palustrine Wetlands: Forested - Willow (*Salix* ssp.)

Vegetation and Habitats Mapped in 2014

0 150 300
FEET

Source: NAIP Imagery 2018
Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet
Notes: This map was created for informational and display purposes only.

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PROJECT NAME: UPDATED CARPINTERIA SALT MARSH ENHANCEMENT PLAN SANTA BARBARA COUNTY, CA

PROJECT NUMBER: 1802-3401

DATE: June 2019

VEGETATION OF THE MARSH EASTERN PORTION

FIGURE 5.3-2

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Back of Figure 5.3-2

Table 5.3-1. Summary of the Vegetation and Cover Types of the Marsh

Map Code	Vegetation/Cover Type	Acres
0	Larger channels, unvegetated	17.4
1	Myoporum *(Myoporum laetum)*, and mixed non-native species	3.3
2	Freeway iceplant *(Carpobrotus edulis)*	2.2
3	Disturbed coastal habitat/palustrine transition	13.7
4	Non-native grasses and black mustard (*Brassica nigra*)	3.0
5	Coastal scrub: California sagebrush (*Artemisia californica*), coyote brush (*Baccharis pilularis*), saltbush (*Atriplex lentiformis*), coastal goldenbush (*Isocoma menziesii*), willow (*Salix* spp.), chaparral mallow (*Malacothamnus fasciculatus*), myoporum	9.5
6	Mudflats, and small channels	13.4
7	Sand flats, spoils, sand bars	2.7
8	Salt flats	6.1
9	Pickleweed *(Salicornia pacifica)*	119.6
10	Parish's glasswort *(Arthrocnemum subterminale)*	0.8
11	Parish's glasswort, saltbush, saltgrass, alkali heath (*Frankenia salina*), jaumea, pickleweed	19.8
12	Parish's glasswort, wild oats (*Avena fatua*), brome grasses (*Bromus* spp.), alkali heath, Italian rye-grass (*Festuca perennis*), pickleweed	3.2
13	Mixed associations, linear associations along berms	4.1
14	Parish's glasswort, saltbush, alkali heath, pickleweed	6.5
15	Mixed emergent/upland: brome grasses, goldenrod, Italian rye-grass, rabbits-foot grass (*Polypogon* spp.), pickleweed, bulrushes	4.7
16	Willow patches	0.9

The following description of vegetation within the Marsh is based on Figures 5.3-1 and 5.3-2 and references vegetation classifications and map codes listed in Table 5.3-1.

Basin 1. This area is primarily vegetated with Parish's glasswort (14), pickleweed (9), mixed emergent upland (15), coastal scrub (5), patches of non-native grasses (4) and willows (16), with linear associations along the main channels (13).

Basin 2. This area is primarily vegetated with pickleweed (9), Parish's glasswort/saltbush/saltgrass (11), Parish's glasswort/annual grasses (12), non-native grasses (4) and disturbed areas along the main channels (3).

Basin 3. This area is primarily vegetated with pickleweed (9), with Parish's glasswort (10) along the smaller channels, and Parish's glasswort/saltbush/saltgrass (11), willows (16) and myoporum (1) along the northern boundary.

South Marsh/Nature Park. This area is primarily vegetated with pickleweed (9), with patches of coastal scrub (5) along the main channel and along Ash Avenue within the Nature Park. Parish's glasswort/saltbush/saltgrass (11) also occurs within the Nature Park.

Franklin Creek Staging/Stockpile Expansion Area. This approximately 0.5-acre area is located immediately adjacent to the existing staging/stockpile area and is surrounded by a low berm. At the time of the most recent field visit (June 6, 2019), approximately 0.2 acres of this area was composed of unvegetated mudflat. Dominant species are pickleweed, rabbits-foot grass (*Polypogon monspeliensis*) and Italian rye-grass (*Festuca perennis*). Due the dominance of pickleweed, this vegetation is considered south coastal salt marsh.

Flora of the Marsh. Historical records and plant collections have made possible a reconstruction of the floristic diversity of the Marsh and vicinity before many impacts of urbanization occurred. A synopsis of the findings has shown that at least 55 vascular plant families containing 153 genera and 252 species are known to occur or have occurred at the Marsh, including the estuary's historical limits and adjacent sand dunes. Of those plants, 104 species (45 percent) are native. Eleven species are possibly extirpated, representing 17 percent of the 64 native wetland species. Fifteen species growing presently at the estuary are regionally rare plants, including three species (saltmarsh bird's-beak, Coulter's goldfields, Ventura marsh milk-vetch) considered rare or endangered by one or more trustee agencies.

Marine/Estuarine Invertebrates of the Marsh. The Carpinteria Salt Marsh Reserve Management Plan reports 122 species of marine/estuarine invertebrates from the Marsh, including many marine species reported from the Marsh outlet to the ocean. These species include anemones, annelid worms, marine worms, barnacles (two species), crabs (8 species), limpets (4 species), sea hare, sea snails, turban snails, bubble snail, slipper snails (6 species), moon snail, horn snail, unicorn snail, dog whelk, basket snail, olive snail, geoduck, mussels (two species), oyster, kelp scallop, shrimp (two species), clams (12 species), isopods, sea stars (two species), brittle star, sand dollar and purple sea urchin.

The density and species composition of marine/estuarine invertebrates within the Marsh's channels vary seasonally and with the rate of sediment deposition/scour during the rainy season. The California oyster (*Ostrea lurida*) is present in rocky areas near the mouth of the estuary. Ghost shrimp (*Callianassa californiensis*), blue mud shrimp (*Upogebia pugetensis*), and jackknife clams (*Tagelus californianus*) are also present, and mussels (*Mytilus gallovincialis*) are attached to the exposed portions of the metal culverts under Estero Way. Other invertebrates that have been observed in the Marsh's channels, particularly in Basin 3 (Brooks, 1999), include striped shore crab (*Pachygrapsus crassipes*), purple shore crab (*Hemigrapsus nudus),* California horn snail (*Cerithidea californica*), channeled basket snail (*Caesia fossatus*), and predatory opisthobranch (*Navanax inermis*). The fiddler crab (*Uca crenulata*) is known to be present in the bend of the channel in the northeast corner of Basin 3.

Fishes of the Marsh. Brooks (1999) and Ferren et al. (1997) report at least 35 species of fish use the Marsh (see Table 5.3-2, including scientific names). Eight of these species are considered "dominant", including open water fish such as the topsmelt, juvenile California halibut, and typical Marsh inhabitants such as the California killifish. Fishes observed during field visits conducted for this project included striped mullet and leopard shark.

Table 5.3-2. Fishes of the Marsh

Common Name	Scientific Name
Yellowfin goby	*Acanthogobius flavimanus*
Topsmelt[1,2]	*Atherinops affinis*
Arrow goby[1,2]	*Clevelandia ios*
Black croaker	*Cheilotrema saturnum*
Shiner surfperch[2]	*Cymatogaster aggregata*
Northern anchovy	*Engraulis mordax*
California killifish[1,2]	*Fundulus parvipinnis*
Three-spined stickleback	*Gasterosteus aculeatus*
Longjaw mudsucker[1,2]	*Gillichthys mirabilis*
Opaleye	*Girella nigricans*
Giant kelpfish	*Heterostichus rostratus*
Bay blenny	*Hypsoblennis gentilis*
Rockpool blenny	*Hypsoblennius gilberti*
Diamond turbot[1,2]	*Hypsopsetta guttulata*
Cheekspot goby[2]	*Ilypnus gilberti*
Bay goby	*Lepidogobius lepidus*
Pacific staghorn sculpin[1,2]	*Leptocottus armatus*
California grunion	*Leuresthes tenuis*
California corbina	*Menticirrhus undulatus*
Stripped mullet	*Mugil cephalus*
Grey smoothhound shark[2]	*Mustelus californicus*
Kelp bass	*Paralabrax clathratus*
Barred sand bass	*Paralabrax nebulifer*
California halibut[1,2]	*Paralichthys californicus*
Starry flounder[1]	*Platichthys stellatus*
Thornback ray	*Platyrhinoides triserata*
Specklefin midshipman[1]	*Porichthys myriaster*
Shadow goby[2]	*Quietula y-cauda*
Rubberlip surfperch	*Rhachochilus vacca*
Shovel-nose guitar fish	*Rhinobatus productus*
Bay pipefish	*Sygnathus leptorhynchus*
California tonguefish	*Symphurus atricauda*
Leopard shark	*Triakis semifasciata*
Yellow-fin croaker	*Umbrina roncador*
Round stingray	*Urolophus halleri*

[1] Considered dominant, species comprises over 1% of the fish population in the Marsh

[2] Observed during tidewater goby surveys in October 2008

The Final EIR prepared in 2003 for the Carpinteria Salt Marsh Enhancement Plan considered tidewater goby (*Eucyclogobius newberryi*) as potentially present in the Marsh, although this species has not been documented in the Marsh since 1923. Tidewater goby was listed as endangered by USFWS in 1994 and critical habitat was re-designated in 2013, which did not include the Marsh or its tributary streams. This species is now considered extirpated from the Marsh (USFWS, 2005). Field surveys conducted according to the USFWS protocol on October 3 and 31, 2008 (including 35 seine hauls on October 3 and 26 seine hauls and dip-netting on October 31) did not observe tidewater goby (Entrix, 2008). Measured salinity during the surveys was mostly near 30 parts per thousand, which is too high for this species. In addition, water velocity in the channels generated by tidal flow in the Marsh is considered too high for tidewater goby (Entrix, 2008).

Amphibians and Reptiles. Five species of amphibian and reptiles have been reported from the Carpinteria Salt Marsh Reserve. Species observed during a brief field survey conducted for this project was limited to southern alligator lizard (*Elgaria multicarinata webbii*).

Birds. The Carpinteria Salt Marsh Reserve Management Plan lists over 206 observed bird species that currently utilize the Marsh. Most are transients or seasonal visitors, but several species breed within the Marsh, including Belding's savannah sparrow (*Passerculus sandwichensis beldingi*), house sparrow (*Passer domesticus*), great blue heron (*Ardea herodias*), Anna's hummingbird (*Calypte anna*), green heron (*Butorides virescens*) and killdeer (*Charadrius vociferus*). Thirty-three species of special-status birds have been reported from the Marsh and are listed in Table 5.3-6.

Based on water-bird censuses conducted in San Diego County wetlands, wetland bird numbers climb from January to peak in April, drastically decline in May, are somewhat low and stable from May through July, climb from July to August and are somewhat stable from August through December (Zedler, 1982). These data indicate bird numbers in southern California wetlands are greatest during pre and post-breeding periods.

Birds observed during a brief field survey of the eastern portion of the Marsh on June 6, 2019 included song sparrow (*Melospiza melodia*), house finch (*Haemorhous mexicanus*), common raven (*Corvus corax*), American crow (*Corvus brachyrhynchos*), cliff swallow (*Petrochelidon pyrrhonota*), white-tailed kite (adult with juveniles) (*Elanus leucurus*), great blue heron, snowy egret (*Egretta thula*), great egret (*Ardea alba*), northern mockingbird (*Mimus polyglottos*), mallard (*Anas platyrhynchos*), killdeer (nest with eggs in Basin 2), western snowy plover (foraging in Basin 2) (*Charadrius alexandrinus nivosus*), black phoebe (*Sayornis nigricans*), California towhee (*Melozone crissalis*), Belding's savannah sparrow (Basins 1 and 2), wrentit (*Chamaea fasciata*) and mourning dove (*Zenaida macroura*). In addition, an osprey (*Pandion haliaetus*) was observed perched on debris in Basin 2 during a site meeting on January 29, 2019.

The Final EIR prepared in 2003 for the Carpinteria Salt Marsh Enhancement Plan considered light-footed Ridgway's (Clapper) Rail (*Rallus obsoletus levipes*) as present in the Marsh, at least in Basins 2 and 3, based on incidental observations in 1995 and 1999. Yearly census for light-footed Ridgway's rail have been performed at sites throughout southern California since 1980. This species has not been observed at Carpinteria Salt Marsh since 2002 (Zembal et al., 2016). Therefore, this species is now considered extirpated from the Marsh.

Mammals. The Carpinteria Salt Marsh Reserve Management Plan indicates eleven mammal species have been reported from the Marsh. Small mammal trapping in Basin 1 in April 2001 documented the presence of harvest mice (*Reithrodontomys megalotis*) and house mice (*Mus musculus*) (Moffat and Nichol & SAIC, 2002). Other mammals known to occur at the Marsh include opossum (*Didelphis virginiana*), raccoon (*Procyon lotor*), striped skunk (*Mephitis mephitis*), Botta's pocket gopher (*Thomomys bottae*), California ground squirrel (*Ostospermophilus beecheyi*), brush rabbit (*Sylvilagus bachmani*), red fox (*Vulpes vulpes*), coyote (*Canis latrans*), and feral cats (*Felis cattus*). Raccoons and red fox are considered potential nest predators of the endangered Belding's savannah sparrow at the Marsh (Zembal et al., 2015). Mammals observed during a brief field survey of the eastern portion of the Marsh on June 6, 2019 included raccoon, brush rabbit and red fox.

Wildlife Movement Corridors. Wildlife migration corridors are generally defined as connections between habitat patches that allow for physical and genetic exchange between otherwise isolated animal populations. Migration corridors may be local such as between foraging and nesting or denning areas, or they may be regional in nature. Migration corridors are not unidirectional access routes; however, reference is usually made to source and receiver areas in discussions of wildlife movement networks. "Habitat linkages" are migration corridors that contain contiguous strips of native vegetation between source and receiver areas. Habitat linkages provide cover and forage sufficient for temporary habitation by a variety of ground-dwelling animal species. Wildlife migration corridors are essential to the regional ecology of an area as they provide avenues of genetic exchange and allow animals to access alternative territories as fluctuating dispersal pressures dictate.

The Marsh and its tributary streams may play an important role as migration/movement corridors for fish and wildlife species moving between the Pacific Ocean and coastal areas to the upper watersheds, and the wildlife habitats of the Santa Ynez Mountains. Riparian corridors provide cover and forage, and facilitate wildlife movement through developed areas such as that located north of the Marsh. However, about one mile of Santa Monica Creek and Franklin Creek are confined to concrete channels upstream of the Marsh, which prevents the development of riparian habitat.

The Marsh may also function as important habitat for bird species during migration through the Pacific Flyway. In spring, moderate-to-large (but declining) numbers of northward migrating shorebirds can be found visiting the Marsh (Lehman, 2019). Southbound transient shorebirds begin to arrive in the area by late June, with the first fall migrant land birds appearing in early July (Lehman, 2019).

Sensitive Communities. For the purposes of this analysis, sensitive natural communities included those that are considered rare by the California Department of Fish and Wildlife (CDFW) California Natural Diversity Data Base (CNDDB), considered sensitive by other trustee agencies or the scientific community. The CNDDB has inventoried natural communities and ranked them according to their rarity and potential for loss. South coastal salt marsh occurs at the Marsh and is considered a rare natural community.

Environmentally Sensitive Habitat Areas. Sections 30230, 30231, and 30233 of the Coastal Act of 1976 require protection of marine resources and estuaries, such as that found at the Marsh. The Santa Barbara County Coastal Land Use Plan provides an overlay designation of Environmentally Sensitive Habitat Area (ESHA) to protect estuaries, wetlands, riparian corridors and other important coastal habitat areas. Policies 9-6 through 9-16b of the Coastal Land Use Plan provide measures to protect the Marsh and other wetland ESHAs.

Regulated Waters and Wetlands. The term wetland is used to describe a particular landscape characterized by inundation or saturation with water for a sufficient duration to result in the alteration of physical, chemical, and biological elements relative to the surrounding landscape. Wetland areas are characterized by prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands provide habitats that are essential to the survival of many threatened or endangered species as well as other wetland dependent species. Wetlands also have value to the public for flood retention, storm abatement, aquifer recharge, water quality improvement, and for aesthetic qualities. Wetlands also play a role in the maintenance of air and water quality and contribute to the stability of global levels of available nitrogen, atmospheric sulfur, carbon dioxide, and methane. Wetlands are rapidly declining within California and efforts are being made to maintain and preserve remaining wetlands within California. Historically, Southern California had extensive wetlands with significant freshwater inflow. The Southern California Coastal Wetland Inventory prepared by the Coastal Conservancy addressed 41 key sites and indicates only about 30 percent of historic coastal wetland area is remaining (Southern California Wetlands Recovery Project, 2001).

Regulatory agencies with jurisdiction over wetlands include the U.S. Army Corps of Engineers (Corps) with authority to enforce two Federal regulations involving wetland preservation; the Clean Water Act (Section 404), which regulates the disposal of dredge and fill materials in waters of the U.S., and the Rivers and Harbors Act of 1899 (Section 10), which regulates diking, filling, and placement of structures in navigable waterways. State regulatory agencies with jurisdiction over wetlands include the State Water Quality Control Board that enforces compliance with the Federal Clean Water Act (Section 401) regulating water quality; the California Coastal Commission (CCC), which regulates development within the coastal zone as stipulated in the California Coastal Act (Sections 30230, 30231, 30233, and 30240 apply to preservation and protection of wetlands); and the CDFW, which asserts jurisdiction over waters and wetlands with actions that involve alterations to streams or lakes by issuing Streambed Alteration Agreements under Section 1602 of the California Fish and Game Code.

Definitions. In the Clean Water Act regulations (33 CFR 328.3(a)), the term “waters of the U.S.” is defined as follows:

1. All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide.
2. All interstate waters including interstate wetlands.
3. Territorial seas.
4. All impoundments of waters otherwise identified as waters of the U.S.
5. All tributaries that contribute flow to a water of the U.S., which exhibit ordinary high water marks.
6. All waters adjacent to a water of the U.S. including wetlands, ponds, lakes, oxbows, impoundments and similar waters.
7. All waters where a significant nexus to a water of the U.S. has been demonstrated.
8. All waters located within the 100-year floodplain of waters identified under 1 through 3 above.
9. All waters located within 4,000 feet of the high tide line or ordinary high water mark of waters identified under 1 through 5 above, where a significant nexus to waters identified under 1 through 3 above has been demonstrated.

Under Corps and USEPA regulations, wetlands are defined as: "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas."

In non-tidal waters, the lateral extent of Corps jurisdiction is determined by the ordinary high water mark (OHWM) which is defined as the: "…line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas." (33 CFR 328[e]).

The U.S. Fish and Wildlife Service (USFWS), CDFW and Santa Barbara County define wetlands as: "…lands transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is covered by shallow water. For the purposes of this classification, wetlands must have one or more of the following attributes: 1) at least periodically, the land supports predominantly hydrophytes; 2) the substrate is predominantly undrained hydric soil; and 3) the substrate is non-soil and is saturated with water or covered by shallow water at some time during the growing season each year."

Under Section 30121 of the Public Resources Code, wetlands in the coastal zone are defined as: "lands within the coastal zone which may be covered periodically or permanently with shallow water and include saltwater marshes, freshwater marshes, open or closed brackish water marshes, swamps, mudflats, and fens."

Distribution of Wetlands. The Marsh and tributary streams (Santa Monica Creek and Franklin Creek) support waters of the U.S. and Corps-defined wetlands, at least in areas where wetland vegetation persists and soils have not been recently disturbed. USFWS-defined wetlands, CDFW-defined wetlands and County-defined wetlands are more common in the Marsh, since these definitions only require that wetland-associated plants (hydrophytes) are either present at some time or the area supports saturated soil. Even frequently maintained flood control channels support some hydrophytes.

Special-Status Plant Species. Special-status plant species are either listed as endangered or threatened under the Federal or California Endangered Species Acts, or rare under the California Native Plant Protection Act, or considered to be rare (but not formally listed) by resource agencies, professional organizations (California Native Plant Society), and the scientific community. For the purposes of this project, special-status plant species are defined in Table 5.3-3.

The literature search and field surveys conducted for this impact analysis indicates that 18 special-status plant species occur in the vicinity of the Marsh. Table 5.3-4 identifies the current regulatory status and nearest known location of each species, relative to the Marsh. Special-status plant species occurring at the Marsh that have the potential to be impacted by maintenance activities include yerba mansa, Parish's glasswort, Ventura marsh milk-vetch, Watson's salt-scale, saltmarsh birds-beak, alkali barley, marsh rosemary, shore-grass, Hoffman's bitter gooseberry, canyon gooseberry, wooly sea-blite, seaside arrow-grass and three-ribbed arrow-grass (see Table 5.3-4 for scientific names).

Table 5.3-3. Definitions of Special-Status Plant Species

- Plants listed or proposed for listing as threatened or endangered under the Federal Endangered Species Act (50 CFR 17.12 for listed plants and various notices in the Federal Register for proposed species).
- Plants that are candidates for possible future listing as threatened or endangered under the Federal Endangered Species Act (Federal Register October 10, 2019).
- Plants that meet the definitions of rare or endangered species under the CEQA (*State CEQA Guidelines,* Section 15380).
- Plants considered by the CNPS to be "rare, threatened, or endangered" in California (Lists 1B and 2).
- Plants listed by CNPS as plants about which we need more information and plants of limited distribution (Lists 3 and 4).
- Plants listed or proposed for listing by the State of California as threatened or endangered under the California Endangered Species Act (14 CCR 670.5).
- Plants listed under the California Native Plant Protection Act (California Fish and Game Code 1900 et seq.).
- Plants considered sensitive or unique by the scientific community or occurring at the limits of its natural range.
- Plants listed as "Rare Plants of Santa Barbara County" by the Santa Barbara Botanic Garden (updated 2012).

Table 5.3-4. Special-Status Plant Species Reported within Two Miles of the Marsh

Common Name (*Scientific Name*)	Status	Nearest Known Location	Flowering Period
Red sand-verbena (*Abronia maritima*)	List 4, SBBG	Reintroduced at the Carpinteria Salt Marsh Nature Park (SBCFC&WCD, 2003)	February-November
Yerba mansa (*Anemopsis californica*)	SBBG	Marsh margins and roadside ditches (SBCFC&WCD, 2003)	March-September
Parish's glasswort (*Arthrocnemum subtem*inale)	SBBG	Dominant species in the Marsh	April-September
Ventura marsh milk-vetch (*Astragalus pycnostachys* var. *lanosissimus*)	FE, SE, List 1B	Introduced to Marsh Basin 2 (Meyer, 2012)	June-October
Watson's salt-scale (*Atriplex watsonii*)	SBBG	Marsh Basin 2 (SBCFC&WCD, 2003)	March-October
Saltmarsh birds-beak (*Chloropyron maritimum* ssp. *maritimum*)	FE, SE, List 1B, SBBG	Marsh Basins 2 and 3, also introduced at the Nature Park (CNDDB, 2019), observed on June 6, 2019 within 50 feet of the Main Channel in Basin 2	May-October
Alkali barley (*Hordeum depressum*)	SBBG	Marsh Basins 1 and 2 (SBCFC&WCD, 2003)	April-May
Spiny rush (*Juncus acutus* ssp. *leopoldii*)	List 4, SBBG	Reintroduced at the Carpinteria Salt Marsh Nature Park (SBCFC&WCD, 2003)	June-August
Coulter's goldfields (*Lasthenia glabrata* ssp. *coulteri*)	List 1B	Reintroduced at the Carpinteria Salt Marsh Nature Park (SBCFC&WCD, 2003)	February-June
Marsh rosemary (*Limonium californicum*)	SBBG	Reported from the Marsh, mostly Basin 2 (Ferren et al., 1997)	July-December
Santa Barbara honeysuckle (*Lonicera subspicata* var. *subspicata*)	List 1B	Santa Monica Canyon, 1.7 miles to the north (Padre, 2016)	May-December
Shore-grass (*Distichlis littoralis*)	SBBG	Reported from the Marsh, mostly Basin 2 (Ferren et al., 1997)	April-August
Nuttall's scrub oak (*Quercus dumosa*)	List 1B	Near Toro Canyon Road, 2.1 miles to the northwest (CNDDB, 2019)	February-April
Hoffmann's bitter gooseberry (*Ribes amarum* var. *hoffmannii*)	List 3	Reported from the Marsh (Ferren et al., 1997)	March-April
Canyon gooseberry (*Ribes menziesii*)	SBBG	Reported from the Marsh (Ferren et al., 1997)	April
Wooly sea-blite (*Suaeda taxifolia*)	SBBG, List 4	Marsh margins and berms (SBCFC&WCD, 2003)	January-December
Seaside arrow-grass (*Triglochin concinna*)	SBBG	Marsh Basin 2 (SBCFC&WCD, 2003)	March-August
Three-ribbed arrow-grass (*Triglochin striata*)	SBBG	Reported from the Marsh (Ferren et al., 1997)	May-September

FE Federal Endangered (USFWS)
FT Federal Threatened (USFWS)
List 1B Plants rare, threatened, or endangered in California and elsewhere (CNPS)
List 3 Plants about which we need more information, a review list (CNPS)
List 4 Plants of limited distribution (CNPS)
SBBG Rare Plant (Santa Barbara Botanic Garden)
SE California Endangered (CDFW)

Special-Status Wildlife Species. For the purposes of this project, special-status wildlife species are defined in Table 5.3-5. Literature research and field surveys conducted for this impact analysis indicates that 42 special-status wildlife species occur within two miles of the Marsh. Information regarding regulatory status and known location of these species relative to desilting activities is provided in Table 5.3-6. Additional discussion of endangered species not currently present at the Marsh is provided below.

Table 5.3-5. Definitions of Special-Status Wildlife Species

- Animals listed or proposed for listing as threatened or endangered under the Federal Endangered Species Act (50 CFR 17.11 for listed animals and various notices in the Federal Register for proposed species).
- Animals that are candidates for possible future listing as threatened or endangered under the Federal Endangered Species Act (Federal Register October 10, 2019).
- Animals that meet the definitions of rare or endangered species under the CEQA (*State CEQA Guidelines*, Section 15380).
- Animals listed or proposed for listing by the State of California as threatened and endangered under the California Endangered Species Act (14 CCR 670.5).
- Animal species of special concern to the CDFW (Shuford & Gardali, 2008 for birds; Williams, 1986 for mammals; Moyle et al., 2015 for fish; and Thomson et al., 2016 for amphibians and reptiles).
- Animal species that are fully protected in California (California Fish and Game Code, Section 3511 [birds], 4700 [mammals], and 5050 [reptiles and amphibians]).
- Marine mammals protected under the Marine Mammal Protection Act.

Table 5.3-6. Special-Status Invertebrate, Fish and Wildlife Species Reported within Two Miles of the Marsh

Common Name (*Scientific Name*)	Status	Nearest Known Occurrence to the Marsh
Invertebrates		
Monarch butterfly (*Danaus plexippus*)	SA	Carpinteria Creek aggregation site, 0.8 miles to the southeast (Meade, 1999)
Fish		
Southern California steelhead (*Oncorhynchus mykiss*)	FE	Carpinteria Creek below State Route 192, 0.7 miles to the southeast (Stoecker et al., 2002)
Tidewater goby (*Eucyclogobius newberryi*)	FE, CSC	Carpinteria Creek, 0.7 miles to the southeast (Padre, 2016)
Amphibians		
California red-legged frog (*Rana draytoni*)	FT, CSC	Santa Monica Creek, 1.6 miles to the north (M. Ingamells, personal observation, 2011)
Coast Range newt (*Taricha torosa*)	CSC	Santa Monica Creek, 1.6 miles to the north (M. Ingamells, personal observation, 2011)
Reptiles		
Western pond turtle (*Emys marmorata*)	CSC	Lower Carpinteria Creek, 1.3 miles to the east (Padre, 2016)
Southern California legless lizard (*Anniella stebbinsi*)	CSC	Sand spit at the Marsh in 1983 (CNDDB, 2019)
Two-striped garter snake (*Thamnophis hammondii*)	CSC	Santa Monica Creek, 1.6 miles to the north (M. Ingamells, personal observation, 2011)
Birds		

Common Name (*Scientific Name*)	Status	Nearest Known Occurrence to the Marsh
Belding's savannah sparrow (*Passerculus sandwichensis beldingi*)	SE	61 breeding territories found in the Marsh in 2015, including three within the Nature Park (Zembal et al., 2015), observed in Basin 2 on June 6, 2019
Brown pelican (*Pelecanus occidentalis*)	FP	Forages/rests along marsh channels, coastal waters and at local beaches, reported from Marsh on 10/29/19 (e-bird.org)
Western snowy plover (*Chardrius alexandrinus nivosus*)	FT, CSC	Forages on beaches near the Marsh, occasionally nests in the Santa Barbara Harbor (CNDDB, 2019), observed in Basin 2 on June 6, 2019 by Padre biologists
Burrowing owl (*Athene cunicularia*)	CSC	Transients historically reported from the Marsh (Ferren et al., 1997), no breeding in the region (Lehman, 2019)
Common loon (*Gavia immer*)	CSC (nesting)	Fairly common fall transient and winter visitor in the region (Lehman, 2019), reported from the Marsh (Ferren et al., 1997), observed at the Marsh on 1/1/15 (e-bird.org)
California gull (*Larus californicus*)	WL (nesting)	Common transient and winter visitor in the region (Lehman, 2019), reported from the Marsh (Ferren et al., 1997), observed at the Marsh on 9/29/19 (e-bird.org)
Elegant tern (*Sterna elegans*)	WL (nesting)	Common summer and fall visitor in the region (Lehman, 2019), reported from the Marsh (Ferren et al., 1997), observed at the Marsh on 9/18/19 (e-bird.org)
Caspian tern (*Sterna caspia*)	SA (nesting)	Fairly common transient and summer visitor in the region (Lehman, 2019), reported from the Marsh (Ferren et al., 1997), observed at the Marsh on 9/18/19 (e-bird.org)
California least tern (*Sternula antilarum browni*)	FE, SE, FP	Post-breeding visitor in the region, historically reported from the Marsh (Ferren et al., 1997), nearest breeding at McGrath State Beach, observed near the Marsh on 8/6/11 (e-bird.org)
Double-crested cormorant (*Phalacrocorax auritus*)	WL (nesting)	Known to breed near Summerland, reported from the Marsh (Ferren et al., 1997), observed at the Marsh on 2/1/19 (e-bird.org)
Redhead (*Aythya americana*)	CSC (nesting)	Uncommon to fairly common but local transient and winter visitor in the region, reported from Marsh on 3/3/14 (e-bird.org)
American bittern (*Botaurus lentiginosus*)	SA	Very uncommon transient and winter visitor in the region (Lehman, 2019), reported from the Marsh (Ferren et al., 1997)
Great blue heron (*Ardea herodias*)	SA (nesting)	Reported to nest along the southern perimeter of the Marsh (Santa Barbara Audubon Society, 2018), observed at the Marsh on June 6, 2019 by Padre biologists
Great egret (*Ardea alba*)	SA (nesting)	Fairly common transient and winter visitor in the region (Lehman, 2019), observed at the Marsh on June 6, 2019 by Padre biologists
Snowy egret (*Egretta thula*)	SA (nesting)	Common transient and winter visitor in the region (Lehman, 2019), observed at the Marsh on June 6, 2019 by Padre biologists
Black-crowned night heron (*Nycticorax nycticorax*)	SA (nesting)	Common resident in the region, likely breeds at the Santa Barbara Bird Refuge (Lehman, 2019), reported from Marsh on 9/29/19 (e-bird.org)
White-faced ibis (*Plegadis chihi*)	WL (nesting)	Rare transient in the region (Lehman, 2019), reported from the Marsh (Ferren et al., 1997), observed at the Marsh on 10/2/19 (e-bird.org)
Fulvous whistling duck (*Dendrocygna bicolor*)	CSC (nesting)	Casual visitor in the region (Lehman, 2019), reported from the Marsh (Ferren et al., 1997)

Common Name (*Scientific Name*)	Status	Nearest Known Occurrence to the Marsh
Brant (*Branta bernicla*)	CSC (winter, staging)	Common to abundant spring transient in the region (Lehman, 2019), reported from the Marsh (Ferren et al., 1997), observed at the Marsh on 2/1/17 (e-bird.org)
Osprey (*Pandion haliaetus*)	WL (nesting)	Rare fall/winter transient in the region (Lehman, 2019), reported from the Marsh (Ferren et al., 1997), observed at Basin 2 on January 29, 2019 by Padre biologists
White-tailed kite (*Elanus leucurus*)	SA, FP (nesting)	Uncommon resident in the region, (Lehman, 2019), three observed at the Marsh on June 6, 2019 by Padre biologists
Bald eagle (*Haliaeetus leucocephalus*)	SE, FP	Very rare transient in the region, (Lehman, 2019), reported from the Marsh (Ferren et al., 1997)
Northern harrier (*Circus hudsonius*)	CSC (nesting)	Uncommon transient and winter visitor in the region, (Lehman, 2019), reported from the Marsh (Ferren et al., 1997), observed at the Marsh on 10/15/17 (e-bird.org)
Sharp-shinned hawk (*Accipiter striatus*)	WL (nesting)	Fairly common transient and winter visitor in the region, (Lehman, 2019), reported from the Marsh (Ferren et al., 1997), observed at the Marsh on 10/6/16 (e-bird.org)
Cooper's hawk (*Accipiter cooperi*)	WL (nesting)	Uncommon resident in the region, (Cachuma Resource Conservation District et al., 2005), reported from the Marsh (Ferren et al., 1997), observed at the Marsh on 8/24/19 (e-bird.org)
Peregrine falcon (*Falco peregrinus*)	FP, SA (nesting)	Uncommon fall/winter visitor in the region, (Lehman, 2019), reported from the Marsh (Ferren et al., 1997), observed at the Marsh on 6/16/19 (e-bird.org)
Merlin (*Falco columbarius*)	WL (wintering)	Very uncommon winter visitor in the region, (Lehman, 2019), reported from the Marsh (Ferren et al., 1997), observed at the Marsh on 3/26/19 (e-bird.org)
Long-billed curlew (*Numenius americanus*)	WL (nesting)	Uncommon fall migrant in the region, (Lehman, 2019), reported from the Marsh (Ferren et al., 1997), 15 observed at the Marsh on 10/2/19 (e-bird.org)
Black skimmer (*Rhynchops niger*)	CSC (nesting)	Rare winter migrant and summer visitor in the region, (Lehman, 2019), reported from the Marsh (Ferren et al., 1997) and observed on 7/27/16 (e-bird.org)
Vaux's swift (*Chaetura vauxi*)	CSC (nesting)	Uncommon migrant in the region, (Lehman, 2019), reported from the Marsh (Ferren et al., 1997), observed at the Marsh on 9/29/18 (e-bird.org)
Red-breasted sapsucker (*Sphyrapicus ruber*)	SA	Uncommon transient and winter visitor in the region, (Lehman, 2019), reported from Marsh on 12/20/09 (e-bird.org)
Loggerhead shrike (*Lanius ludovicianus*)	CSC (nesting)	Rare and irregular breeder in the project area (Lehman, 2019), fledgling observed in the Marsh in 2004 (Santa Barbara Audubon Society, 2018), observed at the Marsh on 2/16/18 (e-bird.org)
California horned lark (*Eremophila alpestris actia*)	WL	Uncommon migrant in the region (Lehman, 2019) and reported from Marsh (Ferren et al., 1997), but fledglings were reported from the Marsh in 2017 (Santa Barbara Audubon Society, 2018)
Yellow warbler (*Setophaga petechia brewsteri*)	CSC (nesting)	Summer resident in Carpinteria Creek (Cachuma Resource Conservation District et al., 2005), reported from the Marsh (Ferren et al., 1997), observed at the Marsh on 5/2/19 (e-bird.org)

Common Name (*Scientific Name*)	Status	Nearest Known Occurrence to the Marsh
Mammals		
Townsend's big-eared bat (*Corynorhinus townsendi*)	CSC	Carpinteria Salt Marsh (historic, 1941) (CNDDB, 2019)
Yuma myotis (*Myotis yumanensis*)	SA	Night roost under the Carpinteria Avenue bridge, 1.0 miles to the southeast (Padre, 2016)

CSC California Species of Special Concern (CDFW)
FE Federal Endangered (USFWS)
FT Federal Threatened (USFWS)
FP Protected under the California Fish & Game Code (CDFW)
SA Special Animal (CDFW)
SE State Endangered (CDFW)
WL Watch List (CDFW)

5.3.1.2 Nearshore Marine Biological Resources

For this impact assessment, marine biological resources addressed include the beach and the area seaward of the mean high tide line extending up to three nautical miles offshore.

Intertidal Habitat and Resources. In the vicinity of the Marsh, intertidal areas are primarily composed of sandy beaches. Common upper intertidal invertebrates include beach-hoppers (*Orchestoidea* sp.), predatory isopods (*Excirolana* sp.), polychaete worms (including the blood worm *Euzononus mucronata*) and beetles (including *Thinopinus pictus*). Middle intertidal invertebrates are characterized by sand crabs (*Emerita analoga, Lepidopa californica*), polychates (*Nephtys californica*), snails (including *Olivella biplicata*) and clams (including *Donax gouldi*). Common invertebrates in the low intertidal zone are predominantly polychaetes and nemertean worms (Thompson, et al., 1993).

Fishes occurring in sandy intertidal areas are primarily those marine species found at the Marsh ocean outlet and are listed in Table 5.3-2, including topsmelt, shiner surfperch, northern anchovy, diamond turbot, Pacific staghorn sculpin, striped mullet, California halibut, starry flounder, rubber-lip surfperch and round stingray (see Table 5.3-2 for scientific names).

Subtidal Habitats and Resources. The offshore environment adjacent to the Marsh consists of a relatively flat and shallow continental shelf, which dips so gently (about 0.4° to 0.5°) that water depths at the 3-nautical-mile limit of California's State Waters are 130 to 150 feet. The seafloor is predominately covered by sediment composed of sand and mud, with small sedimentary bedrock exposures (USGS, 2013). Sediment particle size in nearshore areas near the Marsh varies from fine sand to medium sand (0.2 to 0.45 mm), with sediment size increasing in winter and decreasing in summer (USGS, 2009). The largest of these local bedrock exposures is Carpinteria Reef, located approximately 2.8 miles southwest of the Marsh ocean outlet. Other hard bottom habitat is the rocky area off Rincon Point, located approximately 3.8 miles southeast of the Marsh ocean outlet. The fairly homogeneous seafloor provides habitat for groundfish, crabs, shrimp, and other marine benthic organisms, while exposures of sedimentary bedrock provide habitats for rockfish and related species.

In general, epifauna (organisms living on the seafloor) associated with sandy subtidal areas is well developed and dominated by suspension feeders. In water deeper than about 33 feet, the abundance of epifaunal animals declines markedly and is dominated by scavengers and carnivores (Thompson et al., 1993). Based on data collected at Zuma Beach in Los Angeles County, the most common invertebrates in sandy subtidal areas include the sea pansy (*Renilla kollikeri*), sea pen (*Stylatula elongata*), ornate tube-worm (*Diopatra ornata*), pismo clam (*Tivela sultorum*) and sand dollar (*Dendraster excentricus*) (Thompson et al., 1993).

Based on fish trapping conducted at the former sites of four oil production platforms as close as two miles from the Marsh, common open water fishes in the project area include blue-banded ronquil (*Rathbunnella hypolecta*), brown rockfish (*Sebastes auriculatus*), calico rockfish (*Sebastes dalli*), lingcod (*Ophiodon elongatus*), sarcastic fringehead (*Neoclinus blanchardi*) and white croaker (*Genyonemus lineatus*)(ERM, 2011). Note that these sites are located in relatively deep water (100-130 feet) as compared to subtidal areas potentially affected by the proposed project.

Fish surveys were conducted at eight oil production platforms in the region (Platforms Henry, Hogan and Houchin, located less than five miles from the Marsh) using scuba and a remotely operated vehicle identified the highest density fish species at these three platforms as half-banded rockfish (*Sebastes semicinctus*), square-spot rockfish (*Sebastes hopkinsi*), calico rockfish, olive rockfish (*Sebastes serranoides*), lingcod and painted greenling (*Oxylebius pictus*) (Love et al., 2015).

Special-Status Marine Species. Special-status marine species as defined in Table 5.3-5 that may occur in nearshore waters in the project area are limited to marine mammals protected under the Federal Marine Mammal Protection Act (MMPA). Table 5.3-7 lists marine mammals observed during aerial surveys conducted in support of oil production platform removal (42 surveys over a 15 month period, covering Carpinteria south to Santa Cruz Island, southeast to Port Hueneme) and observed by marine mammal monitors during removal of Platforms Hilda, Hope, Heidi and Hazel (1.9 to 3.7 miles from the Marsh). A Pacific harbor seal rookery and haul-out area is located just offshore of Carpinteria, approximately 1.8 miles southeast of the Marsh mouth.

Table 5.3-7. Marine Mammals Observed in the Project Area

Common Name (*Scientific Name*)	Status	Observed in Region by Aerial Survey	Observed near Platforms Hilda, Hope, Heidi or Hazel
Long-beaked common dolphin (*Delphinus capensis*)		X	X
Bottle-nose dolphin (*Tursiops truncatus*)		X	X
Risso's dolphin (*Grampus griseus*)		X	
Pacific white-sided dolphin (*Lagenorhychus obliquidens*)		X	
California gray whale (*Eschrichtius robustus*)		X	
Blue whale (*Balaenoptera musculus)*	Federal Endangered, depleted (MMPA)	X	
Minke whale (*Balaenoptera acutorostrata)*		X	X
Humpback whale (*Megaptera novaeangliae)*	Federal Threatened (Mexico DPS), depleted (MMPA)	X	X
California sea lion (*Zalophus californianus*)		X	X
Pacific harbor seal (*Phoca vitulina richardsi*)		X	X

5.3.2 Impact Analysis and Mitigation Measures

5.3.2.1 Thresholds of Significance

The criteria for determining significant impacts on biological resources were developed in accordance with Section 15065(a) and Appendix G of the State CEQA Guidelines and the Santa Barbara County Environmental Thresholds and Guidelines Manual (updated 2018).

CEQA Guidelines Section 15065(a). A project may have a significant impact on the environment if the project has the potential to (1) substantially degrade the quality of the environment, (2) substantially reduce the habitat of a fish or wildlife species, (3) cause a fish or wildlife population to drop below a self-sustaining level, (4) threaten to eliminate a plant or animal community, and/or (5) reduce the number or restrict the range of an endangered, rare, or threatened species.

An evaluation of whether an impact on biological resources would be substantial must consider both the resource itself and how that resource fits into a regional or local context. A substantial impact is an impact that diminishes, or results in the loss of, a sensitive biological resource or that significantly conflicts with local, State, or Federal resource conservation plans, goals, and/or regulations. Sometimes impacts can be locally adverse, but not significant. In such a case, the impacts may result in an adverse alteration of a local biological resource, but they may not substantially diminish or result in the permanent loss of an important resource on a population- or region-wide basis.

CEQA Guidelines Appendix G. Implementation of the proposed project may have potentially significant adverse impacts on biological resources if it would result in any of the following:

- Have a substantial adverse impact, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations or by the CDFW or the USFWS;
- Have a substantial adverse impact on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the CDFW or the USFWS;
- Have a substantial adverse impact on State or federally protected wetlands, including but not limited to marsh, coastal, etc., through direct removal, filling, hydrological interruption, or other means;
- 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;
- Conflict with any local policies or ordinances protecting biological resources such as a tree preservation policy or ordinance; and/or
- Conflict with the provisions of any adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan.

Santa Barbara County Environmental Thresholds and Guidelines Manual.

General Impacts**.** Disturbance to habitats or species may be significant, based on substantial evidence in the record (not public controversy or speculation), if they substantially impact significant resources in the following ways:

(1) Substantially reduce or eliminate species diversity or abundance;

(2) Substantially reduce or eliminate quantity or quality of nesting areas;

(3) Substantially limit reproductive capacity through losses of individuals or habitat;

(4) Substantially fragment, eliminate, or otherwise disrupt foraging areas and/or access to food sources;

(5) Substantially limit or fragment range and movement (geographic distribution or animals and/or seed dispersal routes); and/or

(6) Substantially interfere with natural processes, such as fire or flooding, upon which the habitat depends.

Wetland Impact Assessment Guidelines**.** The following types of project-created impacts may be considered significant:

(1) Projects which result in a net loss of important wetland area or wetland habitat value, either through direct or indirect impacts to wetland vegetation, degradation of water quality, or would threaten the continuity of wetland-dependant animal or plant species are considered to have a potentially significant effect on the environment.

(2) Projects which substantially interrupt wildlife access, use and dispersal in wetland areas would typically be considered to have potentially significant impacts.

Coastal Salt Marsh Impact Assessment Guidelines. Project-created impacts may be considered significant due to the potential to change species composition and habitat value as outlined below.

(1) Substantial alteration of tidal circulation or decrease of tidal prism.

(2) Adverse hydrologic changes (e.g., altered freshwater input), substantial increase of sedimentation, introduction of toxic elements or alteration of ambient water temperature.

(3) Construction activity which creates indirect impacts such as noise and turbidity on sensitive animal species, especially during critical periods such as breeding and nesting.

(4) Disruption of wildlife dispersal corridors.

(5) Disturbance or removal of substantial amounts of marsh habitats. Because of the high value and extremely limited extent of salt marsh habitat in the County, small areas of such habitat may be considered significant.

Riparian Impact Assessment Guidelines. The following types of project-related impacts may be considered significant:

(1) Direct removal of riparian vegetation.

(2) Disruption of riparian wildlife habitat, particularly animal dispersal corridors and or understory vegetation.

(3) Intrusion within the upland edge of the riparian canopy (generally within 50 feet in urban areas, within 100 feet in rural areas, and within 200 feet of major rivers listed in the previous section), leading to potential disruption of animal migration, breeding, etc. through increased noise, light and glare, and human or domestic animal intrusion.

(4) Disruption of a substantial amount of adjacent upland vegetation where such vegetation plays a critical role in supporting riparian-dependent wildlife species (e.g., amphibians), or where such vegetation aids in stabilizing steep slopes adjacent to the riparian corridor, which reduces erosion and sedimentation potential.

(5) Construction activity which disrupts critical time periods (nesting, breeding) for fish and other wildlife species.

Native Tree Impact Assessment. In general, the loss of 10 percent or more of the trees of biological value on a project site is considered potentially significant.

5.3.2.2 Impacts of the Existing Carpinteria Salt Marsh Enhancement Plan

The following summarizes the impacts to biological resources identified in the 2003 Final EIR prepared for the existing Enhancement Plan and provides an update based on the status of completion of Plan components.

