
**APPENDIX N – DRAFT COASTAL
CONSISTENCY DETERMINATION
For
WESTMINSTER, EAST GARDEN GROVE
FLOOD RISK MANAGEMENT STUDY**



October 2018



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**Coastal Consistency Determination
Westminster-East Garden Grove
Flood Risk Management Project
Orange County, California**



Prepared for:

**US Army Corps of Engineers
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Acronyms and Abbreviations

ACE	annual chance of exceedance
BA	Biological Assessment
BCER	Bolsa Chica Ecological Reserve
BO	Biological Opinion
CCA	California Coastal Act of 1976, as amended
CCC	California Coastal Commission
CCMP	California Coastal Management Program
CCD	Coastal Consistency Determination
CDFW	California Department of Fish and Wildlife
C.F.R.	Code of Federal Regulations
CY	cubic yards
CZMA	Coastal Zone Management Act of 1972, as amended
DO	dissolved oxygen
EA	Environmental Assessment
ESA	Endangered Species Act
FONSI	Finding of No Significant Impact
FY	Fiscal Year
LPP	Locally Preferred Plan
LUP	Land Use Plan
MLLW	Mean Lower-Low Water
MSCMA	Magnuson-Stevens Conservation and Management Act
NED	National Economic Development
NOAA Fisheries	National Oceanic and Atmospheric Administration, National Marine Fisheries Service
NRHP	National Register of Historic Places

O&M	Operations and Maintenance
RWQCB	Regional Water Quality Control Board
SHPO	State Historic Preservation Officer
USFWS	United States Fish and Wildlife Service
USACE	United States Army Corps of Engineers

SECTION 1.0 – AUTHORITY

The United States Army Corps of Engineers (USACE), Chicago District, has prepared this Coastal Consistency Determination (CCD) in accordance with the Federal Coastal Zone Management Act of 1972, as amended, (CZMA) (Title 16 United States Code [U.S.C.] § 1451 et seq.) and its implementing regulations, Federal Consistency with Approved Coastal Management Programs (Title 15 Code of Federal Regulations [C.F.R.] Part 930). The environmental impact statement, in conjunction with the 40 C.F.R. Part 230 - Section 404(b)(1) guidelines and public notice coordination process, can be used as a guide in formulating environmentally acceptable alternatives.

The Westminster feasibility study is being conducted in accordance with the study resolution adopted by the Committee on Public Works, House of Representatives Committee on Public Works on May 8, 1964 (Flood Control Act of 1938), which reads:

"Resolved by the Committee on Public Works of the House of Representatives, United States, that the Board of Engineers for Rivers and Harbors is hereby requested to review the reports on (a) San Gabriel River and Tributaries, published as House Document No. 838, 76th Congress, 3d Session; (b) Santa Ana River and Tributaries, published as House Document No. 135, 81st Congress, 1st Session; and (c) the project authorized by the Flood Control Act of 1936 for the protection of the metropolitan area in Orange County, with a view to determining the advisability of modification of the authorized projects in the interest of flood control and related purposes."

SECTION 2.0 – DETERMINATION

USACE has evaluated the Proposed Project and has found it is consistent to the maximum extent practicable with the California Coastal Management Program (CCMP), pursuant to the requirements of the Coastal Zone Management Act of 1972, as amended, (CZMA), and the California Coastal Act of 1976, as amended (CCA). The Project, for purposes of this Coastal Consistency Determination (CCD), is defined as the Locally Preferred Plan (LPP). The environmental consideration and consistency sections below provide the basis for the finding. USACE requests that the California Coastal Commission (CCC) concur with this CCD.

SECTION 3.0 – STANDARD OF REVIEW

Under Section 307 (c)(1) of the CZMA, 16 USC Section 1456 (c) (1), federal activities that affect any land or water use or natural resource of the coastal zone are required to be consistent with the affected state's coastal management program to the "maximum extent practicable." Section 930.32 of the National Oceanic and Atmospheric Administration's regulations implementing the CZMA (15 CFR part 930) defines "consistent to the maximum extent practicable" as follows:

(a)(1) The term "consistent to the maximum extent practicable" means fully consistent with the enforceable policies of management programs unless full consistency is prohibited by existing law applicable to the Federal agency.

The standard of review for federal consistency determinations consists primarily of the principal components of the California Coastal Management Program (CCMP), namely the policies of Chapter 3 of the Coastal Act. Section A(6) of the Introduction to the CCMP also states that once incorporated into the CCMP, certified Local Coastal Programs (LCPs) "will be used in making federal consistency

determinations". If an LCP that the Commission has certified and incorporated into the CCMP provides development standards that are applicable to the project site, the LCP can provide guidance in applying Chapter 3 policies in light of local circumstances. If the Commission has not incorporated the LCP into the CCMP, it cannot guide the Commission's decision, but it can provide background information.

SECTION 4.0 – PROJECT DESCRIPTION

4.1 PROJECT BACKGROUND

The Westminster Flood Risk Management Project (Proposed Project) evaluates the flood risk associated with the primary drainage channels in the Westminster Watershed and will examine opportunities to improve the function of the constructed flood control channels or storm drains of the East Garden Grove-Wintersburg (EGGW/C05), Oceanview (OV/C06), Westminster (W/C04), and Bolsa Chica (BCFC/C02) Channel Systems. The Westminster Watershed is designated with the letter “C” by Orange County. As such, these channels are numbered C05, C06, C04, and C02, as identified above. The Proposed Project would allow the modification of the C05, C06, C04, and C02 channels to provide 100-year flood conveyance of stormwater.

The evaluation of flood risk will include the identifying measure to reduce flood hazards associated with the Westminster Channels, such as risks to life safety, damages to residential and commercial structures, and public infrastructure. The evaluation will also consider measures to reduce flood impacts downstream of the channels in the vicinity of Outer Bolsa Bay.