Impact BIO-1: Discharge of dredged sediments into the surf zone would affect marine organisms due to turbidity and sedimentation. Impacts on marine organisms would be adverse but less than significant (Class III).

This analysis was based on the disposal of "beach quality material". The proposed Updated Enhancement Plan would result in disposal of sediment with higher fines content. Changes in impacts to nearshore biological resources are addressed in Section 5.3.2.3.

Impact BIO-2: Excavation of the new tidal inlet channel would affect upland habitat containing non-native vegetation, cause turbidity and sedimentation in the adjacent channel, and temporarily affect wildlife and their habitat. Impacts to common wildlife species would be less than significant (Class III) while impacts to California least tern would be locally significant but feasibly mitigable (Class II) through scheduling to avoid the time when least terns are present.

This component of the Enhancement Plan would not be modified such that no additional impacts would occur. Impacts to California least tern would be mitigated through implementation of Mitigation Measure BIO-7.

Impact BIO-3: Excavation of the new tidal inlet channel would remove salt marsh vegetation. Removal of 0.04 acre of salt marsh, although small and to be replaced by open water, would be considered significant but feasibly mitigable (Class II).

This component of the Enhancement Plan would not be modified such that no additional impacts would occur. Impacts have been mitigated through implementation of Restoration Actions R1 and R3 (Mitigation Measure BIO-1).

Impact BIO-4: Excavation of the new tidal inlet channel would create new aquatic habitat. The new channel would provide additional aquatic habitat for invertebrates and fish as well as improving access to the interior marsh channels for marine fish species, a beneficial impact (Class IV) for aquatic species.

This component of the Enhancement Plan would not be modified such that no additional impacts would occur.

Impact BIO-5a: Sediment removal from creeks within Carpinteria Salt Marsh has the potential to adversely affect invertebrates and fish residing in the channels as well as the birds that feed upon these aquatic organisms. Impacts of turbidity on aquatic species would be similar to those of runoff from a storm event. Since timing of the removal is to coincide with the rainy season (November through March or April) when turbidity normally occurs in the creeks, impacts would be less than significant (Class III). Timing of the desilting to occur outside the spawning season for fish and invertebrates is part of the project description and would avoid impacts to spawning. Thus, impacts are predicted to be adverse but less than significant (Class III) for work conducted outside the breeding season.

Impacts to listed avian species due to desilting activities such as sedimentation and turbidity would be adverse but less than significant (Class III) due to the temporary nature of the disturbance, timing of the work to coincide with the rainy season when turbidity can naturally occur, and the presence of other suitable foraging habitat nearby. Sediment removal would result in loss of individual tidewater gobies present where dredging occurs and a loss of food items (invertebrates) for any fish that survive. This would have a potentially significant but mitigable (Class II) impact on the species if present and if substantial numbers of individuals were in the channels being dredged.

<u>Proposed changes to the Enhancement Plan include routine dredging of lower Franklin Creek and the Main Channel which may increase impacts to estuarine invertebrates, fish and birds. However, tidewater goby does not occur in the Marsh and would not be adversely affected. Modified impacts associated with the Updated Enhancement Plan are addressed in Section 5.3.2.3.</u>

Impact BIO-6: Increasing the elevation of the east Franklin Creek berm would result in temporary disturbance of upland vegetation as well as wildlife and their habitat. The temporary removal of approximately 1.5 acres of upland habitat dominated by non-native grassland/weed dominated vegetation would be considered less than significant (Class III). Construction activities have the potential to increase sedimentation and turbidity within the marsh's channels. Sediment input to the channels is expected to be minimal and short term due to implementation of sediment control measures that are part of the project and included in Mitigation Measure BIO-2; consequently, impacts to aquatic species would be short- term and less than significant (Class III).

Impacts to common wildlife populations are considered to be short-term and adverse, but less than significant (Class III). Impacts to wildlife species (i.e., shorebirds and waterfowl) inhabiting aquatic habitat downstream of the project site would be adverse but less than significant (Class III). Impacts to listed avian species due to construction activities, sedimentation, and turbidity would be adverse but not significant (Class III) due to the temporary nature of the disturbance, the loss of only a small portion of available habitat, the scheduling of activities to avoid the savannah sparrow breeding season, and the presence of other suitable foraging habitat nearby. Impacts to the tidewater goby, if present, would also be adverse but less than significant (Class III) because habitat would not be directly affected, and indirect effects of turbidity and sedimentation would be temporary and in only a portion of the marsh channels. Impacts of sedimentation would be further reduced by implementation of sediment control measures (Mitigation Measure BIO-2).

This component of the Enhancement Plan has been completed such that no additional impacts would occur.

Impact BIO-7a: Increasing the elevation of the east Franklin Creek berm would result in a loss of salt marsh vegetation. The removal of approximately 0.2 acre of native salt marsh (Corps and CCC wetland) habitat would be considered significant but feasibly mitigable (Class II) with implementation of salt marsh revegetation, restoration, or enhancement of a greater amount of salt marsh habitat (Mitigation Measure BIO-1).

This component of the Enhancement Plan has been completed such that no additional impacts would occur.

Impact BIO-8a: Construction activities associated with flood control structures (berms and flood walls) have the potential to adversely impact rare, threatened, or endangered species. Belding's savannah sparrows in or adjacent to the work area would be disturbed during vegetation clearing, but no mortality or injury would occur because the birds are mobile and would move away from the disturbance. Impacts would be significant but feasibly mitigable (Class II) with implementation of habitat restoration or enhancement in the marsh (Mitigation Measure BIO-1 and 3) and surveys before and monitoring during vegetation clearing (Mitigation Measure BIO-4).

This component of the Enhancement Plan has been completed such that no additional impacts would occur.

Impact BIO-9a: Construction of flood control structures in South Marsh would result in temporary disturbance of upland vegetation as well as wildlife and their habitat, but would have long-term beneficial impacts, as well. The temporary and /or permanent removal of approximately 0.3 acres of roadside non-native grassland /ornamental/weed-dominated vegetation as a result of floodwall and berm construction would be considered less than significant (Class III). The floodwall could also have beneficial impacts (Class IV) for the marsh by limiting disturbance of wildlife by dogs and cats from the adjacent residences. The wall would also prevent encroachment into the marsh by human activities, such as parking and gardens.

This component of the Enhancement Plan has been completed such that no additional impacts would occur.

Impact BIO-10a: Construction of flood control structures in South Marsh would result in permanent impacts to salt marsh vegetation. The permanent removal of approximately 170 square feet of salt marsh (Corps and CCC wetland) habitat would be considered significant but feasibly mitigable (Class II) with implementation of salt marsh revegetation, restoration or enhancement of a greater amount of salt marsh habitat (Mitigation Measure BIO-1).

This component of the Enhancement Plan has been completed such that no additional impacts would occur.

Impact BIO-11a: Construction activities associated with removal of Berm B1 would affect common wildlife species within the disturbance zone and potentially several rare, threatened or endangered species. Berm removal to 3 feet above msl could result in turbidity in the Main Channel if high tides inundate the area during the work or immediately after the work and before soils are stabilized. These effects would be of short duration (a few days) and of limited extent due to the small size of the area and measures to stabilize soils (Mitigation Measure BIO-2). Impacts on aquatic species would be adverse but less than significant (Class III).

Construction activities associated with removing the B1 Berm will result in a temporary loss of 0.4 acres of Belding's savannah sparrow foraging habitat and disturbance of individuals in or near the work area. Impacts to Belding's savannah sparrows and their habitat would be considered adverse but not significant (Class III).

Noise, turbidity, and increased human presence related to construction activities could also affect other listed species, such as California least tern (summer only) and California brown pelican, which could forage in the area. Tidewater gobies could be present in the adjacent channel and be affected by turbidity. These impacts are expected to be short term and less than significant (Class III).

Berm removal is not currently planned for implementation; therefore, impacts to wildlife would not occur.

Impact BIO-12a: Construction activities associated with removal of the B1 Berm would affect native vegetation and potentially affect light-footed clapper rails. Removal of the B1 Berm would convert 0.4 acre of upland vegetation to salt marsh vegetation. Removal of the iceplant and replanting with native upland species would avoid impacts to the native upland vegetation (Mitigation Measure BIO-3) and may provide a beneficial impact to wildlife (Class IV) by improving and preserving the limited upland resources in the area. Noise, turbidity, and increased human presence related to construction activities could also affect other listed species, such as light-footed clapper rail, which could forage in the area. These impacts are expected to be short term, and the implementation of pre-disturbance surveys for light-footed clapper rails (Mitigation Measure BIO-5) would result in significant but feasibly mitigable impacts (Class II).

Berm removal is not currently planned for implementation. In any case, light-footed Ridgway's (clapper) rail has not been observed since 2002 and is considered extirpated from the Marsh.

Impact BIO-11b: Construction activities associated with removal of the B2 Berm would affect common wildlife species within the disturbance zone and potentially several rare, threatened or endangered species. Impacts of berm removal to common wildlife and aquatic species would be short term and less than significant (Class III). Construction activities associated with removing the B2 Berm would result in a loss of approximately 0.43 acre of Belding's savannah sparrow foraging habitat and disturbance of individuals in or adjacent to the work area. Due to the small area being disturbed, impacts to Belding's savannah sparrows and their habitat would be considered adverse but less than significant (Class III). Noise, turbidity and increased human presence related to construction activities could also affect other listed species such as California least tern (summer only) and California brown pelican, which could forage in the area, and turbidity could affect tidewater gobies if present. These impacts are expected to be short-term and less than significant (Class III).

Berm removal is not currently planned for implementation; therefore, impacts to wildlife would not occur.

Impact BIO-12b: Construction activities associated with removal of Berm B2 would affect native vegetation and potentially affect light-footed clapper rails. Lowering Berm B2 to msl would eliminate 0.4 acre of upland and 0.03 acre of transition (CCC wetland) vegetation. Aquatic habitat (about 0.4 acre, CCC wetland) would be created and water-associated birds would use the area for resting and foraging. Construction of a bridge between Berm B3 and the remaining upland adjacent to Berm B2 could affect a small amount of marsh and upland habitat. The permanent loss of native upland and transition vegetation would be considered significant but feasibly mitigable (Class II).

Enhancing and preserving the remaining upland habitat at this location by removing non-native species and replacing them with native species (Mitigation Measure BIO-3) would offset these impacts and may provide a beneficial impact to wildlife (Class IV). Noise, turbidity, and increased human presence related to construction activities could also affect other listed species, such as light-footed clapper rail, which could forage in the area. These impacts are expected to be short-term, and the implementation of pre-disturbance surveys for light-footed clapper rails (Mitigation Measure BIO-5) would result in significant but feasibly mitigable impacts (Class II).

Berm removal is not currently planned for implementation. In any case, light-footed Ridgway's (clapper) rail has not been observed since 2002 and is considered extirpated from the Marsh.

Impact BIO-13a: Lowering of Berm B3 to 5 feet above msl would affect upland habitat containing native and non-native vegetation, cause turbidity and siltation in the adjacent channel, and temporarily affect wildlife and their habitat. Impacts to vegetation and wildlife would be short-term and less than significant (Class III). Construction activities would result in a temporary loss of 1.0 acre of Belding's savannah sparrow foraging habitat and disturbance to individuals in the area. Impacts to Belding's savannah sparrows could be reduced further through monitoring as in Mitigation Measure BIO-4, and turbidity could be reduced through sediment control (Mitigation Measure BIO-2). Turbidity from runoff could affect tidewater gobies, if present. Impacts would be adverse but less than significant (Class III).

Berm lowering is not currently planned for implementation; therefore, impacts to wildlife would not occur.

Impact BIO-13b: Lowering (removal) of Berm B5 to 4.5 feet above msl would affect upland habitat containing native and non-native vegetation, cause turbidity and siltation in the adjacent channel, and temporarily affect wildlife and their habitat. The temporary disturbance for the excavation and restoration of vegetation would have adverse but less than significant (Class III) impacts on common wildlife due to the small area and short duration of the disturbances. Impacts to aquatic and wildlife species using the channel would be less than significant (Class III) and further reduced with implementation of Mitigation Measure BIO-2. Construction activities associated with lowering the B5 Berm would result in a temporary loss of approximately 0.8 acre of Belding's savannah sparrow foraging habitat and disturbance of individuals in the area. Due to the temporary nature of the disturbance, impacts to Belding's savannah sparrow foraging habitat and other sensitive avian species, such as California least tern and California brown pelican, which forage in the area would be considered adverse but less than significant (Class III).

Berm removal is not currently planned for implementation; therefore, impacts to wildlife would not occur.

Impact BIO-14: Removal (lowering) of Berm B5 would increase the amount of marsh and transition vegetation. Conversion of 0.5 acre of upland vegetation dominated by non-native species, 0.2 acre of native shrubs, and 0.06 acre of transition vegetation (CCC wetland) to transition and high marsh vegetation would be a beneficial impact (Class IV).

Berm removal is not currently planned for implementation; therefore, beneficial impacts to vegetation would not occur.

Impact BIO-15a: Restoration activities in Basin 1 would temporarily affect vegetation, wildlife and their habitat, and add aquatic habitat as well as marsh vegetation (wetlands). Habitat restoration and enhancement activities would result in temporary disturbances that would ultimately lead to increased habitat value. Excavation of new tidal channels would remove fill and weedy species as well, a beneficial impact (Class IV). Included in the Basin 1 restoration planning is installation of a foot bridge over Franklin Creek to allow access to and from the Carpinteria Salt Marsh Nature Park to the east. The area to be disturbed would be small (less than 0.02 acre), impacts of bridge footing construction on vegetation and wildlife would be less than significant (Class III).

This component of the Enhancement Plan has been completed such that no additional impacts would occur.

Impact BIO-16: Restoration activities (R1 and R3) would affect upland vegetation and result in turbidity. Loss of 0.42 acre of non-native grassland and coastal sage scrub, is an adverse but less than significant impact (Class III). Impacts to fish, invertebrates, and birds foraging in Franklin Creek and the Main Channel would be less than significant, (Class III). Other earthwork in Basin 1 would temporarily increase the potential for runoff of sediment to the channels or the adjacent marsh. Impacts, however, are expected to be less than significant (Class III) and would be further reduced with implementation of erosion and sediment control measures (Mitigation Measure BIO-2).

Restoration Action R1 of the Enhancement Plan has been completed such that no additional impacts would occur. Restoration Action R3 of the Enhancement Plan was completed in 2005; however, routine maintenance of the created channels is proposed as a component of the Updated Enhancement Plan (see Section 5.3.2.3).

Impact BIO-17: Restoration activities (R1 and R3) could affect rare, threatened, or endangered species. Restoration activities would result in temporary disturbances to Belding's savannah sparrow breeding and foraging habitat and any individuals present during restoration activities. Short-term impacts would be significant but feasibly mitigable (Class II) through implementation of Mitigation Measure BIO-4, while long-term impacts would be beneficial (Class IV). The new channels would also provide foraging habitat for species, such as light-footed clapper rail and California brown pelican.

Restoration Action R1 of the Enhancement Plan has been completed such that no additional impacts would occur. Restoration Action R3 of the Enhancement Plan was completed in 2005; however, routine maintenance of the created channels is proposed as a component of the Updated Enhancement Plan (see Section 5.3.2.3). In any case, light-footed Ridgway's (clapper) rail has not been observed since 2002 and is considered extirpated from the Marsh.

Impact BIO-15b: South Marsh restoration activities (R3) would temporarily affect vegetation, wildlife, and their habitat and add aquatic habitat as well as marsh vegetation (wetlands). Impacts would be similar to those described for Basin 1 restoration (Impact BIO-15a), a net beneficial impact (Class IV).

Restoration Action R3 of the Enhancement Plan was completed in 2005; however, routine maintenance of the created channels is proposed as a component of the Updated Enhancement Plan (see Section 5.3.2.3).

Impact BIO-18: Implementation of Restoration Action R4 (deepening and widening the channel along the north and east sides of Basin 3, providing access along the south side of the north channel, and replacement of 4 to 5 culverts under Estero Way) would affect marsh and transition vegetation, wildlife and their habitat, and aquatic species and their habitat. Providing access along the south side of the channel on the north side of Basin 3 would disturb transition vegetation (CCC wetland). If access were maintained for future desilting activities, the loss of vegetation would be permanent, a significant impact (Class II) but feasibly mitigable by implementation of Mitigation Measures BIO-1 and 3.

Widening and deepening the north and eastern channel would permanently remove 0.5 acre of marsh vegetation (Corps and CCC wetland), converting it to open water (CCC wetland), a significant impact (Class II) but feasibly mitigable by restoration at other locations in the marsh (e.g., R1, Mitigation Measure BIO-1). Culvert replacement along Estero Way would temporarily remove up to 0.1 acre of marsh vegetation, which would be a significant but feasibly mitigable (Class II) impact due to restoration of the small area affected at each culvert (Mitigation Measure BIO-1).

This activity would also result in a temporary disturbance to Belding's savannah sparrow breeding and foraging habitat and any individuals present. Scheduling the activities to avoid this species' breeding season (Mitigation Measure BIO-4) would result in impacts that are significant but feasibly mitigable (Class II). The work could increase the potential for disturbance, injury, or death of light-footed clapper rails, which would be considered significant but feasibly mitigable (Class II) with implementation of a native habitat revegetation or enhancement plan (Mitigation Measure BIO-1), scheduling the construction activities to avoid the clapper rail breeding season (Mitigation Measure BIO-6), and conducting surveys for this species prior to any activities within Basins 2 and 3 (Mitigation Measure BIO-5).

This component of the Enhancement Plan is planned for completion by November 2019 and would not be modified as part of the Updated Enhancement Plan. Therefore, no additional impacts would occur. In addition, light-footed Ridgway's (clapper) rail has not been observed since 2002 and is considered extirpated from the Marsh.

Impact BIO-19: Removal of sediments along the east side of Basin 2 (R5) would temporarily affect vegetation and wildlife and their habitat. Impacts would be short-term and potentially significant but feasibly mitigable (Class II) by restoring additional marsh elsewhere in Carpinteria Salt Marsh (Mitigation Measure BIO-1). Sediment removal activities would affect Belding's savannah sparrows through noise and human presence, as well as through temporary loss of approximately 1.7 acres of foraging habitat and 1.1 acres of potential breeding habitat. Impacts would be significant but feasibly mitigable (Class II) by scheduling this restoration to avoid this species' breeding season (Mitigation Measure BIO-4).

This component of the Enhancement Plan has been completed such that no additional impacts would occur.

Impact BIO-5b: Implementation of Restoration Action R6 (one-time sediment removal from the Main Channel) has the potential to adversely affect invertebrates and fish residing in the channels as well as the birds that feed upon these aquatic organisms. Impacts would be similar to those described for sediment removal in Impact BIO-5a. The area temporarily affected would be 0.8 acre, and impacts would be less than significant (Class III) for both aquatic and wildlife species. Sensitive species that would be affected by this activity's noise and turbidity would include Belding's savannah sparrows foraging in the adjacent Basin 2 and California least tern (summer only) and California brown pelicans which occasionally forage in the Main Channel. Tidewater gobies could also be affected as described in Impact BIO-5a. Discharge of dredged sediments into the surf zone would affect marine organisms as described under Impact BIO-1.

This component of the Enhancement Plan was completed as part of emergency hydraulic dredging in 2018.

5.3.2.3 Impacts of the Proposed Updated Enhancement Plan

The primary changes proposed as part of the Updated Enhancement Plan or changes in the regulatory or environmental setting or environmental baseline that would modify or result in additional impacts to biological resources include:

- Surf zone disposal instead of upland disposal during drag-line desilting of upper Franklin Creek and Santa Monica Creek.
- Hydraulic dredging of upper Franklin Creek and Santa Monica Creek with surf zone disposal instead of drag-line desilting with upland disposal.
- Hydraulic dredging of lower Franklin Creek and the Main Channel with surf zone disposal.
- Hydraulic dredging of all major channels in the Marsh (Franklin Creek, Santa Monica Creek and the Main Channel) with surf zone disposal.
- Franklin Creek staging/stockpile area expansion.
- Avenue Del Mar drainage system maintenance.

- Absence of tidewater goby and light-footed Ridgway's (clapper) rail from the Marsh (assumed present in the 2003 Final EIR).

Impact UP-BIO-1: Surf zone disposal of sediments removed by drag-line desilting as a routine maintenance component would adversely impact marine organisms. The biological impacts of surf zone disposal of sediments at Carpinteria City Beach were addressed under Impact BIO-1 in the 2003 Final EIR. However, this analysis was based on disposal of "beach quality material", which was assumed to have a maximum of 25 percent fines. The project description of the 2003 Final EIR explicitly stated sediment from Franklin Creek and Santa Monica Creek is not suitable for surf zone disposal. As surf zone disposal of sediments removed from the Marsh is not part of the environmental baseline, this is considered a new component.

The project (Updated Enhancement Plan) proposes surf zone disposal of up to 40,000 cubic yards of sediments removed from upper Franklin and Santa Monica Creeks within the Marsh with a fines content of up to 60 percent. These finer sediments are anticipated to stay in suspension longer and subsequently spread over a larger area as compared to coarser sediments addressed in the 2003 Final EIR.

Based on oblique aerial photographs (taken by a drone) of surf zone disposal of sediments removed from local debris basins on February 9, 2019, the area of turbidity extended up to 500 feet offshore and about 1,500 feet along the shoreline. Observations by District staff indicate the turbidity declined to near background levels within 12 to 24 hours of the termination of disposal. It is expected that the subtidal area affected by siltation would be much less than the observed turbidity plume.

Surf zone disposal of finer sediment would result in increased total suspended solids (TSS) and related turbidity, which would temporarily reduce light penetration and primary productivity in the water column, and may clog gills and feeding apparatus of fish, planktonic larvae and filter-feeding organisms. Increased turbidity may also reduce foraging success for fish species, as prey is more difficult to find. Eventual settling of TSS causes siltation, which may bury bottom-dwelling invertebrates and result in some mortality in less mobile species.

<u>Direct Impacts to Beach Invertebrates</u>. Operation of heavy equipment on the beach to push sediment into the surf zone would result in some mortality of beach macroinvertebrates through sand compaction. The intertidal area directly affected by heavy equipment activity would be small (about 0.1 acres). Therefore, direct impacts would very limited in magnitude and not substantially affect local populations of beach macroinvertebrates.

<u>Indirect Impacts to Intertidal Invertebrates and their Predators</u>. Disposal of Marsh sediment in the surf zone would result in short-term siltation and turbidity of adjacent ocean waters. In addition, long-term changes in beach sediment composition may occur. Perturbations in the intertidal sandy beach community can have cascading effects on higher trophic levels, reducing prey availability for shorebirds, juvenile fish and many other organisms (McLachlan and Brown, 2006).

Beach nourishment is commonly practiced in southern California to replace beach sands lost to coastal erosion (see Section 5.5.1.10) and involves discharge of sediments (typically from dredging) on the beach. Surf zone disposal of sediments from the Marsh would result in similar impacts to intertidal invertebrates as beach nourishment. Therefore, a brief review of the scientific literature regarding observed impacts of beach nourishment was conducted. Sand crabs (*Emerita* spp.) and bean clams (*Donax* spp.) are common residents in sandy intertidal areas and are a good indicator of the health of beach invertebrate communities (Leber, 1982, DeLancey, 1989).

A 15-month, eight beach study in San Diego of a beach nourishment project indicated that populations of talitrid amphipods (sand fleas) and bean clams declined with beach nourishment but recovered within one year, and sand crabs bloomed four months after nourishment at some beaches but returned to near baseline levels within 15 months. However, polychaete density (dominated by *Scolelepis* sp.) was substantially reduced at beaches affected by beach nourishment through the end of the 15-month study, but only on beaches with high polychaete density prior to beach nourishment (Wooldridge et al., 2016). Source sediments used for beach nourishment addressed in this study was fine-medium sand, similar to the beaches nourished.

Leewis et al. (2012) studied 17 sandy beaches in the Netherlands to determine the long-term effects of beach nourishment and found that recovery of amphipods and ispods occurred within one year, while the abundance of the polychaete *Scolelepis squamata* was higher for several years after nourishment. However, the mean grain size of sand used for beach nourishment was very similar to existing conditions at the affected beaches.

Based on observations from 1996 through 2004, placement of dredged material from the Ventura Harbor onto McGrath State Beach had no long-term impact on the presence/absence of intertidal invertebrates (Applied Environmental Technologies, 2003 and 2004). Based on 2018 sediment sampling in the Ventura Harbor (Corps of Engineers, 2018), sediment placed on McGrath State Beach is expected to have a fines content of five percent or less, which is much less than Marsh sediment proposed for surf zone disposal.

Beach macroinvertebrate sampling for a beach nourishment project in North Carolina found a 97 percent reduction in sand crab and bean clam densities 10 weeks after nourishment (Peterson et al., 2000). Similar to the proposed project, the sediment used for this nourishment program appeared to have a relatively high fines content as the mean grain size at the sample beach was reduced from 0.2 mm to 0.08 mm. Recovery rates of intertidal and nearshore benthic areas following beach nourishment is typically a few months (SAIC, 2007), but greater than 12 months for projects using materials with a high fines content (Rakocinski et al., 1996; U.S. Army Corps of Engineers, 2001). Delayed recovery following beach nourishment is associated with mortality of bean clams at offshore wintering grounds (in addition to mortality at the nourishment beach) and lack of migration (reliance on pelagic larval recruitment) by sand crabs (Reilly and Bellis, 1983).

Impacts to invertebrates of intertidal and nearshore areas would be greater than indicated in the 2003 Final EIR because the fines content of disposed sediment would be greater. However, proposed surf zone disposal would avoid the typical April to August recruitment period for beach invertebrates. The project-related temporary reduction in invertebrate abundance would also adversely affect birds and fish that feed on these invertebrates.

Indirect Impacts to Fish. Potential adverse effects to fish associated with surf zone sediment disposal include altered distribution, potential for gill clogging, temporary removal of benthic prey and potential burial of soft bottom-dwelling fish. Biological monitoring following beach nourishment projects indicates adverse effects to fish and their larvae are undetectable or very short-term when the fines content (typically less than 10 percent) of fill material (sediment) used is similar to the beaches nourished (Corps of Engineers, 2001, Van Dolah et al., 1992). Impacts to fish associated with disposal of high fines content fill material is not well known, but is expected to be short-term and limited to areas of elevated TSS, which is typically 500 meters from the sediment discharge site (Van Dolah et al., 1992).

Impacts to fish of adjacent intertidal and nearshore areas would be greater than indicated in the 2003 Final EIR because the fines content of disposed sediment would be greater. In addition, these impacts (turbidity and siltation) would be greater in duration and area as discussed under intertidal invertebrates. Fish are known to avoid turbid water (Collin and Hart, 2015) such that exposure to project-related elevated levels of TSS is not likely to be fatal. Reduced foraging success by fish may occur due to avoidance behavior (turbid waters), reduced visibility and reduced prey levels.

Water Quality Impacts to Marine Organisms. As discussed under Impact UP-HYDRO-2, Marsh sediments contain ammonia and surf zone discharge of sediments may result in elevated concentrations of ammonia in areas adjacent to the surf zone disposal site. Most biological membranes are permeable to ammonia, and elevated ammonia concentrations in the water column may result in uptake of ammonia and an imbalance in the blood plasma, which can result in toxic effects (Eddy, 2005). Contact with oxygenated waters of the surf zone would rapidly oxide the ammonia to nitrates and forms of organic nitrogen. Therefore, significant ammonia-related impacts on marine organisms are not anticipated.

Based on the lack of substantial contamination found during the analysis of Marsh sediments and anticipated compliance with California Ocean Plan water quality objectives (see Section 5.6.2.3), contaminant release into the water column following sediment disposal is not expected to be a source of mortality for invertebrates or fish of affected intertidal and nearshore habitats.

Summary. Based on a brief review of beach nourishment studies, recovery of intertidal invertebrate abundance may be greater than one year when sediment with a high fines content (substantially greater than the receiver beach) is disposed on the beach. However, beach nourishment projects studied typically consist of disposal of millions of cubic yards of sediments over thousands of feet of beaches. The large scale of these projects is anticipated to increase recovery time because recolonization is limited by the distance to source populations of invertebrates. Due to the relatively small amount of sediment disposal proposed (up to 40,000 cubic yards per year), recovery is anticipated to be faster than observed in beach nourishment studies. Winter storm waves would return areas affected by project-related siltation and any changes in beach grain size to near pre-disposal conditions given sufficient time between discharge events. However, the impacts of ocean disposal of sediments containing up to 60 percent fines on intertidal and nearshore habitats and animal populations have not been well studied.

Overall, project turbidity and siltation impacts to intertidal and nearshore habitats would be temporary and localized, but repeated discharges of sediment could have substantial long-term impacts to populations of marine organisms in the Carpinteria area. Due to the higher fines content, surf zone sediment disposal impacts would be greater than identified in the 2003 Final EIR. Impacts to intertidal and nearshore habitats associated with surf zone disposal of sediment with up to 60 percent fines cannot be fully predicted and are considered potentially significant (Class II).

Impact UP-BIO-2: The proposed use of hydraulic dredging instead of drag-line desilting of upper Franklin and Santa Monica Creeks during routine maintenance would adversely impact marine organisms associated with turbidity and siltation of nearshore waters. The maximum amount of sediment to be removed from upper Franklin and Santa Monica Creeks during routine maintenance and disposed of would be the same as existing drag-line desilting (40,000 cubic yards). The project description of the 2003 Final EIR explicitly stated sediment from Franklin Creek and Santa Monica Creek is not suitable for surf zone disposal. As hydraulic dredging (including surf zone disposal of sediments) of the Marsh is not part of the environmental baseline, this is considered a new component. Overall, surf zone disposal of sediment with a fines content as high as 60 percent would increase the nearshore area affected, and duration of turbidity and siltation as compared to drag-line desilting and surf zone disposal of “beach quality material” as assessed in the 2003 Final EIR.

Based on aerial photographs taken during emergency dredging of lower Franklin Creek and the Main Channel on April 12, 2018, the area of noticeably increased turbidity was about 25 acres (up to 500 feet offshore and about 3,800 feet along the shoreline). Observations by District staff indicate the increased turbidity declined to near background levels within 12 hours of the termination of sediment slurry discharge. It is expected that the subtidal area affected by siltation would be much less than the observed turbidity plume.

Note that inspection of a February 19, 2016 aerial photograph of the project area following a relatively small storm event (0.3 inches over 24 hours) when no beach disposal operations were taking place, shows a turbidity plume generated by fluvial discharge by local drainages extending 500 to 3,000 feet offshore from Arroyo Paredon southeast to beyond the Carpinteria Pier. The project-related turbidity plume (roughly 25 acres) would only be a small fraction of that size (about 600 acres).

Indirect Impacts to Intertidal Invertebrates and Their Predators. As discussed under Impact UP-BIO-1, dredging-related increased turbidity and siltation of intertidal and nearshore ocean waters would reduce the abundance of intertidal invertebrates which would also affect the foraging success of birds and fish that feed on these invertebrates.

Indirect Impacts to Fish. The proposed sediment slurry disposal in the surf zone would result in increased turbidity and siltation of intertidal and nearshore ocean waters. As discussed under Impact UP-BIO-1, adverse effects to fish would occur.

Water Quality Impacts to Marine Organisms. As discussed under Impact UP-HYDRO-2, Marsh sediments contain ammonia and discharge of a sediment slurry in the surf zone may result in elevated concentrations of ammonia in areas adjacent to the discharge site. Sediments removed by the dredge would be diluted at least 2:1 with overlying water and discharged in the surf zone, where the sediment/water slurry would immediately contact waters of the surf zone or run down the wet sand to the surf zone. The contact with ambient air and oxygenated waters of the surf zone would rapidly oxide the ammonia to nitrates and forms of organic nitrogen. Therefore, significant ammonia-related impacts on marine organisms are not anticipated.

Based on the lack of substantial contamination found during the analysis of Marsh sediments and anticipated compliance with California Ocean Plan water quality objectives (see Section 5.6.2.3), contaminant release into the water column following sediment disposal is not expected to be a source of mortality for invertebrates or fish of affected intertidal and nearshore habitats.

Summary. Based on a brief review of beach nourishment studies, recovery of intertidal invertebrate abundance may be greater than one year when sediment with a high fines content is disposed in the surf zone. However, beach nourishment projects studied typically consist of disposal of millions of cubic yards of sediments over thousands of feet of beaches. Due to the relatively small amount of sediment disposal proposed (up to 40,000 cubic yards per year) and surf zone disposal rather than direct beach placement, recovery is anticipated to be faster than observed in beach nourishment studies. Winter storm waves would return areas affected by project-related siltation and any changes in beach grain size to near pre-disposal conditions given sufficient time between discharge events. However, the impacts of ocean disposal of sediments containing up to 60 percent fines on intertidal and nearshore habitats and animal populations have not been well studied.

Overall, project turbidity and siltation impacts to intertidal and nearshore habitats would be temporary and localized, but repeated discharges of sediment could have substantial long-term impacts to populations of marine organisms in the Carpinteria area. Impacts to intertidal and nearshore habitats associated with surf zone disposal of sediment with up to 60 percent fines cannot be fully predicted and are considered potentially significant (Class II).

Impact UP-BIO-3: The addition of hydraulic dredging of lower Franklin Creek and the Main Channel as a routine maintenance component would result in adverse impacts to marine organisms associated with turbidity and siltation of nearshore waters. Impact BIO-5b of the 2003 Final EIR addressed surf zone sediment disposal associated with one-time hydraulic dredging of 600 linear feet of the Main Channel which was completed during 2018 emergency hydraulic dredging. Periodic hydraulic dredging of lower Franklin Creek and the Main Channel is proposed as a new routine maintenance component of the Enhancement Plan.

Proposed hydraulic dredging would include pressurized discharge of a sediment/water slurry in the surf zone near the Marsh mouth. Up to 20,000 cubic yards would be disposed in the surf zone, with a fines content up to 60 percent, which is substantially greater than the maximum of 25 percent assumed in the 2003 Final EIR. Therefore, impacts to marine organisms associated with turbidity and siltation are anticipated to be greater than disposal of sediments addressed under Impact BIO-1 of the 2003 Final EIR. The extent of the turbidity plume and area affected by siltation would be same as discussed under Impact UP-BIO-2.

Indirect Impacts to Intertidal Invertebrates and Their Predators. As discussed under Impact UP-BIO-1, the increased turbidity and siltation of intertidal and nearshore ocean waters would reduce the abundance of intertidal invertebrates which would also affect the foraging success of birds and fish that feed on these invertebrates.

Indirect Impacts to Fish. As discussed under Impact UP-BIO-1, the increased turbidity and siltation of intertidal and nearshore ocean waters would adversely affect fish.

Water Quality Impacts to Marine Organisms. As discussed under Impact UP-BIO-2, significant ammonia-related impacts to marine organisms is not anticipated. Based on the lack of substantial contamination found during the analysis of Marsh sediments and anticipated compliance with California Ocean Plan water quality objectives (see Section 5.6.2.3), contaminant release into the water column following sediment disposal is not expected to be a source of mortality for invertebrates or fish of affected intertidal and nearshore habitats.

Summary. Winter storm waves would return areas affected by project-related siltation and any changes in beach grain size to near pre-disposal conditions given sufficient time between discharge events. However, the impacts of ocean disposal of sediments containing up to 60 percent fines on intertidal and nearshore habitats and animal populations have not been well studied. Overall, project turbidity and siltation impacts to intertidal and nearshore habitats would be temporary and localized, but repeated discharges of sediment could have substantial long-term impacts to populations of marine organisms in the Carpinteria area. Impacts to intertidal and nearshore habitats associated with surf zone disposal of sediment with up to 60 percent fines cannot be fully predicted and are considered potentially significant (Class II).

Impact UP-BIO-4: The addition of hydraulic dredging of all major channels (Franklin Creek, Santa Monica Creek, Main Channel) in single year as a routine maintenance component would result in adverse impacts to marine organisms associated with turbidity and siltation of nearshore waters. Proposed hydraulic dredging would include pressurized discharge of a sediment/water slurry in the surf zone near the Marsh mouth. Up to 60,000 cubic yards would be disposed in the surf zone, with a fines content up to 60 percent, which is substantially greater than the maximum of 25 percent assumed in the 2003 Final EIR. Therefore, impacts to marine organisms associated with turbidity and siltation are anticipated to be greater than disposal of sediments addressed under Impact BIO-1 of the 2003 Final EIR. The extent of the turbidity plume and area affected by siltation would be same as discussed under Impact UP-BIO-2.

Indirect Impacts to Intertidal Invertebrates and Their Predators. As discussed under Impact UP-BIO-1, the increased turbidity and siltation of intertidal and nearshore ocean waters would reduce the abundance of intertidal invertebrates which would also affect the foraging success of birds and fish that feed on these invertebrates.

Indirect Impacts to Fish. As discussed under Impact UP-BIO-1, the increased turbidity and siltation of intertidal and nearshore ocean waters would adversely affect fish.

Water Quality Impacts to Marine Organisms. As discussed under Impact UP-BIO-2, significant ammonia-related impacts to marine organisms is not anticipated. Based on the lack of substantial contamination found during the analysis of Marsh sediments and anticipated compliance with California Ocean Plan water quality objectives (see Section 5.6.2.3), contaminant release into the water column following sediment disposal is not expected to be a source of mortality for invertebrates or fish of affected intertidal and nearshore habitats.

Summary. Winter storm waves would return areas affected by project-related siltation and any changes in beach grain size to near pre-disposal conditions given sufficient time between discharge events. However, the impacts of ocean disposal of sediments containing up to 60 percent fines on intertidal and nearshore habitats and animal populations have not been well studied. Overall, project turbidity and siltation impacts to intertidal and nearshore habitats would be temporary and localized, but repeated discharges of sediment could have substantial long-term impacts to populations of marine organisms in the Carpinteria area. Impacts to intertidal and nearshore habitats associated with surf zone disposal of sediment with up to 60 percent fines cannot be fully predicted and are considered potentially significant (Class II).

Impact UP-BIO-5: The addition of hydraulic dredging of lower Franklin Creek and the Main Channel as a routine maintenance component would impact estuarine organisms residing within the affected channels. Impact BIO-5b of the 2003 Final EIR addressed one-time impacts to invertebrates and fish residing within 600 linear feet of the Main Channel. Periodic hydraulic dredging of lower Franklin Creek and the Main Channel is proposed as a new routine maintenance component of the Enhancement Plan.

Most organisms (including shrimp, clams, snails) residing in areas where sediments are removed by hydraulic dredging perish during suction of sediments using a cutter head, hydraulic transport and surf zone disposal. However, studies conducted in dredged channels in the United States indicate affected benthic communities recover in one to six months (Wilber and Clarke, 2007). Project factors that would benefit recovery include:

- Affected areas are shallow with a history of disturbance (emergency dredging).
- Affected sediments are fine-grained.
- The spatial scale of disturbance (dredging) would be very small.
- Dredging would be timed to avoid the spring-summer larval recruitment period.

Fish residing in lower Franklin Creek and the Main Channel would be affected by proposed hydraulic dredging including hydraulic entrainment (pulled into the dredge suction inlet), direct effects of suspended sediment, reduced foraging success and contaminant release from the sediments (hydrophobic organics, metals). Adult fish are unlikely to be affected by hydraulic entrainment, as most would avoid the dredge suction inlet, but some proportion of the larval fish population may be entrained.

Suspended solids exposure resulting in 10 percent mortality in common fish of the Marsh varies from a one-day exposure of 23,770 mg/l TSS for killifish to a four-day exposure of 1,000 mg/l TSS for shiner surfperch (Wilber and Clarke, 2001). However, fish are known to avoid turbid water (Collin and Hart, 2015) such that exposure to elevated levels of suspended solids is not likely to reach fatal concentrations. Reduced foraging success by fish may occur due to avoidance behavior (turbid waters and dredging-related water disturbance), reduced visibility and reduced prey levels. Sediment removal by hydraulic dredge would prevent the release of any contaminants from the sediments to the water column, and would not be a source of mortality for fish and invertebrates of affected channels.

Overall, dredging-related impacts to benthic organisms and fish in the Marsh would be temporary, localized and timed to minimize impacts, such that substantial long-term impacts to populations of estuarine organisms of the Marsh would not occur. No rare, declining, threatened or endangered species would be affected. Therefore, these impacts are considered less than significant (Class III).

Impact UP-BIO-6: The addition of hydraulic dredging of lower Franklin Creek and the Main Channel as a routine maintenance component may impact special-status species near the affected channels. Periodic hydraulic dredging of lower Franklin Creek and the Main Channel is proposed as a new routine maintenance component of the Enhancement Plan. Special-status species that are known to or may occur adjacent to the affected channels include saltmarsh bird's beak, Watson's salt-scale, alkali barley, Coulter's goldfields, marsh rosemary, shore-grass, wooly sea-blite, seaside arrow-grass, three-ribbed arrow-grass, Belding's savannah sparrow and California least tern. Other special-status bird species reported from the Marsh (see Table 5.3-6) would not be adversely affected because dredging would be limited to previously maintained channels and would avoid the breeding season.

Dredging activities including launching the dredge, discharge pipe assembly and installation, dredge and booster pump operation and movement of the dredge (using excavators) have the potential to result in mortality of special-status plant species and adversely affect breeding and/or foraging of Belding's savannah sparrow and California least tern. These impacts are considered potentially significant (Class II).

Impact UP-BIO-7: Expansion of the Franklin Creek staging/stockpile area would result in temporary loss of coastal salt marsh vegetation and coastal wetlands. South coastal salt marsh is considered a rare natural community by CDFW and an environmentally sensitive habitat area under the Coastal Act. The proposed expansion area is located adjacent to the existing area used for stockpiling sediment removed by drag-line desilting. Utilization of this area for staging and stockpiling materials would result in the temporary loss of approximately 0.3 acres of sensitive habitats (south coastal salt marsh and coastal wetlands) and breeding habitat for Belding's savannah sparrow. Following proposed removal of excess fill and restoration of topography after infrequent desilting events, salt marsh vegetation is anticipated to recolonize the expansion area.

This impact would be offset through routine maintenance of the tidal channels in the South Marsh which would benefit south coastal salt marsh in the long-term (see Impact UP-BIO-10). Therefore, the temporary loss of vegetation/wildlife habitat is considered a less than significant impact (Class III).

Impact UP-BIO-8: The addition of channel excavation in the South Marsh as routine maintenance of the Avenue Del Mar drainage system may result in impacts to rare, threatened and endangered species. Short-term impacts to rare, threatened and endangered species related to construction of these tidal channels was addressed under Impact BIO-17 of the 2003 Final EIR and found to be significant but mitigable (Class II). The proposed Updated Enhancement Plan would not modify this impact as channel excavation activities would be the same as described in the 2003 Final EIR. Long-term impacts related to establishment of these tidal channels were addressed under Impact BIO-15b of the 2003 Final EIR and found to be ultimately beneficial due to the increased habitat value. Impact UP-BIO-8 addresses recurring adverse effects to rare, threatened and endangered species associated with periodic excavation (routine maintenance) to maintain channel capacity.

Periodic short-term impacts to Belding's savannah sparrow and other special-status species associated with channel excavation in the South Marsh are considered significant (Class II).

Impact UP-BIO-9: The addition of tidal channel excavation in the South Marsh as routine maintenance of the Avenue Del Mar drainage system may result in temporary impacts to south coastal salt marsh (also considered coastal wetlands). Short-term impacts to vegetation related to the construction of these tidal channels was addressed under Impact BIO-15a of the 2003 Final EIR. The proposed Updated Enhancement Plan would not modify this impact as channel excavation activities would be very similar as described in the 2003 Final EIR. Impact UP-BIO-9 addresses periodic excavation (routine maintenance) to maintain channel capacity.

Proposed excavation would occur in channels established in 2005 with limited sediment removal in October 2018 in response to debris flows in January 2018. Therefore, south coastal salt marsh is mostly lacking in areas that would be affected by channel excavation. However, vegetation would colonize some of the affected areas between maintenance events and temporary removal of salt marsh vegetation may occur. Additional south coastal salt marsh may be adversely affected by transporting excavated material to existing stockpile areas.

The area of affected south coastal salt marsh would be small (likely less than one acre) and would have relatively low plant density and species diversity (reduced habitat value). No special-status species would be affected, including saltmarsh birds-beak. This habitat loss would be offset through routine maintenance of the tidal channels in the South Marsh which would benefit south coastal salt marsh in the long-term (see Impact UP-BIO-10). Therefore, periodic channel excavation impacts to south coastal salt marsh vegetation are considered less than significant (Class III).

Impact UP-BIO-10: The addition of tidal channel excavation in the South Marsh as routine maintenance of the Avenue Del Mar drainage system would benefit south coastal salt marsh and coastal wetlands. In the long-term, routine maintenance of these channels would improve tidal circulation and maintain saturated soils beneficial to south coastal salt marsh. In general, tidal channels are critical to the structure and function of coastal salt marshes (Vivian-Smith, 2001). Therefore, periodic channel excavation would be beneficial to south coastal salt marsh and coastal wetlands in the long-term (Class IV).

Impact UP-BIO-11: Surf zone disposal of material excavated from tidal channels in the South Marsh would result in impacts to marine organisms associated with turbidity and siltation of nearshore waters. Material excavated to periodically re-establish tidal channels in the South Marsh may be trucked to City Beach and disposed in the surf zone. Material excavated during creation of these channels in 2005 (Restoration Action R3 of the Enhancement Plan) was used to construct berms within the Marsh. Excavated material would very similar in volume and composition as that removed from Franklin Creek and Santa Monica Creek by drag-line desilting, and surf zone disposal would have the same impacts as discussed under Impact UP-BIO-1 (Class II).

Impact UP-BIO-12: Surf zone disposal of sediments removed from upper Franklin and Santa Monica Creeks and tidal channels in the South Marsh would contribute to beach nourishment and increase the intertidal habitat area. In contrast to the environmental baseline, the proposed project includes surf zone disposal of sediment at City Beach consistent with the Coastal Regional Sediment Management Plan, which would contribute to a wider beach and associated intertidal habitat area. Beach nourishment of about 100,000 cubic yards conducted as part of the San Diego Regional Beach Sand Project enhanced intertidal invertebrate populations at least 2,500 feet down-current of receiver sites (SAIC, 2006). Beach nourishment may also improve intertidal invertebrate habitat quality and species diversity at affected beaches as persistent sandy beach habitat replaces seasonally eroded habitat (SAIC, 2007). These beneficial impacts would also contribute to greater invertebrate prey availability to shorebirds, juvenile fish and other species (Class IV).