Engineering Regulation (ER) 1105-2-100 and ER 11165-2-21 set minimum drainage requirements to qualify for federal interest consideration under the flood risk management authority. The requirements are as follows:

- Flows within the channel must be greater than 800 cubic feet per second (cfs) (22.7 cubic meters/second [cms]) for the 0.1 annual chance of exceedance (ACE) storm event, except in areas of hydraulic disparity where flows do not exceed 800 cfs (22.7 cms) for the 0.1 ACE storm event, but exceed 1,800 cfs (51.0 cms) for the 0.01 ACE storm event.

4.1.1 Project Area

The Proposed Project lies in the area referred to as the Westminster Watershed, a sub-watershed of the Anaheim Bay-Huntington Harbour Watershed (identified by the U.S. Environmental Protection Agency [USEPA] as # 18070201) located between the lower reaches of the San Gabriel River Watershed and the Santa Ana River Watershed in Orange County, California. The study area is approximately 25 miles (40.2 kilometers) southeast of downtown Los Angeles, California.

The Westminster Watershed lies on a flat coastal plain, approximately 90 square miles (233.1 square kilometers) in area and is almost entirely urbanized with residential and commercial development. The Santa Ana River historically meandered widely over this coastal plain. Channelization occurred throughout the mid-20th century with containment in concrete channels and earthen berm channels from Anaheim Bay to the north, and southward to Newport Bay. Urbanization within the Westminster Watershed generally followed historic alignments of the former Santa Ana River drainage system. C05 and C02 systems collect runoff from the urbanized areas in the cities of Anaheim, Cypress, Fountain Valley, Garden Grove, Huntington Beach, Los Alamitos, Santa Ana, Seal Beach, Stanton, and Westminster in the County of Orange. Typical flow in the Anaheim Bay-Huntington Harbour Watershed is almost completely dry weather runoff. There is no dominant river for the watershed that drains a substantial portion of the watershed. Channels that drain the watershed include Stanton Storm Channel; C02; Anaheim Harbor City Channel; C04; C05; and C06.

The channels within the Westminster Watershed collect local storm water runoff and vary in size, geometry, and lining material. Typical channel configurations are described below and vary by reach throughout the channel systems.

- Concrete rectangular channels: Vertical channel walls with concrete lined sides and bottom.
- Riprap-lined trapezoidal channels: Sloped channels that are lined with riprap; soft or unpaved bottom.
- Concrete-lined trapezoidal channels: Sloped channels with concrete-lined sides and bottoms.
- Enclosed culverts: Rectangular or box conduits that are not exposed at the surface.
- Levees: Earthen berms (3H:1V TYP.) are located along channels in the flattest downstream extents of the watershed.
- Steel Sheet Pile: Rectangular channels comprised of vertical sheet pile walls with soft channel bottom in between.

Current data for C05 are from a sampling station at Gothard Street. C05 terminates with one-way flap gates at the south end of Outer Bolsa Bay. From Outer Bolsa Bay, runoff is conveyed under the Warner Avenue Bridge through Huntington Harbour, Anaheim Bay and ultimately to the Pacific Ocean. Tidal waters flow between Outer and Inner Bolsa Bay through culverts that partly restrict tidal exchange. The tidal range in Inner Bolsa Bay is muted to about 22 percent of that of Outer Bolsa Bay (CSLC et al. 2001).

The downstream receiving waters are comprised of the following four regions:

Huntington Harbour

The City of Huntington Beach is a residential community that includes five man-made islands and waterways used for boating. The layout of the harbor is illustrated in Figure 5. FEMA maps from a detailed floodplain study dated 2010 show the channels within Huntington Harbour contain up to the 0.01 ACE storm event.

Seal Beach National Wildlife Refuge

Seal Beach National Wildlife Refuge (NWR) was developed through a collaboration of the U.S. Fish and Wildlife Service (USFWS) and the Department of the Navy. The refuge is part of the Seal Beach Naval Weapons Station located to the northwest of the CO2/CO4 channel confluence.

Anaheim Bay

Anaheim Bay serves as the outlet to the Pacific Ocean for the wildlife refuge and the CO2/CO4 channel system. The Navy is currently investigating ways to modify navigation in Anaheim Bay to redirect civilian ships in Huntington Harbour away from the facilities at the Seal Beach Naval Weapons Station. These changes would neither affect nor conflict with the project alternatives.

Bolsa Chica Ecological Reserve (BCER)

This nature reserve is designed to protect a significant coastal wetland and provide habitat for endemic plant and animal species, including federally listed endangered species (see Figure 5).

4.1.2 Project Channels and Reaches

The study will focus only on channel reaches C02, C04, C05, and C06. The study will not include reaches of C02 upstream of the C02/C04 confluence, or the C03 channel, Anaheim Harbor City Channel.

C02 – Bolsa Chica Channel

For the C02 channel, this study focuses only on the portion that extends from the confluence with the C04 channel, near the southeastern corner of the Seal Beach Naval Weapons Station, to where the channel discharges into Huntington Harbour. This channel segment is approximately 1.5 miles (2.4 kilometers) long and provides flood risk management for the Huntington Beach, Huntington Harbour, and the Seal Beach Naval Weapons Station.

C04 - Westminster Channel

The C04 channel is approximately 7.8 miles (12.6 kilometers) in length and provides flood risk management for the cities of Garden Grove, Westminster, and Huntington Beach. The channel begins south of Highway 22 and flows westward past Westminster Memorial Park Cemetery, Interstate 405, and Westminster Mall, joining with the C02 channel near the southeastern corner of the Seal Beach Naval Weapons station.