Mitigation Measures:

Mitigation measures provided in the 2003 Final EIR have been deleted or modified to address current conditions and the proposed Updated Enhancement Plan. Mitigation Measures BIO-1 and BIO-3 have been deleted because Restoration Actions R1 and R3 and required monitoring has been completed. Mitigation Measure BIO-2 was modified to expand current erosion control measures to include routine maintenance. Mitigation Measure BIO-4 was modified to be consistent with the current CDFW LSAA. Mitigation Measures BIO-5, BIO-6 and BIO-8 have been deleted because light-footed Ridgway's (clapper) rail and tidewater goby are considered extirpated from the Marsh. Mitigation Measure BIO-7 was modified to be consistent with the current CDFW LSAA, and expanded to include all heavy equipment activity near the beach and Marsh mouth.

Mitigation Measure BIO-9 has been added to address potential impacts to special-status plant species from proposed hydraulic dredging of lower Franklin Creek and the Main Channel, and channel excavation in the South Marsh. Mitigation Measure BIO-10 has been added to address potential impacts to intertidal and nearshore habitats associated with surf zone disposal of sediment with a high fines content.

BIO-2. Install and maintain adequate sediment and erosion control measures at all ground disturbance sites. This shall include measures to prevent sediment from falling into creeks or marsh channels during desilting, excavation and dredging activities and to prevent runoff of sediments from disturbed soils until they are stabilized with vegetation. **Plan Requirements and Timing**: An erosion and sediment control plan that includes monitoring and maintenance of all measures shall be reviewed and approved by the District prior to implementation of any activities that could result in sediments entering the Marsh or its channels.

MONITORING: Monitoring of erosion and sediment control measures shall occur throughout construction and be reported to the District immediately whenever non-compliance with the plan occurs.

BIO-4. Schedule construction activities and other ground disturbance in salt marsh habitat to avoid the Belding's savannah sparrow breeding season from March 15 through August 1. At other times of the year, surveys shall be conducted immediately prior to vegetation clearing in suitable habitat and a qualified monitor will be present during such clearing to ensure none are present in the work area. **Plan Requirements and Timing**: A construction and routine maintenance schedule that avoids work during the Belding's savannah sparrow breeding season shall be established by the District prior to any land disturbance in salt marsh habitat. A survey and monitoring plan shall be prepared prior to any construction or routine maintenance activities and approved by the District and CDFW.

MONITORING: Verification that the construction schedule, surveys, and monitoring are being implemented shall be sent to the Corps and CDFW as required in their permit conditions.

BIO-7. Should any routine maintenance activities be planned near the Marsh mouth between April and August, a qualified avian biologist shall conduct field surveys of suitable habitat for California least tern within 500 feet of the planned activity. The field survey shall be conducted no more than 24 hours prior to the initiation of the routine maintenance activity. If California least terns are found within 200 feet of planned heavy equipment activity during this survey, the routine maintenance activity shall be postponed until the birds have left the area or the least terns shall be monitored to identify any adverse effects of the activity and the activity postponed if needed to avoid adverse effects. **Plan Requirements and Timing**: The California least tern field survey shall be conducted no more than 24 hours before the planned activity, and the results of the survey provided to the appropriate District staff.

MONITORING: Verification that the construction schedule is being implemented shall be sent to the regulatory agencies as required in their permit conditions.

BIO-9. Botanical surveys shall be conducted by a qualified biologist prior to any routine maintenance activities within or adjacent to coastal salt marsh. The botanical surveys shall be timed to maximize the detection of any special-status plant species occurring along affected channels in the Marsh, including saltmarsh bird's beak, Watson's salt-scale, alkali barley, Coulter's goldfields, marsh rosemary, shore-grass, wooly sea-blite, seaside arrow-grass and three-ribbed arrow-grass. Routine maintenance shall be conducted to entirely avoid impacts to endangered and CNPS List 1B species (saltmarsh bird's beak, Coulter's goldfields) and minimize impacts to other special-status plant species (including Watson's salt-scale, alkali barley, marsh rosemary, shore-grass, wooly sea-blite, seaside arrow-grass and three-ribbed arrow-grass) to the extent feasible. If special-status plant species cannot be feasibly avoided while meeting the project objectives, individuals (not including saltmarsh birds-beak) within work areas shall be salvaged and relocated to suitable habitat within the Marsh. Salvage of saltmarsh birds-beak shall be conducted only if take of this endangered species is authorized under the District's Corps permit. If take of saltmarsh birds-beak is not authorized, affected individuals shall be flagged and avoided during sediment removal activities.

Plan Requirements and Timing: Botanical surveys shall be timed to maximize detection of special-status plant species. A rare plant salvage plan shall be prepared if special-status plant species are found within work areas during the botanical surveys and submitted to regulatory agencies for approval.

MONITORING. District staff shall ensure botanical surveys are completed and special-status plant species are avoided through review of botanical survey reports and field inspection during routine maintenance activities. Implementation of the rare plant salvage plan shall be monitored by District staff.

BIO-10. The purpose of this mitigation measure is to provide a preliminary outline of long-term monitoring to be conducted to identify potential project-related impacts to marine and estuarine habitats. The monitoring tasks listed below may be considered preliminary pending review by regulatory agencies (Corps of Engineers, California Department of Fish and Wildlife, Regional Water Quality Control Board, California Coastal Commission) conducted as part of permit issuance. It is anticipated that a more detailed Long-Term Biological Monitoring Program would be developed in response to permit conditions. The review of the monitoring reports would be conducted in coordination with regulatory agencies to determine if any significant negative trends can be attributed to the project. The decision to implement any action to address these trends would also be coordinated with affected regulatory agencies.

Giant Kelp Bed Habitat Monitoring. The purpose of this task is to identify potential changes in giant kelp (*Macrocystis pyrifera*) bed density and biomass that could be attributable to project-related turbidity and siltation. Two kelp beds to be monitored (including a reference site) are the nearest kelp beds monitored by the University of California, Santa Barbara as part by the Santa Barbara Coastal Long-Term Ecological Research (LTER) Project. Existing transects established for the LTER Project would be used to monitor annually in the summer/fall regardless of any project-related surf zone disposal of sediments.

Surfgrass Habitat Monitoring. The purpose of this task is to identify potential changes in surfgrass (*Phyllospadix* sp.) cover that could be attributable to project-related turbidity and siltation. The nearest surfgrass bed is located approximately 1.0 miles southeast of the Ash Avenue sediment disposal site and is monitored as part of the Multi-Agency Rocky Intertidal Network (MARINe). Existing line transects established for the MARINe project would be used to monitor percent surfgrass cover annually in the summer/fall regardless of any project-related surf zone disposal of sediments.

Sandy Beach Habitat Monitoring. The purpose of this task is to identify potential changes in intertidal benthic invertebrate populations that could be attributable to project-related turbidity and siltation, and heavy equipment activity at the Ash Avenue disposal site. Three sites would be sampled; a reference site, the Marsh mouth dredging discharge location and the Ash Avenue disposal site. The preserved samples would be submitted to a qualified laboratory for processing, sorting and identification to the lowest practical taxonomic level.

Marsh Channel Habitat Monitoring. The purpose of this task is to identify potential changes in benthic invertebrate populations that could be attributable to drag-line desilting, hydraulic dredging and associated turbidity and siltation. At least two sites would be sampled annually within the proposed desilting areas; a reference site outside potential dredging areas and an impact site located within a recently desilted or dredged area. An additional impact site may be sampled, if more than one channel has been recently desilted or dredged. The preserved samples would be submitted to a qualified laboratory for processing, sorting and identification to the lowest practical taxonomic level.

Beach Grain Size Monitoring. The purpose of this monitoring task is to detect changes (trends) in beach grain size potentially attributable to project-related discharge of fine-grained sediment. Collection of two grab samples would be conducted annually at one reference site and up to two impact sites. The sediment samples would be processed to determine the grain size distribution.

Actions to Mitigate Adverse Effects. Following a consensus among regulatory agencies and the District that any significant negative trends identified in annual monitoring reports are attributable to the project, the following actions may be taken to mitigate adverse effects. The decision of which action(s) to implement would be based on the significant negative trend identified and coordination with regulatory agencies.

- Limitation on the maximum fines content (percentage) of sediment discharged to the surf zone.
- Reduction in the maximum daily rate of sediment discharged to the surf zone.
- Development and implementation of a restriction on the maximum daily rate (tons per day) of fines (silt and clay) discharged to the surf zone.
- Reduction in the total annual amount of sediment discharged to the surf zone.
- Development and implementation of a restriction on the maximum annual amount (tons) of fines (silt and clay) discharged to the surf zone.
- Development and implementation of a restriction on the length of channels dredged in a season (significant negative trend in channel invertebrate diversity or abundance).
- Restriction of the surf zone discharge period to the winter months (December-March) when high wave energy would minimize siltation of intertidal and nearshore habitats.

Plan Requirements and Timing: A Long-Term Biological Monitoring Program would be developed for review by the Southern California Dredged Material Management Team as part of obtaining regulatory permits for approval of surf zone disposal.

MONITORING. District staff would ensure the approved Long-Term Biological Monitoring Program is fully implemented and monitoring reports are prepared as required.

5.3.2.4 Cumulative Impacts

Most other projects listed in Section 4.6 are located in developed areas and are unlikely to result in substantial impacts to biological resources. However, implementation of some of these projects may result in the loss or temporary disturbance of native vegetation, designated environmentally sensitive habitat areas and wildlife habitat including Lagunitas Mixed Use, Carpinteria Avenue Bridge Replacement, Via Real Hotel and U.S. 101 HOV Lanes. Construction of the U.S. 101 HOV Lanes project may result in short-term impacts to Franklin Creek and Santa Monica Creek; however, these drainages are concrete lined at their crossing of U.S. 101 such that impacts to biological resources would be minimal.

None of the cumulative projects would result in loss of coastal salt marsh, direct impacts to fish and invertebrates of the Marsh or siltation of nearshore waters. However, the proposed project (routine maintenance) would incrementally contribute to habitat loss and disturbance associated with construction and operation of the cumulative projects. The project's contribution may be cumulatively considerable.

5.3.2.5 Residual Impacts

With implementation of mitigation measures identified in the 2003 Final EIR as modified (see above) and Mitigation Measure BIO-10, residual impacts of the Updated Enhancement Plan would be less than significant.

5.3.3 References

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5.4 CULTURAL RESOURCES

This section presents a discussion of cultural resources issues associated with the proposed project. The analysis serves as an update to the information provided within the original 2003 Final EIR and addresses proposed changes to the Enhancement Plan.

5.4.1 Setting

5.4.1.1 Prehistory

The project area lies within the historic territory of the Native American group known as the Chumash. The Chumash occupied the region from San Luis Obispo County to Malibu Canyon on the coast, and inland as far as the western edge of the San Joaquin Valley, and the four northern Channel Islands (Grant, 1978). The Chumash are subdivided into factions based on distinct dialects. The Barbareño Chumash occupied the coastal plain from Point Conception to Punta Gorda in Ventura County. The name Barbareño is derived from the mission with local jurisdiction, Santa Barbara.

Chumash society developed over the course of some 9,000 years and achieved a level of social, political and economic complexity not ordinarily associated with hunting and gathering groups (Morrato, 1984). The prehistoric Chumash are believed to have maintained one of the most elaborate bead money systems in the world, as well as one of the most complex non-agricultural societies (King, 1990). Several chronological frameworks have been developed for the Chumash region. One of the most definitive works on Chumash chronology is that of King (1990). King postulates three major periods; Early, Middle and Late. Based on artifact typologies from a great number of sites, he was able to discern numerous style changes within each of the major periods.

The Early Period (8,000 to 3,350 years Before Present [B.P.]) is characterized by a primarily seed processing subsistence economy. The Middle Period (3,350 to 800 years B.P.) is marked by a shift in the economic/subsistence focus from plant gathering and the use of hard seeds, to a more generalized hunting-maritime-gathering adaptation, with an increased focus on acorns. The full development of the Chumash culture, one of the most socially and economically complex hunting and gathering groups in North America, occurred during the Late Period (800 to 150 years B.P.).

The Chumash aboriginal way of life ended with Spanish colonization. As neophytes brought into the mission system, they were transformed from hunters and gatherers into agricultural laborers and exposed to diseases to which they had no resistance. By the end of the Mission Period in 1834, the Chumash population had been decimated by disease and declining birthrates. Population loss as a result of disease and economic deprivation continued into the next century.

Today, many people claim their Chumash heritage in Santa Barbara County. In general, they place high value on objects and places associated with their past history, especially burials, grave goods and archaeological sites.

5.4.1.2 History of the Project Area

In 1769, Gaspar de Portola and Father Junipero Serra departed the newly established San Diego settlement and marched northward toward Monterey, with the objective to secure that port and establish five missions along the route. The Gaspar de Portola Expedition landed along Carpinteria Beach on August 17, 1769, near the village of Mishopshnow (Bolton, 1927). The combined sea and land 1769-1770 Portola expedition, which passed through Santa Barbara County on its way to Monterey, was the prelude to systematic Spanish colonization of Alta California. Mission Santa Barbara was founded by Padre Fermin Lasuen in 1786. The Carpinteria Valley was granted to the Mission by the Spanish Government as part of the Pueblo Lands of Santa Barbara. Agricultural development of the Pueblo Lands was initiated during Spanish control, although livestock was the primary economic mainstay of the Spanish Period. Mexico gained its independence from Spain in 1822 and twelve years later the Missions were secularized and their lands granted as rewards for loyal service or in response to an individual's petition. The Mexican Ranchos also were heavily vested in the raising of cattle, sheep and horses.

Carpinteria Creek served as the boundary between the Pueblo Lands and Rancho El Rincon, which was granted in 1835 to Teodoro Arellanes (Cowan, 1977). The Mexican Period ended with the singing of the Treaty of Guadalupe Hidalgo in 1848, which transferred control of California, New Mexico, Texas and other western properties to the United States. During the early American Period, the Pueblo Lands were sectioned and sold off. Dry farming expanded within the Carpinteria Valley and by 1869 much of the Carpinteria Valley was in agricultural production (Condor Environmental Planning Services, 1996).

A small community, which would eventually develop into the City of Carpinteria, sprang up along the northern margin of the Marsh in the vicinity of Santa Monica Creek and Carpinteria Avenue. In 1868, a post office was established in Carpinteria. By 1870, an estimated 87 houses and about 400 people apparently existed in the general region. The initial growth of the community was limited by geographic constraints.

The first road through Carpinteria Valley was constructed in part through wetlands of the Marsh to provide a route for stagecoach travel between Santa Barbara and Los Angeles. Similarly, construction of the Southern Pacific Railroad (1884-87), now known as the Union Pacific Railroad, was achieved by placing it on a berm in wetlands along the northern margin of the Marsh. As a result of the construction of a train station at the eastern end of the developing town, the expansion of Carpinteria moved east and southward from the area of "Old Town", resulting in the fragmentation and filling of the eastern portion of the Marsh. By 1888, Carpinteria Valley had a population of about 800 (Caldwell, 1979).

Precursors to the existing Estero Way, Sand Point Road and Del Mar Avenue are present in a 1929 aerial photograph, with residential development initiated along Sand Point Road. During this period, the Marsh extended east of Franklin Creek in areas currently occupied by City streets. The Santa Barbara Harbor breakwater was completed around 1929 and resulted in reduced sediment transport and the loss of much of the beach along Sand Point Road. Ash Avenue was graded in the 1940's, which reduced tidal circulation in the eastern Marsh, and later development resulted in the filling of the eastern Marsh.

In June 1977, approximately 120 acres of the Marsh was incorporated into the University of California Natural Reserve System. A management plan was developed for the Carpinteria Salt Marsh Reserve by Ferren et al. in 1997, to protect and enhance natural and cultural resources and promote research programs, education programs and public stewardship.

In 1997, the Carpinteria Salt Marsh Nature Park opened along the eastern margin of the Marsh, including trails and nature viewing areas.

5.4.1.3 Record Search

On February 8, 2019, Padre Senior Archaeologist Rachael J. Letter ordered an expedited archaeological record search from the Central Coast Information Center located at the University of California, Santa Barbara. The center is an affiliate of the State of California Office of Historic Preservation and the official state repository of archaeological and historic records and reports for Santa Barbara and Ventura counties. Padre received the results on February 11, 2019.

The records search included a review of all recorded historic-era and prehistoric archaeological sites within a 0.25-mile radius of the Marsh as well as a review of known cultural resource surveys and technical reports. The State Historic Property Data Files, National Register of Historic Places, National Register of Determined Eligible Properties, California Points of Historic Interest, and the California Office of Historic Preservation Archaeological Determinations of Eligibility also were analyzed.

The records search revealed the presence of one previously recorded cultural resource site within the Marsh (CA-SBA-8). Consistent with the 2003 Final EIR, this site is considered a potentially significant resource under CEQA. The records search also indicated that an additional four cultural resources are located within a 0.25-mile radius of the Marsh. Table 5.4-1 lists and describes these resources. The records search revealed that four cultural resource studies have been completed within or adjacent to the Marsh (see Table 5.4-2). The records search also indicated that 23 additional cultural resource studies have been completed within a 0.25-mile radius of the Marsh.

Table 5.4-1. Previously Recorded Cultural Resources

Site Number	Description
CA-SBA-8	**Shell midden containing groundstone, flaked tools and lithic debitage. Possibly prehistoric village site "Teneknes". Not formally evaluated, potentially significant resource.**
CA-SBA-2177	Small historic trash dump possibly dating from the 19th century or early 20th century. Not considered a significant resource.
P-42-040788	Historic structure located south of US Highway 101, near north end of Cramer Road.
P-42-040789	Historic structure located south of US Highway 101, near north end of Cramer Road.
P-42-040790	Historic structure located north of US Highway 101 on east side of Sandpiper Drive.

Note: Resources located within the Marsh are listed in bold.

Table 5.4-2. Previous Cultural Resource Studies Completed within/adjacent to the Marsh

Report No.	Author(s), Year	Title
SR-00850	Wilcoxon, 1974	An Archaeological Reconnaissance of the Carpinteria Valley Watershed Project
SR-03322	Victorino, 2003	Letter Report for Phase I Archaeological Survey, Carpinteria Salt Marsh Enhancement Plan
SR-04058	Sikes et al., 2006	Cultural Resources Final Report of Monitoring and Findings for the Qwest Network Construction Project
SR-04111	Yost et al., 2001	Final Report on Cultural Resource Monitoring Level (3) Long Haul Fiber Optic Running Line, San Luis Obispo to Burbank, California, San Luis Obispo, Santa Barbara, Ventura, and Los Angeles Counties

The records search identified CA-SBA-8, a potential prehistoric village site, along the southern edge of the Marsh, occupying the center of Sand Point near the western margin of Sandyland Cove. The southern portion of CA-SBA-8 abuts the shoreline, with the remainder of the site extending north into an overlying dune formation. The southernmost portion of the Project, which extends as a narrow finger down into Sand Point, encompasses the western margin of CA-SBA-8. CA-SBA-8 was first described by D. B. Rogers in 1929 as “an extensive Canaliño village”, almost completely obscured by sand dunes (Victorino, 2003). A subsequent investigation by Wilcoxon in 1974 describes CA-SBA-8 as a shell midden with stone flakes and flake tools, located on a sandspit along the eastern bank of the marsh outflow buried by sand dunes. Wilcoxon added that the archaeological survey, conducted in September 1974, was hindered by the presence of dunes, which “rendered the mapping procedure inaccurate” (Wilcoxon, 1974).

Science Applications International Corporation completed the most recent investigation of CA-SBA-8 in support of the Carpinteria Salt Marsh Enhancement Plan (Victorino, 2003). During the survey, weathered shell fragments were observed in the vicinity of the mapped boundary of CA-SBA-8; however, other characteristics of a prehistoric occupation site such as dark soils, features, or lithic debitage were not. The 2002 survey also noted recent disturbance from underground utilities and residential construction (Victorino, 2003).

5.4.2 Impact Analysis and Mitigation Measures

5.4.2.1 Thresholds of Significance

Significance criteria for cultural resources were determined based on the 2019 State CEQA Guidelines (Appendix G), the County’s Environmental Thresholds and Guidelines Manual (Cultural Resources Guidelines).

State CEQA Guidelines Section 15064.5. A project with an effect that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment.

(1) Substantial adverse change in the significance of an historical resource means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired.

(2) The significance of an historical resource is materially impaired when a project:

(A) Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the California Register of Historical Resources; or

(B) Demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources pursuant to Section 5020.1(k) of the Public Resources Code or its identification in an historical resources survey meeting the requirements of Section 5024.1(g) of the Public Resources Code, unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or

(C) Demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its eligibility for inclusion in the California Register of Historical Resources as determined by a lead agency for purposes of CEQA.

Santa Barbara County Environmental Thresholds and Guidelines Manual. A project is considered to have a significant impact if it would damage an important cultural resource. For the purposes of CEQA, an "important archaeological resource" can be defined as having one or more of the following characteristics:

1. Is associated with an event or person with recognized significance in California or American history; or recognized scientific importance in prehistory.
2. Can provide information which is of both demonstrable public interest and useful in addressing scientifically consequential and reasonable or archaeological research questions,
3. Has a special or particular quality such as oldest, best example, largest, or last surviving example of its kind.
4. Is at least 100 years old and possesses substantial stratigraphic integrity; or
5. Involves important research questions that historical research has shown can be answered only with archaeological methods.

5.4.2.2 Impacts of the Existing Carpinteria Salt Marsh Enhancement Plan

The following summarizes the cultural resource impacts identified in the 2003 Final EIR prepared for the existing Enhancement Plan.

Impact CULT-1: Construction of a floodwall along the north side of Del Mar Avenue could result in disturbance of unknown potentially significant sub-surface cultural resources. It is possible that unknown sub-surface artifactual material exists along the estuary margins where the potential for unknown archaeological site locations is high. If intact cultural remains were encountered during construction, the potential for destruction of these potential unknown finds would be a significant but feasibly mitigated direct impact (Class II) on prehistoric archaeological resources.

Construction of this floodwall has been completed such that no additional impacts would occur as a result of the proposed Updated Enhancement Plan.

Impact CULT-2: Project construction activity would potentially increase short-term access to archaeological artifacts and the potential for unauthorized collection. Archaeological sites would potentially be exposed during construction, and workers would have increased knowledge of and access to artifacts. Unauthorized collection of artifacts during construction would contribute to the destruction of site integrity and would be a significant but feasibly mitigated indirect impact (Class II) on prehistoric archaeological resources.

Construction of channel improvements identified in the 2003 Final EIR has been completed such that no additional impacts would occur. New or modified maintenance activities associated with the Updated Enhancement Plan would occur within recently excavated or dredged flow channels or the surf zone such that disturbance of archeological sites is not anticipated.

5.4.2.3 Impacts of the Proposed Updated Enhancement Plan

Consistent with the 2003 Final EIR, existing routine maintenance activities and proposed additions/modifications associated with the Updated Enhancement Plan presently occur or would occur with the Marsh channels, and not along the perimeter of the Marsh where prehistoric occupation is anticipated. Ground disturbance associated with proposed changes to the Enhancement Plan would be located in areas that have been repeatedly excavated as part of sediment removal or establishment of tidal channels. The proposed expansion of the Franklin Creek desilting staging/stockpile area would not involve ground disturbance extending more than a few inches below the ground surface at this previously disturbed site.

Therefore, known cultural resources (CA-SBA-8, CA-SBA-2177) would not be affected, and unreported intact cultural resources or isolated artifacts are not anticipated to be discovered. Overall, implementation of the Updated Enhancement Plan would not result in any cultural resources impacts.

Mitigation Measures

Mitigation measures provided in the 2003 Final EIR have been deleted because the floodwall along Avenue Del Mar has been completed.

5.4.2.4 Cumulative Impacts

Most other projects listed in Section 4.6 are located in developed areas and are unlikely to result in impacts to cultural resources. However, implementation of some of these projects may result in the disturbance of known or unreported cultural resources, potentially including Lagunitas Mixed Use, Carpinteria Avenue Bridge Replacement, Via Real Hotel and U.S. 101 HOV Lanes. The proposed project is not anticipated to impact cultural resources such that it would not incrementally contribute to cumulative impacts.

5.4.2.5 Residual Impacts

Mitigation was implemented during construction of components of the Enhancement Plan that may result in significant impacts to cultural resources, such that residual impacts were less than significant. The proposed Updated Enhancement Plan would not result in any additional cultural resources impacts.

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5.5 GEOLOGIC PROCESSES

This section presents a discussion of geological issues associated with the proposed project. The analysis serves as an update to the information provided within the original 2003 Final EIR and addresses proposed changes to the Enhancement Plan.

5.5.1 Setting

5.5.1.1 Regional Geology

The Carpinteria Salt Marsh (Marsh) is located at the southern base of the Santa Ynez Mountains, a component of the Transverse Range Geomorphic Province. This geomorphic province is characterized by generally east-west trending mountain ranges and intervening valleys. Older uplifted bedrock is exposed in the mountains, while the valleys are filled with sedimentary rocks and alluvial deposits. The Transverse Ranges are bordered by the Santa Monica fault to the south and the Santa Ynez fault to the north.

The Santa Ynez Mountains extend from Gaviota Canyon eastward to the Matilija Gorge in Ventura County. The range is composed of a single main crest that is continuous for approximately 50 miles. The northern flank of the Santa Ynez Range is a steep escarpment created by uplift along the Santa Ynez fault. The southern flank is characterized by south-plunging ridges that separate incised drainage canyons. These canyons generally include a perennial stream bounded by steep east- and west-facing slopes. The indurated sandstone units typically form prominent, more resistant outcrops and generally support dense chaparral vegetation. The poorly indurated and finer-grained units typically form more gently-sloping, grass-covered hills.

5.5.1.2 Local Geology

The Marsh is located within the Carpinteria Valley, an east-west oriented, northward verging, faulted syncline containing shallow marine and non-marine Pleistocene sediments from several hundred to several thousand feet thick deposited on older folded rocks. Underlying geologic formations include the Sespe Formation and Coldwater Sandstone Formation. The Marsh is underlaid by Holocene-aged alluvium composed of floodplain deposits of silt, sand and gravel, with beach sand deposits extending from the shoreline into the Marsh (Dibblee, 1986).

5.5.1.3 Topography

The elevations in the Marsh are low enough to allow tidal inflow through a network of channels that also convey flood flows from the tributary watersheds. Relief is very low, varying from -1 to +9 feet relative to mean sea level (msl). The lowest elevation of about one foot below msl occurs in the Main Channel, near the tidal inlet, and remains relatively constant within the major channels of the Marsh. Channel slope gradients are generally shallow in submerged areas (2.5:1 to 3:1 and flatter); however, upper slopes are generally steeper, in part due to periodic sediment removal.

5.5.1.4 Soils

The Soil Survey for Santa Barbara County, South Coastal Part indicates the soils of the Marsh are primarily composed of Aquents (flooded), a very poorly drained soil with coarse to fine textured alluvium as parent material located in areas with a slope of less than two percent. Areas on the southern margin of the Marsh (along Sand Point Road, Avenue Del Mar) have been mapped as Aquents (fill areas), also a very poorly drained soil. Soils north and east of the Marsh have been mapped as Camarillo variant, fine sandy loam, a poorly drained floodplain soil with a typical profile of seven inches of fine sandy loam over 28 inches of stratified loamy sand to clay loam.

5.5.1.5 Subtidal Environment

The offshore environment adjacent to the Marsh consists of a relatively flat and shallow continental shelf, which dips so gently (about 0.4° to 0.5°) that water depths at the 3-nautical-mile limit of California's State Waters are 130 to 150 feet. The seafloor is predominately covered by sediment composed of sand and mud, with small sedimentary bedrock exposures (USGS, 2013). Sediment particle size in nearshore areas near the Marsh varies from fine sand to medium sand (0.2 to 0.45 mm), with sediment size increasing in winter and decreasing in summer (USGS, 2009). The largest of these local bedrock exposures is the Carpinteria Reef, which extends to within approximately 0.3 miles of the Marsh ocean outlet.

5.5.1.6 Tsunami Hazard

Overview. A tsunami is a wave or series of waves generated in a body of water (usually the ocean) by a large scale or magnitude disturbance that vertically displaces the water column. Tsunamis can be generated by earthquake, submarine or terrestrial landslide, volcanic eruptions, or impacts from meteorites. Regardless of their origin, tsunamis evolve through three overlapping but quite distinct physical processes: 1) generation by a force that disturbs the water column; 2) propagation from deeper water near the source to shallow coastal areas; and 3) inundation of dry land. As the tsunami crosses the deep ocean, its length from crest to crest may be a hundred miles or more, and its height from crest to trough will only be a few feet or less. They cannot be felt aboard ships nor can they be seen from the air in the open ocean. In the deep ocean, the waves travel at high rates of speed up to a velocity of a few hundred miles per hour. When the tsunami enters the shallower waters of the coastlines in its path, the velocity of its waves diminishes and the wave height increases. It is in these shallow waters that a large tsunami can crest to heights up to 100 feet and strike coastal land with devastating force.

Inundation Hazard. The entire Marsh and portions of the City of Carpinteria south of the Union Pacific Railroad tracks are located with a Tsunami Inundation Hazard Area mapped by the California Emergency Management Agency. The hazard area includes residential areas along Sand Point Road and Avenue Del Mar.

5.5.1.7 Regional Faulting and Seismicity

Similar to the surrounding areas, the Marsh may be affected by moderate to major earthquakes centered on one of the known large, active faults. These faults include the Santa Ynez Fault (considered active) located approximately 5.3 miles to the north, and the Arroyo Parida Fault (considered potentially active) located 1.5 miles to the north, and the San Andreas Fault located 36 miles to the north. The closest known Holocene age fault is the Santa Ynez Fault; however, the San Andreas Fault is the most likely active fault to produce ground shaking at the Marsh.

The Alquist-Priolo Earthquake Fault Zoning Act of 1972 requires that the California State Geologist establish Earthquake Fault Zones around the surface traces of active faults and to issue appropriate maps. The Marsh is not located within an Earthquake Fault Zone.

5.5.1.8 Liquefaction

Liquefaction is a phenomenon that occurs when loosely consolidated, saturated, granular soils (e.g., beach sands) lose their load-bearing capabilities during ground-shaking events, and settle or flow in a fluid-like manner. According to Santa Barbara County's Seismic Safety and Safety Element (Santa Barbara County, amended 2010), there is high potential for liquefaction to occur in the area of the Marsh. This is due to the presence of shallow groundwater and loosely consolidated granular fill soils located beneath the site.

5.5.1.9 Expansive, Compressible, and Collapsible Soils

The geologic hazard maps in the County of Santa Barbara's Seismic Safety and Safety Element indicate that the Marsh area has a low to moderate potential for expansive soils, and a high potential for compressible and collapsible soils (Santa Barbara County, amended 2010).

5.5.1.10 Coastal Processes

Littoral Drift. Along the coast of California, a longshore or littoral current is developed parallel to the coast as the result of waves breaking at an angle to the shoreline. This current combined with the agitating action of the breaking waves, which serves to entrain the sand, are the essential factors creating sand movement along the shoreline. As waves approach the beach at an angle, the up-rush of water, or swash, moves sand at an angle onto the shoreface. The backwash of water rushes down the shoreface perpendicular to the shoreline or a slight downcoast angle. This zigzag motion (waves washing onto shore at an angle and returning perpendicular or at a slight downcoast angle to the ocean) results in a longshore current parallel to the shoreline. Littoral drift refers to the movement of sand grains in the direction of the longshore current.

The Santa Barbara littoral cell extends 150 miles from the Santa Maria River in the north, around Point Conception, where the north-south trending coast takes an abrupt turn to a west-east trending shoreline heading into the Southern California Bight. The sand on area beaches moves along the coast of southern Santa Barbara and Ventura Counties in response to the longshore current until it reaches the Mugu submarine canyon, which is believed to be the endpoint of the littoral cell.

The Santa Barbara littoral cell includes a relatively complex coastline with a variety of rocky outcrops, offshore reefs, and relatively narrow beaches. The beaches receive the majority of their sand inputs from four major rivers: the Santa Maria, Santa Ynez, Ventura, and Santa Clara Rivers, which drain the sedimentary rocks of the Transverse Range. Numerous small coastal drainages also provide sediment pulses during episodic rain events.

The Carpinteria area lies in the central part of the Santa Barbara littoral cell, which is characterized by west-to-east transport of sediment from Point Arguello on the northwest to Hueneme and Mugu Canyons on the southeast. Based on harbor dredging records, about 400,000 tons per year of littoral sediment drifts east from Santa Barbara Harbor towards the Carpinteria area. At the east end of the littoral cell, eastward-moving sediment is trapped by Hueneme and Mugu Canyons and then transported to the deep-water Santa Monica Basin (USGS, 2013).

Sediment supply to the western and central part of the littoral cell is largely from relatively small transverse coastal watersheds, which have an estimated cumulative annual sediment flux of 640,000 tons per year (Warrick and Farnsworth, 2009). These coastal watersheds include (from east to west) Rincon Creek, Carpinteria Creek, Franklin Creek, Santa Monica Creek, Arroyo Paredon, and Toro Canyon Creek. The much larger Ventura and Santa Clara Rivers, the mouths of which are about 15 to 20 miles southeast of Carpinteria, yield an estimated 3.4 million tons of sediment annually (Warrick and Farnsworth, 2009), the coarser sediment load generally moving southeast, down the coast, and the finer sediment load moving both upcoast and offshore (Drake, 1972; Warrick and Farnsworth, 2009).

Regionally, fluvial discharge and sediment load are highly variable, characterized by brief large events during winter storms and long periods of low or no flow and minimal sediment load between storms. In recent history, the majority of high-discharge, high-sediment-flux events have been associated with the El Niño phase of the El Niño–Southern Oscillation climatic pattern (Warrick and Farnsworth, 2009).

Inspection of a February 19, 2016 aerial photograph of the project area following a relatively small storm event (0.3 inches in 24 hours) shows a turbidity plume generated by fluvial discharge by local drainages extending 500 to 3,000 feet offshore from Arroyo Paredon southeast to beyond the Carpinteria Pier.

Carpinteria Area Beach Erosion. Coastal erosion problems are ongoing in the Carpinteria area, and they are tied to both development and natural processes. The shoreline is variably protected by riprap, revetments, and seawalls, including nearly continuous rock revetment on the beaches on the seaward margin of the Marsh, and also between Rincon Point and Punta Gorda where significant amounts of sediment derived from the steep bluffs typically are not reaching the beach; instead, they are trapped and then moved away from source areas to prevent burial of coastal transportation corridors.

Breakwater construction and sand impoundment at the Santa Barbara Harbor led to a well-documented erosion wave that impacted downcoast (southeast) beaches including beaches at Sandyland and Carpinteria (USGS, 2009). At Carpinteria, a recurring erosion hotspot at the end of the rock revetment along the Marsh requires regular beach maintenance and periodically threatens oceanfront property during large storm events. Seasonal beach-width change analyses show that the seasonal cyclical pattern is a systematic retreat of the shoreline and narrowing of the beach width at Carpinteria City Beach by up to 66 feet (USGS, 2009).

Regional Beach Management. Beach erosion has been an important concern in southern and central California for nearly 50 years. The Beach Erosion Authority for Clean Oceans and Nourishment (BEACON) was established as a California Joint Powers Authority to address coastal erosion issues along the central coast of California. The entities comprising BEACON are Santa Barbara and Ventura Counties and the cities of Port Hueneme, Oxnard, San Buenaventura, Carpinteria, and Santa Barbara. BEACON developed a South Central Coast Beach Enhancement Program in 2001 and a Coastal Regional Sediment Management Plan in 2009. Both of these plans identified the need to discharge up to 100,000 cubic yards of beach fill material (sediments) at the terminus of Ash Avenue at Carpinteria City Beach to address beach erosion.

About 31,500 cubic yards of sediment removed from the Marsh (Franklin Creek) have been deposited at Carpinteria City Beach since 2001 (see Table 3-2). Sediment removed from debris basins and creek channels in the region has also been deposited at Carpinteria City Beach, especially in 2018 and 2019 following massive debris flows in January 2018.

5.5.1.11 Marsh Sediment Characterization

The grain size of sediment in the Marsh has been sampled by the District and tested on several occasions to determine the suitability for surf zone disposal and has focused on sediment accumulated in channels that may be removed to restore capacity. A summary of these channel sediment data is provided in Table 5.5-1, and indicates grain size generally increases (lower percent fines) from upstream to downstream. This is likely due to the transport of beach sands into the Marsh during high tides, which increases the overall grain size in lower (downstream) portions of the Marsh. Sediment sampling of Marsh soils in Basin 3 by ERM (2012) indicates grain size varies from 4 to 88 percent fines, with grain size generally decreasing with distance from the Marsh mouth.

5.5.1.12 Beach Sand Grain Size

Grain size data for areas affected by surf zone disposal (beach nourishment) of sediments removed from the Marsh is presented in Table 5.5-2. Marsh mouth data was collected in August 2012 by ERM (2012). Other data was collected as part of the South Central Coast Beach Enhancement Program by Moffatt & Nichol Engineers (2001). Beach face grain size data collected by USGS (2009) varies from 0.24 mm 1,800 feet northwest of the Marsh to 0.31 mm 800 feet east of the Marsh mouth to 0.26 mm at Carpinteria State Beach.

Table 5.5-1. Channel Sediment Grain Size Data

Location	Sampling Date	Percent Fines
Franklin Creek		
Between the Marsh and Carpinteria Avenue	October 13, 2005	1-4
~750 feet downstream of the UPRR tracks	August 14-16, 2012	39.9
Santa Monica Creek		
~150 feet downstream of the UPRR tracks	April 30, 2013	18
~600 feet downstream of the UPRR tracks	April 30, 2013	24
~800 feet downstream of the UPRR tracks	August 14-16, 2012	29.8
~1,100 feet downstream of the UPRR tracks	April 30, 2013	58
Main Channel		
~600 feet downstream of the Santa Monica Creek confluence	August 14-16, 2012	25.2
~600 feet downstream of the Santa Monica Creek confluence	February 22, 2018	39
~800 feet downstream of the Santa Monica Creek confluence	February 22, 2018	10
~1,050 feet downstream of the Santa Monica Creek confluence	February 22, 2018	30
~1250 feet downstream of the Santa Monica Creek confluence	February 22, 2018	7
~1,300 feet downstream of the Santa Monica Creek confluence (terminus of Estero Way)	August 14-16, 2012	8.6
~1,500 feet downstream of the Santa Monica Creek confluence	February 22, 2018	7
Marsh mouth	August 14-16, 2012	0.8
Sand Plug		
Confluence of Main Channel and Basin 3 Channel	August 14-16, 2012	1.7

Table 5.5-2. Beach Sediment Grain Size Data

Location	Grain Size (percent fines)					
	Beach	6 foot depth	12 foot depth	18 foot depth	24 foot depth	30 foot depth
Marsh mouth	0.7	--	--	--	--	--
1,200 feet east of the Marsh mouth	0.8	1.2	1.4	Cobble	Bedrock	2.4
Ash Avenue	0.0	0.7	2.8	3.9	43.1	2.8

5.5.1.13 Paleontological Resources

The project site is underlain by coarse to fine textured alluvium (see Sections 5.5.1.2 and 5.5.1.4). Due to the lack of intact geologic formations, paleontological resources are not anticipated to be present. In addition, the Paleontology Identification Report prepared for replacement of the U.S. 101 bridges over Carpinteria Creek (Linden Avenue & Casitas Pass Road Interchanges Project) located 0.6 miles east of the Marsh indicated there is a low potential for encountering sensitive paleontological resources. Paleontological resources listed in the University of California Museum of Paleontology database in the Carpinteria area is limited to fossils of nine contemporary bird species.

5.5.2 Impact Analysis and Mitigation Measures

5.5.2.1 Thresholds of Significance

Significance criteria for geologic processes impacts were determined based on the 2019 State CEQA Guidelines (Appendix G), the County's Environmental Thresholds and Guidelines Manual (Geologic Constraints Guidelines).

CEQA Guidelines Appendix G: Geology and Soils. Implementation of the proposed project may have a potentially significant adverse impact on geological processes if it would result in any of the following:

- Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: rupture of a known earthquake fault, strong seismic ground-shaking, seismic-related ground failure, including liquefaction and landslides.
- Result in substantial soil erosion or the loss of topsoil.
- 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.
- Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code, creating substantial direct or indirect risks to life or property.
- Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater.

Santa Barbara County Environmental Thresholds and Guidelines Manual. Geologic impacts have the potential to be significant if the project involves any of the following characteristics:

- Project sites or part of the project located on land having substantial geologic constraints, such as active or potentially active faults, underlain by rock types associated with compressible/collapsible soils, or susceptible to landslides or severe erosion.
- The project results in potentially hazardous geologic conditions such as construction of cut slopes exceeding a grade of 1.5H:1V.

- The project proposes construction of a cut slope over 15 feet in height as measured from the lowest finished grade.
- The project is located on slopes exceeding 20 percent grade.

5.5.2.2 Impacts of the Existing Carpinteria Salt Marsh Enhancement Plan

The following summarizes the geologic processes impacts identified in the 2003 Final EIR prepared for the existing Enhancement Plan.

Impact GEO-1: Project grading, excavating, and temporary stockpiling of dredged material, associated with construction of floodwalls and berms, would result in a short-term increase in the amount of soil exposed to wind and water erosion. An increase in erosion could result in increased sedimentation and associated adverse impacts to water quality in the Marsh. Short-term erosion and sedimentation associated with grading and construction is considered a potentially significant but feasibly mitigated impact (Class II).

Construction of floodwalls and berms and Restoration Actions R1, R3, R4 and R5 have been completed. No changes to Restoration Action R2 or replacement of culverts under Estero Way is proposed. Although Restoration Action R3 was completed in 2005, routine maintenance of the created South Marsh channels is proposed as a component of the Updated Enhancement Plan and is addressed by existing Impact GEO-1. Restoration Action R6 has been completed. Stockpiling of dredged material would not be modified by the proposed Updated Enhancement Plan. Therefore, no new geologic processes impacts would occur.

Impact GEO-2: Changes in topography would occur as a result of the project. Berm construction would result in an increase in topography by one to three feet. Construction of 2:1 to 3:1 gradient slopes within the channels would likely result in a more complex side slope profile over time, such as is currently present (Fugro West, Inc. 1994). These slopes would likely not fail completely, but rather would locally degrade during high flow events, becoming over-steepened at the top. Such oversteepening of the slopes would be potentially significant but feasibly mitigated impact (Class II).

Berm construction has been completed such than no additional impacts would occur. Channel slopes created by drag-line desilting would not be modified by the proposed Updated Enhancement Plan. Therefore, no additional geologic processes impacts would occur.

Impact GEO-3: Proposed dredged material may not be suitable for beach or surf zone disposal. If dredged material from upper Franklin and Santa Monica Creeks was not suitable for beach or surf zone disposal, this would be a significant but feasibly mitigated impact (Class II).

This impact addressed surf zone disposal of sediment removed from upper Franklin and Santa Monica Creeks by drag-line desilting. The proposed Updated Enhancement Plan includes surf zone disposal of this material instead of currently permitted upland disposal.

Impact GEO-4: Project grading and excavating associated with berm removal would result in a short-term increase in the amount of soil exposed to wind and water erosion. An increase in erosion could result in increased sedimentation and associated adverse impacts to water quality in the marsh and is considered a potentially significant but feasibly mitigated impact (Class II).

Berm removal is not currently proposed for implementation. Restoration Action R5 has been completed. In any case, the proposed Updated Enhancement Plan would not modify this impact.

Impact GEO-5: Berm removal would result in changes to the topography. Existing berms are mostly spoil piles resulting from sediment removal. Berm removal would return the on-site topography to a more natural condition. No significant impacts to topography would occur.

Berm removal is not currently proposed for implementation. In any case, the proposed Updated Enhancement Plan would not modify this impact.

5.5.2.3 Impacts of the Proposed Updated Enhancement Plan

The primary changes proposed as part of the Updated Enhancement Plan or changes in the regulatory or environmental setting or environmental baseline that would modify or result in additional impacts to geologic processes include:

- Surf zone disposal instead of upland disposal during drag-line desilting of upper Franklin Creek and Santa Monica Creek.
- Hydraulic dredging of upper Franklin Creek and Santa Monica Creek with surf zone disposal instead of drag-line desilting with upland disposal.
- Hydraulic dredging of lower Franklin Creek and the Main Channel with surf zone disposal.
- Hydraulic dredging of all major channels in the Marsh (Franklin Creek, Santa Monica Creek and the Main Channel) with surf zone disposal.
- Avenue Del Mar drainage system maintenance.

Proposed surf zone disposal of sediments removed by drag-line desilting is addressed under existing Impact GEO-3 (Class II). Channel excavation associated with maintenance of the proposed Avenue Del Mar drainage system may result in small berms along the channels but would not result in any slope stability or erosion hazards. Proposed surf zone disposal of sediments removed from these existing South Marsh channels is covered under existing Impact GEO-3.

Impact UP-GEO-1: The addition of hydraulic dredging as a routine maintenance component may modify the grain size composition of local beaches. The 2003 Final EIR addressed surf zone sediment disposal associated with one-time hydraulic dredging of 600 linear feet of the Main Channel (Restoration Action R6) which was completed during emergency hydraulic dredging in 2018. Impact GEO-3 (as discussed under Restoration Action R6) was based on hydraulic dredging and surf zone disposal of sediment having a fines content of two percent.

Since surf zone sediment disposal is not part of the environmental baseline, periodic hydraulic dredging is proposed as a new routine maintenance component of the Enhancement Plan. Hydraulic dredging (with surf zone disposal) is also proposed in the upper desilting area. Sediment to be removed in these areas may have a fines content up to 60 percent. The rate of sediment disposal is relatively low (typically about 1,000 cubic yards per day) and would be dispersed by wave action. However, repeated hydraulic dredging events that discharge to the same location may reduce the grain size at affected beaches over time such that reduced beach suitability for public use may occur. Therefore, geologic processes impacts associated with disposal of high fines content sediment on the beach is considered potentially significant (Class II).