C05 – East Garden Grove/Wintersburg Channel

The C05 channel is approximately 11.6 miles (18.7 kilometers) in length and provides flood risk management for the cities of Santa Ana, Garden Grove, Westminster, and Huntington Beach. The channel begins west of the intersection of Highway 5, Highway 57, and Highway 22 in the City of Santa Ana and flows southwest through Haster Basin, under Interstate 405, and through the Bolsa Chica Ecological Reserve, ultimately discharging into Outer Bolsa Bay. Haster Basin is a detention basin that controls flows entering the C05 channel with a pump system.

C06 - Ocean View Channel

The C06 channel is approximately 4.1 miles (6.6 kilometers) in length and provides flood risk management for the cities of Fountain Valley and Huntington Beach. The channel begins 0.5 miles (0.8 kilometers) east of Mile Square Regional Park in the City of Fountain Valley and flows westward through Mile Square Regional Park and under Interstate 405, ultimately discharging into the C05 channel at the confluence near Gothard Street in Huntington Beach, CA. Mile Square Regional Park is a 640 acre (259.0 hectares) park that is home to multiple golf courses, a 55 acre (22.3 hectares) recreation center, and two lakes. This park is located in the City of Fountain Valley but is a key recreation resource for communities throughout the watershed.

4.1.3 Bolsa Chica Ecological Reserve

The lower segment of the C05 channel bisects the reserve and discharges into Outer Bolsa Bay, a body of water that is contained within the Bolsa Chica Ecological Reserve (BCER). The BCER is owned by California State Lands Commission and is home to a variety of local wildlife and habitat types. The BCER is comprised of the following areas:

Full Tidal Basin

The Full Tidal Basin is located along the eastern edge of the C05 channel and is considered an environmentally sensitive area. The Full Tidal basin is separated from the C05 Channel, the Muted Tidal Basin, and Inner Bolsa Bay by levees. Water exchange between the Muted Tidal Basin and the Full Tidal Basin is permitted by a series of culverts and is controlled by flap gates that respond to changes in tide. Water exchange between the Seasonal Pond Area and the basin is controlled by flap gates that respond to changes in tide. The basin is connected to the Pacific Ocean by an ocean outlet that passes under Pacific Coast Highway at the southern tip of the Full Tidal Basin.

Muted Tidal Basin

The Muted Tidal Basin is located northeast of the Full Tidal Basin. The Muted Tidal Basin is divided into three cells that only allow water to move between them through overflow weirs during larger storm events. Each cell is separated from the Full Tidal Basin and the C05 channel by a levee. Culverts permit water exchange between the Muted Tidal Basin and the Full Tidal Basin, and flap gates allow regular, but muted tidal influence.

Inner Bolsa Bay

Inner Bolsa Bay is located between Pacific Coast Highway and the Full Tidal Basin. The bay is isolated from the Full Tidal Basin by a levee and is separated from Outer Bolsa Bay by tide gates. The tide gates permit water from Outer Bolsa Bay to enter Inner Bolsa Bay and maintain a tidal influence within Inner Bolsa Bay. There is no water exchanged between the Full Tidal Basin and Inner Bolsa Bay.

Muted Tidal Pocket

The Muted Tidal Pocket is separated from the Full Tidal Basin by the C05 channel. The Muted Tidal Pocket is isolated from the C05 channel by a levee and a tide gate. A culvert permits water from Outer Bolsa Bay to enter the Muted Tidal Pocket, maintaining a muted tidal influence.

Seasonal Ponds

The Seasonal Ponds are located along the eastern edge of the Full Tidal Basin and are separated from the Full Tidal Basin by a levee system. A single culvert controls discharge from the Seasonal Ponds into the Full Tidal Basin. This area is subject to runoff from surrounding developments.

Outer Bolsa Bay

Outer Bolsa Bay is located at the mouth of the C05 channel. Water exchange between the C05 channel and the bay is controlled by tide gates. Outer Bolsa Bay is connected to Inner Bolsa Bay by different tide gates, and a culvert connects Outer Bolsa Bay to the Muted Tidal Pocket just north of the C05 outfall. Water is discharged from Outer Bolsa Bay under the Warner Ave. Bridge into Huntington Harbour. Outer Bolsa Bay is separated from the Pacific Ocean by Pacific Coast Highway and Bolsa Chica State Beach.

4.1.4 Essential Fish Habitat

Essential Fish Habitat (EFH) are those areas that have been identified and described as essential for certain life stages of various species. EFH can include various habitat types — wetlands, coral reefs, sea grasses,

rivers, etc. — required by fish for spawning, breeding, foraging, and nursery. These habitats are necessary for fish to successfully reproduce, grow to maturity, and survive.

EFH potentially present within the study area was queried using GIS data made available by the National Oceanic and Atmospheric Administration's (NOAA) National Marine Fisheries Service. It was found that EFH for groundfish, coastal pelagic species, and finfish, and market squid is present within Anaheim Bay, Huntington Harbour, and Outer and Inner Bolsa Bay. EFH for these species also extends upstream into reaches of Channels C02 and C05. Outside of the project area, but within Anaheim Bay and along the coastline, EFH also exists for krill (i.e., *Euphausia pacifica*, *Thysanoessa spinifera*, and other krill species) as well as for the aforementioned species.

Coastal pelagic species that may be found in the area include Jack Mackerel (*Trachurus symmetricus*), Pacific (Chub) Mackerel (*Scomber japonicus*), Pacific Sardine (*Sardinops sagax*), Northern Anchovy (*Engraulis mordax*), and Market Squid (*Loligo opalescens*). Coastal pelagic species tend to be most common in the upper mixed layer of the ocean (above the thermocline) in a broad band (up to hundreds of miles wide) along the coast. Coastal pelagic species may occur in shallow embayments and brackish water, but do not depend on these habitats to any significant degree.