Impact UP-GEO-2: Surf zone disposal of sediments removed from upper Franklin and Santa Monica Creeks and tidal channels in the South Marsh would contribute to beach nourishment and address local beach erosion. In contrast to the environmental baseline, the proposed project includes surf zone disposal of sediment at City Beach consistent with the Coastal Regional Sediment Management Plan, which would replace sediments lost to coastal erosion and contribute to reducing seasonal shoreline retreat at City Beach. This impact is considered beneficial (Class IV).

Impacts to paleontological resources were not addressed in the 2003 Final EIR. As discussed in Section 5.5.1.13, due to the lack any geologic formations within areas affected by the project, paleontological resources are not anticipated to be adversely affected. In addition, any isolated fossils washed into the Marsh by storm flows are unlikely to be present due to repeated excavation associated with construction and maintenance activities in the Marsh. Therefore, the Updated Enhancement Plan would not result in any impacts to paleontological resources.

Mitigation Measures

Mitigation measures provided in the 2003 Final EIR have been modified to address current conditions and the proposed Updated Enhancement Plan.

GEO-1. The following shall be implemented for all construction and maintenance activities in the Marsh.

a. Temporary berms and sedimentation traps, such as silt fencing, straw bales, and sandbags, shall be installed in association with project grading, excavations, and stockpiling of sediments to minimize erosion of soils and sedimentation into Marsh channels. The sedimentation basins and traps shall be cleaned periodically, and the silt shall be removed and disposed of in an unvegetated location, which is outside a wetland and in an area approved by the District.

b. All surface runoff shall be conveyed in accordance with the approved site drainage plans.

c. Grading and excavation shall not occur during the wet season (December 1-April 15) unless erosion control devices acceptable to the District are implemented.

Plan Requirements and Timing: Erosion control components shall be reviewed and approved by the District. These measures shall be implemented during construction and routine maintenance (as applicable).

MONITORING: The District shall verify compliance with this measure through site inspections.

GEO-2. Channel slopes shall be inspected during sediment removal operations to determine whether oversteepening has occurred. If so, such slopes shall be repaired to the original slope gradient of 2:1 to 3:1. **Plan Requirements and Timing**: Slope maintenance plans shall be reviewed and approved by the District. These measures shall be implemented during sediment removal operations.

MONITORING: The District shall verify compliance with this measure through site inspections.

GEO-3. Dredged or excavated sediment proposed for surf zone disposal shall be sampled and tested as per an approved Sampling and Analysis Plan. The sediment shall be approved for ocean disposal by the Southern California Dredged Material Management Team. **Plan Requirements and Timing:** The Sampling and Analysis Plan shall be completed and submitted to the Southern California Dredged Material Management Team sufficiently prior to planned disposal to allow review and approval.

MONITORING: The District shall conduct monitoring and reporting as required by the approved Sampling and Analysis Plan.

Implementation of Mitigation Measure BIO-10 addressing potential impacts of discharge of sediment with high fines content (turbidity and siltation of intertidal and nearshore habitats) would also address the potential project-related reduction in grain size at affected beaches.

5.5.2.4 Cumulative Impacts

Construction of many of the other projects listed in Section 4.6 would involve earthwork which would result in changes in topography and soil erosion which may cause increased siltation of the Marsh. The incremental contribution of the proposed project to increased siltation may be cumulatively considerable.

5.5.2.5 Residual Impacts

With implementation of mitigation measures identified in the 2003 Final EIR as modified (see above) and Mitigation Measure BIO-10, residual impacts of the Updated Enhancement Plan would be less than significant.

5.5.3 References

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5.6 WATER RESOURCES

This section presents a discussion of water resources issues associated with the proposed project. The analysis serves as an update to the information provided within the original 2003 Final EIR and addresses proposed changes to the Enhancement Plan.

5.6.1 Setting

5.6.1.1 Rainfall

Rainfall data has been collected at the Carpinteria Fire Station since 1948, yielding an average annual rainfall of 17.35 inches. Most of the rainfall (96 percent) occurs from October through April. Excluding the 2016/2017 rain year, annual rainfall recorded since 2011 has been below normal. However, rainfall recorded at the Carpinteria Fire Station during the 2018/2019 rain year was 17.89 inches or three percent above normal.

5.6.1.2 Tides

Tides enter Carpinteria Salt Marsh (Marsh) from the ocean and penetrate upstream through the Main Channel, Franklin Creek, Santa Monica Creek and tributary channels to the Nature Park, Basins 2 and 3, and a portion of South Marsh. Some high tides enter the southern portion of Basin 1 through channels constructed in 2005 as part of the implementation of the Enhancement Plan (Restoration Action R1). However, the capacity of these channels was substantially reduced by debris/sediment deposited in January 2018.

Tides in the Marsh are attenuated by a sand and cobble sill near the inlet. High tides in the Marsh reach approximately the same elevation as those in the ocean, but low tides are perched at mean sea level by effects of the sand and cobble flood tide bar. The bar acts as a sill to restrict ebbing tides and keeps low tidal elevations in the Marsh higher than would otherwise occur. The mean tide range (difference between mean higher high water and mean lower low water) in the ocean near the Marsh mouth is 5.4 feet.

Data from a tide gauge located in the Marsh at the Sandyland Cove Road bridge presented in the Wetland Enhancement Plan for Basin 1 and the South Marsh indicates tides in the Marsh appear to vary from a low of msl to a mean higher high tide of 2.6 feet above msl.

5.6.1.3 Description of Contributing Surface Waters

Based on the District's watershed map, three watersheds contribute surface flow into the Marsh; Santa Monica Creek, Franklin Creek and the Slough watershed.

Santa Monica Creek. This creek extends about five miles southward from the crest of the watershed to the Marsh, where it joins Franklin Creek to form the Main Channel, extending to the Marsh mouth (tidal inlet). The Santa Monica Creek watershed has been subdivided into two sub-watersheds composed of approximately 3,173 acres, and reaches an elevation of 3,853 feet above mean sea level (msl). A small storm water detention basin (1.2 stream miles upstream of the Marsh) and a large debris basin (1.5 stream miles upstream of the Marsh) have been constructed within this watershed. A stream flow gauge was in place approximately 4,800 feet upstream of the Marsh and recorded peak surface flows from 1969 to 1978. The largest peak flow recorded was 6,300 cubic feet per second (cfs) on December 27, 1971. The anticipated peak discharge during a 100-year storm event in Santa Monica Creek is estimated at 3,100 cfs (Fuscoe et al., 1991).

Franklin Creek. This creek extends about four miles southward from the foothills of the Santa Ynez Mountains to its confluence with Santa Monica Creek within the Marsh. The Franklin Creek watershed has been subdivided into 16 sub-watersheds composed of approximately 2,895 acres and reaches an elevation of 1,746 feet above msl. A stream flow gauge was in place approximately 2,900 feet upstream of the Marsh and recorded peak surface flows from 1971 to 1992. The largest peak flow recorded was 1,600 cfs on October 1, 1983. This stream gauge also provided daily stream flow data from 1970 to 1978, and indicated surface is typically present year-round with a monthly maximum of 2.7 cfs in February. The anticipated peak discharge during a 100-year storm event in Franklin Creek is estimated at 3,500 cfs (Fuscoe et al., 1991).

Slough Watershed. This watershed has been subdivided into six sub-watersheds and encompasses a 758-acre area west of the Santa Monica Creek watershed that drains into the Marsh.

Main Channel. Santa Monica Creek and Franklin Creek join within the Marsh to form the Main Channel where estimated peak flows during a 100-year event are 6,600 cfs.

5.6.1.4 Regulatory Background

Clean Water Act. In 1972, Congress amended the Federal Water Pollution Control Act, making the addition of pollutants to the waters of the United States (U.S.) from any point source unlawful unless the discharge is in compliance with a National Pollutant Discharge Elimination System (NPDES) permit. Known today as the Clean Water Act, Congress has amended it several times. The objective of the Clean Water Act is “to restore and maintain the chemical, physical, and biological integrity of the Nation’s waters”. In the 1987 amendments, Congress directed dischargers of storm water from municipal and industrial/construction point sources to comply with the NPDES permit scheme. Important Clean Water Act sections are:

- Sections 303 and 304 require states to promulgate water quality standards, criteria and guidelines.
- Section 401 requires an applicant for a federal license or permit to conduct any activity, which may result in a discharge to waters of the U.S., to obtain certification from the State that the discharge will comply with other provisions of the act.

- Section 402 establishes the NPDES, a permitting system for the discharges (except for dredge or fill material) of any pollutant into waters of the U.S.
- Section 404 establishes a permit program for the discharge of dredge or fill material into waters of the U.S., administered by the U.S. Army Corps of Engineers.

Consistent with the requirements of Clean Water Act Section 303(d) (approved 2016 list), the State Water Resources Control Board has identified the Marsh, Santa Monica Creek, Franklin Creek and the Pacific Ocean at Carpinteria State Beach as impaired waters because identified beneficial uses are not consistently supported (see Table 5.6-1).

Table 5.6-1. Impairments of Affected Waterbodies

Source of Impairment	Carpinteria Salt Marsh	Santa Monica Creek	Franklin Creek	Pacific Ocean at Carpinteria State Beach
Priority organics	X			
Nutrients	X			
Dissolved oxygen	X			
Fecal coliform bacteria		X	X	X
pH		X	X	
Nitrate			X	
E. coli bacteria			X	
Sodium			X	
Toxicity			X	

Porter-Cologne Water Quality Control Act. California's Porter-Cologne Act, enacted in 1969, provides the legal basis for water quality regulation within California. This Act requires a "Report of Waste Discharge" for any discharge of waste (liquid, solid or gaseous) to land or surface waters that may impair beneficial uses for surface and/or groundwater of the State. It predates the Clean Water Act and regulates discharges to waters of the State. Waters of the State include more than just waters of the U.S., such as groundwater and surface waters not considered waters of the U.S. Additionally, it prohibits discharges of "waste" as defined and this definition is broader than the Clean Water Act definition of "pollutant". Discharges under the Porter-Cologne Act are permitted by Waste Discharge Requirements and may be required even when the discharge is already permitted or exempt under the Clean Water Act.

Water Quality Control Plan, Central Coast Region. The California Porter-Cologne Act assigns the State Water Resources Control Board and Regional Water Quality Control Boards with the responsibility of protecting surface water and ground water quality in California. The project site is within the jurisdiction of the Central Coast Regional Water Quality Control Board (CCRWQCB).

Per the requirements of the Clean Water Act and the California Porter-Cologne Act, CCRWQCB has prepared a Water Quality Control Plan for the watersheds under its jurisdiction, last updated in June 2011. The Water Quality Control Plan has been designed to support the intentions of the Clean Water Act and the Porter-Cologne Act by (1) characterizing watersheds within the Central Coast Region; (2) identifying beneficial uses that exist or have the potential to exist in each water body; (3) establishing water quality objectives for each water body to protect beneficial uses or allow their restoration, and; (4) providing an implementation program that achieves water quality objectives. Implementation program measures include monitoring, permitting and enforcement activities.

Beneficial uses established by CCRWQCB in the Water Quality Control Plan for the Marsh, Santa Monica Creek, Franklin Creek and local coastal waters are provided in Table 5.6-2.

Table 5.6-2. Beneficial Uses of Affected Waterbodies

Beneficial Use	Carpinteria Salt Marsh	Santa Monica Creek	Franklin Creek	Coastal Waters*
Municipal and Domestic Supply		X	X	
Agricultural Supply		X	X	
Industrial Service Supply				X
Groundwater Recharge		X	X	
Navigation				X
Water Contact Recreation	X	X	X	X
Non-Contact Recreation	X	X	X	X
Marine Habitat				X
Wildlife Habitat	X	X	X	X
Cold Freshwater Habitat		X	X	
Warm Freshwater Habitat	X	X	X	
Migration of Aquatic Organisms	X		X	
Spawning, Reproduction and/or Early Development	X	X	X	
Biological Habitats of Special Significance	X	X		
Rare, Threatened or Endangered Species Habitat	X		X	X
Estuarine Habitat	X			
Freshwater Replenishment		X	X	
Commercial and Sport Fishing	X	X	X	X
Shellfish Harvesting				X

*Coal Oil Point to Rincon Point

The Water Quality Control Plan establishes general qualitative and/or quantitative water objectives that apply to all inland surface waters, estuaries and enclosed bays in the Central Coast Region. The general objectives pertain to the following water quality parameters: color, taste and odors, floating material, suspended material, settleable material, oil and grease, biostimulatory substances (e.g., nutrients), sediment, turbidity, pH, dissolved oxygen, temperature, toxicity pesticides, chemical constituents, other organics and radioactivity.

The Water Quality Control Plan also provides water quality objectives for specific beneficial uses such as municipal water supply, agriculture, cold freshwater aquatic life habitat, fish spawning habitat, recreation, etc. Water quality parameters of concern and numeric objectives vary considerably depending on the nature of the beneficial use. For example, objectives for municipal water supply and fish spawning habitat are much more stringent and apply to a greater number of parameters than those for agricultural or industrial water supply. Depending on the type of beneficial use, objectives can apply to parameters such as specific organic chemicals, heavy metals, inorganic ions, nutrients, pH, bacteria levels, temperature, dissolved oxygen, etc. In cases where multiple beneficial uses are designated for a given water body (as is the case for local water bodies), a combination of objectives apply, some of which are for the same parameters. In these cases, the most stringent objective for each water quality parameter applies to the water body.

Water Quality Control Plan, Ocean Waters of California (California Ocean Plan). The principal State regulatory document for ocean water quality is the California Ocean Plan (SWRCB, updated 2019). The California Ocean Plan sets forth water quality objectives for ocean waters to ensure the reasonable protection of beneficial uses and the prevention of nuisance. The California Ocean Plan includes water quality objectives for four categories, including bacterial characteristics, physical characteristics, chemical characteristics and biological characteristics.

Water quality objectives for bacterial characteristics include the following standards for waters with a designated beneficial use of water contact recreation (including coastal waters adjacent to the Marsh):

- Fecal coliform density of 400 colony-forming units per 100 milliliter (ml) (single sample maximum).
- Enterococcus density of 30 colony-forming units per 100 ml (30-day geometric mean).
- Enterococcus density of 110 colony-forming units per 100 ml (10 percent of samples collected in a calendar month).

Areas with a designated beneficial use of shellfish harvesting (including coastal waters adjacent to the Marsh) must meet the following standards:

- Median total coliform density of 70 colony-forming units per 100 ml.
- Total coliform density of 230 colony-forming units per 100 ml (10 percent of samples).

Water quality objectives for physical characteristics in the California Ocean Plan are:

- Floating particulates and grease and oil shall not be visible.
- The discharge of waste shall not cause aesthetically undesirable discoloration of the ocean surface.
- Natural light shall not be significantly reduced at any point outside the initial dilution zone as the result of the discharge of waste.
- The rate of deposition of inert solids and the characteristics of inert solids in ocean sediments shall not be changed such that benthic communities are degraded.
- Trash shall not be present in ocean waters, along shorelines or adjacent areas that adversely affect beneficial uses or cause nuisance.

Water quality objectives for chemical characteristics include the following standards as well as numeric objectives to protect marine aquatic life and human health.

- The dissolved oxygen concentration shall not at any time be depressed more than 10% from that which occurs naturally, as the result of the discharge of oxygen demanding waste materials.
- The pH shall not be changed at any time more than 0.2 unit from that which occurs naturally.
- The dissolved sulfide concentration of waters in and near sediments shall not be significantly increased above that present under natural conditions.
- The concentration of substances set forth in Chapter II, Table 1 (numeric water quality objectives) in marine sediments shall not be increased to levels which would degrade indigenous biota.
- The concentration of organic materials in marine sediments shall not be increased to levels that would degrade marine life.
- Nutrient materials shall not cause objectionable aquatic growths or degrade indigenous biota.

Water quality objectives for biological characteristics include the following standards:

- Marine communities, including vertebrate, invertebrate, algae and plant species, shall not be degraded.
- The natural taste, odor, and color of fish, shellfish, or other marine resources used for human consumption shall not be altered.
- The concentration of organic materials in fish, shellfish or other marine resources used for human consumption shall not bioaccumulate to levels that are harmful to human health.

Numerical water quality objectives for contaminants found in sediments of the Marsh are provided in Table 5.6-3.

Table 5.6-3. California Ocean Plan Numerical Water Quality Objectives (micrograms/liter)

Contaminant	Six Month Median	Daily Maximum	Instantaneous Maximum
Ammonia (as nitrogen)	600	2400	6000
Arsenic	8	32	80
Cadmium	1	4	10
Chromium (hexavalent)	2	8	20
Copper	3	12	30
Lead	2	8	20
Nickel	5	20	50
Selenium	15	60	150
Zinc	20	80	200
Mercury	0.04	0.16	0.4
PAH	30-day average: 0.0088		

Public Health Bacteriological Standards. Title 17 Section 7958 of the California Code of Regulations identifies public health standards for public beaches and other public water contact sports areas:

- 10,000 total coliform bacteria colonies per 100 ml.
- 1,000 total coliform bacteria colonies per 100 ml, if the ratio of fecal/total coliform exceeds 0.1.
- 400 fecal coliform bacteria colonies per 100 ml.
- 104 enterococcus bacteria colonies per 100 ml.

5.6.1.5 Ocean Water Quality

Water quality sampling is conducted weekly at 16 County beaches by the Santa Barbara County Public Health Department to identify exceedances of public health bacteriological standards and determine if beach closures are necessary. Beach water quality sampling and analysis is limited to bacterial contamination typically associated with human or animal waste; total coliform, fecal coliform and Enterococcus. High bacterial levels are associated with rainfall events which transport pollutants from the watersheds to the beaches. In the project area, storm water discharge from local drainages (including Toro Canyon Creek, Arroyo Paredon, the Marsh mouth and Carpinteria Creek) into the ocean during and following rainfall events results in high turbidity levels. A February 19, 2016 aerial photograph of the project area following a relatively small storm event (0.3 inches in 24 hours) shows a turbidity plume generated by storm water discharge extending 500 to 3,000 feet offshore from Arroyo Paredon southeast to beyond the Carpinteria Pier.

The District conducts limited ocean water quality sampling during desilting and dredging operations in the Marsh.

Table 5.6-4 provides a summary of beach water quality data from the vicinity of the Marsh prior to, during, and after emergency hydraulic dredging conducted in March and April 2018. The data presented in Table 5.6-4 was collected from five beach locations near the Marsh (see Figure 5.6-1):

- Sandyland 1: approximately 500 feet northwest (up-current) of the Marsh mouth, sampled prior to, during and after emergency hydraulic dredging.
- Sandyland 2: at the Marsh mouth and adjacent to the hydraulic dredging sediment slurry discharge site, sampled prior to, during and after emergency hydraulic dredging.
- Sandyland 3: approximately 900 feet east (down-current) of the Marsh mouth, sampled prior to, during and after emergency hydraulic dredging.
- Carpinteria City Beach, West Buffer: approximately 2,000 feet east (down-current) of the Marsh mouth and 400 feet west of the terminus of Ash Avenue, sampled following storm events and re-sampled as needed to determine when closed beaches can be opened.
- Carpinteria State Beach: approximately 1.1 miles east (down-current) of the Marsh mouth and adjacent to the outlet of Carpinteria Creek, sampled weekly throughout the year.

Data presented in Table 5.6-4 indicates that the Ocean Plan water quality objective and public health standard for Enterococcus was exceeded at the Sandyland 2 (Marsh mouth) sampling location for all samples taken from March 20 through April 5, 2018, following a series of storms from March 11 through March 24, 2018. In addition, the Enterococcus Ocean Plan water quality objective and public health standard was exceeded at the Sandyland 3 sampling location on March 29, 2018. Fecal coliform levels were also high at the Marsh mouth (63 to 259 colonies/100 ml) following storm events from March 11 through 24, 2018, but did not exceed the Ocean Plan water quality objective or public health standard.

During the period of Enterococcus exceedances, the Sandyland 2 sampling location was affected by both storm water discharge from the Marsh mouth and discharge of sediment slurry during hydraulic dredging. Bacteria levels measured when storm flows had subsided (after April 9, 2018) were substantially less than the Ocean Plan water quality objectives and similar to the Sandyland 1 sampling location, which is unlikely to be affected by dredge slurry discharge. These data suggest elevated bacteria concentrations recorded at nearby beaches during dredging conducted in March-April 2018 is primarily a consequence of storm water discharge and not hydraulic dredging.

Bacteria concentrations recorded during the dry season at Carpinteria State Beach are substantially below the California Ocean Plan water quality objectives; typically 10 colonies/100 ml or less for Enterococcus and 20 colonies/100 ml or less for fecal coliform.

BASIN 3

BASIN 2

BASIN 1

ESTERO WAY

UNION PACIFIC RAILROAD

R7

SEVENTH

N

Santa Monica Creek

SANDYLAND COVE RD

Main Channel

1

2

3

4

5

SOUTH MARSH

Franklin Creek

AVENUE DEL MAR

Sandyland 1

Sandyland 2

Sanyland 3

West Buffer

Pacific Ocean

SILVER SANDS MHP

SILVER SANDS MHP

SILVER SANDS MHP

FOURTH ST

CITY OF CARPINTERIA

NATURE PARK

THIRD ST

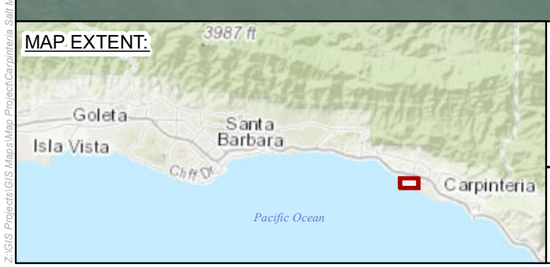
ASH AVE

HOLLY AVE

SANDYLAND RD

ELM AVE

MAP EXTENT:



LEGEND:

- Avenue Del Mar Drainage System Pilot Channel
- South Marsh Tidal Channel Re-establishment
- Floodwall
- Lower Desilting Area
- Upper Desilting Area
- Staging/Stockpile Area Expansion
- Surf Zone Disposal Area (Hydraulic Dredging)
- Surf Zone Disposal Area (Trucking)
- City of Carpinteria Boundary
- Assessor Parcel Boundary
- Beach Sand Sampling Site
- Marsh Sediment Sampling Site
- Ocean Water Sampling Site
- FEMA National Flood Hazard Layer (NFHL)

0 150 300
FEET

Source: Google Earth Imagery May 2018, Esri Online Topo Basemap, County of Santa Barbara, FEMA
Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet
Notes: This map was created for informational and display purposes only.

padre associates, inc.
ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

PROJECT NAME:	UPDATED CARPINTERIA SALT MARSH ENHANCEMENT PLAN SANTA BARBARA COUNTY, CA
PROJECT NUMBER:	1802-3401
DATE:	November 2019

FLOOD HAZARD AND SAMPLING SITE LOCATION MAP

FIGURE 5.6-1

Z:\GIS Projects\GIS Maps\Map Project\Carpinteria Salt Marsh Enhancement Plan\Flood Hazard and Sampling Site Location Map.mxd 11/18/2019

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Table 5.6-4. Ocean Water Quality Bacteria Data Collected during Hydraulic Dredging (March 19-April 30, 2018)

Date	Dredging Activity	Recent Rain (")	Fecal Coliform				Enterococcus			
			Sandyland 1	Sandyland 2	Sandyland 3	State Beach	Sandyland 1	Sandyland 2	Sandyland 3	State Beach
3/7/18	None	0.86 (3/2-3/3)	<10 (City Beach, west buffer)			20	<10 (City Beach, west buffer)			187
3/12/18	None	0.91 (3/11)	--	--	--	20	--	--	--	31
3/19/18	Part day	0.90 (3/14-3/17)	--	--	--	41	--	--	--	171
3/20/18	Part day	None since 3/17	10	259	10	--	10	457	10	--
3/27/18	Whole day	3.38 (3/21-3/24)	10	63	10	--	160	412	10	--
3/29/18	Whole day	None since 3/24	10	97	10	--	10	464	228	--
4/2/18	Whole day	0.01	--	--	--	73	--	--	--	158
4/3/18	Whole day	0.01 (4/2)	41	52	10	--	146	187	63	--
4/4/18	Whole day	None	--	--	--	86	--	--	--	488
4/5/18	Whole day	None	31	119	816	--	171	336	10	--
4/9/18	Whole day	None	--	--	--	4611	--	--	--	410
4/10/18	Whole day	None	10	10	10	--	10	10	10	--
4/11/18	Whole day	None	--	--	--	10	--	--	--	10
4/12/18	Whole day	None	10	20	10	--	10	10	20	--
4/16/18	Part day	None	10	52	10	10	10	84	63	10
4/23/18	Part day	0.04 (4/19)	10	10	10	10	10	10	41	10
4/26/18	Part day	None	41	20	10	--	132	86	41	--
4/30/18	Part day	None	--	--	--	20	--	--	--	20
5/1/18	None	None	10	10	10	--	20	10	10	--

Sandyland data collected by the District
Carpinteria State Beach and City Beach data collected by the Santa Barbara County Public Health Department

5.6.1.6 Beach Sediment (Sand) Quality

Beach sand at the Carpinteria City Beach (at the terminus of Ash Avenue, see Figure 5.6-1) was sampled and analyzed for metals and organic compounds (including polynuclear aromatic hydrocarbons [PAH] and pesticides) in January and February 2018. Table 5.6-5 provides a summary of these data as compared to the National Oceanic and Atmospheric Administration (NOAA) screening values for marine sediment. Excluding nickel, all measured contaminant concentrations in beach sand were well below screening values.

Table 5.6-5. Carpinteria City Beach Sediment Analysis Results (mg/kg, dry)

Parameter	NOAA Marine Sediment Screening Value[1]		January 23, 2018	January 26, 2018	January 29, 2018	February 5, 2018
	ERL[2]	ERM[3]				
Ammonia (as nitrogen)[4]	--	--	31	47	70	160
Arsenic	8.2	70.0	2.5	3.7	3.1	5.1
Cadmium	1.2	9.6	0.12	ND[5]	0.24	ND
Chromium	81.0	370.0	4.9	14	21	13
Copper	34.0	270.0	8.1	10	8.9	11
Lead	46.7	218.0	5.3	7.4	6.6	11
Nickel	20.9	51.6	17	29	45	12
Selenium[6]	4.1		0.18	ND	ND	ND
Zinc	150.0	410.0	31	39	37	33
Mercury	0.15	0.71	0.016	0.024	0.021	0.026
Total PAH	4.022	44.792	0.048	0.072	0.26	0.18

[1] NOAA Screening Quick Reference Tables (SQuiRTs)
[2] ERL: Effects Range-Low
[3] ERM: Effects Range-Medium
[4] Ammonia marine standards limited to water (6 mg/L instantaneous maximum)
[5] Not detected
[6] Marine sediment values not established; value represents soil screening value for invertebrates

5.6.1.7 Surface Water Quality

Surface water quality data from Santa Monica Creek and Franklin Creek just upstream of the Marsh obtained from the Central Coast Ambient Monitoring Program indicates:

- Chlorpyrifos concentrations in Santa Monica Creek exceed the aquatic life goal (2001-2002 data).
- Fecal coliform concentrations in Santa Monica Creek exceeded the human health goal and Water Quality Control Plan objective on numerous occasions between 2001 and 2008.

- Nitrate concentrations in Santa Monica Creek exceeded the human health goal (2001-2008 data).
- Chlorpyrifos and diazinon concentrations in Franklin Creek exceeded the aquatic life goal (2013-2014 data).
- Copper, selenium and silver concentrations exceeded the aquatic life goal in Franklin Creek (2013-2014 data).
- Fecal coliform concentrations in Franklin Creek exceeded the human health goal and Water Quality Control Plan objective on numerous occasions between 2001 and 2015.
- Nitrate concentrations in Franklin Creek exceeded the human health goal (2001-2015 data).

5.6.1.8 Marsh Sediment Sampling Data

Sediment within the Marsh was sampled and analyzed for metals and organic compounds (including PAH and pesticides) at five locations (see Figure 5.6-1) on February 22, 2018 in anticipation of emergency debris/sediment removal (hydraulic dredging). Table 5.6-6 provides a summary of these data as compared to NOAA screening values for marine sediment. Excluding nickel, all measured contaminant concentrations in Marsh sediment are well below screening values. Note that nickel concentrations as high as 32 micrograms per liter has been found in surface water of Franklin Creek upstream of the Marsh (Central Coast Ambient Monitoring Program) and contribute to nickel found in Marsh sediments.

5.6.1.9 Groundwater Supplies

The Marsh lies within the Carpinteria Valley sub-area of the South Coast Hydrologic Area, which includes the City of Carpinteria and the coastal plain from Toro Canyon on the west to Rincon Creek on the east. The Carpinteria Valley is served by the Carpinteria Valley Water District (CVWD), which develops water supplies from Cachuma Lake, the State Water Project and the Carpinteria Groundwater Basin. Not all users take delivery from CVWD, as a significant number of agricultural users rely on their own wells.

The Carpinteria Groundwater Basin underlies approximately 12 square miles of the Carpinteria Valley. The Carpinteria Basin comprises two aquifers that extend from beyond the Ventura County line on the east, to Toro Canyon on the west. Total storage in the aquifer is estimated to be approximately 700,000 acre-feet. The two aquifers are separated by the Rincon Creek Fault and are called Storage Unit 1 and Storage Unit 2. Storage Unit No. 1 exhibits both higher water quality and storage capacity. The estimated total storage capacity of Unit No. 1 is 575,000 acre-feet. Overall, pumping from the basin has not approached the estimated perennial yield since the drought in the early 1990s, as reflected by the recovery of generally high water levels.

Table 5.6-6. Main Channel Sediment Analysis Results (mg/kg, dry)

Contaminant	NOAA Marine Sediment Screening Value[1]		Sample 1	Sample 2	Sample 3	Sample 4	Sample 5
	ERL[2]	ERM[3]					
Ammonia (as nitrogen)	--	--	13	54	42	24	38
Arsenic	8.2	70.0	2.5	4.4	2.8	3.3	3.1
Cadmium	1.2	9.6	0.16	0.20	0.15	0.16	0.18
Chromium	81.0	370.0	20	22	21	18	21
Copper	34.0	270.0	6.7	16	8.6	12	12
Lead	46.7	218.0	5.4	2.1	3.7	1.6	2.2
Nickel	20.9	51.6	15	28	21	17	20
Selenium[4]	4.1		0.21	0.22	0.42	0.37	0.18
Zinc	150.0	410.0	25	56	31	36	40
Mercury	0.15	0.71	0.020	0.028	0.014	0.017	0.022
Total PAH	4.022	44.792	0.024	0.096	0.057	0.050	0.056

[1] NOAA Screening Quick Reference Tables (SQuiRTs)
[2] ERL: Effects Range-Low
[3] ERM: Effects Range-Medium
[4] Marine sediment values have not been established, value represents soil screening value for invertebrates

Under the authority of State Assembly Bill 3030, the CVWD adopted a Management Plan in order to establish its role as manager for the Carpinteria Basin. This Plan provides direction for the CVWD as the managing entity for the Carpinteria Basin. Elements of the plan include; water level and quality monitoring, sanitary seal retrofit program, abandoned well destruction program, educational goals and a well inventory database.

The CVWD has prepared, with the assistance of its consulting hydrogeologists, a water budget calculation covering the past 80 years. This water budget, calculated using commonly accepted hydrogeologic practices, shows long-term recharge (inflow) and discharge (outflow) in the Basin are essentially in balance at approximately 4,000 acre-feet per year. While this is true over the long-term, the Basin does experience short-term periods of depletion (during dry periods) or accumulation (during wet periods) of water in storage. These short periods of depletion are not considered overdraft.

The CVWD conducted a multiple dry water year assessment of groundwater and Cachuma surface water as part of its Urban Water Management Plan 2016 Update. This assessment indicates that the CVWD would have an estimated net surplus of approximately 277 acre-feet in 2020. Thus, no deficit was observed during this multiple dry water year assessment of supplies and demands. Overall, the Carpinteria area has current and future water supplies are sufficient to meet current and expected future demand.

5.6.1.10 Groundwater Monitoring

The CVWD monitors the hydrologic health of the Carpinteria Basin by measuring approximately 35 wells for static water level every two months. These data are compared to mean sea level and plotted against time, which allows the staff and consulting hydrogeologists to assess the accretion or depletion of water stored in the Basin. Along with other information such as rainfall, stream flows and water extraction estimates, the CVWD makes estimates on changes to the water in storage annually. The CVWD also monitors the quality of the water in the Basin using most of the same wells used to measure water levels. Two samples are collected every year from about 30 wells, and the samples are analyzed for 15 inorganic constituents including nitrates, chlorides, sodium and five physical properties such as pH, total dissolved solids and alkalinity.

These data allow the staff and consulting hydrogeologists to assess potential issues such as seawater contamination or pollution from surface activities. In addition to the 30 private wells, the CVWD analyzes water quality from four CVWD-owned wells regularly. Constituents including volatile organic compounds, synthetic organic compounds and radionuclides are measured in addition to many inorganic constituents.

5.6.1.11 Flooding

Based on Federal Emergency Management Agency Flood Insurance Rate Maps (FIRM panels 06083C1418H and 06083C419H, effective 9/28/18), the Marsh is located within the floodway (Zone AE, with 100-year floodwater elevation of 8 feet above msl) (see Figure 5.6-1). In addition, properties along Avenue Del Mar and Sand Point Road are subject to flooding by a 1 percent annual chance storm event. Adjacent areas of the City of Carpinteria are located with the 0.2 percent annual chance flood hazard area, mostly east of Holly Street and immediately north of the Marsh and east of Santa Monica Creek.

5.6.2 Impact Analysis and Mitigation Measures

5.6.2.1 Thresholds of Significance

Significance criteria for water resources were determined based on the 2019 State CEQA Guidelines (Appendix G), the County's Environmental Thresholds and Guidelines Manual (Groundwater Thresholds and Surface and Storm Water Quality Significance Guidelines).

State CEQA Guidelines – Hydrology/Water Quality

- Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality (including the water quality objectives of the California Ocean Plan).
- Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin.

- 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 result in substantial erosion or siltation on- or off-site; substantially increase the rate or amount of surface run-off which would result in flooding on- or off-site; create or contribute run-off water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted run-off.
- In a flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation.
- Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

County's Environmental Thresholds and Guidelines Manual (Groundwater).

- New groundwater production that would result in overdraft of a bedrock aquifer.
- Adverse environmental effects associated with overdraft of an alluvial groundwater basin including water quality degradation, saltwater intrusion, land subsidence, loss of well yield, well interference, and reduction in surface water available to support biological resources.

County's Environmental Thresholds and Guidelines Manual (Surface and Storm Water Quality).

A significant water quality impact is presumed to occur if the project:

- Is located within an urbanized area of the County and the project construction or redevelopment individually or as part of a larger common plan of development or sale would disturb 1 or more acres of land.
- Increases the amount of impervious surfaces on a site by 25 percent or more.
- Results in channelization or relocation of a natural drainage channel.
- Results in removal or reduction in riparian vegetation or other vegetation from the buffer zone of any streams, creeks or wetlands.
- New industrial facility regulated under NPDES Phase I Industrial Storm Water Regulations.
- Discharges pollutants that exceed water quality standards set forth in the applicable NPDES permit, Basin Plan, or otherwise impairs beneficial uses.
- Results in a discharge of pollutants into an impaired waterbody as designated under Section 303(d) of the CWA,
- Results in a discharge of pollutants of concern to a receiving waterbody, as identified by the RWQCB.

5.6.2.2 Impacts of the Existing Carpinteria Salt Marsh Enhancement Plan

The following summarizes the water resources impacts identified in the 2003 Final EIR prepared for the existing Enhancement Plan.

Impact HYDRO-1: The flood risk would be decreased relative to the current situation, with the 100-year flood contained within the channels and basins of the Marsh, with a freeboard of less than 3 feet. This is a beneficial impact (Class IV), associated with increased floodwall and bank height along Franklin Creek as compared to existing conditions.

Construction of floodwalls and berms has been completed. The proposed Updated Enhancement Plan would not alter the beneficial impact of increased freeboard.

Impact HYDRO-3: The proposed project would tend to increase tidal flushing, causing a slight improvement in water quality within the Marsh. This is a beneficial impact (Class IV) associated with modification of the tidal inlet channel which would improve tidal connections with the Main Channel, Santa Monica Creek, Franklin Creek, and Basins 1 and 2.

The tidal inlet channel was modified, and the Marsh mouth opened as part of emergency sediment removal in March-April 2018. This beneficial impact of improved tidal flushing would be augmented by periodic dredging of the Main Channel as part of the proposed Updated Enhancement Plan (see Section 5.6.2.3).

Impact HYDRO-4: There is a potential for extensive turbidity plumes to develop in the nearshore if unexpectedly fine sediments are encountered during construction. This localized increase in turbidity is not expected to result in significant impacts to water quality in the area based on the relatively localized nature of the predicted turbidity plumes and the rapid diluting capacity of the open ocean. There is however a potential for more extensive turbidity plumes to develop if unexpectedly fine sediments are encountered during construction. This would be a potentially significant but feasibly mitigated impact (Class II).

This analysis was based on the assumption that beach or surf zone disposal of sediment would be limited a maximum fines content of 25 percent. The proposed Updated Enhancement Plan would result in the disposal of sediment with higher fines content. Changes in turbidity impacts are addressed in Section 5.6.2.3.

Impact HYDRO-5: Beach or surf zone disposal of dredged sediment would bury the intertidal communities that live on the sand where sediment is placed and the organisms that live on rocky intertidal or subtidal habitats. The impacts of burial in these areas were determined to be adverse, but less than significant (Class III) because sediment deposition of a few inches would have little impact on hard bottom communities in the area.

This analysis was based on an assessment by Chambers Group for a 100,000 cubic yard beach nourishment project at Ash Avenue. The proposed maximum sediment disposal volume is 60,000 cubic yards (hydraulic dredging all major channels in the Marsh in a single year), which would not exceed this value. Therefore, no additional or modified impacts would occur.

Impact HYDRO-6: Contaminants within sediment could potentially be disposed of on the beach or in the surf zone. Chemical testing of sediments in Basin 1 in 1994 yielded no contamination above State standards and very low levels of constituents overall. Therefore, dredged materials are suitable for unrestricted on-site reuse or upland disposal. Processes in Basin 1 and Basin 3 are sufficiently similar to result in conditions that should be consistent throughout the Marsh. It is possible that the sediment may be influenced by runoff from upland sources during storms that could compromise its chemistry. Additionally, preliminary geotechnical investigations suggest that much of the material associated with maintenance dredging within Franklin and Santa Monica creeks would have too high a fines content to be suitable for beach or surf zone placement, based on requirements of the Corps. The receiving beach contains primarily fine to silty fine sand; the materials deemed to be unsuitable for beach or surf zone placement were largely clayey silt, silty clay, and clayey sand. This is a significant but feasibly mitigated impact (Class II). If the sediments are found to be unsuitable for beach or surf zone disposal, they would be disposed of at an upland site, and no turbidity impacts would occur.

This analysis has been updated in Section 5.6.2.3 based on recent sediment testing results and disposal of sediments with a high fines content.

Impact HYDRO-7. Short-term, turbidity impacts within the Marsh channels would occur during the channel dredging operations. Turbidity impacts would occur over a narrow area, and turbidity levels are anticipated to be similar to or less than those occurring after normal winter rainfall events. Hydrological impacts, therefore, would be less than significant (Class III).

The proposed Updated Enhancement Plan would increase the channel area affected by dredging. Modified impacts are addressed in Section 5.6.2.3.

Impact HYDRO-8: Removing the sand stockpile from the vicinity of the tidal inlet as part of creating the new inlet channel is anticipated to result in a significant decrease in sediment sources within the Marsh, so that the mouth of the Main Channel and the main channel of Basin 3 would be less subject to siltation than they are now. This is a beneficial impact (Class IV).

The sand stockpile was removed and the Marsh mouth opened as part of emergency sediment removal in March-April 2018. This beneficial impact of reduced siltation would not be modified by the proposed Updated Enhancement Plan.

Impact HYDRO-9: Overflow into Basins 1, 2, and 3 would occur slightly more frequently than under current conditions, increasing flood-related sediment deposition in these basins and side channels. This results from the berm removal actions, which increase flood routing to the basins in the Marsh. However, this deposition would be small less than 6 inches for a 100-year flood event. This impact is adverse, but less than significant (Class III).

Berm removal is not currently planned for implementation. In any case, the proposed Updated Enhancement Plan would not modify this component.

Impact HYDRO-10: The planned improvements to the tidal connections (Restoration Action R1) would increase the quantity of floodwater that is routed from the creeks to the Marsh basins, thereby decreasing the peak water levels in the creeks and decreasing the flood risk. This is a beneficial impact (Class IV).

Restoration Action R1 has been completed such that the proposed Updated Enhancement Plan would not modify this beneficial impact.

Impact HYDRO-11: Restoration Action R3 would decrease the flood risk. The planned tidal connection to the Main Channel would increase the quantity of flood water that is routed to the South Marsh from this channel, thereby decreasing the peak water level in the estuary. This would be a beneficial impact (Class IV).

Restoration Action R3 has been completed. However, proposed routine maintenance of the tidal channels in the South Marsh under the Updated Enhancement Plan would ensure this beneficial impact occurs in the long-term (see Section 5.6.2.3).

Impact HYDRO-13: Restoring or improving tidal circulation within the basins of the Marsh (Restoration Action R1) would improve the long-term water quality within the basins while not impacting water quality elsewhere in the Marsh. This is a beneficial impact (Class IV).

Restoration Action R1 has been completed such that the proposed Updated Enhancement Plan would not modify this beneficial impact.

Impact HYDRO-14: Some scouring or sedimentation would occur within newly created or restored tidal channels (Restoration Action R1). These impacts would be less than significant (Class III).

Restoration Action R1 has been completed such that the proposed Updated Enhancement Plan would not modify this less than significant impact.

Impact HYDRO-15: Increasing the tidal prism of the Marsh or otherwise improving tidal flushing (Restoration Action R2) would tend to increase current speeds within the main channel of Basin 3, which would decrease the tendency for ocean-derived sediments to be trapped within Basin 3. However, it is to be expected that maintenance dredging within the channel would be required from time to time, as in the present situation. The decrease in sediment trapping is a beneficial impact (Class IV).

Restoration Action R2 would not be modified by the proposed Updated Enhancement Plan. Therefore, no changes to this beneficial impact would occur.

Impact HYDRO-16: Historical long-term sediment build-up within the Marsh would be offset by implementation of Restoration Action R4, although there would be no effect on the future rate of sedimentation. This is a beneficial impact (Class IV).

Restoration Action R4 would not be modified by the proposed Updated Enhancement Plan. Therefore, no changes to this beneficial impact would occur.

5.6.2.3 Impacts of the Proposed Updated Enhancement Plan

The primary changes proposed as part of the Updated Enhancement Plan or changes in the regulatory or environmental setting or environmental baseline that would modify or result in new water resources impacts include:

- Surf zone disposal instead of upland disposal during drag-line desilting of upper Franklin Creek and Santa Monica Creek.
- Hydraulic dredging of upper Franklin Creek and Santa Monica Creek with surf zone disposal instead of drag-line desilting with upland disposal.
- Hydraulic dredging of lower Franklin Creek and the Main Channel with surf zone disposal.
- Hydraulic dredging of all major channels in the Marsh (Franklin Creek, Santa Monica Creek and the Main Channel) with surf zone disposal.
- Avenue Del Mar drainage system maintenance.

Impact UP-HYDRO-1: The proposed addition of surf zone disposal of sediments removed by drag-line desilting as a routine maintenance component would result in exceedances of the Ocean Plan water quality objective for turbidity-based aesthetic discoloration. The water quality impacts of surf zone disposal of sediments were addressed under Impact HYDRO-4 in the 2003 Final EIR. However, this analysis was based on disposal of “beach quality material”, which was assumed to be a maximum of 25 percent fines. The project description of the 2003 Final EIR stated sediment from Franklin Creek and Santa Monica Creek is not suitable for surf zone disposal. As surf zone disposal of sediment removed from the Marsh is not part of the environmental baseline, this is considered a new component. Surf zone disposal would include a maximum of 40,000 cubic yards per year with a fines content of up to 60 percent.

Based on February 9, 2019 oblique aerial photographs taken by a drone during surf zone disposal of sediment from local debris basins, the area of noticeably increased turbidity extended up to 500 feet offshore and about 1,500 feet along the shoreline. Observations by District staff indicate the increased turbidity declined to near background levels within 12 to 24 hours of the termination of disposal. Ocean Plan water quality objectives for bacteria, siltation, dissolved oxygen, pH and numerical water quality objectives are unlikely to be exceeded by this activity because:

- Based on available ocean water quality data, discharge of a sediment slurry to the surf zone would not cause bacteria water quality objectives to be exceeded (see Section 5.6.1.5).
- The rate of deposition of inert solids is not anticipated to degrade benthic communities due to rapid dispersal by surf action.
- Changes in dissolved oxygen concentration or pH are not anticipated due to rapid dispersal of sediments by surf action.
- Numerical water quality objectives (including ammonia and nickel) would not be exceeded (see discussion under Impact UP-HYDRO-2).

However, surf zone disposal of sediments may exceed Ocean Plan water quality objectives by causing aesthetically undesirable discoloration of the ocean surface and reduce natural light outside the dilution zone. Consistent with the findings of Impact HYDRO-4 of the 2003 Final EIR, water quality impacts associated with surf zone disposal of higher fines content sediment is considered potentially significant (Class II).

Impact UP-HYDRO-2: The proposed use of hydraulic dredging instead of drag-line desilting of upper Franklin and Santa Monica Creeks during routine maintenance would result in exceedances of the Ocean Plan water quality objective for turbidity-based aesthetic discoloration. The maximum amount of sediment to be removed from upper Franklin and Santa Monica Creeks during routine maintenance and disposed of would be the same as assessed in the 2003 Final EIR (40,000 cubic yards). Under the Updated Enhancement Plan, dredged sediment with a fines content of up to 60 percent would be disposed in the surf zone as a sediment/water slurry.

Ammonia. Testing of Marsh sediments from the Main Channel (see Table 5.6-6) indicates these sediments contain reduced forms of nitrogen associated with decaying organic material in an anoxic (low oxygen) environment. Unionized ammonia (NH_3) can be harmful to aquatic life (as noted in the Ocean Plan) and may be released to the water column during discharge of the sediment/water slurry to the surf zone. Sediments removed by the dredge would be diluted at least 2:1 with overlying water and discharged in the surf zone, where the sediment/water slurry would immediately contact waters of the surf zone or run down the wet sand to the surf zone, to be agitated and distributed by wave action. The contact with ambient air and oxygenated waters of the surf zone would rapidly oxide the ammonia to nitrates and forms of organic nitrogen.

Tramontano and Bohlen (1984) studied the geochemistry of dredge discharge plumes and found that ammonia concentrations exceeded background levels by as much as two to nine times, but water column concentrations of ammonia did not exceed 291.2 micrograms per liter, which is substantially less than daily maximum water quality objective of the Ocean Plan (2,400 micrograms per liter).

Dredge plume modeling of sediment disposal with an average concentration of 110.9 mg/kg ammonia yielded an average dissolved water column concentration of 770 micrograms per liter, which is much less than the Ocean Plan daily maximum water quality objective (San Francisco Estuary Institute, 2008). As the ammonia concentration of the Main Channel sediments (see Table 5.6-6) is 54 mg/kg or less, water column concentrations are expected to be much less than 770 micrograms per liter. Since project-related elevated ammonia concentrations in receiving waters are not expected to exceed the daily maximum water quality objective for ammonia, impacts are considered less than significant (Class III).

Nickel. Testing of Marsh sediments from the Main Channel indicates these sediments contain concentrations of nickel that slightly exceed the NOAA screening table values for "Effects Range-Low" (see Table 5.6-6) for sediments (not ocean water). This benchmark is based on a data base of marine sediment chemistry and bioassay data. Dredging and disposal of Marsh sediment in the surf zone has the potential to increase nickel concentrations in the water column. Heavy metals such as nickel mostly occur as sulfides in anoxic sediments, which have a low solubility. When the sediment is removed by dredging and discharged to the ocean, these sulfides are slowly oxidized then quickly scavenged by iron and manganese hydroxides or complexed with organic matter.

Overall, only a small fraction of heavy metals present in sediment becomes dissolved in the water column (San Francisco Estuary Institute, 2008). Dredge plume modeling of sediment disposal where 94 percent of the samples exceeded the Effects Range-Medium screening value for nickel (51.6 mg/kg) yielded an average dissolved water column concentration of 2.31 micrograms per liter, which is much less than the daily maximum water quality objective (20 micrograms per liter) (San Francisco Estuary Institute, 2008). Due to relatively low concentrations of nickel (below the Effects Range-Medium screening value) in affected sediments, relatively low discharge rate (average of 100 cubic yards per hour), high rate of dispersal and dilution in the surf zone and very low solubility of nickel, Ocean Plan water quality objectives for nickel are not anticipated to be exceeded. Therefore, the potential impacts of elevated nickel concentrations in receiving waters is considered less than significant (Class III).

Other Water Quality Objectives. Based on aerial photographs taken during emergency dredging of lower Franklin Creek and the Main Channel on April 12, 2018, the area of noticeably increased turbidity was about 25 acres (up to 500 feet offshore and about 3,800 feet along the shoreline). Observations by District staff indicate the increased turbidity declined to near background levels within 12 to 24 hours of the termination of sediment slurry discharge. Ocean Plan water quality objectives for bacteria, siltation, dissolved oxygen and pH are unlikely to be exceeded by this activity because:

- Based on available ocean water quality data, discharge of a sediment slurry to the surf zone would not cause bacteria water quality objectives to be exceeded (see Section 5.6.1.5).

- The rate of deposition of inert solids is not anticipated to degrade benthic communities due to rapid dispersal by surf action.
- Changes in dissolved oxygen concentration or pH are not anticipated due to rapid dispersal of sediments by surf action.

However, surf zone disposal of a sediment slurry may exceed Ocean Plan water quality objectives by causing aesthetically undesirable discoloration of the ocean surface and reduce natural light outside the dilution zone. Therefore, turbidity-related water quality impacts are considered potentially significant (Class II).

Impact UP-HYDRO-3: The addition of hydraulic dredging of lower Franklin Creek and the Main Channel and dredging all major channels in a single year as new routine maintenance components would increase the channel area affected by short-term turbidity impacts. Impact HYDRO-7 of the 2003 Final EIR addressed short-term turbidity impacts within dredged channels. Periodic hydraulic dredging of lower Franklin Creek and the Main Channel is proposed as a new routine maintenance component of the Enhancement Plan and would increase the area affected by these impacts. In addition, hydraulic dredging of all major channels in a single year is proposed as a new component of the Enhancement Plan. As discussed in the 2003 Final EIR, turbidity generated by channel dredging would be localized, short-term and similar to conditions present following storm run-off events. Therefore, this impact is considered less than significant (Class III).

Impact UP-HYDRO-4: The addition of hydraulic dredging of lower Franklin Creek and the Main Channel and dredging all major channels in a single year as new routine maintenance components would result in exceedances of the Ocean Plan water quality objective for turbidity-based aesthetic discoloration. Recent testing (see Table 5.6-6) indicate Marsh sediments contain nickel and reduced forms of nitrogen such that discharge of a sediment slurry to the ocean could result in elevated ammonia and nickel concentrations. However, as discussed under Impact UP-HYDRO-2, dredging-related exceedances of Ocean Plan water quality objectives for ammonia and nickel are not anticipated. However, surf zone disposal of a sediment slurry may exceed Ocean Plan water quality objectives by causing aesthetically undesirable discoloration of the ocean surface and reduce natural light outside the dilution zone. Therefore, water quality impacts are considered potentially significant (Class II).

Impact UP-HYDRO-5: The addition of channel excavation in the South Marsh as routine maintenance of the Avenue Del Mar drainage system would reduce flood risk and improve tidal circulation. Proposed routine maintenance of the tidal channels in the South Marsh would reduce flood risk for residences on Avenue Del Mar. This activity would also improve tidal circulation which would benefit water quality in the Main Channel and possibly reduce flood water elevations in the Main Channel and lower Franklin Creek during periods of storm run-off. These impacts to flood risk and water quality are considered beneficial (Class IV).

Impact UP-HYDRO-6: Surf zone disposal of sediments generated by re-establishment of tidal channels in the South Marsh would result in exceedances of the Ocean Plan objective for turbidity-based aesthetic discoloration. As discussed under Impact UP-HYDRO-1, surf zone disposal of sediments may exceed Ocean Plan water quality objectives by causing aesthetically undesirable discoloration of the ocean surface and reduce natural light outside the dilution zone. Consistent with the findings of Impact HYDRO-4 of the 2003 Final EIR, water quality impacts associated with surf zone disposal of higher fines content sediment is considered potentially significant (Class II).

Mitigation Measures

Mitigation Measure HYDRO-1 provided in the 2003 Final EIR has been deleted because dredged material disposal is not currently regulated solely by the Regional Water Quality Control Board. Implementation of Mitigation Measure GEO-3 (see Section 5.5.2.3) would ensure water quality impacts are reduced to the satisfaction of regulatory agencies as represented by the Southern California Dredged Material Management Team.

In addition, implementation of Mitigation Measure BIO-10 (see Section 5.3.2.3) addressing potential impacts of discharge of sediment with high fines content (turbidity and siltation of intertidal and nearshore habitats) would also address turbidity-related exceedances of the water quality objectives of the California Ocean Plan.

5.6.2.4 Cumulative Impacts

Construction of the other projects listed in Section 4.6 may result in inadvertent discharge of fuel, lubricants, coolant or other contaminants that may degrade the water quality of the Marsh. Operation of some of these other projects would result in the discharge of storm water into the Marsh which may contain hydrocarbons, herbicides or fertilizers that may degrade the water quality of the Marsh. The incremental contribution of the proposed project to degraded water quality of the Marsh may be cumulatively considerable.

Impervious surfaces associated with some of these other projects would result in an increase in peak storm water flows into the Marsh which may increase flood risk to adjacent land uses. The proposed project would be beneficial with respect to flooding hazards and would not incrementally contribute to this cumulative impact.

5.6.2.5 Residual Impacts

With implementation of mitigation measures identified in the 2003 Final EIR as modified (see above) and Mitigation Measure BIO-10, residual impacts of the Updated Enhancement Plan would be less than significant.

5.6.3 References

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5.7 NOISE AND VIBRATION

This section presents a discussion of noise and vibration issues associated with the proposed project located in the southern coastal portion of the County. The analysis serves as an update to the information provided within the original 2003 Final EIR and addresses proposed changes to the Enhancement Plan.

5.7.1 Setting

5.7.1.1 Project Noise Environment

The noise environment of areas potentially affected by the proposed project is dominated by traffic noise generated by U.S. Highway 101 as well as local traffic on Carpinteria Avenue and other adjacent roadways. In addition, the Union Pacific Railroad tracks are located immediately north of the Marsh and rail noise dominates the noise environment for periods during train pass-throughs.

Noise-Sensitive Land Uses. Noise sensitive land uses in close proximity to the Marsh include residential land uses and one school:

- Residences along Sand Point Road (Santa Barbara County).
- Residences along Avenue Del Mar (Santa Barbara County).
- Residences along Carpinteria Avenue and adjacent areas (City of Carpinteria).
- Residences along Ash Avenue and adjacent areas (City of Carpinteria).
- Aliso Elementary School (City of Carpinteria).

Existing Traffic Noise. The City of Carpinteria's General Plan/Local Coastal Land Use Plan indicates the 65 dBA CNEL noise contour generated by vehicle traffic on U.S. Highway 101 and rail traffic extends approximately 500 feet into the Marsh from the north.

Project-Specific Noise Measurements. The existing daytime ambient noise level was measured at the nearest residences to routine maintenance areas, and the Aliso Elementary School (City of Carpinteria). Figure 5.7-1 provides the noise measurement locations. The measurements were conducted on May 24, 2019 using a Larson-Davis LXT Type 1 Precision Integrating Sound Level Meter. The Meter was calibrated using a Larson-Davis CAL200 Calibrator at 94 dBA. Table 5.7-1 presents a summary of the noise measurement data.

Table 5.7-1. Summary of Noise Measurement Data (dBA Leq)

Location	Time	Distance (feet) to Primary Noise Source	dBA Leq
Sandyland Cove Road near railroad tracks	9:50-10:10 am	300 (Carpinteria Avenue)	54.5
Nature Park near Franklin Creek	10:16-10:36 am	1,800 (U.S. Highway 101)	47.7
Ash Avenue at Sandyland Road	10:50-11:10 am	2,700 (U.S. Highway 101)	51.9
Aliso Elementary School	11:14-11:29 am	80 (Seventh Street)*	58.0

*Primary noise source during noise measurement was children's voices

5.7.1.2 Definitions and Concepts

Sound, Noise and Acoustics. Sound can be described as the mechanical energy of a vibrating object transmitted by pressure waves through a liquid or gaseous medium (e.g., air) to a hearing organ, such as a human ear. Noise is defined as loud, unexpected or annoying sound. In the science of acoustics, the fundamental model consists of a sound (or noise) source, a receiver, and the propagation path between the two. The loudness of the noise source and obstructions or atmospheric factors affecting the propagation path to the receiver determines the sound level and characteristics of the noise perceived by the receiver. The field of acoustics deals primarily with the propagation and control of sound.

Frequency. Continuous sound can be described by frequency (pitch) and amplitude (loudness). A low-frequency sound is perceived as low in pitch. Frequency is expressed in terms of cycles per second, or Hertz (Hz) (e.g., a frequency of 250 cycles per second is referred to as 250 Hz). High frequencies are sometimes more conveniently expressed in kilohertz (kHz), or thousands of Hertz. The audible frequency range for humans is generally between 20 Hz and 20,000 Hz.

Sound Pressure Levels and Decibels. The amplitude of pressure waves generated by a sound source determines the loudness of that source. Sound pressure amplitude is measured in micro-Pascals (mPa). One mPa is approximately one hundred billionth (0.00000000001) of normal atmospheric pressure. Sound pressure amplitudes for different kinds of noise environments can range from less than 100 to 100,000,000 mPa. Because of this huge range of values, sound is rarely expressed in terms of mPa. Instead, a logarithmic scale is used to describe sound pressure level in terms of decibels (dB). The threshold of hearing for young people is about 0 dB, which corresponds to 20 mPa.

LEGEND:

- Noise Measurement Location
- Traffic Noise Modeling Receptor
- City of Carpinteria Boundary
- Surf Zone Disposal Area (Trucking)

MAP EXTENT:

0 200 400
FEET

Source: NAIP 2018 Imagery, Esri Online Topo Basemap, County of Santa Barbara
Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet
Notes: This map was created for informational and display purposes only.

padre associates, inc.
ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

PROJECT NAME:	UPDATED CARPINTERIA SALT MARSH ENHANCEMENT PLAN SANTA BARBARA COUNTY, CA
PROJECT NUMBER:	1802-3401
DATE:	June 2019

NOISE MEASUREMENT LOCATION AND RECEPTOR MAP

FIGURE 5.7-1

Carpinteria Salt Marsh Enhancement Plan\Noise Measurement Locations and Receptor Map.mxd 6/20/2019

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Addition of Decibels. Because decibels are logarithmic units, sound pressure level cannot be added or subtracted through ordinary arithmetic. Under the decibel scale, a doubling of sound energy corresponds to a 3 dB increase. In other words, when two identical sources are each producing sound of the same loudness, the resulting sound level at a given distance would be 3 dB higher than one source under the same conditions. For example, if one automobile produces a sound pressure level of 70 dB when it passes an observer, two cars passing simultaneously would not produce 140 dB, they would combine to produce 73 dB. Under the decibel scale, three sources of equal loudness together produce a sound level 5 dB louder than one source.

A-Weighted Decibels. The decibel scale alone does not adequately characterize how humans perceive noise. The dominant frequencies of a sound have a substantial effect on the human response to that sound. Although the intensity (energy per unit area) of the sound is a purely physical quantity, the loudness or human response is determined by the characteristics of the human ear. Human hearing is limited in the range of audible frequencies as well as in the way it perceives the sound pressure level in that range. In general, people are most sensitive to the frequency range of 1,000–8,000 Hz, and perceive sounds within that range better than sounds of the same amplitude in higher or lower frequencies. To approximate the response of the human ear, sound levels of individual frequency bands are weighted, depending on the human sensitivity to those frequencies. Then, an “A-weighted” sound level (expressed in units of dBA) can be computed based on this information.

The A-weighting network approximates the frequency response of the average young ear when listening to most ordinary sounds. When people make judgments of the relative loudness or annoyance of a sound, their judgments correlate well with the A-scale sound levels of those sounds. Other weighting networks have been devised to address high noise levels or other special problems (e.g., B-, C-, and D-scales), but these scales are rarely used in noise impact assessments. Noise levels for impact assessments are typically reported in terms of A-weighted decibels or dBA. Table 5.7-2 describes typical A-weighted noise levels for various noise sources.

Human Response to Changes in Noise Levels. As discussed above, doubling sound energy results in a three dB increase in sound. However, given a sound level change measured with precise instrumentation, the subjective human perception of a doubling of loudness will usually be different than what is measured.

Under controlled conditions in an acoustical laboratory, the trained, healthy human ear is able to discern one dB changes in sound levels, when exposed to steady, single-frequency (“pure-tone”) signals in the midfrequency (1,000 Hz–8,000 Hz) range. In typical noisy environments, changes in noise of one to two dB are generally not perceptible. However, it is widely accepted that people are able to begin to detect sound level increases of three dB in typical noisy environments. Further, a five dB increase is generally perceived as a distinctly noticeable increase, and a 10 dB increase is generally perceived as a doubling of loudness. Therefore, a doubling of sound energy (e.g., doubling the volume of traffic on a highway) that would result in a three dB increase in sound, would generally be perceived as barely detectable.

Table 5.7-2. Typical A-Weighted Noise Levels

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	— 110 —	Rock band
Jet fly-over at 1000 feet		
	— 100 —	
Gas lawn mower at 3 feet		
	— 90 —	
Diesel truck at 50 feet at 50 mph		Food blender at 3 feet
	— 80 —	Garbage disposal at 3 feet
Noisy urban area, daytime		
Gas lawn mower, 100 feet	— 70 —	Vacuum cleaner at 10 feet
Commercial area		Normal speech at 3 feet
Heavy traffic at 300 feet	— 60 —	
		Large business office
Quiet urban daytime	— 50 —	Dishwasher next room
Quiet urban nighttime	— 40 —	Theater, large conference room (background)
Quiet suburban nighttime		
	— 30 —	Library
Quiet rural nighttime		Bedroom at night, concert
	— 20 —	
		Broadcast/recording studio
	— 10 —	
Lowest threshold of human hearing	— 0 —	Lowest threshold of human hearing

Source: Caltrans 2009.

5.7.1.3 Sound Propagation

When sound propagates over a distance, it changes in level and frequency content. The manner in which noise reduces with distance depends on the following factors.

Geometric Spreading. Sound from a localized source (i.e., a point source) propagates uniformly outward in a spherical pattern. The sound level attenuates (or decreases) at a rate of six decibels for each doubling of distance from a point source. Roadways and railroad tracks consist of several localized noise sources on a defined path, and hence can be treated as a line source, which approximates the effect of several point sources. Noise from a line source propagates outward in a cylindrical pattern, often referred to as cylindrical spreading. Sound levels attenuate at a rate of three decibels for each doubling of distance from a line source.

Ground Absorption. The propagation path of noise from a source to a receiver is usually very close to the ground. Noise attenuation from ground absorption and reflective-wave canceling adds to the attenuation associated with geometric spreading. Traditionally, the excess attenuation has also been expressed in terms of attenuation per doubling of distance. This approximation is usually sufficiently accurate for distances of less than 200 feet. For acoustically hard sites (i.e., sites with a reflective surface between the source and the receiver, such as a parking lot or body of water), no excess ground attenuation is assumed. For acoustically absorptive or soft sites (i.e., those sites with an absorptive ground surface between the source and the receiver, such as soft dirt, grass, or scattered bushes and trees), an excess ground-attenuation value of 1.5 decibels per doubling of distance is normally assumed. When added to the cylindrical spreading, the excess ground attenuation results in an overall drop-off rate of 4.5 decibels per doubling of distance.

Atmospheric Effects. Receptors located downwind from a source can be exposed to increased noise levels relative to calm conditions, whereas locations upwind can have lowered noise levels. Sound levels can be increased at large distances (e.g., more than 500 feet) from the source due to atmospheric temperature inversion (i.e., increasing temperature with elevation). Other factors such as air temperature, humidity and turbulence can also have significant effects.

Shielding by Natural or Human-Made Features. A large object or barrier in the path between a noise source and a receiver can substantially attenuate noise levels at the receiver. The amount of attenuation provided by shielding depends on the size of the object and the frequency content of the noise source. Natural terrain features (e.g., hills and dense woods) and human-made features (e.g., buildings and walls) can substantially reduce noise levels. Walls are often constructed between a source and a receiver specifically to reduce noise. A barrier that breaks the line of sight between a source and a receiver will typically result in at least five dB of noise reduction. Taller barriers provide increased noise reduction. Vegetation between the roadway and receiver is rarely effective in reducing noise because it does not create a solid barrier.

5.7.1.4 Noise Descriptors

Noise in our daily environment fluctuates over time. Some fluctuations are minor, but some are substantial. Some noise levels occur in regular patterns, but others are random. Some noise levels fluctuate rapidly, but others slowly. Some noise levels vary widely, but others are relatively constant. Various noise descriptors have been developed to describe time-varying noise levels. The following are the noise descriptors most commonly used in community noise analysis.

- Equivalent Sound Level (Leq) represents an average of the sound energy occurring over a specified period. The one-hour A-weighted equivalent sound level (Leq[h]) is the energy average of A-weighted sound levels occurring during a one-hour period.
- Percentile-Exceeded Sound Level represents the sound level exceeded for a given percentage of a specified period (e.g., L10 is the sound level exceeded 10% of the time, and L90 is the sound level exceeded 90% of the time).

- Maximum Sound Level is the highest instantaneous sound level measured during a specified period.
- Day-Night Level is the energy average of A-weighted sound levels occurring over a 24-hour period, with a 10 dB penalty applied to A-weighted sound levels occurring during nighttime hours between 10:00 p.m. and 7:00 a.m.
- Community Noise Equivalent Level (CNEL) is the energy average of the A-weighted sound levels occurring over a 24-hour period, with a 10 dB penalty applied to A-weighted sound levels occurring during the nighttime hours between 10:00 p.m. and 7:00 a.m., and a five dB penalty applied to the A-weighted sound levels occurring during evening hours between 7:00 p.m. and 10:00 p.m.

5.7.1.5 Characteristics of Ground-borne Vibration and Noise

In contrast to airborne noise, ground-borne vibration is not a common environmental problem. It is unusual for vibration from sources such as buses and trucks to be perceptible, even in locations close to major roads. Some common sources of ground-borne vibration are trains, buses on rough roads, and construction activities such as blasting, pile-driving and operating heavy earth-moving equipment.

The effects of ground-borne vibration include detectable movement of the building floors, rattling of windows, shaking of items on shelves or hanging on walls and rumbling sounds. In extreme cases, the vibration can cause damage to buildings. Building damage is not a factor for most projects, with the occasional exception of blasting and pile-driving during construction. Annoyance from vibration often occurs when the vibration exceeds the threshold of perception by only a small margin. A vibration level that causes annoyance would be well below the damage threshold for normal buildings.

Vibration is an oscillatory motion which can be described in terms of the displacement, velocity or acceleration. Because the motion is oscillatory, there is no net movement of the vibration element and the average of any of the motion descriptors is zero. Displacement is the easiest descriptor to understand. For a vibrating floor, the displacement is simply the distance that a point on the floor moves away from its static position. The velocity represents the instantaneous speed of the floor movement and acceleration is the rate of change of the speed. The peak particle velocity (PPV) is defined as the maximum instantaneous positive or negative peak of the vibration signal. PPV is often used in monitoring of blasting vibration since it is related to the stresses that are experienced by buildings.

5.7.1.6 Regulatory Framework

State. The California Department of Health has established noise guidelines to facilitate land use planning, which are summarized in Table 5.7-3.

Santa Barbara County. Section 40.2 of the County Code of Ordinances prohibits loud noises (focused on music) between 10 p.m. and 7 a.m. on Sunday through Thursday and between midnight and 7 a.m. on Friday and Saturday.

Table 5.7-3. Land Use Compatibility for Community Noise Environments

Land Use Category	Community Noise Exposure Ldn or CNEL, dBA					
	55	60	65	70	75	80
Residential: Low-density Single Family, Duplex, Mobile Homes						
Residential: Multiple Family						
Transient Lodging: Motels, Hotels						
Schools, Libraries, Churches, Hospitals, Nursing Homes						
Sports Arena, Outdoor Spectator Sports						
Playgrounds, Neighborhood Parks						
Golf Courses, Riding Stables, Water Recreation, Cemeteries						
Office Buildings, Business Commercial and Professional						
Industrial, Manufacturing, Utilities, Agriculture						

Source: California Department of Health, Office of Noise Control

INTERPRETATION:

	Normally Acceptable: specified land use is satisfactory, based upon the assumption that any buildings involved are of normal construction without any special noise insulation requirements.
	Conditionally Acceptable: New construction or development should only be undertaken after a detailed analysis of the noise reduction requirements is made and the needed insulation features included in the design.
	Normally Unacceptable: New construction or development should generally be discouraged. If new development is to proceed, a detailed analysis of the noise reduction requirements is made and the needed insulation features included in the design.
	Clearly Unacceptable: New development or construction should not be undertaken.

5.7.2 Impact Analysis and Mitigation Measures

5.7.2.1 Thresholds of Significance

Significance thresholds for noise impacts are taken from the State CEQA Guidelines and the Santa Barbara County Environmental Thresholds and Guidelines Manual (revised 2018).

State CEQA Guidelines. The State CEQA Guidelines (14 CCR Division 6, Chapter 3) suggest that a project may have a significant impact with respect to noise if it results in any of the following:

- Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
- Exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels;
- A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project; and,
- A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

Santa Barbara County Environmental Thresholds and Guidelines Manual. The Santa Barbara County Environmental Thresholds and Guidelines Manual (revised 2018) defines noise-sensitive land uses as residential, transient lodging, hospitals, long-term medical care facilities and educational facilities (schools, libraries, churches) and includes several criteria used to define significant noise impacts:

- A proposed development that would generate noise levels in excess of 65 dBA CNEL and could affect sensitive receptors would generally be presumed to have a significant impact.
- Outdoor living areas of noise-sensitive uses that are subject to noise levels in excess of 65 dBA CNEL would generally be presumed to be significantly impacted by ambient noise.
- A significant impact would also generally occur where interior noise levels cannot be reduced to 45 dBA CNEL or less.
- A project will generally have a significant effect on the environment if it will increase substantially the ambient noise levels for noise-sensitive receptors adjoining areas. Per item a., this may generally be presumed when ambient noise levels affecting sensitive receptors are increased to 65 dBA CNEL or more. However, a significant effect may also occur when ambient noise levels affecting sensitive receptors increase substantially but remain less than 65 dBA CNEL, as determined on a case-by-case level.

- Noise from grading and construction activity proposed within 1,600 feet of sensitive receptors, including schools, residential development, commercial lodging facilities, hospitals or care facilities, would generally result in a potentially significant impact. According to USEPA guidelines, the average construction noise is 95 dBA at a 50 foot distance from the source. A 6 dB drop occurs with a doubling of the distance from the source. Therefore, locations within 1,600 feet of the construction site may be affected by noise levels over 65 dBA.

City of Carpinteria Environmental Thresholds Manual. Noise thresholds applicable to the proposed project are limited to the temporary construction noise threshold of 65 dBA Leq for vehicular traffic. This threshold is applied to project-related traffic noise on City streets.

5.7.2.2 Impacts of the Existing Carpinteria Salt Marsh Enhancement Plan

The following summarizes the noise impacts identified in the 2003 Final EIR prepared for the existing Enhancement Plan.

Impact NOI-1: Noise generated by constructing berms and floodwalls temporarily would exceed 65 dBA CNEL at residential areas within approximately 500 feet. Any sensitive receptors within about 500 feet of stationary or moving construction equipment would temporarily be exposed to noise levels in excess of County noise thresholds. Even though ambient noise levels already are high (about 70 dBA), Alisos School and condominiums north of the Marsh also could be impacted by construction activities occurring in the northern part of the Marsh. Impacts would be significant but feasibly mitigated (Class II).

<u>The berms and floodwalls have been completed such that no additional noise impacts would occur.</u>

Impact NOI-2: Noise generated by desilting operations along Franklin and Santa Monica creeks temporarily would exceed 65 dBA CNEL at residential areas within approximately 375 feet. Noise from construction activities could exceed 65 dB CNEL at residences closer than about 375 feet from the site. Even though ambient noise levels already are high (about 70 dBA), Alisos School and condominiums north of the Marsh also could be impacted by construction activities occurring in the northern part of the Marsh. Impacts would be significant but feasibly mitigated (Class II).

<u>This routine maintenance activity would not be modified in the Updated Enhancement Plan. Therefore, no changes to this existing noise impact would occur.</u>

Impact NOI-3: Noise generated by the removal of dewatered sediment temporarily would exceed 65 dBA CNEL at residential areas within approximately 375 feet. Noise from construction activities could exceed 65 dB CNEL at residences closer than about 375 feet from the site. Even though ambient noise levels already are high (about 70 dBA), Alisos School and condominiums north of the Marsh also could be impacted by construction activities occurring in the northern part of the Marsh. Impacts would be significant but feasibly mitigated (Class II).

This routine maintenance activity would not be modified in the Updated Enhancement Plan. Therefore, no changes to this existing noise impact would occur.

Impact NOI-4: Heavy trucks used to remove dewatered sediment would cause a slight increase in noise along the access routes. Given the proximity of the UPRR tracks, U.S. Highway 101, and Carpinteria Avenue, this increase would be adverse but not significant (Class III).

The 2003 Final EIR qualitatively assessed the noise impact of 40 round truck trips per day (estimated truck trips in Section 4.9.3 of the Final EIR). The proposed Updated Enhancement Plan may involve up to 200 round truck trips on a peak day (see Section 4.1.4). Potential noise impacts associated with increased truck traffic are assessed under Impact UP-NOI-1.

Impact NOI-5: Noise generated by dredging the mouth of Carpinteria Marsh and disposing of the sediment would exceed 65 dBA CNEL at residential areas within approximately 500 feet. Noise from construction activities could exceed 65 dB CNEL at residences closer than about 500 feet from the site. These would include westernmost residences south of Del Mar Avenue. Impacts would be significant but feasibly mitigated (Class II).

Dredging of the mouth of the Marsh (as needed) would be incorporated into proposed dredging of the Main Channel and is addressed under Impact UP-NOI-3.

Impact NOI-6: Noise generated by opening the mouth of Carpinteria Marsh would exceed 65 dBA CNEL at residential areas within approximately 500 feet. The mouth of the Marsh also would be opened periodically with a dozer/ loader. Noise would briefly exceed 65 dB CNEL at the westernmost residences along Del Mar Avenue. Impacts would be significant but feasibly mitigated (Class II).

This maintenance activity would not be modified in the Updated Enhancement Plan. Therefore, no changes to this existing noise impact would occur.

Impact NOI-7: Noise generated by construction activities temporarily could affect the recreational and scientific use of the Marsh and the adjacent Nature Park. Noise from construction equipment could cause wildlife to temporarily leave the area, thus affecting bird watchers, scientists, and others who go the Marsh and Nature Park to observe wildlife. Impacts would be significant but feasibly mitigated (Class II).

Proposed changes to the Enhancement Plan include routine dredging of the Main Channel which may increase potential adverse effects on the recreational and scientific use of the Marsh (see Impact UP-NOI-5).

Impact NOI-8: Noise generated by berm removal temporarily would exceed 65 dBA CNEL at residential areas within 375 feet. Removal of Berms 1 through 5 would impact residences along Del Mar Avenue; impacts would be significant but feasibly mitigated (Class II).

Removal of Berms 1 through 5 is not currently planned for implementation such that this noise impact would not occur.

Impact NOI-9: Noise generated by restoration activities associated with Restoration Action R1 temporarily would exceed 65 dBA CNEL at residential areas within 500 feet. Noise would temporarily exceed 65 dBA CNEL at residential areas within 500 feet. Even though ambient noise levels already are high (about 70 dBA), Alisos School and condominiums north of the Marsh also could be impacted by construction activities occurring in the northern part of the Marsh. Impacts would be significant but feasibly mitigated (Class II).

Restoration Action R1 has been completed such that no additional noise impacts would occur.

Impact NOI-10: Noise generated by dredging Basin 3 (Restoration Action R2) would exceed 65 CNEL at residential areas within 500 feet. Noise generated by the hydraulic dredge would temporarily exceed 65 dBA CNEL at residential areas within 500 feet. Impacts would be significant but feasibly mitigated (Class II).

This maintenance activity would not be modified in the Updated Enhancement Plan. Therefore, no changes to this existing noise impact would occur.

Impact NOI-11: Noise generated by restoration activities associated with Restoration Action R3 temporarily would exceed 65 dBA CNEL at residential areas within 500 feet. Noise from increasing wetland habitat area, providing new tidal connections and channels, and removing exotic vegetation would as described under Impact NOI-7. Impacts from constructing floodwalls and berms would be as described under Impact NOI-1. Impacts would be significant but feasibly mitigated (Class II).

This component of the Enhancement Plan has been completed such that no additional noise impacts would occur. However, routine maintenance of tidal channels in the South Marsh in included in the Updated Enhancement Plan and is addressed under Impact UP-NOI-4.

Impact NOI-12: Noise generated by desilting operations along the Estero Way Extension (Restoration Action R4) temporarily would exceed 65 dBA CNEL at residential areas within 375 feet. Noise generated by this action would be as described under Impact NOI-2, significant but feasibly mitigated (Class II).

This component of the Enhancement Plan has been completed such that no additional noise impacts would occur.

Impact NOI-13: Noise generated by lowering the easterly edge of Basin 2 (Restoration Action R5) temporarily would exceed 65 dBA CNEL at residential areas within 375 feet. Noise generated by this equipment would be as described under Impact NOI-3, significant but feasibly mitigated (Class II).

This component of the Enhancement Plan has been completed such that no additional noise impacts would occur.

Impact NOI-14: Noise generated by dredging the Main Channel (Restoration Action R6) would exceed 65 CNEL at residential areas within 500 feet. Noise generated by the hydraulic dredge would be as described under Impact NOI-4 and would temporarily exceed 65 dBA CNEL at residential areas within 500 feet. Impacts would be significant but feasibly mitigated (Class II).

Restoration Action R6 was been completed as part of emergency dredging in 2018; therefore, no additional noise impacts would occur.

5.7.2.3 Impacts of the Proposed Updated Enhancement Plan

The primary changes proposed as part of the Updated Enhancement Plan or changes in the regulatory or environmental setting or environmental baseline that would modify or result in new or modified noise impacts include:

- Surf zone disposal instead of upland disposal during drag-line desilting of upper Franklin Creek and Santa Monica Creek.
- Hydraulic dredging of upper Franklin Creek and Santa Monica Creek with surf zone disposal instead of drag-line desilting with upland disposal.
- Hydraulic dredging of lower Franklin Creek and the Main Channel with surf zone disposal.
- Hydraulic dredging of all major channels in the Marsh (Franklin Creek, Santa Monica Creek and the Main Channel) with surf zone disposal.
- Avenue Del Mar drainage system maintenance.

Impact UP-NOI-1: Noise generated by proposed increased truck traffic associated with disposal of sediment may exceed the City's temporary construction traffic noise threshold along the proposed truck route. Project peak day truck traffic (up to 200 round trips per 10-hour day) would increase traffic noise along the proposed truck route in the City of Carpinteria (Carpinteria Avenue, Seventh Street, Linden Avenue, Sandyland Road). Traffic noise modeling was conducted using the Federal Highway Administration's (FHWA) Traffic Noise Model to determine the increase in traffic noise associated with sediment trucking (40 one-way trips per hour) to City Beach. Traffic noise modeling was conducted on Carpinteria Avenue (Plum Street to Santa Ynez Avenue) because the highest truck speeds (and traffic noise) would be expected along this portion of the truck route.

The average daily traffic volume (9,900) used in traffic noise modeling for Carpinteria Avenue west of Linden Avenue was taken from the traffic study prepared by Fehr & Peers Transportation Consultants (2007) for the U.S. 101/Linden Avenue and Casitas Pass Road Interchange Improvement Project. The results of the traffic noise modeling are provided in Table 5.7-4. Noise receptors used in the modeling are identified in Figure 5.7-1. Noise-sensitive receptors were selected based on close proximity to Carpinteria Avenue. Modelled existing noise levels are close to the City of Carpinteria's 65 dBA Leq construction traffic noise threshold, and project-related traffic noise may result in exceedances of this threshold. However, project-related traffic noise increases would not be noticeable as they do not exceed 3 dBA Leq. Therefore, sediment trucking noise impacts associated with the Updated Enhancement Plan would remain less than significant (Class III).

Table 5.7-4. Traffic Noise Modeling Results for Carpinteria Avenue (dBA Leq)

Noise Receptor	Existing Noise Level	Existing Noise Level + 40 Heavy-duty Truck Trips/Hour	Project-related Increase
R1: Sea Breeze Mobile Home Park (residence)	66.0	67.8	1.8
R2: Sea Breeze Mobile Home Park (residence)	64.5	66.2	1.7
R3: 4512 Carpinteria Avenue (residence)	65.6	67.3	1.7
R4: Camino Real Apartments (residence)	64.5	66.2	1.7
R5: 4455 Carpinteria Avenue (residence)	62.8	64.4	1.6
R6: 4527 Carpinteria Avenue (residence)	63.3	64.8	1.5
R7: Aliso Elementary School*	56.3*	58.3*	2.0

*Modelled values do not include traffic noise from Santa Ynez Avenue or Seventh Street, such that actual noise levels (existing and proposed) are likely higher than presented

Impact UP-NOI-2: Noise generated by proposed 24-hour hydraulic dredging of upper Franklin and Santa Monica Creeks would exceed the 65 dBA CNEL standard at nearby residences and the Aliso Elementary School. As discussed under Impact UP-NOI-3, the 65 dBA CNEL standard would be exceeded within approximately 1,000 feet of proposed 24-hour dredging operations, which includes residences along the eastern portion of Avenue Del Mar, residences on the eastern side of Ash Avenue, residences of Silver Sands Village, residences along the western end of Fourth Street, residences at the Chapel Court Apartments, residences along Carpinteria Avenue north of the Marsh, and the Aliso Elementary School. Exceedances of the 65 dBA CNEL standard would be short-term (a few weeks); however, a large number of residences would be adversely affected. Mitigation Measure NOI-1 is not applicable due to proposed 24-hour dredging. The mobile nature of dredging and surrounding sensitive habitats renders typical mitigation measures such as noise barriers impractical which would result in impacts to visual resources (blocking views) and biological resources (habitat disturbance). Therefore, 24-hour dredging noise impacts are considered significant and unavoidable (Class I).

Impact UP-NOI-3: Noise generated by proposed 24-hour hydraulic dredging of lower Franklin Creek and the Main Channel would exceed the 65 dBA CNEL standard at nearby residences. The FHWA Roadway Construction Noise Model was used to estimate dredging noise at the nearest residence along Avenue Del Mar. The estimated hourly noise level is 69.2 dBA Leq, which equates to a 24-hour CNEL value of 75.9 dBA based on evening and nighttime noise penalties (see CNEL description in Section 5.7.1.4).

The 65 dBA CNEL standard would be exceeded within approximately 1,000 feet of proposed dredging operations, which includes all residences on Avenue Del Mar, residences at the southern terminus of Sand Point Road, residences along the western terminus of Sandyland Road and residences along the southern terminus of Ash Avenue. Exceedances of the 65 dBA CNEL standard would be short-term (a few weeks); however, a large number of residences would be adversely affected. Mitigation Measure NOI-1 is not applicable due to proposed 24-hour dredging. The mobile nature of dredging and surrounding sensitive habitats renders typical mitigation measures such as noise barriers impractical which would result in impacts to visual resources (blocking views) and biological resources (habitat disturbance). Therefore, 24-hour dredging noise impacts are considered significant and unavoidable (Class I).

Impact UP-NOI-4: Noise generated by proposed re-establishment of tidal channels in the South Marsh as part of the maintenance of the Avenue del Mar drainage system would exceed the 65 dBA CNEL standard at nearby residences. The FHWA Roadway Construction Noise Model was used to estimate channel excavation noise at the nearest residence along Avenue Del Mar. The estimated hourly noise level is 75.2 dBA Leq, which equates to a CNEL value of 71.6 dBA based on 7 a.m. to 5 p.m. operation. The 65 dBA CNEL standard would be exceeded within approximately 205 feet of proposed channel excavation operations, which includes approximately 24 residences on Avenue Del Mar. Channel re-establishment noise impacts would be significant, but feasibly mitigated (Class II).

Impact UP-NOI-5: noise generated by proposed routine dredging of lower Franklin Creek and the Main Channel may exacerbate current adverse effects on the recreational and scientific use of the Marsh. As discussed under Impact NOI-7 from the 2003 Final EIR, construction activity may result in wildlife temporarily leaving the area which may adversely affect persons that observe wildlife for recreational or scientific purposes. The addition of routine dredging of lower Franklin Creek and the Main Channel to the Updated Enhancement Plan would add a new area within the Marsh that may be affected by temporary adverse effects on recreational and scientific use. However, simultaneous desilting and/or dredging is not proposed such that the area affected by routine maintenance activities on any one day would not substantially increase. Similar to construction equipment noise impacts on the recreational and scientific use of the Marsh addressed in the 2003 Final EIR, hydraulic dredging noise impacts would be significant, but feasibly mitigated (Class II).

Impact UP-NOI-6: Vibration generated by proposed increased truck traffic associated with the disposal of sediment would not result in structural damage or substantial human annoyance along the proposed truck route. Project truck traffic (up to 200 round trips per day) would increase truck-generated vibration along the proposed truck routes (Carpinteria Avenue, Seventh Street, Linden Avenue, Sandyland Road). Commercial and residential structures are located within 30 feet of the proposed truck route. Truck-related vibration was estimated at a PPV of 0.062, using the Caltrans Transportation and Construction Vibration Guidance Manual. This value is slightly greater than the 0.04 PPV needed to be distinctly perceptible by humans, but much less than 0.1 PPV needed to be strongly perceptible to humans. The 0.062 PPV value is much less than 0.3 which may cause damage to older residential structures. Therefore, the project-related increase in vibration associated with truck transportation of sediments would not be significant (Class III).

Mitigation Measures:

Mitigation measures provided in the 2003 Final EIR have been modified to address current conditions and new or modified noise impacts of the proposed Updated Enhancement Plan.

NOI-1. Construction activities shall be limited to the hours between 7:00 A.M. and 5:00 P.M., Monday through Friday. No construction shall occur on State holidays (e.g., Thanksgiving, Labor Day). Routine maintenance activities shall also comply with these hours of operation, to the extent feasible. Vehicle and equipment maintenance shall be limited to the approved operating hours. All internal combustion engine-driven vehicles and equipment shall be properly muffled. **Plan Requirements and Timing**: Vehicle and equipment operational hours restrictions shall be included in contracts with companies providing routine maintenance services.

MONITORING: District staff shall verify construction and routine maintenance activities comply with operating hours restrictions.

NOI-2. Nearby residents shall be notified at least two weeks in advance of construction and routine maintenance activities, as shall the manager of the Carpinteria Salt Marsh Reserve and the Nature Park. The District representative's telephone number shall be provided with the notification so that community concerns can be communicated. **Plan Requirements and Timing**: This notification requirement shall be implemented at least two weeks prior to planned construction or routine maintenance activities.

MONITORING: The District shall verify compliance.

5.7.2.4 Cumulative Impacts

Most of the cumulative projects listed in Section 4.6 are sufficiently distant from the Marsh that they would not affect the same noise receptors as the proposed project. However, noise generated by construction of the U.S. 101 High Occupancy Vehicle Lanes project would adversely affect residences along Carpinteria Avenue north of the Marsh. In addition, the Gobuty Condos project is located along the proposed truck route between the Marsh and the Ash Avenue disposal site. Routine maintenance conducted during construction of these projects would incrementally contribute to cumulative noise impacts. The project's incremental contribution may be cumulatively considerable.

5.7.2.5 Residual Impacts

Feasible mitigation measures would not reduce noise impacts associated with 24-hour hydraulic dredging (Impacts UP-NOI-2 and UP-NOI-3) to a level of less than significant, primarily because Mitigation Measure NOI-1 is not applicable. Therefore, residual noise impacts associated with this activity are considered significant and unavoidable.

5.7.3 References

California Department of Transportation (Caltrans). 2013. *Transportation and Construction Vibration Guidance Manual*.

Federal Highway Administration. 2004. *FHWA Traffic Noise Model User's Guide (version 2.5 Addendum).*

Federal Highway Administration. 2006. *FHWA Roadway Construction Noise Model User's Guide*.

Fehr & Peers Transportation Consultants. 2007. *Final Traffic Analysis Report U.S. 101/Linden Avenue and U.S. 101 Casitas Pass Road Interchange Improvement Project.*

5.8 HAZARDS AND HAZARDOUS MATERIALS

This section presents a discussion of hazardous materials issues associated with the proposed project. The analysis serves as an update to the information provided within the original 2003 Final EIR and addresses proposed changes to the Enhancement Plan.

5.8.1 Setting

5.8.1.1 Sediment Contaminant Data

A summary of the analysis of sediment samples from the Main Channel taken on February 22, 2018 is provided in Table 5.6-6. Nickel is the only contaminant that exceeded sediment screening values.

5.8.1.2 Hazardous Materials Records Review

An on-line hazardous materials data base was reviewed (Geotracker by the State Water Resources Control Board) to identify known hazardous materials issues near the Marsh. Sites identified near the Marsh include:

- **1300 Cravens Lane, Green Heron Spring Site**: pesticides, lead and petroleum hydrocarbons associated with past agricultural land use were found in 2007, remediation was competed in 2018 and the case was closed.
- **4290 Via Real, Chevron Station**: a leaking underground gasoline storage tank was discovered in 1998, remediation was competed in 2009 and the case was closed.
- **4401 Via Real, Tosco Station**: a leaking underground gasoline storage tank was discovered in 1989, remediation was competed in 2009 and the case was closed.
- **4410 Via Real, 7-Eleven Store**: a leaking underground gasoline storage tank was discovered in 1998, clean-up was competed in 2003 and the case was closed.
- **4424 Via Real, Carpinteria Valley Water District**: a leaking underground gasoline storage tank was discovered in 1988, clean-up was completed and the tank removed. The case was closed in 1989.
- **4602 Carpinteria Avenue, Chevron Station**: a leaking underground gasoline storage tank was discovered and removed in 1975, the site was re-evaluated in 2006 and was closed in 2014.

None of these sites are currently considered contaminated or hazardous and do not affect the Marsh.

5.8.1.3 Regulatory Setting

The management of hazards, hazardous materials, hazardous waste, and public safety is subject to numerous laws and regulations at all levels of government. These regulations are designed to regulate hazardous materials and hazardous wastes, as well as to manage sites contaminated by hazardous waste to limit the risk of upset during the use, transport, handling storage and disposal of hazardous materials. Summaries of federal and state laws and regulations related to hazards and hazardous materials management are presented in this section.

The following hazardous materials and hazardous waste definitions provide a simplified overview of a very complicated subject; they are not legal definitions.

Hazardous Material. Any material that because of its quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment. Hazardous materials include, but are not limited to, hazardous substances, hazardous waste, and any material which a handler or the administering regulatory agency has a reasonable basis for believing would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment. A number of properties may cause a substance to be considered hazardous, including toxicity, ignitibility, corrosivity, or reactivity.