No Pacific Salmon EFH, Habitat Areas of Particular Concern (HAPC), or EFH Areas Protected from Fishing (EFHA) were identified within the vicinity of the Proposed Project area. Additionally, EFH for Pacific Highly Migratory Species (PHMS) — Thresher Shark, Bluefin Tuna, Dolphinfish (*Engraulis mordax*), and Swordfish — is located approximately 1 mile (1.6 kilometer) off the coast; therefore, these species are not anticipated to be within the vicinity of the Proposed Project area.

4.2 PURPOSE AND NEED

The purpose of this study is to evaluate flood risk within the Westminster Watershed following the completion of channel modifications for the Santa Ana River and the removal of the Westminster Watershed from the Santa Ana River floodplain. Flood risk within the watershed can be attributed to drainage channels that collect surface runoff and convey it to the Pacific Ocean. Portions of the Westminster Watershed are the only areas left in Orange County that are still within the Federal Emergency Management Agency (FEMA) 1% Floodplain. Preliminary analysis shows that flows overtop the channels regularly and the levees on C02 and C05 are overtopped during 0.02 annual chance of exceedance (ACE) and 0.2 ACE storm events, respectively, putting area residents and approximately 20,000 structures at risk, representing expected average annual damages of \$85,000,000. Overbank flooding also impacts traffic in the project area, causing closures on local roads as well as major routes, including the Pacific Coast Highway (PCH) and Interstate-405.

Hydraulic analysis shows that the following channel segments may not meet the drainage requirements criteria for with project conditions.

- C04 – Portions of the channel that are approximately 0.25 miles upstream of the Ward Street crossing. Flows upstream of the crossing do not exceed 770 cfs (21.8 cms) for the 0.1 ACE storm event.
- C05 – Portions of the channel that are upstream of the Garden Grove Freeway. Flows in the channel between Westminster Avenue and Haster Basin do not exceed 460 cfs (13.0 cms) for the 0.1 ACE storm event.

- C06 – Portions of the channel that are approximately 900 feet upstream of Brookhurst Street. Flows in the channel upstream of Brookhurst Street do not exceed 800 cfs (22.7 cms) for the 0.1 ACE storm event.

4.3 PROJECT OBJECTIVES AND CONSTRAINTS

The goal of the study is to identify a sustainable flood risk management solution within the Westminster Watershed to reduce flooding caused by overtopping of the C05/C06 and C02/C04 channel systems. Detailed descriptions of the Objectives and Constraints are discussed in the EIS/EIR.

4.3.1 Objectives

- Reduce the risk of flood damages to structures and infrastructure:
- Reduce life-safety risk associated with overbank flooding:
- Reduce the risk of downstream flood damages:
- Incorporate recreation features where compatible with flood risk management alternatives in the Westminster Watershed.

4.3.2 Constraints

- Limit extensive changes to local land use designations and zoning by limiting channel modifications to within the existing channel right of way.
- Minimize impacts to culturally sensitive areas.
- Limited change in elevation across the watershed reduces opportunities for lowering the invert of the existing channel systems.

4.4 ALTERNATIVES

The following strategies were used for developing study alternatives.

- Maximize Nonstructural and Flood Proofing – Retrofitting existing buildings and infrastructure to be more flood resistant.
- Focus on Improving Channel Conveyance – More efficiently transporting flood waters, especially in upstream channel reaches where the watershed has more slope.
- Focus on Increasing Channel Capacity – Increasing flood water storage within the existing drainage channels.
- Focus on Improving Downstream Conveyance – More efficiently transporting flood waters received from the channels. Any modifications to conveyance and capacity upstream would exacerbate existing flow restrictions downstream.

Based on the measures and the strategies developed for alternative development, four action and one no action alternative plans were developed for the focused array of alternatives for project consideration and are described in further detail below.

Water Diversion

Water diversion methods would be the same for each of the action alternatives. In the reaches where sheet pile is being placed (e.g., downstream reaches of C02 and C05) full dewatering will not occur.

Cofferdams will be used to block off one side of the channel where work is being conducted, but the other side will be left open for water to flow through in the channel. In the reaches where concrete is being placed, water will be completely diverted around the work area. Cofferdams will be used at the upstream and downstream areas to completely block off from flow the section where work is occurring. Water from upstream will be completely diverted around the site through a pipe to the downstream area.

Nonstructural Measures

Retained nonstructural measures are included in every action alternative listed (i.e., all alternatives except No Action) and include removal of impediments to flow. These measures are the same for each action alternative.

Removal of Impediments to Flow: Removal of impediments to flow is a nonstructural maintenance measure that involves the removal of vegetation, sediment, and other debris that can accumulate in the channel and interfere with the conveyance of flood flows. Removing impediments to flow could be implemented on a priority-basis, increasing maintenance investments in locations that are known to require greater capacity during flood events.

4.4.1 Alternative 1 – No Action Alternative

Flooding will continue through the Westminster Watershed due to the insufficient capacity of the existing channel systems, which will continue to cause damage to structures and result in road closures in the project due to overtopping of the channels. Outer Bolsa Bay will continue to flood during frequent storm events, impacting traffic on Pacific Coast Highway. The oil wells in the BCER will remain at risk of inundation by flows that overtop the C05 channel upstream of the reserve and travel over land into the muted tidal basin and seasonal ponds.

4.4.2 Alternative 2 –Minimum Channel Modifications

Consistent with the formulation strategy to “focus on improving channel conveyance,” this alternative would reduce flood risk within the watershed by improving conveyance efficiency of existing channels. Trapezoidal channels within C02, C04, C05, and C06 that currently have an earthen bottom and either earthen or riprap banks would be lined with concrete. There would be no alteration to reaches that are rectangular in shape or lined with concrete, nor to reaches of in-channel box and pipe structures. The leveed areas in the downstream reaches of C02 and C05 (reaches 23 and 1, respectively) would be improved to reduce the risk of levee failure. Modifications in these reaches would include installation of steel sheet pile channel walls and preservation of existing soft bottom, tidally-influenced habitat.

Additional downstream measures would be combined with the in-channel measures to address existing flooding in Outer Bolsa Bay and to account for increased flow volumes that result from increased conveyance capacity in the channels. The tide gates on C05 would be replaced in order to improve the flow conditions through the lower reaches of the C05 channel. The current tide gates leak and therefore, allow saltwater to intrude upstream in C05. This saltwater influence extends upstream of Outer Bolsa Bay for approximately 2.5 miles. The replacement of the tide gates as part of this alternative would be configured to allow for continued tidal influence in the lower reaches of C05, thus lessening impacts to the existing ecological conditions. This alternative also includes the widening of the Outer Bolsa Bay Channel just upstream of the Warner Avenue Bridge. Widening of the channel would require that the Warner Avenue Bridge and the pedestrian bridge at the Bolsa Chica Conservancy be widened as well.

Widening of the Outer Bolsa Bay Channel would improve conveyance as well as the hydraulic efficiency of the lower reaches of C05. A 2,500 foot long and 3 foot tall floodwall would be built along PCH at Outer Bolsa Bay to reduce impacts from flooding on traffic.

Compatible nonstructural measures would be incorporated to lessen the life safety risk associated with flooding in the project area. Compatible nonstructural measures that were considered in the development of this alternative include development of a flood warning system and removal of impediments to flow.

This alternative has been identified as the National Economic Development (NED) Plan (Figure 2).

4.4.3 Alternative 3 –Maximum Channel Modifications

Consistent with the formulation strategies to “focus on improving channel conveyance” and “focus on improving channel capacity,” this alternative will reduce flood risk within the watershed by improving both conveyance efficiency and capacity of existing channels. Trapezoidal channels within C02, C04, C05, and C06 will be replaced with rectangular concrete (or steel sheet pile) channels to contain a 100-year storm event. Additionally, floodwalls would be constructed in the existing channel right of way where necessary. Soft channel bottoms would be preserved in the tidally-influenced downstream reaches of C02 and C05 to avoid impacts to marine habitat.

Additional downstream measures would be combined with the in-channel measures to address existing flooding in Outer Bolsa Bay and to account for increased flow volumes that result from the improved conveyance capacity in the channels. The tide gates on C05 would be replaced in order to improve the flow conditions through the lower reaches of the C05 channel. The current tide gates leak and therefore, allow saltwater to intrude upstream in C05. This saltwater influence extends upstream of Outer Bolsa Bay for approximately 2.5 miles. The replacement of the tide gates as part of this alternative would be configured to allow for continued tidal influence in the lower reaches of C05, thus lessening impacts to the existing ecological conditions. This alternative also includes the widening of the Outer Bolsa Bay Channel just upstream of the Warner Avenue Bridge. Widening of the channel would require that the Warner Avenue Bridge and the pedestrian bridge at the Bolsa Chica Conservancy be widened as well. Widening of the Outer Bolsa Bay Channel would improve conveyance as well as the hydraulic efficiency of the lower reaches of C05. A 2,500 foot long and 3 foot tall floodwall would be built along PCH at Outer Bolsa Bay to reduce impacts from flooding on traffic.

Compatible nonstructural measures would be incorporated to lessen the life safety risk associated with flooding in the project area. Compatible nonstructural measures that were considered in the development of this alternative include removal of impediments to flow.

This alternative has been identified as the Locally Preferred Plan (LPP) (Figure 3).