Hazardous Waste. A waste or combination of waste which because of its quantity, concentration, or physical, chemical, or infection characteristics, may cause or significantly contribute to an increase in mortality or an increase in serious irreversible or incapacitation-reversible illness; or pose a substantial present or potential hazard to human health or the environment, due to factors including, but not limited to, carcinogenicity, acute toxicity, chronic toxicity, bio-accumulative properties, or persistence in the environment, when improperly treated, stored, transported, or disposed of or otherwise managed.

5.8.1.4 Federal Regulations

U.S. Environmental Protection Agency (USEPA). The USEPA is the principal regulatory agency responsible for the safe use and handling of hazardous materials.

Superfund Amendments and Reauthorization Act (SARA) Public Law 99-499 (100 Stats. 1613). SARA amended the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, 42 U.S.C. § 9601 et seq.) on October 17, 1986. SARA specifically addresses the management of hazardous materials by requiring public disclosure of information relating to the types and quantities of hazardous materials used at various types of facilities. SARA Title III (42 U.S.C. § 11001 et seq.) is referred to as the Emergency Planning and Community Right to Know Act. The Act addresses community emergency planning, emergency release notification, and hazardous materials chemical inventory reporting.

Resource Conservation and Recovery Act (RCRA) 42 U.S.C. §6901 et seq. RCRA gave the USEPA the authority to control hazardous waste from the "cradle-to-grave." This includes the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA regulates disposal of solid and hazardous waste, adopted by congress on October 21, 1976. Subtitle D of RCRA established the solid waste program, which encourages states to develop comprehensive plans to manage nonhazardous industrial solid waste and municipal solid waste, sets criteria for municipal solid waste landfills and other solid waste disposal facilities, and prohibits the open dumping of solid waste. RCRA encourages environmentally sound solid waste management practices that maximize the reuse of recoverable material and foster resource recovery.

Clean Air Act of 1990, 42 U.S.C. 7401-7671. The Clean Air Act (CAA) as amended in 1990 also requires states to implement a comprehensive system to inform local agencies and the public when a significant quantity of such materials is stored or handled at a facility. It establishes a nationwide emergency planning and response program and imposes reporting requirements for business that store, handle, or produce significant quantities of extremely hazardous materials.

Clean Air Act Risk Management Plan, 42 USC § 112(r). This section of the CAA determines that facilities storing or handling significant amounts of acutely hazardous materials are required to prepare and submit a Risk Management Plan (RMP), codified under 40 CFR 68.

National Fire Protection Association (NFPA). The NFPA sets forth minimum standards to establish a reasonable level of fire safety and property protection from the hazards created by fire and explosion. The standards apply to the manufacture, testing, and maintenance of fire protection equipment. The NFPA also provides guidance on safe selection and design, installation, maintenance, and construction of electrical systems.

U.S. Department of Transportation (DOT). The DOT has the regulatory responsibility for the safe transportation of hazardous materials.

5.8.1.5 State of California Regulations

California Emergency Management Agency. The California Emergency Management Agency Hazardous Materials (HazMat) Section coordinates statewide implementation of hazardous materials accident prevention and emergency response programs for all types of hazardous materials incidents and threats.

California Health and Safety Code (CHSC) § 25500. CHSC Section 25500 requires companies that handle hazardous materials in sufficient quantities to develop a Hazardous Materials Business Plan, which includes basic information on the location, type, quantity, and health risks of hazardous materials handled, stored, used, or disposed of that could be accidentally released into the environment. Each plan includes training for new personnel, and annual training of all personnel in safety procedures to follow in the event of a release of hazardous materials. It also includes an emergency response plan and identifies the business representative able to assist emergency personnel in the event of a release.

California Department of Toxic Substance Control (DTSC). The objective of the DTSC is to protect human health and the environment from exposure to hazardous material and waste. The DTSC has the authority to respond to and enforce the cleanup of hazardous substance releases. Waste streams at oil production sites are generally considered waste, not substances, and are thus regulated by the DTSC when hazardous. Certain waste streams can be considered as recyclable material, not waste, provided that their ultimate disposal to land does not release contaminants to the environment.

Central Coast Regional Water Quality Control Board (CCRWQCB). The CCRWQCB protects ground and surface water quality of the watersheds of Santa Cruz, San Benito, Monterey, San Luis Obispo and Santa Barbara counties, as well as portions of Santa Clara, San Mateo, Kern and Ventura counties by the development and enforcement of the Water Quality Control Plan for the Central Coastal Basin. Specifically, the Plan: (i) designates beneficial uses for surface and ground waters, (ii) sets narrative and numerical objectives that must be attained or maintained to protect the designated beneficial uses and conform to the state's antidegradation policy, and (iii) describes implementation programs to protect all waters in the Region. In addition, the Plan incorporates (by reference) all applicable State and Regional Board plans and policies and other pertinent water quality policies and regulations. The CCRWQCB also issues waste discharge permits, takes enforcement action against violators, and monitors water quality.

State Water Resources Control Board (SWRCB). The principal State regulatory document for ocean water quality is the California Ocean Plan (SWRCB, updated 2019). The California Ocean Plan sets forth water quality objectives for ocean waters to ensure the reasonable protection of beneficial uses and the prevention of nuisance. The California Ocean Plan includes water quality objectives for four categories, including bacterial characteristics, physical characteristics, chemical characteristics and biological characteristics.

5.8.1.6 Local Authorities and Administering Agencies

The Certified Unified Program Agency (CUPA) is an agency certified by the DTSC to conduct the Unified Program, which consists of hazardous waste generator and onsite treatment programs; aboveground and underground storage tank programs; hazardous materials management, business plans, and inventory statements; and the Risk Management and Prevention Program. In Santa Barbara County, the CUPA is the Santa Barbara County Public Health Department, Environmental Health Services Division. The CUPA supervises the remediation of contaminated soil sites. The CUPA will grant closure of an impacted site when confirmatory samples of soil and groundwater taken demonstrate that levels of contaminants are below the standards set by DTSC and CCRWQCB.

5.8.1.7 Fire Hazards

The Marsh and adjacent City of Carpinteria is not located within a Very High Fire Hazard Severity Zone as designated by the California Department of Forestry and Fire Protection. Due to the presence of saturated soils and hydrated vegetation, the Marsh is not considered a fire hazard area. However, vegetation along the Marsh margins may be susceptible to wildfire.

5.8.2 Impact Analysis and Mitigation Measures

5.8.2.1 Thresholds of Significance

Significance thresholds for hazards and hazardous waste are derived from the State CEQA Guidelines, the Santa Barbara County Environmental Thresholds and Guidelines Manual (revised 2018).

State CEQA Guidelines. The State CEQA Guidelines (14 CCR Division 6, Chapter 3) suggest that a project may have a significant impact with respect to hazards and hazardous materials if it results in any of the following:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.
- 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.
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school.
- Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5, and as a result, create a significant hazard to the public or environment.
- For a project located within an airport land use plan or where such a plan has not been adopted, within 2 miles of a public airport or public use airport, result in safety hazard or excessive noise for people residing or working in the project area.
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.
- Expose people or structures, either directly or indirectly to a significant risk of loss, injury or death involving wildland fires.

Santa Barbara County Environmental Thresholds and Guidelines Manual. Public safety thresholds contained in the County's Environmental Thresholds and Guidelines Manual focus on involuntary public exposure to acute risks that stem from certain types of activities with significant quantities of hazardous materials or land uses proposed in proximity to existing hazardous facilities. The County's public safety thresholds employ quantitative measures of societal risk of a proposed development to indicate whether the annual probability of expected fatalities or serious injuries is significant or not. The thresholds apply to risks from specific facilities, activities, and handling of specific hazardous materials. The proposed project does not include any of the facilities or activities, or handling of such hazardous materials identified in the applicability section of the County's public safety thresholds. Therefore, these thresholds are not applicable to this analysis. However, the concepts of risk to public safety (involuntary exposure) provided in the Manual are applied in this impact analysis.

5.8.2.2 Impacts of the Existing Carpinteria Salt Marsh Enhancement Plan

The following summarizes the risk of upset/hazardous materials impacts identified in the 2003 Final EIR prepared for the existing Enhancement Plan.

Impact HAZ-1: Potential risks of desilting operations include the accidental discharge of fuels, lubricants, and hydraulic fluids onto the ground or into the marsh. Trucks coming onto the site would supply the dredge, crane, and other vehicles and equipment with diesel fuel, hydraulic oil, and lubricants as required. Depending on tank size and the operating schedule, the dredge may require refueling one or two times a week. Most dredges have spill collars located around the fuel inlet that can catch small leaks. In addition to silt containment, silt curtains can be used for containment of fuel or spills under low water flow conditions. The likelihood of spills from the dredge is very low and therefore considered less than significant (Class III).

Desilting of upper Franklin and Santa Monica Creeks is an ongoing component of routine maintenance and associated environmental impacts would not be changed by the proposed Updated Enhancement Plan.

Impact HAZ-2: Potential spillage of fuel or other petroleum products during equipment fueling and servicing operations could occur, however. This is considered potentially significant but feasibly mitigable (Class II).

This impact applies to all activities included in the existing Enhancement Plan. Similar impacts associated with new components of the Updated Enhancement Plan are addressed in Section 5.8.2.3.

Impact HAZ-3: The proposed project (Restoration Actions R2, R3, R4) could result in the disposal of sediments with elevated concentrations of toxic substances. Adequate sediment characterization has not been completed for the main channel within Basin 3. It is therefore unclear which sediment disposal options would be applicable in association with channel desilting. Potential disposal of sediments with elevated concentrations of toxic substances is considered a potentially significant but mitigable impact (Class II).

Restoration Actions R2, R3, and R4 would not be modified under the Updated Enhancement Plan, such that impacts identified in the 2003 Final EIR would not change. However, tidal channels created in the South Marsh under Recreation Action R3 would be incorporated into the routine maintenance program and impacts are addressed in Section 5.8.2.3.

Impact HAZ-4: Restoration and maintenance activities may include limited herbicide spraying to patches of exotic vegetation. Most of the exotic vegetation present in areas to be restored would be removed by mechanical methods. It is possible, however, that spot application of herbicides may be used on a very limited basis, both during initial restoration activities and during maintenance. All state and federal requirements to ensure public safety and environmental protection would be observed, as well as the District's Standard Maintenance Practices related to herbicide treatment. Aquamaster™ would be used when there is open water in proximity to the plants to be treated and is non-toxic to fish and aquatic organisms at recommended application rates. The potential for herbicide use to adversely affect either human or animal health or safety is considered very low, and the impact is considered adverse but less than significant (Class III).

Herbicide application is not practiced in the Marsh and has been deleted from the Enhancement Plan. Therefore, no impacts would occur.

5.8.2.3 Impacts of the Proposed Updated Enhancement Plan

Changes proposed as part of the Updated Enhancement Plan that would modify or result in new hazardous materials impacts include:

- Surf zone disposal instead of upland disposal during drag-line desilting of upper Franklin Creek and Santa Monica Creek.
- Hydraulic dredging of upper Franklin Creek and Santa Monica Creek with surf zone disposal instead of drag-line desilting with upland disposal.
- Hydraulic dredging of lower Franklin Creek and the Main Channel with surf zone disposal.
- Hydraulic dredging of all major channels in the Marsh (Franklin Creek, Santa Monica Creek and the Main Channel) with surf zone disposal.
- Avenue Del Mar drainage system maintenance.

Impact UP-HAZ-1: The proposed addition of surf zone sediment disposal as a routine maintenance component may result in the exposure of the public and the environment to hazardous materials. Surf zone disposal of Marsh sediments was not fully addressed in the 2003 Final EIR because sediments were not considered “beach quality material” and would not be discharged. As surf zone disposal of sediments removed from the Marsh is not part of the environmental baseline, this is a new component. Proposed changes to the Enhancement Plan include ocean disposal of sediment including:

- Surf zone disposal of trucked sediment from upper Franklin and Santa Monica Creeks removed by drag-line desilting.
- Surf zone disposal of a sediment slurry from upper Franklin and Santa Monica Creeks removed by hydraulic dredging.

- Surf zone disposal of a sediment slurry from lower Franklin Creek and the Main Channel removed by hydraulic dredging.
- Surf zone disposal of trucked sediment from re-established tidal channels in the South Marsh removed by excavation.

The California Ocean Plan was developed to protect the public and the marine environment. Therefore, compliance with the water quality objectives of the Ocean Plan would prevent significant impacts related to disposal of contaminated sediment. These impacts are discussed in the water resources section (Section 5.6.2.3, see Impacts UP-HYDRO-1, UP-HYDRO-2, UP-HYDRO-4 and UP-HYDRO-6).

Impact UP-HAZ-2: Hydraulic dredging activities may result in accidental discharge of fuel, lubricants and coolant from the dredge, booster pump, vessels and associated equipment. Accidental spillage of these materials during routine maintenance may contaminate soil and surface water, possibly resulting in exceedances of water quality standards of the Water Quality Control Plan (Franklin and Santa Monica Creeks) and California Ocean Plan which is considered a potentially significant impact (Class II).

Impact UP-HAZ-3: Excavation of channels in the South Marsh may result in accidental discharge of fuel, lubricants and coolant from heavy equipment (backhoe, dozer, excavators) and trucks. Accidental spillage of these materials during routine maintenance may contaminate soil and surface water, possibly resulting in exceedances of water quality standards of the Water Quality Control Plan and California Ocean Plan which is considered a potentially significant impact (Class II).

The Marsh is entirely undeveloped and does not include any structures requiring fire protection. The proposed project would involve equipment use that could be a source of ignition. However, all proposed equipment use would be in areas with saturated soils and hydrated vegetation. Therefore, a project-related increase in wildfire hazard is not expected.

Mitigation Measures:

Mitigation measures provided in the 2003 Final EIR have been modified to address current conditions and the proposed Updated Enhancement Plan.

HAZ-1. Fueling and maintenance of equipment and vehicles used for construction and routine maintenance shall be completed at least 100 feet from the nearest channel or wetland area. The dredge and booster pump may be fueled in place (within or adjacent to channels) provided a containment area is provided to collect any spillage and spill response kits are located at the fueling site. Spill containment and clean-up procedures shall be developed as part of the District's Standard Maintenance Practices. All District field staff shall be trained in the appropriate procedures. The contractor shall be held responsible for compliance with spill containment and clean-up procedures and removing and properly disposing of any hazardous materials that are brought onto the site as a result of construction or routine maintenance activities and removing and properly disposing of any soils that become contaminated on-site through spillage or leakage. All such contaminated areas shall be cleaned up prior to completion of any construction or routine maintenance.

Plan Requirements and Timing: Fueling areas shall be identified and spill containment and clean-up procedures shall be noted on construction plans. These plans shall be reviewed and approved by the District. Spill containment and clean-up procedures for routine maintenance shall be included in the District's Standard Maintenance Practices.

MONITORING: District staff shall verify equipment fueling and maintenance is properly conducted, and any contaminated soil is removed.

Mitigation for Impact UP-HAZ-1 is provided as Mitigation Measure GEO-3 (see Section 5.5.2.3)

5.8.2.4 Cumulative Impacts

Construction of the other projects listed in Section 4.6 may result in inadvertent discharge of fuel, lubricants, coolant or other contaminants to the construction site and/or adjacent drainages that may be a hazard to the environment. The incremental contribution of the proposed project to this hazard may be cumulatively considerable.

5.8.2.5 Residual Impacts

Mitigation measures provided in the 2003 Final EIR (as modified above) are adequate to reduce hazardous materials impacts associated with the Updated Enhancement Plan to a level of less than significant.

5.9 RECREATION

This section presents a discussion of potential recreation impacts associated with the proposed Updated Enhancement Plan.

5.9.1 Setting

Excluding the City of Carpinteria's Nature Park, the Marsh is not open to the general public for recreational use. However, guided tours of the Carpinteria Salt Marsh Reserve are provided for school field trips and other groups. Recreational use of the Marsh is limited to passive use such as nature study and birdwatching.

The City's Nature Park is located on the eastern margin of the Marsh and provides trails, interpretive signage and picnic areas. In addition, the public has access to Basin 1 from the Nature Park via a pedestrian bridge over Franklin Creek. This bridge is part of Restoration Action R1 of the existing Enhancement Plan.

In addition to the Nature Park, City parks in proximity to the Marsh include City Beach (Ash Avenue east to Linden Avenue), Memorial Park, Heath Ranch Park and Adobe, Franklin Park and El Carro Park.

Santa Claus Lane County beach is located just northwest of the Marsh. Carpinteria State Beach is located approximately 1,500 feet east of the Marsh and provides day use and camping facilities, including spaces for trailers and recreational vehicles.

5.9.2 Impact Analysis and Mitigation Measures

5.9.2.1 Thresholds of Significance

Significance thresholds for recreation impacts are taken from the State CEQA Guidelines, which indicate a project may have a significant impact with respect to recreation if it results in any of the following:

- Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration would occur or be accelerated.
- Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

5.9.2.2 Impacts of the Existing Carpinteria Salt Marsh Enhancement Plan

Recreational impacts of the existing Enhancement Plan were found to be less than significant in the short-term and beneficial in the long-term due implementation of restoration. The discussion from the 2003 Final EIR is provided below:

Carpinteria Marsh is not open to the public for general recreational use. It does, however, provide birdwatching /wildlife viewing opportunities for those who use the adjacent Carpinteria Salt Marsh Nature Park. Short-term impacts to those who use the Nature Park for wildlife viewing from project-induced noise are addressed under Impact NOI-6. Overall, the project would benefit recreational activities such as birdwatching by enhancing/restoring habitat. Additionally, the Land Trust may implement several improvements in Basin 1 to provide passive recreational opportunities, including providing a pedestrian footbridge over Franklin Creek from the Nature Park, a 1,200-foot-long gravel path, and four interpretive stations. The project would not increase the demand for or otherwise affect recreational resources.

The proposed Updated Enhancement Plan would result in additional short-term impacts that may adversely affect recreational opportunities and are addressed in Section 5.9.2.3. However, beneficial impacts associated with past restoration conducted under the existing Enhancement Plan would not be altered.

5.9.2.3 Impacts of the Proposed Updated Enhancement Plan

Changes proposed as part of the Updated Enhancement Plan that would modify or result in new recreation impacts include:

- Surf zone disposal at City Beach instead of upland disposal during drag-line desilting of upper Franklin Creek and Santa Monica Creek.
- Hydraulic dredging of the upper Franklin Creek and Santa Monica Creek with surf zone disposal at the Marsh mouth instead of drag-line desilting with upland disposal.
- Hydraulic dredging of lower Franklin Creek and the Main Channel with surf zone disposal.
- Hydraulic dredging of all major channels in the Marsh (Franklin Creek, Santa Monica Creek and the Main Channel) with surf zone disposal.
- Avenue Del Mar drainage system maintenance.

Impact UP-REC-1: Proposed disposal of Marsh sediment in the surf zone would preclude recreational use of a portion of City Beach. Surf zone disposal of Marsh sediments was not fully addressed in the 2003 Final EIR because sediments were not considered “beach quality material” and would not be discharged. As surf zone disposal of sediments removed from the Marsh is not part of the environmental baseline, this is a new component. Proposed changes to the Enhancement Plan include surf zone disposal of trucked sediment from upper Franklin and Santa Monica Creeks removed by drag-line desilting and surf zone disposal of trucked sediment from re-established tidal channels in the South Marsh removed by excavation.

Queuing of trucks and disposal of sediment at the terminus of Ash Avenue would temporarily preclude the use of about 100 linear feet of beachfront and may disrupt parking of beach users. This impact to recreational use of City Beach is considered less than significant (Class III) because it would not occur during peak season, it would be temporary (up to about six weeks) and affect only a small portion of the beach.

Impact UP-REC-2: Proposed surf zone disposal of sediments removed from major channels (Franklin Creek, Santa Monica Creek, Main Channel) and tidal channels in the South Marsh would contribute to beach nourishment and increase the beach width. In contrast to the environmental baseline, the proposed project includes surf zone disposal of sediment at City Beach or near the Marsh mouth consistent with the Coastal Regional Sediment Management Plan, which would contribute to a wider beach. This action would increase the beach area available for recreation and is considered a beneficial impact (Class IV).

The use of hydraulic dredging instead of drag-line desilting for routine maintenance of upper Franklin and Santa Monica Creeks would avoid surf zone disposal at City Beach. Under the Updated Enhancement Plan, dredged sediment would be disposed in the surf zone near the Marsh mouth as a sediment/water slurry. Recreational impacts associated with surf zone sediment disposal at City Beach would be avoided. However, surf zone disposal is not currently conducted for routine maintenance and is not part of the environmental baseline due to permit limitations.

Implementation of the proposed Updated Enhancement Plan would not involve any new development that could result in increased use of existing parks or recreational facilities and would not require the construction or expansion of recreational facilities and related impacts.

5.9.2.4 Cumulative Impacts

Many of the cumulative projects listed in Section 4.6 are residential projects and would result in an increase in the local population which may cause greater use of existing parks and other recreational facilities and potentially require the construction of new recreational facilities. The proposed project does not involve any new development, would not increase use of existing parks or recreational facilities and would not contribute to this cumulative impact.

The other cumulative projects would not directly adversely affect recreational use of City Beach or the Marsh and would not contribute to project-specific impacts.

5.9.2.5 Residual Impacts

As significant recreation impacts were not identified, mitigation is not required, and residual impacts would be the same as project-specific impacts.

5.10 TRANSPORTATION/TRAFFIC

This section presents a discussion of potential transportation and traffic impacts associated with the proposed Updated Enhancement Plan.

5.10.1 Setting

The quality of traffic service provided by a roadway system can be described through the Level of Service (LOS) concept. LOS is a standardized means of describing traffic conditions by comparing traffic volumes in a roadway system with the system's capacity. An LOS rating of A, B or C indicates that the roadway is operating efficiently. Minor delays are possible on an arterial with a LOS of D. Level E represents traffic volumes at or near the capacity of the roadway, resulting in possible delays and unstable flow.

Regional access to the Marsh is provided by U.S. Highway 101, with a freeway interchange located to the northeast (Linden Avenue) and a southbound offramp to Carpinteria Avenue to the northwest. Year 2017 traffic volumes provided by the California Department of Transportation (Caltrans) indicate 72,500 average annual daily trips occur on U.S. 101 north of the Linden Avenue interchange, with 68,300 to the south.

The Marsh is accessed from Carpinteria Avenue for construction, routine maintenance and authorized scientific and nature study purposes. Public access to the Nature Park and Basin 1 is provided by Ash Avenue. Carpinteria Avenue is a two-lane facility with Class 2 bike lanes on both shoulders. The posted speed limit on Carpinteria Avenue near the Marsh is 35 mph (just west of the Linden Avenue intersection).

Proposed trucking of removed sediments from the Marsh to Carpinteria City Beach would follow Carpinteria Avenue to the east, right on Seventh Street, right on Linden Avenue, right on Sandyland Road to Ash Avenue (see Figure 4-2).

Table 5.10-1 provides calculated level of service for nearby intersections based on traffic counts conducted in January 2016 by Associated Transportation Engineers (2016). As shown in Figure 4-2, the proposed sediment disposal trucking route includes the Carpinteria Avenue/Seventh Street intersection.

Table 5.10-1. Existing (2016) Level of Service (LOS) at Nearby Intersections

Intersection	AM Peak	PM Peak
Carpinteria Avenue/Seventh Street	B	C
Linden Avenue/Carpinteria Avenue	C	C
Santa Ynez Avenue/Via Real	C	C

5.10.2 Impact Analysis and Mitigation Measures

5.10.2.1 Thresholds of Significance

Santa Barbara County Environmental Thresholds and Guidelines Manual. The County's Manual (revised 2018) is used to assess the project's potential to generate project-specific and/or cumulative traffic impacts. The County's thresholds are listed below.

a. An impact is considered significant if the addition of project traffic to an intersection exceeds the following values:

Intersection Level of Service (Including Project)	Increase in V/C or Trips Greater Than
LOS A	0.20
LOS B	0.15
LOS C	0.10
LOS D	15 Trips
LOS E	10 Trips
LOS F	5 Trips

b. The project's access to a major road or arterial road would require a driveway that would create an unsafe situation, a new traffic signal or major revisions to an existing traffic signal.

c. The project adds traffic to a roadway that has design features (e.g., narrow width, road-side ditches, sharp curves, poor sight distance, inadequate pavement structure) or receives use which would be incompatible with substantial increases in traffic (e.g., rural roads which use by farm equipment, livestock, horseback riding, or residential roads with heavy pedestrian or recreational use) that would become a potential safety problem with the addition of project or cumulative traffic.

d. Project traffic would utilize a substantial portion of an intersections capacity where the intersection is currently operating at an acceptable LOS (A-C) but with cumulative traffic would degrade, or approach LOS D (V/C 0.81) or lower. Substantial is defined as a minimum change of 0.03 for an intersection which would operate from 0.80 to 0.85, a change of 0.02 for an intersection which would operate from 0.86 to 0.90, and 0.01 for intersections operating at anything lower.

City of Carpinteria Environmental Thresholds Manual. The City's transportation, circulation and parking thresholds are the same as Santa Barbara County thresholds a., b. and d.

5.10.2.2 Impacts of the Existing Carpinteria Salt Marsh Enhancement Plan

The following summarizes transportation impacts identified in the 2003 Final EIR prepared for the existing Enhancement Plan and provides an update on the status of completion of Plan components.

Impact TRANS-1. Construction activities could cause short-term safety impacts and inconvenience traffic along Sandyland Cove Road, Del Mar Avenue, and at the access roads' intersection with Carpinteria Avenue. The project would not create long-term traffic impacts; all impacts would be short-term and related to construction equipment involved in such activities as constructing berms and floodwalls, desilting the creeks, removing the sediment from the site, dredging Basin 3 and the mouth of the creek, removing berms, and restoring portions of the Marsh.

Construction also would occur along the north side of Del Mar Avenue, requiring access from this private road. Equipment such as a dragline crane, dozer/loader, excavator, and backhoe would enter the Marsh and remain until construction was completed. Cement trucks would require multiple trips. A small number of employee commuting roundtrips per day would occur, as well. Impacts to local roadways from this small increase in traffic would not be significant.

After the sediment removed from the creeks was dewatered, it would be hauled to an off-site disposal area. The precise disposal site or sites is not known, but it is assumed that the material would be used for agricultural purposes in the Carpinteria area. It is estimated that between 3,000 and 20,000 cy of sediment could be removed from both Franklin and Santa Monica creeks. If 20,000 cy were removed, trucks would operate for about 50 days, also making 4 roundtrips per hour, or 40 roundtrips per day. Trips would be evenly spread out over a 10-hour day and would not cause significant level of service changes at nearby streets and intersections. Because of the size of the trucks and the number of daily trips involved, they potentially could cause safety impacts and temporarily inconvenience traffic along Sandyland Cove Road, Del Mar Avenue, and at the access roads' intersection with Carpinteria Avenue. Impacts would be significant but feasibly mitigable (Class II).

Equipment and vehicle access for routine maintenance would continue to use Estero Way and Sandyland Cove Road. Potential safety impacts associated with trucks accessing Carpinteria Avenue and Sandyland Cove Road would not be modified. Flood wall construction along Avenue Del Mar has been completed such that project-related traffic on this roadway would not occur. Restoration Action R2 (dredging Basin 3) has not been completed, such that access from Sand Point Road may be required. Transportation impacts associated with proposed changes to the Enhancement Plan are addressed in Section 5.10.2.3.

5.10.2.3 Impacts of the Proposed Updated Enhancement Plan

Changes proposed as part of the Updated Enhancement Plan that would modify or result in new transportation impacts include:

- Surf zone disposal at City Beach instead of upland disposal during drag-line desilting of upper Franklin Creek and Santa Monica Creek, including increased number of truck trips per day.
- Hydraulic dredging of upper Franklin Creek and Santa Monica Creek with surf zone disposal at the Marsh mouth instead of drag-line desilting with upland disposal.
- Avenue Del Mar drainage system maintenance.

Impact UP-TRANS-1: Trucking of Marsh sediment to City Beach for disposal would contribute to traffic congestion on City streets. The intersection with the greatest traffic volumes along the trucking route is the Carpinteria Avenue/Seventh Street intersection which operates at LOS B during a.m. peak hour and LOS C during p.m. peak hour. Other affected intersections (along Seventh Street) handle much lower volumes and are anticipated to operate at LOS C or better. The proposed Updated Enhancement Plan would generate up to 40 peak hour trips (see Table 5.10-2) (20 round trips per hour). However, due to the lack of space for queuing trucks and limited operating area for heavy equipment unloading trucks and spreading sediment at City Beach, typical hourly truck trips would be less. Affected turning movements at the Carpinteria Avenue/Seventh Street intersection are eastbound right and northbound left, which comprise only 7 percent of the total vehicle turning movements during a.m. peak hour and 10 percent during p.m. peak hour. The addition of up to 40 hourly truck trips to this intersection would affect total turning movements by up to 4 percent during a.m. peak hour and 3 percent during p.m. peak hour. Due to the short-term nature of proposed sediment trucking to City Beach and relatively low traffic generation rates, potential traffic congestion impacts are considered less than significant (Class III).

Table 5.10-2. Trip Generation Estimates

Activity	Peak Day Round Trips		Peak Hour Trips (one-way)	
	Autos/Light-duty Trucks	Heavy Duty Trucks	Autos/Light-duty Trucks	Heavy Duty Trucks
Drag-line desilting upper Franklin and Santa Monica Creeks with sediment disposal at City Beach	4	200	0	40*
Hydraulic dredging upper Franklin and Santa Monica Creeks with beach sediment disposal at Marsh mouth	6	2	1	1
Hydraulic dredging lower Franklin Creek and the Main Channel with beach sediment disposal at Marsh mouth	6	2	1	1
Re-establishment of South Marsh tidal channels with sediment disposal at City Beach	6	30	1	6*

*Assumes truck trips occur at the same rate throughout the 10-hour work day

Implementation of the proposed Updated Enhancement Plan would not involve the construction of any new roads or driveways and would not add traffic to a roadway with incompatible design features.

Mitigation Measures:

The mitigation measure provided in the 2003 Final EIR has been modified to address the proposed Updated Enhancement Plan.

TRANS-1. Flag-persons and warning signs shall be used as needed to ensure the safe ingress and egress of heavy-duty trucks to and from Carpinteria Avenue and to facilitate the safe transit of trucks and equipment accessing the South Marsh at the southern end of Sandyland Cove Road. Notice of construction and routine maintenance activities shall be given to adjacent residents prior to the onset of activities affecting these roadways.

Plan Requirements and Timing: The District shall notify adjacent residents prior to the onset of activities affecting these roadways. During construction and routine maintenance, the District shall designate flag-persons and post warning signs as needed.

MONITORING: District staff shall verify adjacent residents are notified, warning signs are posted and flag-persons used as needed.

5.10.2.4 Cumulative Impacts

Many of the cumulative projects listed in Section 4.6 would generate traffic on City streets and could result in traffic congestion. Proposed trucking of sediments to City Beach for disposal would incrementally contribute to cumulative traffic congestion. Due to the relatively small number of peak hour trips generated and available capacity of roadways and intersections affected by the project, the incremental contribution of the proposed project would not be cumulatively considerable.

5.10.2.5 Residual Impacts

Mitigation measures provided in the 2003 Final EIR (as modified above) are adequate to reduce transportation impacts associated with the Updated Enhancement Plan to a level of less than significant.

5.10.3 References

Associated Transportation Engineers. 2016. *Traffic, Circulation and Parking Study, Patel Hotel Project, City of Carpinteria, California*.

5.11 OTHER IMPACTS NOT CONSIDERED SIGNIFICANT

This section of the Subsequent EIR provides discussion of the environmental impacts of the proposed project for issue areas not addressed in Sections 5.1 through 5.10.

5.11.1 Agricultural and Forestry Resources

5.11.1.1 Setting

Important Farmlands. The Farmland Mapping and Monitoring Program operated by the California Department of Conservation has classified farmland as "Prime," "Statewide Importance," "Unique" and "Local Importance". In the project area, the basis for this classification is the Soil Survey of Santa Barbara County, California, South Coastal Part.

"Prime" farmlands are defined as farmland with the best combination of physical and chemical features able to sustain long-term production of agricultural crops. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Land must have been used for production of irrigated crops at some time during the four years prior to the most recent mapping date (2016).

"Farmlands of Statewide Importance" are lands similar to "Prime" but with minor shortcomings, such as greater slopes or less soil moisture-holding capacity. Land must have been used for production of irrigated crops at some time during the four years prior to the most recent mapping date (2016).

"Unique Farmlands" are other lands of lesser quality soils used for production of the State's leading agricultural crops. This land is usually irrigated, but may include non-irrigated orchards or vineyards. Land must have been used for production of crops at some time during the four years prior to the most recent mapping date (2016).

"Farmland of Local Importance" is considered to be important to the local agricultural economy as determined by each county's board of supervisors and a local advisory committee.

The Marsh does not include any agricultural lands; however, agricultural lands uses occur just north of U.S. Highway 101, including greenhouses, row crops and orchards. The nearest Prime farmland is located approximately 1,800 feet north of the Marsh. The nearest Farmlands of Statewide Importance are located approximately 800 feet north of the Marsh. The nearest Unique Farmlands are located approximately 400 feet north of the Marsh.

Forest Land. The nearest forest land (as defined in Public Resources Code Section 12220) or timberland is located within the Los Padres National Forest, approximately 1.3 miles north of the Marsh.

Zoning. The portion of the Marsh within Santa Barbara County (Basins 1, 2 and 3, South Marsh) has RES-100 zoning with an environmentally sensitive habitat area overlay. The portion of the Marsh within the City of Carpinteria (Nature Park) is zoned as Recreation.

5.11.1.2 Impacts

The proposed project would not result in the conversion of farmland to non-agricultural use, not result in any change in agricultural zoning, would be consistent with existing zoning, would not affect any Williamson Act contracts, and would not cause any forest land or timberlands to be converted or rezoned. The project is not anticipated to result in impacts related to agricultural or forestry resources.

5.11.2 Energy

The proposed project would consume non-renewable energy in the form of fuels and lubricants for vehicles and equipment used to conduct routine maintenance. This energy use would not be wasteful, inefficient or unnecessary. The proposed project would not conflict with any State or local plan for renewable energy or energy efficiency, including the County's Energy and Climate Action Plan.

5.11.3 Land Use and Planning

5.11.3.1 Setting

The portion of the Marsh within Santa Barbara County (Basins 1, 2 and 3, South Marsh) has a land use designation of Open Lands with an environmentally sensitive habitat area overlay. The portion of the Marsh within the City of Carpinteria (Nature Park) has a land use designation of Open Space/Recreation.

5.11.3.2 Impacts

The proposed project would not require a change in land use or zoning, and would not involve in the construction of any roads, barriers, or facilities that could potentially physically divide an existing community. The proposed project would not conflict with any policies of the Santa Barbara County Coastal Land Use Plan (see Section 6.2), the City of Carpinteria's General Plan and Local Coastal Plan (see Section 6.4) and the County's ECAP (see Section 6.5).

5.11.4 Mineral Resources

5.11.4.1 Setting

Aggregate is the only locally important mineral resource and is defined as construction grade sand and gravel. Mineral resource areas have not been identified in the project area. The nearest aggregate production site is the Ojai Quarry located approximately 14 miles northeast of the Marsh.

5.11.4.2 Impacts

The proposed project would not adversely affect the availability of these mineral resources.

5.11.5 Population and Housing

5.11.5.1 Setting

The proposed project would be located within the Santa Barbara County Carpinteria Valley Coastal Planning Area. Housing inventories in the area are regulated in part through implementation of the County's Coastal Land Use Plan and Toro Canyon Community Plan, and the City's General Plan and Local Coastal Plan.

5.11.5.2 Impacts

The project would not directly result in the construction of any homes or facilities that would attract people to the area. Due to the relatively small number and temporary nature of employment opportunities provided, it is not expected that the project would facilitate economic expansion, population growth or the construction of additional housing.

5.11.6 Public Services

The proposed project would not involve any new housing or employment opportunities, such that it would not generate any demand for public facilities, including fire protection, police protection, schools or parks.

5.11.7 Utilities and Service Systems

The Marsh is entirely undeveloped with utility and service systems limited to adjacent residential development. The proposed project would not require any new or modified utilities including electricity, natural gas, storm water drainage systems, water supply systems, wastewater collection or treatment systems or telecommunications systems.

6.0 CONSISTENCY WITH ADOPTED PLANS AND POLICIES

6.1 CALIFORNIA COASTAL ACT

The entire project site is located within the boundaries of the California Coastal Zone. The California Coastal Commission certifies Local Coastal Programs (in this case the Santa Barbara County Coastal Land Use Plan, discussed in Section 6.2), and acts as an appeal body for developments that are appealable to the Commission. The Commission also exercises original permit jurisdiction on state tidelands, submerged lands, public trust lands, and all lands seaward of the mean high tide lines out to 3 miles, including the Marsh. Therefore, actions affecting such lands are subject to the requirements of the California Coastal Act of 1976 (California Public Resources Code Sections 30000-30900).

The basic goals of the state for the coastal zone, as described in Section 30001.5 of the Act, are to:

- Protect, maintain, and, where feasible, enhance and restore the overall quality of the coastal zone environment and its natural and artificial resources.
- Assure orderly, balanced utilization and conservation of coastal zone resources taking into account the social and economic needs of the people of the state.
- Maximize public access to and along the coast and maximize public recreational opportunities in the coastal zone consistent with sound resource conservation principles and constitutionally protected rights of private property owners.
- Assure priority for coastal-dependent and coastal-related development over other development on the coast.
- Encourage state and local initiatives and cooperation in preparing procedures to implement coordinated planning and development for mutually beneficial uses, including educational uses, in the coastal zone.

Applicable sections of the Act include the following:

Section 30230. Marine resources shall be maintained, enhanced, and, where feasible, restored. Special protection shall be given to areas and species of special biological or economic significance. Uses of the marine environment shall be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes.

Section 30231. The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface water flow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.

As noted in Section 5.3, the proposed project would result in the temporray loss of coastal salt marsh and may adversely impact special-status plant and wildlife species, as well as other wildlife and marine/aquatic species and their habitat. These impacts are all mitigable to less than significant levels through implementation of the measures identified in this Subsequent EIR (Section 5.3). Past implementation of the existing Enhancement Plan (including Restoration Actions R1 and R3) has resulted in long-term beneficial impacts. Proposed maintenance of tidal channels in the South Marsh would result in additional long-term beneficial impacts to coastal salt marsh, estuarine organisms and special-status species. Overall, the proposed project would have long-term beneficial impacts to marine resources and maintain biological productivity through improved tidal circulation, improved water quality and increased estuarine fish habitat. With mitigation, the project would be consistent with these sections of the Coastal Act.

30233. (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:

(1) New or expanded port, energy, and coastal-dependent industrial facilities, including commercial fishing facilities.

(2) Maintaining existing, or restoring previously dredged, depths in existing navigational channels, turning basins, vessel berthing and mooring areas, and boat launching ramps.

(3) In wetland areas only, entrance channels for new or expanded boating facilities; and in a degraded wetland, identified by the Department of Fish and Game pursuant to subdivision (b) of Section 30411, for boating facilities if, in conjunction with such boating facilities, a substantial portion of the degraded wetland is restored and maintained as a biologically productive wetland; provided, however, that in no event shall the size of the wetland area used for such boating facility, including berthing space, turning basins, necessary navigation channels, and any necessary support service facilities, be greater than 25 percent of the total wetland area to be restored.

(4) In open coastal waters, other than wetlands, including streams, estuaries, and lakes, new or expanded boating facilities.

(5) 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.

(6) Mineral extraction, including sand for restoring beaches, except in environmentally sensitive areas.

(7) Restoration purposes.

(8) Nature study, aquaculture, or similar resource-dependent activities.

(b) Dredging and spoils disposal shall be planned and carried out to avoid significant disruption to marine and wildlife habitats and water circulation. Dredge spoils suitable for beach replenishment should be transported for such purposes to appropriate beaches or into suitable longshore current systems.

(c) In addition to the other provisions of this section, diking, filling, or dredging in existing estuaries and wetlands shall maintain or enhance the functional capacity of the wetland or estuary. Any alteration of coastal wetlands identified by the Department of Fish and Game, shall be limited to very minor incidental public facilities, restorative measures, nature study, commercial fishing facilities in Bodega Bay, and development in already developed parts of South San Diego Bay, if otherwise in accordance with this division.

(d) Erosion control and flood control facilities constructed on watercourses can impede the movement of sediment and nutrients which would otherwise be carried by storm runoff into coastal waters. To facilitate the continued delivery of these sediments to the littoral zone, whenever feasible, the material removed from these facilities may be placed at appropriate points on the shoreline in accordance with other applicable provision of this division, where feasible mitigation measures have been provided to minimize adverse environmental effects. Aspects that shall be considered before issuing a coastal development permit for such purposes are the method of placement, time of year of placement, and sensitivity of the placement area.

Drag-line desilting of the Marsh (existing) and proposed hydraulic dredging would increase tidal flushing/circulation, which would improve water quality; reduce the potential for siltation in the Marsh by decreasing the source of sediment; and remove existing sediment build-up. Sediment removal would in part be conducted for restoration purposes. Mitigation measures have been identified in this Subsequent EIR that would effectively minimize impacts to biological resources and water quality. No feasible less environmentally damaging alternative is available. Overall, the project would have long-term beneficial impacts to biological and water resources. Dredged material would be disposed of on the beach or in the surf zone if found to be suitable for this purpose. Therefore, with mitigation the project would be consistent with this section of the Coastal Act.

Section 30236. Channelizations, dams, or other substantial alterations of rivers and streams shall incorporate the best mitigation measures feasible, and be limited to (1) necessary water supply projects, (2) flood control projects where no other method for protecting existing structures in the floodplain is feasible and where such protection is necessary for public safety or to protect existing development, or (3) developments where the primary function is the improvement of fish and wildlife habitat.

A primary purpose of the proposed project is to provide flood protection for adjacent land uses by the removal of sediment from channels that already have been modified by past flood control activities. The 2003 Final EIR examined a range of alternative methods for providing flood protection to ensure that the least damaging alternative was identified. Mitigation measures have been identified in this Subsequent EIR that would reduce all significant impacts to a less than significant level. With mitigation, the proposed project would be consistent with this policy.

Section 30240. (a) Environmentally sensitive habitat areas 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 environmentally sensitive habitat areas 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.

Overall, the project would benefit the biological resources (including environmentally sensitive habitat areas) of the Marsh, as discussed under Sections 30230 and 30231. Mitigation measures have been identified that would reduce all significant impacts to environmentally sensitive habitat areas to a less than significant level. The project would be compatible with continued recreational use of the Nature Park. With mitigation, the proposed project would be consistent with this policy.

Section 30244. Where development would adversely impact archaeological or paleontological resources as identified by the State Historic Preservation Officer, reasonable mitigation measures shall be required.

No known cultural resources are present in the area that would be disturbed by the project. Construction identified in the existing Enhancement Plan along the Marsh margins where cultural resources could occur has been completed. Proposed disturbance under the Updated Enhancement Plan would be limited to existing channels of the Marsh, where cultural resources are not present due to past excavation. Therefore, the proposed project would be consistent with this policy.

Section 30251. The scenic and visual qualities of coastal areas shall be considered and protected as a resource of public importance. Permitted development shall be sited and designed to protect views to and along the ocean and scenic coastal areas, to minimize the alteration of natural landforms, to be visually compatible with the character of surrounding areas, and where feasible, to restore and enhance visual quality in visually degraded areas.

As noted in Section 5.1, impacts to scenic resources associated with the Updated Enhancement Plan would be limited to short-term turbidity of nearshore ocean waters (beach and surf zone sediment disposal) and minor short-term degradation of visual quality of public views of the Marsh due to heavy equipment activity. Public views of the ocean would be protected, natural landforms would not be altered, and the project would be visually compatible with surrounding areas. Therefore, the proposed project would be consistent with this policy.

Section 30253. New development shall: (1) Minimize risks to life and property in areas of high geologic, flood, and fire hazard. (2) Assure stability and structural integrity, and neither create nor contribute significantly to erosion, geologic instability, or destruction of the site or surrounding area or in any way require the construction of protective devices that would substantially alter natural landforms along bluffs and cliffs.

As compared to the existing Enhancement Plan, the proposed project would provide improved flood protection through dredging of lower Franklin Creek and the Main Channel and maintenance of tidal channels in the South Marsh. The project would not contribute to erosion, geologic instability or alter landforms along bluffs or cliffs. Existing temporary stockpiling of sediment removed by drag-line desilting is susceptible to wind and water erosion, but existing mitigation reduces this impact to a less than significant level. With mitigation, the proposed project would be consistent with this policy.

Section 30253.(4). New development shall be consistent with requirements, imposed by an air pollution control district or the State Air Resources Control Board as to each particular development.

As described in Section 5.2, the proposed project would result in significant, but feasibly mitigated impacts caused by PM_{10} emissions (Impact AQ-3) and cumulative NO_x and ROC emissions associated with routine maintenance. With mitigation, the proposed project would be consistent with this policy.

Section 30607.1. Where any dike and fill development is permitted in wetlands in conformity with Section 30233 or other applicable policies set forth in this division, mitigation measures shall include, at a minimum, either acquisition of equivalent areas of equal or greater biological productivity or opening up equivalent areas to tidal action; provided, however, that if no appropriate restoration site is available, an in-lieu fee sufficient to provide an area of equivalent productive value or surface areas shall be dedicated to an appropriate public agency, or the replacement site shall be purchased before the dike or fill development may proceed. The mitigation measures shall not be required for temporary or short-term fill or diking if a bond or other evidence of financial responsibility is provided to assure that restoration will be accomplished in the shortest feasible time.

The proposed Updated Enhancement Plan does not involve any fill in wetlands. As per existing conditions, removed sediment would be temporarily stockpiled in previously disturbed areas that do not support wetlands. These sediments would be removed from the Marsh when properly drained. The proposed project would be consistent with this policy.

6.2 SANTA BARBARA COUNTY COASTAL LAND USE PLAN

The following discussion addresses consistency with the policies of the County's Coastal Land Use Plan.

Coastal Plan Policy 3-13. Plans for development shall minimize cut and fill operations. Plans requiring excessive cutting and filling may be denied if it is determined that the development could be carried out with less alteration of the natural terrain.