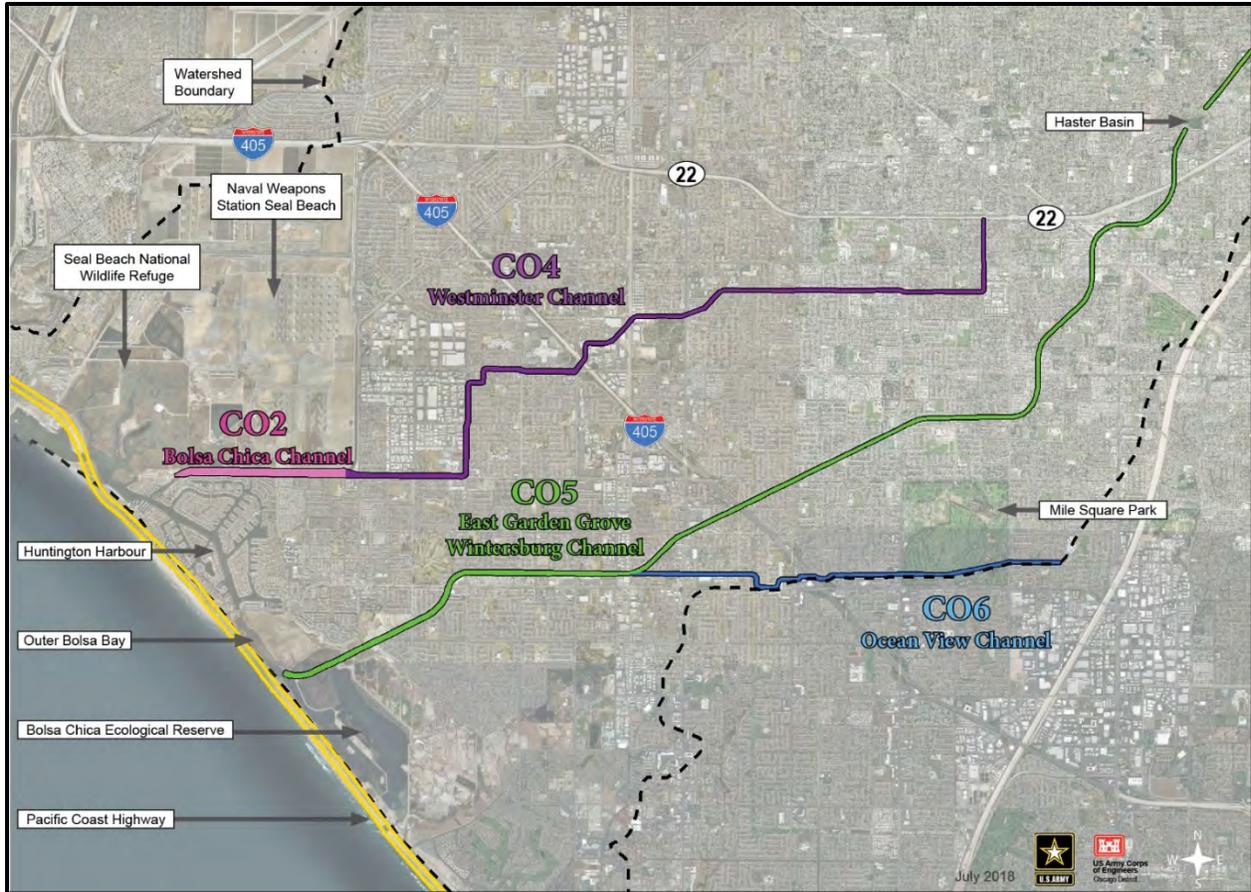


Figure 1: Project Location

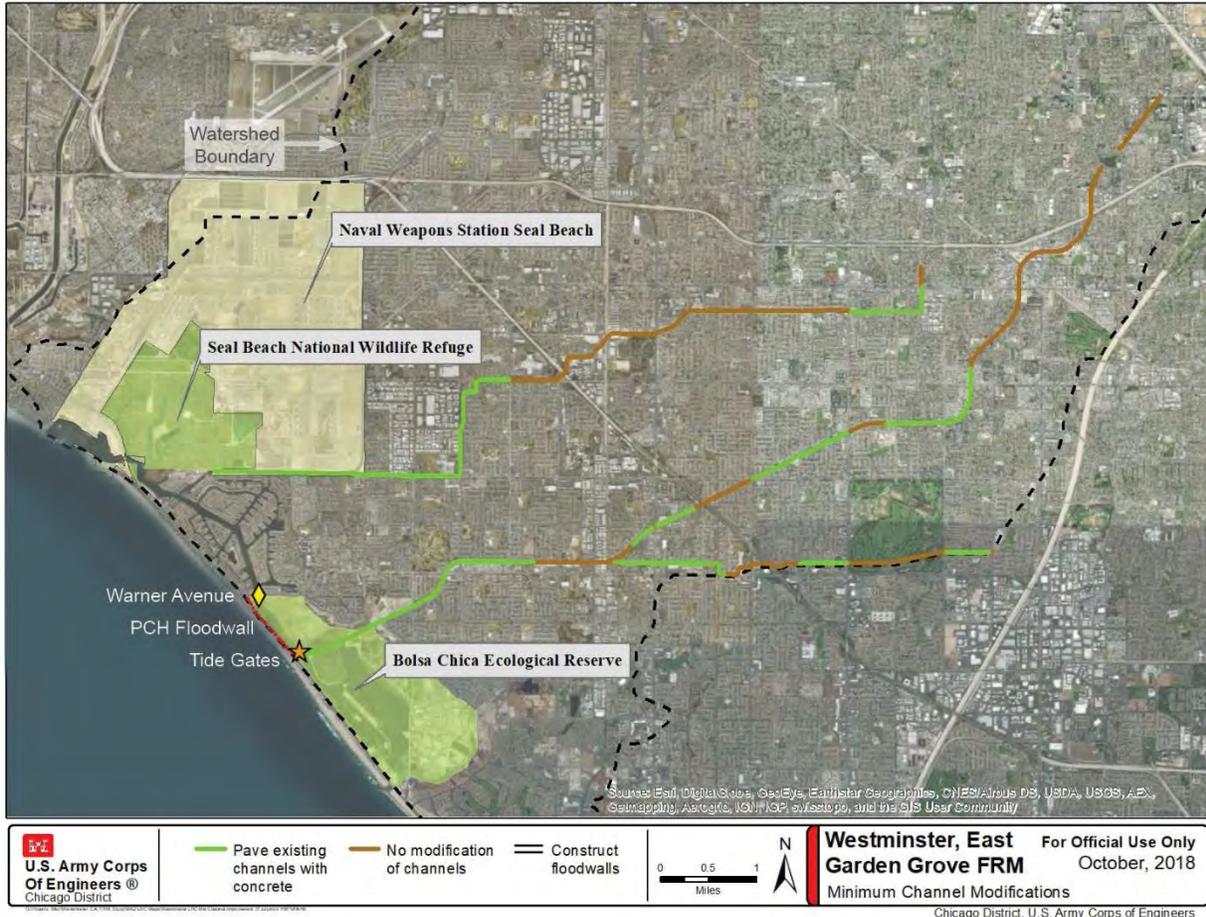


Figure 2: Minimum Channel Modifications Plan



Figure 3: Maximum Channel Modifications Plan.

SECTION 5.0 – CONSISTENCY WITH THE CALIFORNIA COASTAL ACT

This section of the federal consistency determination analyzes the consistency between this Proposed Project and the policies set forth in Chapter 3 (Coastal Resources Planning and Management Policies) (Section 30200 et. seq.) of the California Coastal Act (Division 20, California Public Resources Code Section 30000 et. seq.; California Code of Regulations, Title 14, Section 13000 et. seq.). The evaluation of the Proposed Project with respect to the California Coastal Act is described in the subsections below.

5.1 ARTICLE 1 – GENERAL (SECTION 30200)

The potential effects of the Proposed Project that could have a direct impact on resources within the coastal zone have been considered as well as the effects of such actions on coastal zone resources, which are further detailed in the following subsections.

5.2 ARTICLE 2 – PUBLIC ACCESS (SECTIONS 30210 – 30214)

Several neighborhood and regional parks exist within the Proposed Project area that are adjacent to the channel system, as well as other recreational opportunities at Bolsa Chica Ecological Reserve, Huntington

Harbour, and the Seal Beach National Wildlife Refuge. These recreational opportunities include no-to-low cost options, including but, not limited to walking, jogging, bird watching, and bicycle riding. Maintenance roads occur alongside several reaches of the channels; however, public access currently is not allowed on these maintenance roads. The Proposed Project purpose is to improve the subject channels and does not propose to make direct changes, or changes in access, to any of the existing adjacent and/or nearby recreational opportunities. No new recreational facilities will be built.

For purpose of this assessment, the maximum channel modifications alternative will be considered as the maximum potential for impacts; any other alternative option would involve less impacts. The Proposed Project consists of nonstructural measures (e.g., removal of impediments to flow), improving earthen/riprap trapezoidal channels by lining them with concrete, increasing the span of Warner Avenue Bridge, building a floodwall along the PCH, and replacing the tide gates on Reach 1 of C05. Removal of impediments to flow could include removal of vegetation, sediment and other debris from the channels that could be restricting flow. The nonstructural measure would result in no impacts to existing neighborhood and regional parks or other recreational facilities.

There would be no change in access to use of the channels for recreation as the channel maintenance roads currently do not serve a dual purpose for recreation. Unauthorized public access is not permitted. During construction, access from perpendicular and/or adjacent roadways may temporarily block sidewalks used by joggers, walkers, and others including roadway use by bicyclists. Since roadway bridges over channels are not included when channel geometry is not being changed, there would be no impact to recreational use of roadway bridges. Where public access is possible along the channels for recreation use, the impacts would be temporary for individual reaches during construction as the channel is being modified.

The modification of the Warner Avenue Bridge would affect bicyclists, joggers, walkers, and other recreational users that may utilize the bridge. Currently, there is a sidewalk on the north side of the bridge and bike lanes on the north and south side of the bridge. During construction, the bridge may be reduced to single lanes, which would impact bikers trying to use the bike lanes as well as walkers and joggers using the sidewalk, depending on what side of the bridge construction is occurring on at the time. Increasing the span of the Warner Avenue Bridge also include the removal of the constriction on the south side of the bridge.

Currently, there is a walking trail leading from the north parking lot of the Bolsa Chica Conservancy to a pedestrian footbridge that crosses Outer Bolsa Bay. In addition, there is a second walking trail from the parking lot to the water's edge of Outer Bolsa Bay that cuts through the approximately 1 acre of land that would be removed as part of increasing the span of Warner Avenue Bridge. Removal of the constriction would require removal of the existing pedestrian footbridge as well as a disruption in access to these two walking trails while construction is occurring. In order to address short-term impacts due to loss of the pedestrian footbridge, an option would be to construct a sidewalk on the south side of Warner Avenue to access the land side of Outer Bolsa Bay. However, there is limited space on the south side of Warner Avenue Bridge and it would create safety concerns for people using this limited width of space. Additionally, people would be accessing the site from a non-designated footpath. The pedestrian footbridge would be replaced once modification of the bridge and removal of the constriction is complete. There would be no long-term impacts to recreation once construction is complete; however, the two walking trails would be reduced in length due to the permanent removal of the constriction as part of the Proposed Project.

Construction of the three foot high floodwall would prevent parking on the strip between PCH and Outer Bolsa Bay for the length of the construction period, however, parking is not allowed in this area. There are “No Stopping Any Time” signs in this area. Parking may not be allowed after construction is completed, as it would depend on the distance from the road to the flood wall, whether a car would have sufficient space to park on the roadway shoulder.

Reconstruction of the tide gates on C05 would prevent bicyclists from accessing and utilizing the bicycle path that crosses over the tide gates during construction. The new tide gates would occupy the same footprint as the former tide gates; the openings of the tide gates would just be larger. Once reconstruction of the tide gates is complete, bicyclists would be able to use the path again; therefore, there would be no long-term impacts to access once construction is complete.

By reducing the risk of flooding, the Proposed Project would have a beneficial impact by reducing the potential of overtopping events which could threaten access to regional parks and recreational facilities that are adjacent to the channel system. Therefore, the Proposed Project is consistent with Sections 30210 through 30214 and is consistent with Article 2.

5.3 ARTICLE 3 – RECREATION (SECTIONS 30220 – 30224)

Sections 30221 through 30222.5 and 30224 are not applicable to this Proposed Project as it does not include any activities involving oceanfront land, private lands or recreational boating. The Proposed Project purpose is to improve the subject channels and does not propose to make direct changes to any of the existing adjacent and/or nearby water-oriented recreational opportunities, such as swimming, fishing, or boating. The improvement of water capacity from flood risk reduction may provide a benefit to water-oriented recreational users that are located downstream of the Proposed Project but will not be directly affected by this Proposed Project. The Proposed Project is consistent with Sections 30220 through 30224 and is consistent with Article 3.

5.4 ARTICLE 4 – MARINE ENVIRONMENT (SECTION 30230 – 30237)

Nonstructural measures that are part of this alternative do not propose the construction of any new structures. No wetland or riparian vegetation are anticipated to be affected by Proposed Project activities. No change to the tidal influence within the channels will occur. The various channel reaches of the existing channels range from earthen trapezoidal with earthen bottom to concrete vertical with concrete bottom and would not be affected by this alternative. No change of species composition or important habitat would result, and the biotic character of the immediate vicinity would be similar to the existing conditions. Non-structural modifications to the channels would increase the system’s flood capacity, which may improve habitat availability for fish and other aquatic invertebrates.