Floodwalls included in the existing Enhancement Plan have been completed with minimal cut and fill. Proposed alteration of the natural terrain would be limited to periodic removal of accumulated sediments to restore channel capacity. The proposed project is consistent with this policy.

Coastal Plan Policy 3-14. All development shall be designed to fit the site topography, soils, geology, hydrology, and any other existing conditions and be oriented so that grading and other site preparation is kept to an absolute minimum. Natural features, landforms, and native vegetation, such as trees, shall be preserved to the maximum extent feasible. Areas of the site which are not suited for development because of known soils, geologic, flood, erosion, or other hazards shall remain in open space.

The existing Enhancement Plan and proposed changes would not change the land use and is consistent with the topography, geology and hydrology of the Marsh. Natural features of the Marsh have been previously modified by channel creation and maintenance and the proposed project would not affect any areas that have not been previously disturbed. Therefore, the project would be consistent with this policy.

Coastal Plan Policy 3-17. Temporary vegetation, seeding, mulching, or other suitable stabilization method shall be used to protect soils subject to erosion that have been disturbed during grading or development. All cut and fill slopes shall be stabilized immediately with planting of native grasses and shrubs, appropriate nonnative plants, or with accepted landscaping practices.

No cut or fill slopes are proposed. This Subsequent EIR provides mitigation measures (AQ-1, GEO-1) to minimize erosion. With mitigation, the proposed project would be consistent with this policy.

Coastal Plan Policy 3-19. Degradation of the water quality of groundwater basins, nearby streams, or wetlands shall not result from development of the site. Pollutants, such as chemicals, fuels, lubricants, raw sewage, and other harmful waste, shall not be discharged into or alongside coastal streams or wetlands either during or after construction.

The proposed project does not involve any discharges that may affect the quality of groundwater. Dredging-related short-term impacts to water quality of streams and wetlands (Marsh channels) would be mitigated to a level of less than significant. Accidental discharge of fuels, lubricants, or coolant could occur during construction or routine maintenance. This Subsequent EIR provides mitigation (HAZ-1) that would minimize the potential for discharge to occur and would minimize any adverse effects should such a discharge occur. With mitigation, the proposed project would be consistent with this policy.

Coastal Plan Policy 9-1. Prior to the issuance of a development permit, all projects on parcels shown on the land use plan and/or resource maps with a Habitat Area overlay designation or within 250 feet of such designation or projects affecting an environmentally sensitive habitat area shall be found to be in conformity with the applicable habitat protection policies of the land use plan. All development plans, grading plans, etc. shall show the precise location of the habitat(s) potentially affected by the project. Projects which could adversely impact an environmentally sensitive habitat area may be subject to a site inspection by a qualified biologist to be selected jointly by the County and the applicant.

The entire Marsh as shown on Figure 3-1 (Basins 1, 2 and 3, South Marsh, Nature Park) is considered environmentally sensitive habitat under the Coastal Act. The existing Enhancement Plan is currently authorized under Coastal Development Permit 4-4-0492, which would be renewed prior to the April 17, 2020 expiration date. A site inspection by a qualified biologist would be conducted as part of renewal of this permit. The proposed project (with mitigation) is consistent with habitat protection policies related to environmentally sensitive habitat. Therefore, it would be consistent with Coastal Plan Policy 9-1.

Coastal Plan Policy 9-6. All diking, dredging, and filling activities shall conform to the provisions of Sections 30233 and 30607.1 of the Coastal Act. Dredging, when consistent with these provisions and where necessary for the maintenance of the tidal flow and continued viability of the wetland habitat or for flood control purposes, shall be subject to the following conditions:

(a) Dredging shall be prohibited in breeding and nursery areas and during period s of fish migration and spawning.

(b) Dredging shall be limited to the smallest area feasible.

(c) Designs for dredging and excavation projects shall include protective measures such as silt curtains, diapers and weirs to protect water quality in adjacent areas during construction by preventing the discharge of refuse, petroleum spills, and unnecessary dispersal of silt materials. During permitted dredging operations, dredge spoils may only be temporarily stored on existing dikes or on designated spoil storage areas.

As discussed in Section 6.1, the proposed project would be consistent with Sections 30233 and 30607.1 of the Coastal Act. Channel desilting and hydraulic dredging would be scheduled in the fall or winter to avoid the spring-summer larval recruitment period for fish and invertebrates. Dredging would be limited to existing channels and affect the smallest area feasible. Removed sediment would be stockpiled in existing designated staging/storage areas. Silt fences would be used to contain temporarily stockpiled sediment while draining. Stockpiled sediment would be removed from the Marsh within 60 to 90 days. The proposed project would be consistent with this policy.

Coastal Plan Policy 9-7: Dredge spoils shall not be deposited permanently in areas subject to tidal influence or in areas where public access would be significantly adversely affected. Where feasible, spoils should be deposited in the littoral drift, except when contaminants would adversely affect water quality or marine habitats, or on the beach.

Removed sediment (dredge spoils) would be temporarily stockpiled in areas not subject to tidal influence and would not affect public access. These sediments would be discharged to the surf zone as beach nourishment if found to be suitable by affected regulatory agencies. Therefore, the proposed project would be consistent with this policy.

Coastal Plan Policy 9-12: Wetland sandbars may be dredged, when permitted pursuant to Policy 9-6 above, and when necessary for maintenance of tidal flow to ensure the continued biological productivity of the wetland.

Opening of the Marsh mouth to maintain tidal circulation is part of the existing Enhancement Plan and would not be modified as part of the proposed project. This activity would be approved by regulatory agencies and scheduled to minimize impacts to estuarine fish and invertebrates. Therefore, the proposed project would be consistent with this policy.

Coastal Plan Policy 9-14: New development adjacent to or in close proximity to wetlands shall be compatible with the continuance of the habitat area and shall not result in a reduction in the biological productivity or water quality of the wetland due to runoff (carrying additional sediment or contaminants), noise, thermal pollution, or other disturbances.

The proposed project does not involve any new development or change in land use. The Updated Enhancement Plan would enhance biological productivity through maintaining tidal circulation and improve water quality. Mitigation measures are provided to minimize short-term impacts to biological resources associated with routine maintenance activities. With mitigation, the proposed project would be consistent with this policy.

Coastal Plan Policy 9-38: No structures shall be located within the stream corridor except: public trails, dams for necessary water supply projects, flood control projects where no other method for protecting existing structures in the flood plain is feasible and where such protection is necessary for public safety or to protect existing development; and other development where the primary function is for the improvement of fish and wildlife habitat. Culverts, fences, pipelines, and bridges may be permitted when no alternative route/location is feasible. All development shall incorporate the best mitigation measures feasible.

The only structures not installed to date are replacement culverts under Estero Way which is part of the existing Enhancement Plan. These structures would not be located in a stream corridor, and only serve to facilitate circulation between Basins 2 and 3 which is impeded by currently deteriorated culverts under Estero Way. This action would serve to improve fish and wildlife habitat. Mitigation measures are provided to minimize short-term impacts to biological resources associated with this activity. With mitigation, the proposed project would be consistent with this policy.

Coastal Plan Policy 9-40: All development, including dredging, filling, and grading within stream corridors, shall be limited to activities necessary for the construction of uses specified in Policy 9-38. When such activities require removal of riparian plant species, revegetation with local native plants shall be required except where undesirable for flood control purposes.

The proposed project would be limited to routine maintenance of existing modified stream channels for flood control purposes, with no removal of riparian vegetation. Therefore, the proposed project would be consistent with this policy.

Coastal Plan Policy 9-41: All permitted construction and grading within stream corridors shall be carried out in such a manner as to minimize impacts from increased runoff, sedimentation, biochemical degradation, or thermal pollution.

The proposed project would involve removal of sediment from existing modified stream channels, which would restore capacity to handle regional run-off without biochemical degradation or thermal pollution. This Subsequent EIR provides mitigation measures to minimize short-term impacts to stream water quality (GEO-1). With mitigation, the proposed project would be consistent with this policy.

Coastal Plan Policy 9-43. Other than projects that are currently approved and/or funded, no further concrete channelization or other major alterations of streams in the coastal zone shall be permitted unless consistent with the provisions of Section 30236 of the Coastal Act.

The proposed project does not involve any concrete channelization or alterations of streams beyond routine maintenance, which is required for flood control purposes. Mitigation measures have been identified in this Subsequent EIR that would reduce all significant impacts to a less than significant level. With mitigation, the proposed project would be consistent with this policy.

Coastal Plan Policy 10-2. When developments are proposed for parcels where archaeological or other cultural sites are located, project design shall be required which avoids impacts to such cultural sites if possible.

Coastal Plan Policy 10-3. When sufficient planning flexibility does not permit avoiding construction on archaeological or other types of cultural sites, adequate mitigation shall be required. Mitigation shall be designed in accord with guidelines of the State Office of Historic Preservation and the State of California Native American Heritage Commission.

No known cultural resources are present in the area that would be disturbed by the project. Construction identified in the existing Enhancement Plan along the Marsh margins where cultural resources could occur has been completed. Proposed disturbance under the Updated Enhancement Plan would be limited to existing channels of the Marsh, where cultural resources are not present due to past excavation. Therefore, the proposed project would be consistent with these policies.

Coastal Plan Policy 11-1. The provisions of the Air Quality Attainment Plan shall apply to the coastal zone.

The Updated Enhancement Plan would remain consistent with the most recent air quality plan (2016 Ozone Plan) as no change in land use would occur and proposed changes to the Plan would have no effect on population projections upon which the Ozone Plan is based. Therefore, the proposed project would be consistent with this policy.

6.3 MANAGEMENT PLAN FOR CARPINTERIA SALT MARSH RESERVE

6.3.1 Infrastructure, Facilities, and Equipment Program

Policy 4-1. Coordinate among owners, regulators, utilities, and districts to provide an infrastructure development and maintenance program to improve the ecosystem functions of the estuarine, e.g., food chain support, endangered species habitats, hydrology, and water quality.

Action 4-1.1. Work with utilities, districts and owners to provide the most efficient and least invasive infrastructure, facilities, and equipment to maintain a healthy marsh.

Action 4-1.2. Maintain all culverts, ditches, basins, berms, oil and sediment traps and fences in appropriate condition to direct watershed runoff, control sedimentation, and maintain tidal circulation.

The Enhancement Plan was developed with considerable input from the Reserve managers, and implementation has substantially benefited the hydrology, water quality, and biological resources of the Marsh. Implementation of the existing Enhancement Plan will result in the replacement of culverts at Estero Way that are currently degraded and maintain tidal circulation. The proposed Updated Enhancement Plan provides additional routine maintenance activities to enhance tidal circulation and improve water quality and habitat value for fish and invertebrates. The proposed project would be consistent with Policy 4-1.

Policy 4-2. Provide appropriate infrastructure, facilities, and equipment to facilitate the research, education, and public service programs at the Reserve.

Action 4-2.1. Maintain access berms and other features that accommodate the needs of Reserve users.

Action 4-2.2: Where feasible and appropriate, maintain necessary infrastructure to facilitate research, education and public service.

Action 4-2.3. Construct a vehicular or pedestrian bridge connecting the south end of Estero Way Extension and the northern berm along the Main Channel.

The Updated Enhancement Plan would not conflict with maintaining access for Reserve users. Access roads and berms are currently maintained as part of existing routine maintenance activities, including access to the northern berm of the Main Channel at Estero Way. The proposed project would be consistent with Policy 4-2.

Policy 4-4. In designing and constructing facilities at the Reserve, consider protection of the cultural, biological, and other resources.

Action 4-4.1. Consult appropriate maps and data to avoid archaeological and historic sites.

Action 4-4.2. Minimize intrusion into sensitive biological habitats.

No known cultural resources are present in the area that would be disturbed by the project. Construction identified in the existing Enhancement Plan along the Marsh margins where cultural resources could occur has been completed. Proposed disturbance under the Updated Enhancement Plan would be limited to existing channels of the Marsh, where cultural resources are not present due to past excavation.

Some sensitive habitats would be impacted by the proposed project, but these impacts have been offset by completed restoration actions and mitigation measures provided for short-term impacts. Limited public access was provided as part of Basin 1 restoration (Nature Park trails and pedestrian bridge), but the site's value as wildlife habitat has not been compromised. With mitigation, the proposed project would be consistent with Policy 4-4.

6.3.2 Ecosystem and Resource Preservation and Maintenance Program

Policy 11-3. To the maximum extent feasible, the mouth of Carpinteria Salt Marsh should remain open to maintain optimal tidal circulation.

Action 11-3.1. Following confirmation that mouth closure has occurred, actions to open the mouth should be taken as soon as possible. The Reserve Manager and Management Advisory Committee should work with the County Flood Control District and relevant permitting agencies to implement this policy.

Opening the mouth of the Marsh is part of the existing Enhancement Plan and would not be modified as part of the proposed project. Therefore, the proposed project would be consistent with this policy.

6.3.3 Restoration and Enhancement Program

Policy 12-1. Through the Management Coordination Program, work with the various property owners and regulatory agencies to implement restoration and enhancement projects in the ecosystem.

Action 12-1.2. Assist the County Flood Control District with the planning, review, permitting, and implementation of the "Carpinteria Salt Marsh Restoration Plan, Phase II-Carpinteria Marsh Enhancement Plan."

Action 12-1.3. Coordinate restoration and enhancement activities throughout the estuary with the Management Advisory Committee, and with Flood Control and Vector Control activities that could affect the restoration or enhancement goals of this Plan.

The District and Reserve managers have coordinated extensively on the development and implementation of the Enhancement Plan. The proposed project would be consistent with this policy.

6.3.4 Endangered and Special Interest Species Protection and Recovery Program

Policy 13-1. Protect endangered and other special interest plant and animal species and their habitats.

Policy 13-2. When appropriate, contribute to the recovery of endangered and other special interest plant and animal species.

Restoration Actions R1 and R3 have expanded estuarine habitat and salt marsh vegetation, which has benefited endangered and special interest species. Mitigation measures have been provided in this Subsequent EIR to minimize short-term impacts related to routine maintenance. Overall, the Updated Enhancement Plan would have long-term beneficial impacts to the biological resources of the Marsh and would be consistent with these policies.

6.3.5 Invasive Exotic Plant Removal Program

Policy 14-1. Identify invasive plant species and develop appropriate methods for the control, or when feasible, the eradication of the targeted plants.

Action 14-1.1. To the maximum extent feasible, eradicate all invasive species identified as problematic at the Reserve.

Action 14-1.2. Avoid use of herbicides such as Roundup and Rodeo in the vicinity of the Reserve unless other alternatives have been found to be ineffective.

The proposed project may result in the removal of exotic vegetation using mechanical methods. Herbicide is not currently or proposed to be used by the District in the Marsh. The proposed project would be consistent with this policy.

6.3.6 Catastrophic Event Response Program

Policy 17-4. Coordinate with the Santa Barbara County Flood Control District to develop and implement a plan to reduce flood threats in and around Carpinteria Salt Marsh.

Action 17-4.1. Assist the Flood Control District in the sponsoring, permitting, and implementation of the Carpinteria Salt Marsh Enhancement Project as outlined in the Restoration and Enhancement Program and the Flood Control Program of this Plan.

The existing Enhancement Plan is a result of the implementation of Policy 17-4 and the proposed Update would further reduce flood threats. Therefore, the proposed project is consistent with this policy.

6.3.7 Flood Control Program

Policy 19-1. Control sediment loading of the marsh to facilitate tidal flushing and improve fish nursery habitat in a manner compatible with the flood control function of marsh channels.

The existing Enhancement Plan helps control sediment loading and facilitates tidal flushing. The proposed Updated Enhancement Plan would further improve tidal circulation and related benefits to fish habitat. Therefore, the proposed project would be consistent with this policy.

6.4 CARPINTERIA GENERAL PLAN AND LOCAL COASTAL PLAN

Although most of the Marsh lies outside the Carpinteria city limits, it is considered to be within its planning area and is identified as an Environmentally Sensitive Habitat Area in the City's General Plan and Local Coastal Plan. The existing Enhancement Plan includes Restoration Action R1 which serves to link Basin 1 to the City's Nature Park. The following are relevant policies.

Policy OSC-1c. Establish and support preservation and restoration programs for ESHAs, including but not limited to Carpinteria Creek, Carpinteria Bluffs, Carpinteria Salt Marsh, seal rookery, Carpinteria reef Pismo clam beds, and the intertidal zones along the shoreline.

Objective OSC-3: Preserve and restore wetlands such as the Carpinteria Salt Marsh.

The existing Enhancement Plan includes restoration activities that have had long-term beneficial impacts to the biological resources (including environmentally sensitive habitat areas and wetlands) of the Marsh. The proposed project would be consistent with this policy.

Policy OSC-3a. Wetland delineations shall be based on the definitions contained in Section 13577b of the Title 14 of the California Code of Regulations.

Policy OSC-3b. The upland limit of a wetland is defined as:

a) The boundary between land with predominantly hydrophytic cover and land with predominately mesophytic or xerophytic cover.

b) The boundary between soil that is predominantly hydric and soil that is predominantly non-hydric;

c) In the case of wetlands without vegetation or soils, the boundary between land that is flooded or saturated at some time during years of normal precipitation, and land that is not.

A formal delineation of coastal wetlands (as defined under Section 13577b) has not been conducted as all areas supporting saturated soils or hydrophytic vegetation within the Marsh are presumed to be coastal wetlands. Therefore, the proposed project would be consistent with this policy.

Policy OSC-3d. Provide additional interpretive and trail opportunities to appropriate areas of the salt marsh if possible, without creating significant impacts from such improvements.

Restoration Action R1 was implemented as part of the existing Enhancement Plan and included a pedestrian trail, several interpretive stations, and a footbridge to connect to the existing trail system in the Nature Park. Installation of these facilities did not result in significant impacts. The proposed project does not include any additional interpretive or trail improvements and would be consistent with this policy.

Policy OSC-4a. Protect the marine resources of the Carpinteria tide pools and Reef and other rocky reefs and intertidal areas. If evidence of depletion of these resources is presented, work with the California Department of Fish and Game to assess the extent of damage and implement mitigating measures.

Discharge of sediments to the beach or surf zone would affect marine resources of intertidal areas due to turbidity and siltation, but the impacts would be short-term and less than significant. Therefore, the proposed project would be consistent with this policy.

Objective OSC-6: Preserve the natural environmental qualities of creekways and protect riparian habitat.

Policy OSC-6c. When alterations to creeks are permitted by the Coastal Act and policies herein, the creeks shall be protected by only allowing creek bank and creek bed alterations where no practical alternative solution is available, where the best mitigation measures feasible have been incorporated, and where any necessary state and federal permits have been issued. Creek alterations should utilize natural creek alterations where possible (e.g., earthen channels, bio-technical stabilization). Nothing in this policy shall be construed to require the City to approve creek alterations not otherwise allowed herein and by the Coastal Act.

Implementation Policies

28. Prohibit all development within stream corridors except for the improvement of fish and wildlife habitat, development necessary for flood control purposes (where no other method to protect existing structures in the floodplain is feasible and where protection is necessary for public safety), and bridges and trails (where no alternative route/location is feasible and, when supports are located within stream corridor setbacks, such locations minimize impacts on critical habitat). All development shall incorporate the best mitigation measures feasible to minimize impacts to the greatest extent.

29. Limit all development within stream corridors, including dredging, filling and grading, to activities necessary; for the construction specified in policy #28 (see above) and to public hiking/biking and equestrian trails. When such activities require removal of riparian plant species, revegetation with local native riparian plants shall be required. Minor clearing of vegetation may be permitted for hiking/biking and equestrian trails.

30. Prohibit further concrete channelization or other major alterations of streams in the city with the exception of natural enhancement projects, or when the City find s that such action is necessary to protect existing structures and that there are no less environmentally damaging alternatives. Where alteration is permitted, best feasible mitigation shall be a condition of the project.

The project would provide flood control and habitat restoration that would have long-term beneficial impacts by reducing flooding in adjacent areas, increasing salt marsh and aquatic habitat, and improving water quality in the Marsh. As described in Section 6.1, with mitigation the proposed project would be consistent with relevant Coastal Act policies. All necessary permits would be in place prior to implementation of the Updated Enhancement Plan. As the project addresses site-specific issues, few alternatives are available. Of all the alternatives assessed in the 2003 Final EIR, the existing Enhancement Plan was considered environmentally superior. The proposed project is limited to modifications to the existing Enhancement Plan and does not involve removal of riparian vegetation, concrete channelization or major alterations of streams. With mitigation, the proposed project would be consistent with these policies.

Objective S-4. Minimize the potential risks and reduce the loss of life, property, and the economic and social dislocations resulting from flooding.

The project involves additional routine maintenance which would reduce the risk of flooding in adjacent areas, which would be consistent with this objective.

Objective N-5. The City will minimize the effects of nuisance noise effects on sensitive land uses.

Policy N-5a. The City will address nuisance noise on a case-by-case basis and develop appropriate mitigation measures such as scheduling of events or activities during hours when effects would be minimal.

Policy N-5b. The City will require that construction activities adjacent to sensitive noise receptors be limited as necessary to prevent adverse noise impacts.

Policy N-5c. The City will require that construction activities employ techniques that minimize the noise impacts on adjacent uses.

This Subsequent EIR provides mitigation measures to reduce significant noise impacts within the City to less than significant. With mitigation, the proposed project would be consistent with these policies.

6.5 SANTA BARBARA COUNTY ENERGY AND CLIMATE ACTION PLAN

The ECAP provides a greenhouse gas reduction strategy with numerous measures to be implemented for various sources. Only Measure BE 10 is applicable to the proposed project as it addresses operation of heavy equipment used in construction.

Construction Equipment Operations (BE 10) Measure: Implement best management practices (BMPs) for construction equipment operation; examples of BMPs include reduced equipment idling, use of alternative fuels or electrification of equipment, and proper maintenance and labeling of equipment.

The identification of feasible best management practices has not been completed to date and heavy equipment (including hydraulic dredges) operating on alternative fuels or electricity are not readily available. However, heavy equipment used for routine maintenance under the Updated Enhancement Plan would be properly maintained and comply with Section 2449 of the California Code of Regulations which includes limitations on idling for off-road diesel vehicles. Therefore, the proposed project would be consistent with this measure.

7.0 ALTERNATIVES ANALYSIS

This section of the Subsequent EIR provides a comparative analysis of the merits of alternatives to the proposed project pursuant to Section 15126.6 of the State CEQA Guidelines. According to the Guidelines, the discussion of alternatives should focus on alternatives to a project or its location that would feasibly meet the basic objectives of the project while avoiding or substantially lessening the significant effects of the project. The State CEQA Guidelines indicate that the range of alternatives included in this discussion should be sufficient to allow decision-makers a reasoned choice between alternatives and a proposed project. The alternatives discussion should provide decision-makers with an understanding of the environmental merits and disadvantages of various project alternatives.

The range of alternatives in an EIR is governed by a “rule of reason” that requires the EIR to set forth only those alternatives necessary to make a reasoned choice. The alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the project (State CEQA Guidelines Section 15126.6 [f]). Of those alternatives, the EIR need examine in detail only the ones that the lead agency determines could feasibly attain most of the basic objectives of the project. The range of feasible alternatives shall be selected and discussed in a manner to foster meaningful public participation and informed decision-making. When addressing feasibility, the State CEQA Guidelines state that “among the factors that may be taken into account when addressing the feasibility of alternatives are site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries (projects with a regionally significant impact should consider the regional context), and whether the proponent can reasonably acquire, control or otherwise have access to the alternative site (or the site is already owned by the proponent).” The State CEQA Guidelines also state that the alternatives discussion need not be presented in the same level of detail as the assessment of the proposed project.

Therefore, based on the State CEQA Guidelines, several factors need to be considered in determining the range of alternatives to be analyzed in an EIR and the level of detail of analysis that should be provided. These factors include:

- The extent to which the alternative would accomplish most of the basic objectives of the project.
- The extent to which the alternative would avoid or lessen any of the identified significant adverse environmental effects of the project.
- The feasibility of the alternative, taking into account site suitability, economic viability, availability of infrastructure, consistency with regulatory limitations, and the reasonability of the Applicant controlling the site.
- The appropriateness of the alternative in contributing to a “reasonable range” of alternatives necessary to permit a reasoned choice.

As required by the State CEQA Guidelines, this analysis focuses on alternatives that could avoid or substantially reduce significant effects of the project. Impacts of the alternatives considered are summarized in Section 7.3. In addition, Section 7.4 identifies the environmentally superior alternative as required by the State CEQA Guidelines.

7.1 NO PROJECT ALTERNATIVE

The purpose of describing and analyzing the No Project Alternative is to allow the decision-makers to compare the impacts of approving the proposed project with the impacts of not approving the proposed project. Under the No Project Alternative, the Carpinteria Salt Marsh Enhancement Plan would not be updated and implementation of components of the Plan would not be modified. Mitigation measures identified in the 2003 Final EIR to address significant impacts would continue to be implemented as appropriate.

The No Project Alternative does not meet the purpose of the project or any of the District's project objectives listed in Section 1.6. The routine maintenance program at the Marsh as described in the existing Enhancement Plan is not adequate to maintain capacity and 100-year flood conveyance in the major channels and the South Marsh, and may result in inundation of adjacent land uses including residences along Avenue Del Mar. In addition, the existing routine maintenance program is not adequate to maintain tidal circulation which benefits estuarine habitat and water quality.

7.2 ALTERNATIVES CONSIDERED

7.2.1 Alternatives Selection Methodology

The selection of alternatives is consistent with Section 15126.6 of the State CEQA Guidelines and focuses on those that would meet most of project's basic objectives, avoid or reduce environmental impacts and provide a reasonable range of alternatives for analysis and comparison.

The proposed project involves updates/additions to an Enhancement Plan that has already been implemented and addresses site-specific flood control issues at the Marsh. Therefore, the range of alternatives to be considered is very limited.

7.2.2 Alternatives of the 2003 Final EIR

Eight alternative projects were identified in the 2003 Final EIR, with Alternative 4a identified as the environmentally superior alternative and ultimately adopted as the Carpinteria Salt Marsh Enhancement Plan. Alternatives 1, 2 and 3 were eliminated from further consideration due to substantially greater impacts to biological resources (primarily loss of coastal salt marsh, wetlands) as compared to other alternatives. Alternative 8 (flood wall within the Nature Park) was eliminated from further consideration due to substantially greater aesthetics impacts. Four alternative projects (Alternative 4, 5, 6 and 7, with sub-alternatives) were carried forward in the alternatives analysis provided in the 2003 Final EIR.

Alternatives 4b, 5b, 6b and 7 would not meet the project objective of providing 100-year flood protection to adjacent land uses and are not considered further in this Subsequent EIR.

Alternative 5a is the same as Alternative 4a, except the floodwall along the north side of Avenue Del Mar would be replaced with a berm (approximately 20-foot top width, 40-foot bottom width). Alternative 6a is the same as Alternative 4a, except the floodwall along the north side of Avenue Del Mar would be replaced with berm along the south side of the Main Channel approximately 20-foot top width, 40-foot bottom width). Alternatives 5a and 6a were not selected because the berms would be much wider than the floodwall and result in substantially greater loss of coastal salt marsh and wetlands. In any case, the floodwall has already been constructed as described in Alternative 4a.

7.2.3 Off-site Alternatives

Debris basins could be considered in the watersheds serving the Marsh to capture sediment, which would reduce the need for periodic sediment removal (routine maintenance) within the Marsh. The Franklin Creek watershed has a small debris basin (about 0.2 acres) located approximately 1.9 stream miles upstream of the Marsh. The Santa Monica Creek watershed includes a large debris basin (about 2.5 acres) located approximately 1.5 stream miles upstream of the Marsh.

Expansion of the capacity of the existing debris basins could be considered. However, costs of acquiring land for the debris basins may be prohibitive, and construction and maintenance of these basins would result in environmental impacts potentially including aesthetics, biological resources, air quality, greenhouse gases and agriculture. These debris basins would not entirely replace sediment removal in the Marsh because they would not be 100 percent effective in retaining sediment and sediment would be transported to the Marsh from watershed areas not served by the basins. In addition, the debris basins would not substantially reduce the need for maintenance of the Avenue Del Mar drainage system. In addition, this alternative would result in potentially significant geologic processes impacts as larger debris basins may reduce the amount of sediment reaching beaches and exacerbate beach erosion.Since this off-site alternative may not be feasible due to economic considerations and would not have reduced impacts as compared the proposed project, it is not considered further in this Subsequent EIR.

7.2.4 Sediment Removal Alternative

The proposed project includes sediment removal in lower Franklin Creek and the Main Channel using hydraulic dredging. Drag-line desilting in these channels with surf zone disposal could be considered as an alternative. Lower Franklin Creek and the Main Channel currently have no staging or access area for dragline cranes and trucks. Such an area would need to be constructed within the salt marsh to facilitate access for this alternative. Such an alternative would result in greater impacts as compared to the proposed project, including:

- Potentially significant long-term loss of coastal salt marsh and wetlands associated with providing an access road and sediment storage areas along lower Franklin Creek and the Main Channel for the drag-line operation.
- Less than significant air quality, traffic noise, aesthetics and recreation impacts associated with sediment trucking and disposal at City Beach.

Consistent with the State CEQA Guidelines, this alternative would not avoid or lessen impacts of the proposed project and is not considered further in this Subsequent EIR.

7.3 IMPACTS OF THE ALTERNATIVES

Due to the lack of any feasible alternatives that would meet most of the basic project objectives and/or avoid or lessen environmental impacts of the proposed project, only the No Project Alternative is assessed in this Subsequent EIR.

7.3.1 Aesthetics/Visual Resources

Aesthetics impacts of the existing Enhancement Plan would continue to occur, primarily associated with drag-line desilting and opening the mouth of the Marsh. Based on the environmental baseline (see Section 1.3), surf zone disposal of sediments removed from the Marsh would not occur.

7.3.2 Air Quality/Greenhouse Gas Emissions

Air quality and greenhouse gas emissions impacts of the existing Enhancement Plan would continue to occur, associated with air pollutant and greenhouse gas emissions generated by drag-line desilting, trucking and disposal of sediments in an upland area, channel excavation in Basin 3 (Restoration Action R2), culvert replacement under Estero Way, and opening the mouth of the Marsh. Based on the environmental baseline (see Section 1.3), air pollutant and greenhouse gas emissions generated by surf zone disposal of sediments removed from the Marsh would not occur.

7.3.3 Biological Resources

Biological resources impacts of the existing Enhancement Plan would continue to occur, associated with temporary vegetation and habitat disturbance caused by drag-line desilting, disposal of sediments in an upland area, channel excavation in Basin 3 (Restoration Action R2), culvert replacement under Estero Way, and opening the mouth of the Marsh. Based on the environmental baseline (see Section 1.3), surf zone disposal of sediments removed from the Marsh has not been conducted; therefore, turbidity and siltation of nearshore waters would not occur. The benefits to coastal salt marsh, special-status species and fish habitat caused by improved tidal circulation associated with maintenance of channels in the South Marsh would not be realized under the No Project Alternative.

7.3.4 Geologic Processes

Geologic processes impacts of the existing Enhancement Plan would continue to occur, associated with sediment stockpiling during drag-line desilting and other changes in topography. Based on the environmental baseline (see Section 1.3), siltation caused by surf zone disposal of sediments removed from the Marsh would not occur.

7.3.5 Water Resources

Water resources impacts of the existing Enhancement Plan would continue to occur, associated with temporary water quality degradation caused by drag-line desilting, channel excavation in Basin 3 (Restoration Action R2), culvert replacement under Estero Way, and opening the mouth of the Marsh. Water quality benefits of the Enhancement Plan would also continue to occur caused by improved tidal circulation. Based on the environmental baseline (see Section 1.3), turbidity and contaminant impacts associated with surf zone disposal of sediments removed from the Marsh would not occur. The benefits to water quality caused by improved tidal circulation associated with maintenance of channels in the South Marsh would not be realized under the No Project Alternative.

7.3.6 Noise and Vibration

Noise impacts of the existing Enhancement Plan would continue to occur, associated with noise generated by drag-line desilting, trucking and disposal of sediments in an upland area, channel excavation in Basin 3 (Restoration Action R2), culvert replacement under Estero Way, and opening the mouth of the Marsh. Based on the environmental baseline (see Section 1.3), noise generated by surf zone disposal of sediments removed from the Marsh would not occur.

7.3.7 Hazards and Hazardous Materials

Hazardous materials impacts of the existing Enhancement Plan would continue to occur, associated with inadvertent discharge of fuels, lubricants and hydraulic fluid during drag-line desilting, trucking and disposal of sediments in an upland area, channel excavation in Basin 3 (Restoration Action R2), culvert replacement under Estero Way, and opening the mouth of the Marsh. In addition, disposal of sediment with elevated concentrations of toxic substances could occur. Based on the environmental baseline (see Section 1.3), contaminant discharge associated with surf zone disposal of sediments removed from the Marsh would not occur.

7.3.8 Recreation

Noise and heavy equipment activity associated with the existing Enhancement Plan (primarily drag-line desilting) may disrupt wildlife viewing from the Nature Park. Based on the environmental baseline (see Section 1.3), disruption of City Beach users associated with surf zone disposal of sediments removed from the Marsh would not occur.

7.3.9 Transportation

Traffic associated with the existing Enhancement Plan may result in safety impacts and temporarily inconvenience traffic along Sandyland Cove Road, Del Mar Avenue and access road intersections with Carpinteria Avenue.

7.4 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

The proposed project is the only feasible alternative that meets the District's project objectives (see Section 1.6). Other alternatives that were considered (see Section 2.2.2) are infeasible or fail to meet the project objectives and/or would not avoid or lessen significant impacts.

The No Project Alternative is considered environmentally superior because it would avoid impacts associated with new components of the proposed Updated Enhancement Plan. If the No Project Alternative is considered environmentally superior, Section 15126.6(e)(2) of the State CEQA Guidelines requires identification of the environmentally superior alternative among the other feasible alternatives. Due to the lack of any other feasible alternatives that would meet the objectives of the project and that would avoid or lessen significant impacts, the proposed project is considered the environmentally superior alternative.

8.0 GROWTH INDUCEMENT

8.1 INTRODUCTION

This section discusses whether the proposed project would foster economic growth or population growth in the surrounding area. A project may foster economic or population growth in a geographic area if it would meet any of the following criteria:

- The project would result in the urbanization of land in a remote location, creating an intervening area of open space which then experiences pressure to be developed.
- The project removes an impediment to growth through the establishment of an essential public service or the provision of new access to an area.
- Economic expansion, population growth or the construction of additional housing occurs in the surrounding environment in response to economic characteristics of the project.
- The project establishes a precedent-setting action, such as a change in zoning or general plan amendment approval that makes it easier for future projects to gain approval.

Should the project meet any one of these criteria, it is to be considered growth-inducing. An increase in population may require construction of new facilities which could cause significant environmental impacts. Section 15126.2 of the State CEQA Guidelines states that growth in an area is not necessarily beneficial, detrimental or of little significance to the environment.

8.2 URBANIZATION OF LAND IN ISOLATED LOCALITIES

The proposed project does not involve any new habitable structures, urbanization, other land development or increased access to parcels that may be developed. The project would provide temporary employment opportunities during routine maintenance activities. However, it is anticipated that project-related routine maintenance would be primarily conducted by existing employees of southern California dredging or construction companies, with no new jobs created. The project would not create a need for new housing or associated urbanization of land; therefore, the project would not be growth-inducing under this criterion.

8.3 REMOVAL OF AN IMPEDIMENT TO GROWTH

In the project area, population growth is generally limited by available housing and employment opportunities. The project would not remove any impediments to growth by providing housing, long-term employment opportunities or extension of infrastructure (roads, water, sewer, etc.) to any new areas. Overall, the project would not be considered growth-inducing under this criterion.

8.4 ECONOMIC GROWTH

The project would not directly result in the construction of any homes or facilities that would attract people to the area. Due to the relatively small number and temporary nature of employment opportunities provided, it is not expected that the project would facilitate economic expansion, population growth or the construction of additional housing.

8.5 PRECEDENT SETTING ACTION

The proposed project would not result in a precedent-setting action such as a General Plan Amendment and would not require a change in zoning. The proposed project would not result in a change in land use at the Marsh and would not foster growth. Therefore, the project would not be growth-inducing under this criterion.

8.6 CONCLUSIONS

As indicated in the above discussion, the proposed project is not growth-inducing under any of the criteria listed in the State CEQA Guidelines. Therefore, the project would not induce growth.

9.0 LIST OF PREPARERS

This document was prepared for the Santa Barbara Flood Control District by Padre Associates, Inc. Persons involved in its preparation include:

9.1 SANTA BARBARA FLOOD CONTROL DISTRICT

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Pat McClure, Drafter

APPENDIX A

NOTICE OF PREPARATION

Santa Barbara County Public Works Department
Flood Control & Water Agency

NOTICE OF PREPARATION

PUBLIC NOTICE OF A REQUEST FOR COMMENTS ON THE PROPOSED CARPINTERIA SALT MARSH ENHANCEMENT PLAN PROJECT UPDATE

PUBLICATION DATE: January 14, 2019

FROM: Seth Shank, Senior Environmental Planner
County of Santa Barbara
Flood Control and Water Conservation District
130 East Victoria Street, Suite 200
Santa Barbara, CA 93101

SUBJECT: Notice of Preparation of a Draft Subsequent Environmental Impact Report (EIR) to the Carpinteria Salt Marsh Enhancement Plan Final EIR (SCH no. 2003021016) certified July 2003.

PROJECT NAME: Carpinteria Salt Marsh Enhancement Plan Update

The Santa Barbara County Flood Control and Water Conservation District (District) is the Lead Agency responsible for preparation of a Subsequent EIR for the proposed Carpinteria Salt Marsh Enhancement Plan Update. In accordance with Section 15082 of the State California Environmental Quality Act (CEQA) Guidelines, a Notice of Preparation (NOP) has been prepared for the subject project. The purpose of this NOP is to inform interested persons and affected public agencies and to solicit comments as to the scope and content of the EIR. Responsible agencies will need to use the EIR prepared by the lead agency when considering any approvals for the project. Therefore, the District needs to know the views of your agency as to the scope and content of environmental information germane to your agency's statutory responsibilities in connection with the proposed project.

BACKGROUND:

The Carpinteria Salt Marsh complex is a 230-acre estuary located in southern Santa Barbara County, adjacent to the City of Carpinteria. The Carpinteria Salt Marsh Enhancement Plan EIR was certified on July 15, 2003 and consisted of flood control and wetland restoration projects that were the final phase of the Carpinteria Valley Watershed Protection Program, a comprehensive watershed program that was designed to reduce erosion and flooding in the Carpinteria Valley.

Completed Components of the Enhancement Plan

The following components described in the 2003 EIR have been completed:

- Vertical extension of the flood wall on the east side of Franklin Creek downstream of the UPRR tracks.
- Construction of a berm along the east bank of Franklin Creek downstream of the concrete channel to the Sandyland Cove Road Bridge.
- Construction of a floodwall along the north side of Avenue Del Mar west of the Sandyland Cove Road Bridge.
- Restoration of Basin 1 by the Land Trust (R1 in the 2003 EIR).
- Restoration of the South Marsh (R3 in the 2003 EIR).
- Sediment removal south of the Union Pacific Railroad tracks and west of Estero Way, (R4 in the 2003 EIR).
- Sediment removal within the eastern edge of Basin 2 to match elevations of the balance of the Basin (R5 in the 2003 EIR).

Ongoing Components of the Enhancement Plan

Routine Maintenance Sediment Removal. On an as-needed basis (typically every 5 to 10 years), sediment is removed in both Santa Monica and Franklin Creeks, beginning from the Union Pacific Railroad bridge downstream for approximately 1,500 feet to provide sufficient width (approximately 45 feet) to establish an in-stream sediment trap. While both hydraulic and dragline dredging was included in the 2003 EIR, only dragline dredging has been used for routine sediment removal, which involves using a land-based crane rigged with a dragline bucket. The target elevation is four feet below mean sea level, or approximately 3 to 4 feet lower than the upstream concrete channel. Sediment volumes removed range from approximately 3,000 to 20,000 cubic yards, which are temporarily stockpiled on the access road for dewatering. Silt fencing is placed along the access road to contain the recently removed sediment. Sediment is typically hauled to upland disposal locations.

Marsh Mouth Opening. The University of California, Santa Barbara (UCSB) breaches the mouth of the Marsh when it closes and the measured dissolved oxygen levels within the sub-tidal/inter-tidal channels fall below 2.0 milligrams/liter (mg/L) and remain below 2.0 mg/L for more than 24 hours. Typical trench dimensions are approximately 10 feet by 40 feet, and four to six feet deep, but may vary greatly based on the size of the sand berm at the mouth.

Uncompleted Components of the Enhancement Plan

The following components described in the 2003 EIR have not been completed:

- Excavation of the main channel in Basin 3 using a hydraulic dredge from the Marsh mouth about 800 feet upstream to reach an elevation of 2 feet below mean sea level (R2 in the 2003 EIR).
- Replacement of six 36-inch-diameter culverts extending under the Estero Way Extension with plastic culverts of the same diameter along Estero Way. The culverts are made of corrugated metal and are failing due to the extreme salt environment.

PROPOSED UPDATE TO THE ENHANCEMENT PLAN:

The project includes implementation of uncompleted components of the Enhancement Plan, modification/expansion of routine creek maintenance and the following new components.

Changes in Routine Maintenance of Franklin and Santa Monica Creeks

The 2003 EIR focused on the use of dragline dredging and upland disposal for routine sediment removal from upper Franklin Creek and upper Santa Monica Creek because regulatory agency opinion at that time was that sediment grain size testing indicated the sediment was expected to be too fine for beach nourishment. The Subsequent EIR will include an updated analysis of both dragline and hydraulic dredging of upper Franklin and Santa Monica Creeks with beach disposal. Hydraulic dredging will include discharge of material into the surf zone to the east of the marsh mouth and dragline desilting will include trucking of material to Ash Avenue for disposal.

The District also proposes to hydraulically dredge the lower portion of Franklin Creek on an as-needed basis, extending from the terminus of the existing dredging area (approximately 1,500 feet downstream of the Union Pacific Railroad tracks) to the Marsh mouth (an increase of about 3,000 feet). Sediment would be discharged into the surf zone to the east of the Marsh mouth.

Franklin Creek Staging/Stockpile Area Expansion

The existing staging/stockpile area adjacent to the west bank of Franklin Creek (about 200 feet south of the Union Pacific Railroad tracks) is proposed to be expanded by approximately 0.5 acres to provide additional staging/stockpile area.

Avenue Del Mar Drainage

The Avenue Del Mar drainage system consists of three pipes that drain local run-off through a floodwall into tidal channels within the South Marsh created by the Land Trust. The 1/9 Debris Flow completely filled in the tidal channels and resulted in flooding of Avenue Del Mar during a March 2018 storm event. Maintenance of the drainage system is needed to reduce the potential for future flooding. Proposed as-needed maintenance of this drainage system would consist of

using a tracked piece of equipment to excavate a trench within the footprint of the tidal channels starting at the drain outlets and daylighting into the Franklin Creek channel along the shortest route possible within the tidal channels. Maintenance may also include complete re-establishment of the tidal channels within the South Marsh if the smaller, shorter trenches do not maintain adequate drainage.

POTENTIAL ENVIRONMENTAL EFFECTS:

A Subsequent EIR will be prepared to evaluate the changes in environmental impacts that this proposed project may cause. Issue areas to be evaluated in the Subsequent EIR include aesthetics, air quality/greenhouse gases, biological resources, noise, land use, transportation/traffic, geologic processes, risk of upset/hazardous materials and water resources.

WRITTEN COMMENTS:

In accordance with the time limits established by the State CEQA Guidelines, your response to this NOP must be received at the address underlined below at the earliest possible date, but not later than 5 p.m. on February 14, 2019. Comments should provide specific detail as to the scope and content of the EIR. Your response should include your name, your agency's or organization's name, your address and the name of a contact person in your agency or organization. Comments should be mailed, e-mailed or hand delivered to: Santa Barbara County Flood Control District, 130 E. Victoria Street, Suite 200, Santa Barbara, California 93101; attention Mr. Seth Shank; e-mail address sshank@cosbpw.net.

Please contact Mr. Seth Shank, Senior Environmental Planner at (805) 568-3443 if you have any comments or questions regarding the Carpinteria Salt Marsh Enhancement Plan Update Project.

Respectfully,

Maureen Spencer

for Seth Shank

Senior Environmental Planner

Santa Barbara County Flood Control and Water Conservation District

cc: Clerk of the Board (please post for 30 days)

APPENDIX B

RESPONSES TO THE NOTICE OF PREPARATION

STATE OF CALIFORNIA Gavin Newsom, Governor

NATIVE AMERICAN HERITAGE COMMISSION
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January 25, 2019

Seth Shank
Santa Barbara County Flood Control District
130 E. Victoria Street, Suite 200
Santa Barbara, CA 93101

RE: SCH# 2003021016 Carpinteria Sal Marsh Enhancement Plan, Santa Barbara County

Dear Mr. Shank:

The Native American Heritage Commission (NAHC) has received the Notice of Preparation (NOP), Draft Environmental Impact Report (DEIR) or Early Consultation for the project referenced above. The California Environmental Quality Act (CEQA) (Pub. Resources Code §21000 et seq.), specifically Public Resources Code §21084.1, states that a project that may cause a substantial adverse change in the significance of a historical resource, is a project that may have a significant effect on the environment. (Pub. Resources Code § 21084.1; Cal. Code Regs., tit.14, §15064.5 (b) (CEQA Guidelines §15064.5 (b)). If there is substantial evidence, in light of the whole record before a lead agency, that a project may have a significant effect on the environment, an Environmental Impact Report (EIR) shall be prepared. (Pub. Resources Code §21080 (d); Cal. Code Regs., tit. 14, § 5064 subd.(a)(1) (CEQA Guidelines §15064 (a)(1)). In order to determine whether a project will cause a substantial adverse change in the significance of a historical resource, a lead agency will need to determine whether there are historical resources within the area of potential effect (APE).

CEQA was amended significantly in 2014. Assembly Bill 52 (Gatto, Chapter 532, Statutes of 2014) (AB 52) amended CEQA to create a separate category of cultural resources, "tribal cultural resources" (Pub. Resources Code §21074) and provides that a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment. (Pub. Resources Code §21084.2). Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource. (Pub. Resources Code §21084.3 (a)). **AB 52 applies to any project for which a notice of preparation, a notice of negative declaration, or a mitigated negative declaration is filed on or after July 1, 2015.** If your project involves the adoption of or amendment to a general plan or a specific plan, or the designation or proposed designation of open space, on or after March 1, 2005, it may also be subject to Senate Bill 18 (Burton, Chapter 905, Statutes of 2004) (SB 18). **Both SB 18 and AB 52 have tribal consultation requirements**. If your project is also subject to the federal National Environmental Policy Act (42 U.S.C. § 4321 et seq.) (NEPA), the tribal consultation requirements of Section 106 of the National Historic Preservation Act of 1966 (154 U.S.C. 300101, 36 C.F.R. §800 et seq.) may also apply.

The NAHC recommends consultation with California Native American tribes that are traditionally and culturally affiliated with the geographic area of your proposed project as early as possible in order to avoid inadvertent discoveries of Native American human remains and best protect tribal cultural resources. Below is a brief summary of portions of AB 52 and SB 18 as well as the NAHC's recommendations for conducting cultural resources assessments.

Consult your legal counsel about compliance with AB 52 and SB 18 as well as compliance with any other applicable laws.

AB 52

AB 52 has added to CEQA the additional requirements listed below, along with many other requirements:

1. Fourteen Day Period to Provide Notice of Completion of an Application/Decision to Undertake a Project: Within fourteen (14) days of determining that an application for a project is complete or of a decision by a public agency to undertake a project, a lead agency shall provide formal notification to a designated contact of, or tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, to be accomplished by at least one written notice that includes:
    a. A brief description of the project.
    b. The lead agency contact information.
    c. Notification that the California Native American tribe has 30 days to request consultation. (Pub. Resources Code §21080.3.1 (d)).
    d. A "California Native American tribe" is defined as a Native American tribe located in California that is on the contact list maintained by the NAHC for the purposes of Chapter 905 of Statutes of 2004 (SB 18). (Pub. Resources Code §21073).

2. Begin Consultation Within 30 Days of Receiving a Tribe's Request for Consultation and Before Releasing a Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report: A lead agency shall begin the consultation process within 30 days of receiving a request for consultation from a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project. (Pub. Resources Code §21080.3.1, subds. (d) and (e)) and prior to the release of a negative declaration, mitigated negative declaration or Environmental Impact Report. (Pub. Resources Code §21080.3.1(b)).
    a. For purposes of AB 52, "consultation shall have the same meaning as provided in Gov. Code §65352.4 (SB 18). (Pub. Resources Code §21080.3.1 (b)).

3. Mandatory Topics of Consultation If Requested by a Tribe: The following topics of consultation, if a tribe requests to discuss them, are mandatory topics of consultation:
    a. Alternatives to the project.
    b. Recommended mitigation measures.
    c. Significant effects. (Pub. Resources Code §21080.3.2 (a)).

4. Discretionary Topics of Consultation: The following topics are discretionary topics of consultation:
    a. Type of environmental review necessary.
    b. Significance of the tribal cultural resources.
    c. Significance of the project's impacts on tribal cultural resources.
    d. If necessary, project alternatives or appropriate measures for preservation or mitigation that the tribe may recommend to the lead agency. (Pub. Resources Code §21080.3.2 (a)).

5. Confidentiality of Information Submitted by a Tribe During the Environmental Review Process: With some exceptions, any information, including but not limited to, the location, description, and use of tribal cultural resources submitted by a California Native American tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public, consistent with Government Code §6254 (r) and §6254.10. Any information submitted by a California Native American tribe during the consultation or environmental review process shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public. (Pub. Resources Code §21082.3 (c)(1)).

6. Discussion of Impacts to Tribal Cultural Resources in the Environmental Document: If a project may have a significant impact on a tribal cultural resource, the lead agency's environmental document shall discuss both of the following:
    a. Whether the proposed project has a significant impact on an identified tribal cultural resource.
    b. Whether feasible alternatives or mitigation measures, including those measures that may be agreed to pursuant to Public Resources Code §21082.3, subdivision (a), avoid or substantially lessen the impact on the identified tribal cultural resource. (Pub. Resources Code §21082.3 (b)).

7. Conclusion of Consultation: Consultation with a tribe shall be considered concluded when either of the following occurs:
    a. The parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource; or
    b. A party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached. (Pub. Resources Code §21080.3.2 (b)).

8. Recommending Mitigation Measures Agreed Upon in Consultation in the Environmental Document: Any mitigation measures agreed upon in the consultation conducted pursuant to Public Resources Code §21080.3.2 shall be recommended for inclusion in the environmental document and in an adopted mitigation monitoring and reporting program, if determined to avoid or lessen the impact pursuant to Public Resources Code §21082.3, subdivision (b), paragraph 2, and shall be fully enforceable. (Pub. Resources Code §21082.3 (a)).

9. Required Consideration of Feasible Mitigation: If mitigation measures recommended by the staff of the lead agency as a result of the consultation process are not included in the environmental document or if there are no agreed upon mitigation measures at the conclusion of consultation, or if consultation does not occur, and if substantial evidence demonstrates that a project will cause a significant effect to a tribal cultural resource, the lead agency shall consider feasible mitigation pursuant to Public Resources Code §21084.3 (b). (Pub. Resources Code §21082.3 (e)).

10. Examples of Mitigation Measures That, If Feasible, May Be Considered to Avoid or Minimize Significant Adverse Impacts to Tribal Cultural Resources:
    a. Avoidance and preservation of the resources in place, including, but not limited to:
        i. Planning and construction to avoid the resources and protect the cultural and natural context.
        ii. Planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.
    b. Treating the resource with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:
        i. Protecting the cultural character and integrity of the resource.
        ii. Protecting the traditional use of the resource.
        iii. Protecting the confidentiality of the resource.
    c. Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.
    d. Protecting the resource. (Pub. Resource Code §21084.3 (b)).
    e. Please note that a federally recognized California Native American tribe or a non-federally recognized California Native American tribe that is on the contact list maintained by the NAHC to protect a California prehistoric, archaeological, cultural, spiritual, or ceremonial place may acquire and hold conservation easements if the conservation easement is voluntarily conveyed. (Civ. Code §815.3 (c)).
    f. Please note that it is the policy of the state that Native American remains and associated grave artifacts shall be repatriated. (Pub. Resources Code §5097.991).

11. Prerequisites for Certifying an Environmental Impact Report or Adopting a Mitigated Negative Declaration or Negative Declaration with a Significant Impact on an Identified Tribal Cultural Resource: An Environmental Impact Report may not be certified, nor may a mitigated negative declaration or a negative declaration be adopted unless one of the following occurs:
    a. The consultation process between the tribes and the lead agency has occurred as provided in Public Resources Code §21080.3.1 and §21080.3.2 and concluded pursuant to Public Resources Code §21080.3.2.
    b. The tribe that requested consultation failed to provide comments to the lead agency or otherwise failed to engage in the consultation process.
    c. The lead agency provided notice of the project to the tribe in compliance with Public Resources Code §21080.3.1 (d) and the tribe failed to request consultation within 30 days. (Pub. Resources Code §21082.3 (d)).

The NAHC's PowerPoint presentation titled, "Tribal Consultation Under AB 52: Requirements and Best Practices" may be found online at: http://nahc.ca.gov/wp-content/uploads/2015/10/AB52TribalConsultation_CalEPAPDF.pdf

SB 18

SB 18 applies to local governments and requires local governments to contact, provide notice to, refer plans to, and consult with tribes prior to the adoption or amendment of a general plan or a specific plan, or the designation of open space. (Gov. Code §65352.3). Local governments should consult the Governor's Office of Planning and Research's "Tribal Consultation Guidelines," which can be found online at: https://www.opr.ca.gov/docs/09_14_05_Updated_Guidelines_922.pdf

Some of SB 18's provisions include:

1. Tribal Consultation: If a local government considers a proposal to adopt or amend a general plan or a specific plan, or to designate open space it is required to contact the appropriate tribes identified by the NAHC by requesting a "Tribal Consultation List." If a tribe, once contacted, requests consultation the local government must consult with the tribe on the plan proposal. **A tribe has 90 days from the date of receipt of notification to request consultation unless a shorter timeframe has been agreed to by the tribe.** (Gov. Code §65352.3 (a)(2)).
2. No Statutory Time Limit on SB 18 Tribal Consultation. There is no statutory time limit on SB 18 tribal consultation.
3. Confidentiality: Consistent with the guidelines developed and adopted by the Office of Planning and Research pursuant to Gov. Code §65040.2, the city or county shall protect the confidentiality of the information concerning the specific identity, location, character, and use of places, features and objects described in Public Resources Code §5097.9 and §5097.993 that are within the city's or county's jurisdiction. (Gov. Code §65352.3 (b)).
4. Conclusion of SB 18 Tribal Consultation: Consultation should be concluded at the point in which:
    a. The parties to the consultation come to a mutual agreement concerning the appropriate measures for preservation or mitigation; or
    b. Either the local government or the tribe, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached concerning the appropriate measures of preservation or mitigation. (Tribal Consultation Guidelines, Governor's Office of Planning and Research (2005) at p. 18).

Agencies should be aware that neither AB 52 nor SB 18 precludes agencies from initiating tribal consultation with tribes that are traditionally and culturally affiliated with their jurisdictions before the timeframes provided in AB 52 and SB 18. For that reason, we urge you to continue to request Native American Tribal Contact Lists and "Sacred Lands File" searches from the NAHC. The request forms can be found online at: http://nahc.ca.gov/resources/forms/

NAHC Recommendations for Cultural Resources Assessments

To adequately assess the existence and significance of tribal cultural resources and plan for avoidance, preservation in place, or barring both, mitigation of project-related impacts to tribal cultural resources, the NAHC recommends the following actions:

1. Contact the appropriate regional California Historical Research Information System (CHRIS) Center (http://ohp.parks.ca.gov/?page_id=1068) for an archaeological records search. The records search will determine:
    a. If part or all of the APE has been previously surveyed for cultural resources.
    b. If any known cultural resources have already been recorded on or adjacent to the APE.
    c. If the probability is low, moderate, or high that cultural resources are located in the APE.
    d. If a survey is required to determine whether previously unrecorded cultural resources are present.

2. If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.
    a. The final report containing site forms, site significance, and mitigation measures should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum and not be made available for public disclosure.
    b. The final written report should be submitted within 3 months after work has been completed to the appropriate regional CHRIS center.

3. Contact the NAHC for:
   a. A Sacred Lands File search. Remember that tribes do not always record their sacred sites in the Sacred Lands File, nor are they required to do so. A Sacred Lands File search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with the geographic area of the project's APE.
   b. A Native American Tribal Consultation List of appropriate tribes for consultation concerning the project site and to assist in planning for avoidance, preservation in place, or, failing both, mitigation measures.

4. Remember that the lack of surface evidence of archaeological resources (including tribal cultural resources) does not preclude their subsurface existence.
   a. Lead agencies should include in their mitigation and monitoring reporting program plan provisions for the identification and evaluation of inadvertently discovered archaeological resources per Cal. Code Regs., tit. 14, §15064.5(f) (CEQA Guidelines §15064.5(f)). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American with knowledge of cultural resources should monitor all ground-disturbing activities.
   b. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the disposition of recovered cultural items that are not burial associated in consultation with culturally affiliated Native Americans.
   c. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the treatment and disposition of inadvertently discovered Native American human remains. Health and Safety Code §7050.5, Public Resources Code §5097.98, and Cal. Code Regs., tit. 14, §15064.5, subdivisions (d) and (e) (CEQA Guidelines §15064.5, subds. (d) and (e)) address the processes to be followed in the event of an inadvertent discovery of any Native American human remains and associated grave goods in a location other than a dedicated cemetery.

If you have any questions or need additional information, please contact me at my email address: Steven.Quinn@nahc.ca.gov

Sincerely,

for

Steven Quinn
Associate Governmental Program Analyst

cc: State Clearinghouse

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February 14, 2019

Seth Shank
County of Santa Barbara
Flood Control and Water Conservation District
130 East Victoria Street, Suite 200
Santa Barbara, CA 93101

Re: Notice of Preparation of a Draft Subsequent Environmental Impact Report (EIR) to the Carpinteria Salt Marsh Enhancement Plan Final EIR

Dear Mr. Shank,

Please accept these comments on behalf of Santa Barbara Channelkeeper regarding the Notice of Preparation of a Draft Subsequent EIR to the Carpinteria Salt Marsh Enhancement Plan. Channelkeeper requests that the following potential environmental impacts be evaluated in the Subsequent EIR:

1) Mobilization of un-ionized ammonia – Biogeochemical processes result in storage of nitrogen in wetland soils in the form of ammonia, both in ionized and un-ionized form. Channelkeeper is concerned that mechanical disturbances of wetland soils result in mobilization of un-ionized ammonia. The ratio of ionized to un-ionized ammonia in water depends on pH and temperature, however even small concentrations of un-ionized ammonia are known to be toxic to aquatic wildlife.

The California Ocean Plan establishes a daily maximum and instantaneous maximum concentration of total ammonia (expressed as nitrogen) of 2.4 and 6.0 mg/l respectively. For additional comparison purposes, the Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties establishes a 1-hour average Water Quality Objective of 0.233 mg/l un-ionized ammonia (NH_3) for non-freshwater systems.

Following the 2018 debris flow emergency and subsequent disposal of sediment onto Carpinteria and Goleta Beaches, Channelkeeper was actively involved in monitoring water quality at disposal beaches, monitoring sediment quality, and reviewing laboratory reports from sampling conducted by Santa Barbara County. County laboratory results from samples of mud deposited onto local beaches routinely exhibited total ammonia concentrations in pore water above 60-70 mg/l, more than an order of magnitude higher than Ocean Plan standards.

Further, on February 8, 2018, Channelkeeper collected water samples offshore of Goleta Beach where sediment disposal activities were being carried out by Santa Barbara County. Samples were collected by Van-Dorn bottle from approximately one foot above the seafloor at varying distances from shore. Sample analysis was performed by UC Santa Barbara's Marine Science Institute Analytical Laboratory. The sample collected nearest to shore (approximately 400 yards directly offshore of Goleta Beach) contained total ammonia concentration of 3.96 mg/l (as nitrogen).

These results indicate that ammonia toxicity resulting from disposal of wetland sediments may impact wildlife within relatively large areas of habitat within the Salt Marsh itself and on the sandy beach, surf zone, and offshore habitats including nearby sand and rocky reef habitats. Such impacts may subsequently interfere with commercial and recreational fishing activity that is known to occur in the vicinity of the Carpinteria Salt Marsh and Ash Street disposal site.

Channelkeeper requests that the Draft Subsequent EIR evaluate potential impacts of ammonia mobilization resulting from project activities. We request that the EIR also evaluate monitoring and mitigation activities that could minimize or eliminate significant impacts of ammonia mobilization. Mitigation activities, for example, could include: timing considerations relevant to tidal fluctuations and salt marsh flushing, sensitive species life cycles, duration of dredging and disposal activities, pre-disposal material sorting, aeration, or other treatment methods, and additional relevant approaches.

2) Fecal Bacteria – Channelkeeper requests that the Draft Subsequent EIR evaluate the Project for potential impacts to public health and recreation due to exceedences of fecal bacteria standards caused by beach and ocean disposal of Salt Marsh sediments. We request that monitoring and mitigation measures to minimize or eliminate fecal bacteria impacts of the project also be evaluated.

3) Turbidity - Channelkeeper requests that the Draft Subsequent EIR evaluate the Project for potential impacts to aesthetics and public recreation due to increases in offshore turbidity caused by beach and ocean disposal of Salt Marsh sediments. We request that monitoring and mitigation measures to minimize or eliminate turbidity impacts of the project also be evaluated.

4) California Grunion – Carpinteria City Beach and other nearby beaches are utilized for spawning by California Grunion. Channelkeeper requests that the Draft Subsequent EIR evaluate the Project for potential impacts to California Grunion

5) Impacts to Wetland Buffer Vegetation – Vegetation along the tops of flood control berms is impacted during dredging activities and currently resemble dirt roads with little vegetation or barriers to prevent or minimize erosion. Channelkeeper requests that the Draft Subsequent EIR evaluate the Project for potential impacts to wetland vegetation and potential mitigation or restoration activities that could ameliorate such impacts.

Channelkeeper is grateful for this opportunity to provide comments on the Draft Subsequent EIR for the Carpinteria Salt Marsh Enhancement Plan Update. Thank you for your consideration.

Sincerely,

//ss// Ben Pitterle
Science and Policy Director
Santa Barbara Channelkeeper

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February 14, 2019

Seth Shank
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Subject: Comments on the Notice of Preparation of a Draft Subsequent Environmental Impact Report (DSEIR) to the Carpinteria Salt Marsh Enhancement Plan Final EIR Plan Project; SCH 2003021016; Santa Barbara County

Dear Mr. Shank:

The California Department of Fish and Wildlife (CDFW) has reviewed the above-referenced Notice of Preparation (NOP) of a Draft Subsequent Environmental Impact Report (DSEIR) to the Carpinteria Salt Marsh Enhancement Plan Final EIR Project (Project). The Santa Barbara County Flood Control District is the lead agency preparing a DSEIR pursuant to the California Environmental Quality Act (CEQA; Pub. Resources Code, § 21000 et. seq.) with the purpose of informing decision-makers and the public regarding potential environmental effects related to the Project.

The Carpinteria Salt Marsh complex is a 230-acre estuary located in southern Santa Barbara County, adjacent to the City of Carpinteria. The Carpinteria Salt Marsh Enhancement Plan EIR was certified on July 15, 2003 and consisted of flood control and wetland restoration projects that were the final phase of the Carpinteria Valley Watershed Protection Program, a comprehensive watershed program that was designed to reduce erosion and flooding in the Carpinteria Valley.

The Project includes implementation of uncompleted components of the Enhancement Plan, modification and expansion of routine creek maintenance as well as the following new components: 1) A change in routine maintenance of Franklin and Santa Monica Creeks; 2) Franklin Creek staging and stockpile area expansion; and, 3) Avenue Del Mar drainage enhancement.

The following comments and recommendations have been prepared pursuant to the CDFW's authority as a Responsible Agency [Pub. Resources Code, § 21069; CEQA Guidelines § 15381] over those aspects of the proposed project that come under the purview of the California Endangered Species Act (CESA; Fish and G. Code § 2050 *et*

seq.), the Native Plant Protection Act (NPPA; Fish and G. Code, §1900 et seq.), and/or CDFW's lake and streambed alteration (LSA) regulatory authority (Fish and G. Code § 1600 *et seq.*). Comments are also being provided pursuant to our authority as Trustee Agency with jurisdiction over natural resources held in trust by statute for all the people of the state that may be affected by the Project [Fish & G. Code, §§ 711. 7, subd. (a) & 1802; Pub. Resources Code, § 21070; CEQA Guidelines § 15386, subd. (a)] to assist the Lead Agency in avoiding or minimizing potential Project impacts on biological resources.

Specific Comments

1) Northern California Legless Lizard: Northern California legless lizard (*Anniella pulchra*) is a California species of special concern (SSC) known to occur within the general project area and habitats on the proposed Project site could be suitable for this species. Impacts to SSC, including northern California legless lizard, should be considered a significant direct and cumulative adverse effect under CEQA without implementing appropriate avoid and/or mitigation measures (CEQA Guidelines §§ 15064, 15065, 15125[c] and 15380). CDFW recommends that the DSEIR include a full evaluation of potential direct and indirect impacts to legless lizard from construction and operation of the Project.

2) Monarch Butterfly Winter Roosts and Overwintering Population: Monarch Butterfly (*Danaus plexippus*), also a SSC, is documented on the north of the proposed Project site and suitable habitat may occur along the riparian habitat adjacent to the Project site. CDFW recommends that the DSEIR include a full evaluation of potential impacts to monarch butterfly roosting habitat (both direct and indirect) from construction and operation of the Project (Fish and G. Code § 1021).

3) Western Snowy Plover: Western snowy plover (*Charadrius alexandrinus nivosus*), a Federal-listed species and a SSC, is known to occur on the beach and foredune habitat adjacent to the Project site. CDFW recommends that the DSEIR include a full evaluation of potential impacts to western snowy plover foraging and nesting habitat (both direct and indirect) from construction and operation of the Project. Impacts to SSC, including western snowy plover, should be considered a significant direct and cumulative adverse effect under CEQA without implementing appropriate avoid and/or mitigation measures (CEQA Guidelines §§ 15064, 15065, 15125[c] and 15380).

4) Tidewater Goby: Tidewater goby (*Eucyclogobius newberryi*), a federal-listed species and a SSC, occurs within Carpinteria Creek in the Project area. CDFW recommends that the DSEIR include a full evaluation of potential impacts to tidewater goby habitat (both direct and indirect) from construction and operation of the Project. Impacts to SSC, including tidewater goby, should be considered a significant direct and cumulative adverse effect under CEQA without implementing appropriate avoid and/or mitigation measures (CEQA Guidelines §§ 15064, 15065, 15125[c] and 15380).

5) Belding's Savannah Sparrow: Belding's savannah sparrow (*Passerculus sandwichensis beldingi*), a CESA-listed species, is documented to occupy suitable habitat in Carpinteria Salt Marsh. CDFW recommends that the DSEIR include a full evaluation of potential impacts to Belding's savannah sparrow suitable habitat (both direct and indirect) from construction and operation of the Project.

6) Ridgway's Rail: Ridgway's rail (*Rallus obsoletus levipes*) a federal and CESA- and State-Fully-Protected Fish and G. Code § 3511) species has been documented to occupy suitable habitat in Carpinteria Salt Marsh. CDFW recommends that the DSEIR include a full evaluation of potential impacts to Ridgway's rail suitable habitat (both direct and indirect) from construction and operation of the Project.

General Comments

1) Project Description and Alternatives: To enable CDFW to adequately review and comment on the proposed Project from the standpoint of the protection of plants, fish, and wildlife, we recommend the following information be included in the DSEIR:

   a) A complete discussion of the purpose and need for, and description of, the proposed Project, including all staging areas and access routes to the construction and staging areas; and,

   b) A range of feasible alternatives to Project component location and design features to ensure that alternatives to the proposed Project are fully considered and evaluated. The alternatives should avoid or otherwise minimize direct and indirect impacts to sensitive biological resources and wildlife movement areas.

2) LSA: As a Responsible Agency under CEQA, CDFW has authority over activities in streams and/or lakes that will divert or obstruct the natural flow; or change the bed, channel, or bank (including vegetation associated with the stream or lake) of a river or stream; or use material from a streambed. For any such activities, the project applicant (or "entity") must provide written notification to CDFW pursuant to section 1600 et seq. of the Fish and Game Code. Based on this notification and other information, CDFW determines whether a LSA Agreement (Agreement) with the applicant is required prior to conducting the proposed activities. CDFW's issuance of an Agreement for a project that is subject to CEQA will require related environmental compliance actions by CDFW as a Responsible Agency. As a Responsible Agency, CDFW may consider the CEQA document prepared by the local jurisdiction (Lead Agency) for the Project. To minimize additional requirements by CDFW pursuant to section 1600 *et seq.* and/or under CEQA, the DSEIR should fully identify the potential impacts to the stream or riparian resources and provide adequate

avoidance, mitigation, monitoring and reporting commitments for issuance of the LSA. [1]

a) The Project area supports aquatic, riparian, and wetland habitats; therefore, a preliminary jurisdictional delineation of the streams and their associated riparian habitats should be included in the DSEIR. The delineation should be conducted pursuant to the U. S. Fish and Wildlife Service (USFWS) wetland definition adopted by the CDFW. [2] Some wetland and riparian habitats subject to CDFW's authority may extend beyond the jurisdictional limits of the U. S. Army Corps of Engineers' section 404 permit and Regional Water Quality Control Board section 401 Certification.

b) In areas of the Project site which may support ephemeral streams, herbaceous vegetation, woody vegetation, and woodlands also serve to protect the integrity of ephemeral channels and help maintain natural sedimentation processes; therefore, CDFW recommends effective setbacks be established to maintain appropriately-sized vegetated buffer areas adjoining ephemeral drainages.

c) Project-related changes in drainage patterns, runoff, and sedimentation should be included and evaluated in the DSEIR.

3) Wetlands Resources: CDFW, as described in Fish & Game Code section 703(a), is guided by the Fish and Game Commission's policies. The Wetlands Resources policy (http://www. fgc. ca. gov/policy/) of the Fish and Game Commission "...seek[s] to provide for the protection, preservation, restoration, enhancement and expansion of wetland habitat in California. Further, it is the policy of the Fish and Game Commission to strongly discourage development in or conversion of wetlands. It opposes, consistent with its legal authority, any development or conversion that would result in a reduction of wetland acreage or wetland habitat values. To that end, the Commission opposes wetland development proposals unless, at a minimum, project mitigation assures there will be "no net loss" of either wetland habitat values or acreage. The Commission strongly prefers mitigation which would achieve expansion of wetland acreage and enhancement of wetland habitat values".

a) The Wetlands Resources policy provides a framework for maintaining wetland resources and establishes mitigation guidance. CDFW encourages avoidance of wetland resources as a primary mitigation measure and discourages the development or type conversion of wetlands to uplands. CDFW encourages activities that would avoid the reduction of wetland acreage, function, or habitat values. Once avoidance and minimization measures have been exhausted, the Project must include mitigation measures to assure a "no net loss" of either wetland habitat values, or acreage, for unavoidable impacts to wetland

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[1] A notification package for a LSA may be obtained by accessing the CDFW's web site at www. wildlife. ca. gov/habcon/1600.

[2] Cowardin, Lewis M. , et al. 1970. Classification of Wetlands and Deepwater Habitats of the United States. U. S. Department of the Interior, Fish and Wildlife Service.

resources. Conversions include, but are not limited to, conversion to subsurface drains, placement of fill or building of structures within the wetland, and channelization or removal of materials from the streambed. All wetlands and watercourses, whether ephemeral, intermittent, or perennial, should be retained and provided with substantial setbacks, which preserve the riparian and aquatic values and functions for the benefit to on-site and off-site wildlife populations. CDFW recommends mitigation measures to compensate for unavoidable impacts be included in the DSEIR and these measures should compensate for the loss of function and value.

b) The Fish and Game Commission's Water policy guides CDFW to [ensure] the quantity and quality of the waters of this state should be apportioned and maintained respectively so as to produce and sustain maximum numbers of fish and wildlife; to provide maximum protection and enhancement of fish and wildlife and their habitat; encourage and support programs to maintain or restore a high quality of the waters of this state; prevent the degradation thereof caused by pollution and contamination; and, endeavor to keep as much water as possible open and accessible to the public for the use and enjoyment of fish and wildlife. CDFW recommends avoidance of water practices and structures that use excessive amounts of water, and minimization of impacts that negatively affect water quality, to the extent feasible (Fish and G. Code § 5650).

4) CESA: CDFW considers adverse impacts to a species protected by CESA to be significant without mitigation under CEQA. As to CESA, take of any endangered, threatened, candidate species, or State-listed rare plant species that results from the Project is prohibited, except as authorized by state law (Fish and Game Code, §§ 2080, 2085; Cal. Code Regs., tit. 14, §786. 9). Consequently, if the Project, Project construction, or any Project-related activity during the life of the Project will result in take of a species designated as endangered or threatened, or a candidate for listing under CESA, CDFW recommends that the Project proponent seek appropriate take authorization under CESA prior to implementing the Project. Appropriate authorization from CDFW may include an Incidental Take Permit (ITP) or a consistency determination in certain circumstances, among other options [Fish and Game Code §§ 2080. 1, 2081, subds. (b) and (c)]. Early consultation is encouraged, as significant modification to a Project and mitigation measures may be required in order to obtain a CESA Permit. Revisions to the Fish and Game Code, effective January 1998, may require that CDFW issue a separate CEQA document for the issuance of an ITP unless the Project CEQA document addresses all Project impacts to CESA-listed species and specifies a mitigation monitoring and reporting program that will meet the requirements of an ITP. For these reasons, biological mitigation monitoring and reporting proposals should be of sufficient detail and resolution to satisfy the requirements for a CESA ITP.

5) Biological Baseline Assessment: To provide a complete assessment of the flora and fauna within and adjacent to the project area, with particular emphasis upon

identifying endangered, threatened, sensitive, regionally and locally unique species, and sensitive habitats, the DSEIR should include the following information:

a) Information on the regional setting that is critical to an assessment of environmental impacts, with special emphasis on resources that are rare or unique to the region (CEQA Guidelines § 15125[c]);

b) A thorough, recent, floristic-based assessment of special status plants and natural communities, following CDFW's *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (see http://www. dfg. ca. gov/habcon/plant/);

c) Floristic, alliance- and/or association-based mapping and vegetation impact assessments conducted at the Project site and within the neighboring vicinity. *The Manual of California Vegetation*, second edition, should also be used to inform this mapping and assessment (Sawyer et al. 2008[3]). Adjoining habitat areas should be included in this assessment where site activities could lead to direct or indirect impacts offsite. Habitat mapping at the alliance level will help establish baseline vegetation conditions;

d) A complete, recent, assessment of the biological resources associated with each habitat type on site and within adjacent areas that could also be affected by the project. CDFW's California Natural Diversity Data Base (CNDDB) in Sacramento should be contacted to obtain current information on any previously reported sensitive species and habitat. CDFW recommends that CNDDB Field Survey Forms be completed and submitted to CNDDB to document survey results. Online forms can be obtained and submitted at http://www. dfg. ca. gov/biogeodata/cnddb/submitting_data_to_cnddb. asp;

e) A complete, recent, assessment of rare, threatened, and endangered, and other sensitive species on site and within the area of potential effect, including California SSC and California Fully Protected Species (Fish and Game Code §§ 3511, 4700, 5050 and 5515). Species to be addressed should include all those which meet the CEQA definition of endangered, rare or threatened species (see CEQA Guidelines § 15380). Seasonal variations in use of the project area should also be addressed. Focused species-specific surveys, conducted at the appropriate time of year and time of day when the sensitive species are active or otherwise identifiable, are required. Acceptable species-specific survey procedures should be developed in consultation with CDFW and the USFWS; and,

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[3]Sawyer, J. O. , Keeler-Wolf, T. , and Evens J. M. 2008. A manual of California Vegetation, 2nd ed. ISBN 978-0-943460-49-9.

f) A recent, wildlife and rare plant survey. CDFW generally considers biological field assessments for wildlife to be valid for a one-year period, and assessments for rare plants may be considered valid for a period of up to three years. Some aspects of the proposed project may warrant periodic updated surveys for certain sensitive taxa, particularly if build out could occur over a protracted time frame, or in phases.

6) Biological Direct, Indirect, and Cumulative Impacts: To provide a thorough discussion of direct, indirect, and cumulative impacts expected to adversely affect biological resources, with specific measures to offset such impacts, the following should be addressed in the DSEIR:

a) A discussion of potential adverse impacts from lighting, noise, human activity, exotic species, and drainage. The latter subject should address Project-related changes on drainage patterns and downstream of the project site; the volume, velocity, and frequency of existing and post-Project surface flows; polluted runoff; soil erosion and/or sedimentation in streams and water bodies; and, post-Project fate of runoff from the project site. The discussion should also address the proximity of the extraction activities to the water table, whether dewatering would be necessary and the potential resulting impacts on the habitat (if any) supported by the groundwater. Mitigation measures proposed to alleviate such Project impacts should be included;

b) A discussion regarding indirect Project impacts on biological resources, including resources in nearby public lands, open space, adjacent natural habitats, riparian ecosystems, and any designated and/or proposed or existing reserve lands (e. g. , preserve lands associated with a Natural Community Conservation Plan (NCCP, Fish and G . Code § 2800 et. seq.). Impacts on, and maintenance of, wildlife corridor/movement areas, including access to undisturbed habitats in adjacent areas, should be fully evaluated in the DSEIR;

c) An analysis of impacts from land use designations and zoning located nearby or adjacent to natural areas that may inadvertently contribute to wildlife-human interactions. A discussion of possible conflicts and mitigation measures to reduce these conflicts should be included in the DSEIR; and,

d) A cumulative effects analysis, as described under CEQA Guidelines section 15130. General and specific plans, as well as past, present, and anticipated future projects, should be analyzed relative to their impacts on similar plant communities and wildlife habitats.

7) Avoidance, Minimization, and Mitigation for Sensitive Plants: The DSEIR should include measures to fully avoid and otherwise protect sensitive plant communities from Project-related direct and indirect impacts. CDFW considers these communities to be imperiled habitats having both local and regional significance. Plant communities, alliances, and associations with a statewide ranking of S-1, S-2, S-3

and S-4 should be considered sensitive and declining at the local and regional level. These ranks can be obtained by querying the CNDDB and are included in *The Manual of California Vegetation* (Sawyer et al. 2008).

8) Compensatory Mitigation: The DSEIR should include mitigation measures for adverse Project-related impacts to sensitive plants, animals, and habitats. Mitigation measures should emphasize avoidance and reduction of Project impacts. For unavoidable impacts, on-site habitat restoration or enhancement should be discussed in detail. If on-site mitigation is not feasible or would not be biologically viable and therefore not adequately mitigate the loss of biological functions and values, off-site mitigation through habitat creation and/or acquisition and preservation in perpetuity should be addressed. Areas proposed as mitigation lands should be protected in perpetuity with a conservation easement, financial assurance and dedicated to a qualified entity for long-term management and monitoring. Under Government Code section 65967, the lead agency must exercise due diligence in reviewing the qualifications of a governmental entity, special district, or nonprofit organization to effectively manage and steward land, water, or natural resources on mitigation lands it approves.

9) Long-Term Management of Mitigation Lands: For proposed preservation and/or restoration, the DSEIR should include measures to protect the targeted habitat values from direct and indirect negative impacts in perpetuity. The objective should be to offset the Project-induced qualitative and quantitative losses of wildlife habitat values. Issues that should be addressed include (but are not limited to) restrictions on access, proposed land dedications, monitoring and management programs, control of illegal dumping, water pollution, and increased human intrusion. An appropriate non-wasting endowment should be set aside to provide for long-term management of mitigation lands.

10) Nesting Birds: CDFW recommends that measures be taken to avoid Project impacts to nesting birds. Migratory nongame native bird species are protected by international treaty under the Federal Migratory Bird Treaty Act (MBTA) of 1918 (Title 50, § 10. 13, Code of Federal Regulations). Sections 3503, 3503. 5, and 3513 of the California Fish and Game Code prohibit take of all birds and their active nests including raptors and other migratory nongame birds (as listed under the Federal MBTA). Proposed Project activities including (but not limited to) staging and disturbances to native and nonnative vegetation, structures, and substrates should occur outside of the avian breeding season which generally runs from February 1 through September 1 (as early as January 1 for some raptors) to avoid take of birds or their eggs. If avoidance of the avian breeding season is not feasible, CDFW recommends surveys by a qualified biologist with experience in conducting breeding bird surveys to detect protected native birds occurring in suitable nesting habitat that is to be disturbed and (as access to adjacent areas allows) any other such habitat within 300-feet of the disturbance area (within 500-feet for raptors). Project personnel, including all contractors working on site, should be instructed on the sensitivity of the area. Reductions in the nest buffer distance may be appropriate

depending on the avian species involved, ambient levels of human activity, screening vegetation, or possibly other factors.

11) Translocation/Salvage of Plants and Animal Species: Translocation and transplantation is the process of moving an individual from the Project site and permanently moving it to a new location. CDFW generally does not support the use of, translocation or transplantation as the primary mitigation strategy for unavoidable impacts to rare, threatened, or endangered plant or animal species. Studies have shown that these efforts are experimental and the outcome unreliable. CDFW has found that permanent preservation and management of habitat capable of supporting these species is often a more effective long-term strategy for conserving sensitive plants and animals and their habitats.

12) Moving out of Harm's Way: The proposed Project is anticipated to result in clearing of natural habitats that support many species of indigenous wildlife. To avoid direct mortality, we recommend that a qualified biological monitor approved by CDFW be on-site prior to and during ground and habitat disturbing activities to move out of harm's way special status species or other wildlife of low mobility that would be injured or killed by grubbing or Project-related construction activities. It should be noted that the temporary relocation of on-site wildlife does not constitute effective mitigation for the purposes of offsetting project impacts associated with habitat loss. If the project requires species to be removed, disturbed, or otherwise handled, we recommend that the DSEIR clearly identify that the designated entity shall obtain all appropriate state and federal permits.

13) Wildlife Movement and Connectivity: The project area supports significant biological resources and is located adjacent to a regional wildlife movement corridor. The project area contains habitat connections and supports movement across the broader landscape, sustaining both transitory and permanent wildlife populations. On-site features that contribute to habitat connectivity should be evaluated and maintained. Aspects of the Project that could create physical barriers to wildlife movement, including direct or indirect project-related activities, should be identified and addressed in the DSEIR. Indirect impacts from lighting, noise, dust, and increased human activity may displace wildlife in the general Project area.

14) Revegetation/Restoration Plan: Plans for restoration and re-vegetation should be prepared by persons with expertise in southern California ecosystems and native plant restoration techniques. Plans should identify the assumptions used to develop the proposed restoration strategy. Each plan should include, at a minimum: (a) the location of restoration sites and assessment of appropriate reference sites; (b) the plant species to be used, sources of local propagules, container sizes, and seeding rates; (c) a schematic depicting the mitigation area; (d) a local seed and cuttings and planting schedule; (e) a description of the irrigation methodology; (f) measures to control exotic vegetation on site; (g) specific success criteria; (h) a detailed monitoring program; (i) contingency measures should the success criteria not be met; and (j) identification of the party responsible for meeting the success criteria

and providing for conservation of the mitigation site in perpetuity. Monitoring of restoration areas should extend across a sufficient time frame to ensure that the new habitat is established, self-sustaining, and capable of surviving drought.

a) CDFW recommends that local on-site propagules from the Project area and nearby vicinity be collected and used for restoration purposes. On-site seed collection should be initiated in the near future to accumulate sufficient propagule material for subsequent use in future years. On-site vegetation mapping at the alliance and/or association level should be used to develop appropriate restoration goals and local plant palettes. Reference areas should be identified to help guide restoration efforts. Specific restoration plans should be developed for various Project components as appropriate.

b) Restoration objectives should include providing special habitat elements where feasible to benefit key wildlife species. These physical and biological features can include (for example) retention of woody material, logs, snags, rocks and brush piles (see Mayer and Laudenslayer, 1988[1]).

CDFW appreciates the opportunity to comment on the NOP for the Carpinteria Salt Marsh Enhancement Plan DSEIR. Questions regarding this letter and further coordination on these issues should be directed to Dan Blankenship, Senior Environmental Scientist, at (661) 259-3750) or Daniel. Blankenship@wildlife. ca. gov.

Sincerely,

Erinn Wilson
Environmental Program Manager I

cc: Randy Rodriguez, Los Alamitos
Dan Blankenship, Newhall
Sarah Rains, Thousand Oaks

Scott Morgan (State Clearinghouse)

[4]Mayer, K. E. and W. F. Laudenslayer, Jr. 1988. Editors: A guide to wildlife habitats of California. State California, The Resources Agency, Department of Forestry and Fire Protection, Sacramento, CA.

February 15, 2019

Seth Shank, Senior Environmental Planner
County of Santa Barbara
Flood Control and Water Conservation District
130 East Victoria Street, Suite 200
Santa Barbara, CA 93101

Re: APCD Response to Notice of Preparation of a Draft Subsequent Environmental Impact Report to the Carpinteria Salt Marsh Enhancement Plan Final EIR (SCH no. 2003021016)

Dear Mr. Shank:

The Santa Barbara County Air Pollution Control District (APCD) appreciates the opportunity to provide comments on the Notice of Preparation (NOP) of a Draft Subsequent Environmental Impact Report (SEIR) to the Carpinteria Salt Marsh Enhancement Plan Final EIR (SCH no. 2003021016) certified July 2003. The County of Santa Barbara Flood Control and Water Conservation District proposes updates to include the modification and expansion of routine creek maintenance and the following new components: make changes in routine maintenance of Franklin and Santa Monica Creeks with an updated analysis of both dragline and hydraulic dredging, an expansion of the existing staging and stockpiling area by 0.5 acre, and the maintenance of the Avenue Del Mar Drainage using equipment to excavate a trench within the footprint of the tidal channels. The project will take place within the City of Carpinteria and the Carpinteria Salt Marsh Reserve.

APCD staff reviewed the Initial Study and NOP of a Draft Subsequent EIR, and concurs that air quality impacts should be addressed in the SEIR. The proposed project may include equipment and operations that may be subject to APCD permit requirements and prohibitory rules, such as the hydraulic dredge and the crane used for dragline desilting. Therefore, **APCD may be a responsible agency under the California Environmental Quality Act (CEQA), and will rely on the SEIR when evaluating any APCD permits for proposed equipment**. The SEIR should include the air pollutant emissions for all proposed equipment to avoid additional CEQA documentation requirements related to APCD permit issuance. APCD's guidance document, entitled *Scope and Content of Air Quality Sections in Environmental Documents* (updated April, 2015), is available online at www.ourair.org/apcd/land-use/. This document should be referenced for general guidance in assessing air quality impacts in the Draft EIR. The EIR should evaluate the following potential impacts related to the Carpinteria Salt Marsh Enhancement Plan:

1. **Permits for Non-Vehicular Combustion Equipment**: If the proposed plan activities would involve the operation of equipment with a diesel engine(s) 50 brake-horsepower or greater (that is not used to drive a vehicle), such equipment/engines may require an APCD Authority to Construct/Permit to Operate permit. Alternatively, the State of California administers a Portable Equipment Registration Program (PERP) that can be used to permit portable engines for operation in California provided the equipment

will be on-site for less than 12 months. The SEIR should address if proposed equipment requires a permit, what type of permit will be required, and demonstrate compliance with permit requirement for all portable combustion equipment. The applicant is encouraged to contact the APCD's Engineering Division at (805) 961-8800 to discuss potential permitting requirements for project equipment.

2. Attainment Status and Consistency with the APCD Ozone Plan. The APCD has posted the most up-to-date attainment status for the County on the APCD website www.ourair.org/air-quality-standards/ and the most recent Ozone Plan (previously known as the Clean Air Plan) was adopted October 2016 and is available at www.ourair.org/clean-air-plans/. The website should be consulted for the most up-to-date air quality information prior to the release of the Public Draft SEIR.

Consistency with land use and population forecasts in local and regional plans, including the Ozone Plan (previously known as the Clean Air Plan), is required under CEQA for all projects. Proposed projects subject to the most recent Ozone Plan consistency determinations include a wide range of activities such as commercial, industrial, residential, and transportation projects. By definition, consistency with the Ozone Plan for the projects subject to these guidelines means that direct and indirect emissions associated with the project are accounted for in the Ozone Plan's emissions growth assumptions and the project is consistent with policies adopted in the Ozone Plan. The Ozone Plan relies primarily on the land use and population projections, and on-road emissions forecast provided by the California Air Resources Board (CARB) as a basis for vehicle emission forecasting. The SEIR should examine whether the proposed project will be consistent with the growth assumptions in the 2016 Ozone Plan.

Commercial or industrial stationary source projects will generally be considered consistent with the Air Quality Attainment Plan if they are consistent with APCD rules and regulations.

3. Land Use Conflicts and Health Risk Related to Air Pollutant Emissions. The SEIR should examine whether any of the operations associated with the proposed project will result in air quality impacts to sensitive land uses such as residential, childcare facilities, schools, or senior living communities. Examples of this type of impact include odors, dust, or toxic air contaminants such as diesel particulate emissions from trucks or other diesel-powered combustion equipment.

4. Increase in Criteria Pollutant Emissions from Proposed Project. The SEIR should present significance thresholds for ozone precursor emissions (reactive organic compounds [ROC], and oxides of nitrogen [NO_X]) and particulate matter and determine whether the proposed project will produce emissions in excess of the County of Santa Barbara's adopted CEQA thresholds.

The proposed project will involve air quality impacts associated with motor vehicle trips, earth-moving activities, stockpiling of soils, and operation of project-related combustion equipment, such as dredge and dragline crane. The air quality impact analysis for mobile source emissions, off-road equipment emissions, portable combustion equipment emissions, and any stationary source emissions should be based on project-specific information, such as average daily truck trips, equipment horsepower and operating hours. Emissions from all of these sources should be evaluated for the baseline (existing) environment and for the proposed project.

If the proposed project exceeds the significance thresholds for air quality, mitigation should be applied to reduce those emissions to below the levels of significance. Section 6 of APCD's *Scope and Content* document offers ideas for air quality mitigation. However, project-specific measures should be developed that are pertinent to the specific project and are enforceable by the lead agency.

5. Construction Impacts. The SEIR should include a description and quantification of potential air quality impacts associated with construction activities for the proposed project, including from the proposed site preparation, grading, dredging, and excavation and trenching. APCD's June, 2017 *Scope and Content* document, Section 6, presents recommended mitigation measures for fugitive dust and equipment exhaust emissions associated with construction projects. Construction mitigation measures should be enforced as conditions of approval for the project. The SEIR should include a Mitigation Monitoring and Reporting Plan that explicitly states the required mitigation and establishes a mechanism for enforcement.

6. Global Climate Change/Greenhouse Gas Impacts. Greenhouse gas (GHG) emissions and global climate change impacts should be addressed in the CEQA document. Global climate change is a cumulative impact; a project participates in this potential impact through its incremental contribution combined with the cumulative increase of all other sources of greenhouse gases. The SEIR should include a quantification of GHG emissions from all project sources (direct and indirect), present significance thresholds, and make a determination regarding the significance of impacts. In addition, we recommend that climate change impacts be mitigated to the extent reasonably possible, whether or not they are determined to be significant.

For guidance regarding greenhouse gas analysis for CEQA environmental documents, please refer to the *CAPCOA CEQA & Climate Change* document. CAPCOA has also published *Quantifying Greenhouse Gas Mitigation Measures*, an extensive sector-by-sector compendium of project-specific mitigation measures, including quantification methods to calculate GHG reductions. Both of these documents are available online at www.capcoa.org.

We hope you find our comments useful. We look forward to reviewing the Draft SEIR. Please contact me at (805) 961-8873 or by e-mail at Hod@sbcapcd.org if you have questions.

Sincerely,

Desmond Ho
Air Quality Specialist
Planning Division

cc: Planning Chron File