Thirteen federally-listed threatened, endangered, or candidate species are listed as occurring within the study area, of which six bird species and the green sea turtle may be affected either directly or through habitat modifications, such as removal of vegetation, sediment, and other debris that can accumulate in the channel. The green sea turtle is an infrequent visitor to the area and would not be expected to occur beyond the downstream ends of C02 and C05. The bird species may forage in the area and may be temporarily disturbed by construction noise and/or project-related activities and would forage in other nearby areas and/or return when construction ceases. The listed species’ foraging and movement also may be improved. No adverse impacts to listed species movement or essential fish habitat are anticipated.

Structural measures that are part of this alternative would pave earthen or riprap lined channels with concrete to increase conveyance efficiency. In addition, Warner Avenue Bridge would be widened, the tide gates would be replaced, and a floodwall along PCH would be built at Outer Bolsa Bay. No change to the tidal influence within the channels will occur. No change of species composition or important habitat would result during the improvement construction.

With the conversion of earthen-lined channels to paved concrete, areas where wetland or riparian vegetation currently exist would be removed by Proposed Project activities. Within the C05 Channel, approximately 1.5 acres (0.61 hectares) of freshwater emergent wetland may be affected between Gothard Street (upstream end) and Edward Street (downstream end). These wetlands have been characterized as seasonally flooded wetlands dominated by herbaceous vegetation. Within the C02 Channel, approximately 0.89 acres (0.36 hectares) of estuarine and marine wetland may be affected.

Although construction will occur within EFH, the quality of fish habitat is not consistent along the entire channel. The construction would be temporary and would create channels with a greater capacity, which would improve water circulation and water quality and provide a benefit to fish. Once completed and in operation, the biotic character of the immediate vicinity would be similar to the existing conditions.

The furthest coastal extent of Reach 1 of C05 is at the Outer Harbor at Bolsa Chica Wetlands and is connected to the Pacific Ocean. The furthest coastal extent of Reach 23 of C02 is at the Edinger Avenue/Sunset Bay East Bridge. These two reaches will remain soft bottom with sheet pile walls installed on either side of the channel where there are currently earthen walls. Tidal influence in C05 extends approximately 1.2 miles upstream from Outer Bolsa Bay within the coastal zone and the tidal influence continues upstream and gradually diminishes for approximately 1.5 miles. Tidal influence in C02 extends approximately 2 miles upstream from Huntington Harbour. The Project proposes to dewater sections of the subject channels by having the sectioned work areas temporarily cut off from water flow, cleared, and then water would be pumped around in a pipe for all reaches that will be lined with concrete. For Reach 1 of C05 and Reach 23 of C02, water will be allowed to flow through the reaches during construction. In these two reaches, coffer dams will block off water flow to one side of the channel at a time and water would continue to flow through on the other side of the channel.

A variety of nearshore fishes are known to swim into Bolsa Chica Wetlands and are expected in the lower reaches of the C05 and C02 channels. Existing channel reaches that are concrete lined are considered low quality habitat and the Proposed Project would not result in a substantial, adverse impact to EFH in these reaches. Modifications of the concrete-lined reaches of the tidal portions of the channels would have minimal impact to EFH. Because the subject channel reaches have concrete sides and bottoms, they typically do not support wetlands habitat to provide substantial sources of food and/or cover for marine fishes. Only marine species that are tolerant of freshwater would be expected in areas at the farther upstream reach of the tidal influence. Channel reaches beyond the tidal influence in these channels would not be expected to support marine fishes at all. The concrete-lined reaches are expected to experience fluctuating salinity, provide no shelter and few food resources, and a low-quality habitat.

No Pacific Salmon EFH, Habitat Areas of Particular Concern (HAPC), or EFH Areas (EFHA) Protected from Fishing were identified within the vicinity of the Proposed Project area. Additionally, EFH for Pacific Highly Migratory Species (PHMS) is located approximately 1 mile (1.6 kilometer) off the coast; therefore, these species are not anticipated to be within the vicinity of the Proposed Project area and would not be impacted by this alternative.

The only potential substantial adverse impact to EFH would be in the event an accident occurred from equipment working in one of these concrete channel reaches, and that accident led to a major fuel spill that polluted quality EFH habitat downstream of these reaches. Standard Best Management Practices (BMP) accepted by the Santa Ana Regional Water Quality Control Board would be implemented to avoid degrading water quality. These BMPs include procedures to avoid leaks and spills and to contain and clean up contaminants in the unlikely event that a spill does occur. Impacts to EFH also would be minimized because the channel would be dewatered during maintenance activities or water would be routed around equipment. Because the equipment will not be working in the wet, the chances of contaminants from a spill or leak entering channel waters is remote. During dewatering, a biologist shall monitor activities to avoid and/or minimize impacts to any fish that may occur on site during construction by relocating native fish, as practicable. With implementation of standard BMPs and biological monitoring, impacts to fish and degradation of higher quality EFH downstream of the concrete channels will be avoided and/or minimized.

Sections 30234, 30234.5, 30235 and 30237 are not applicable to this Proposed Project as it does not include any activities involving or affecting commercial fishing, recreational boating, or altering the natural shoreline. The Proposed Project is consistent with Sections 30230 through 30233 and 30236 and is consistent with Article 4.

5.5 ARTICLE 5 – LAND RESOURCES (SECTIONS 30240 – 30244)

This Proposed Project consists of nonstructural measures, improving earthen/riprap trapezoidal channels by lining them with concrete, increasing the span of Warner Avenue Bridge, building a flood wall along the PCH, and replacing the tide gates on Reach 1 of C05. Removal of impediments to flow could include removal of vegetation, sediment and other debris from the channels that could be restricting flow. The nonstructural measure would have no impact to cultural resources since no construction would occur.

There are four sensitive vegetation communities with the potential to occur within the Proposed Project site - Southern Coastal Marsh, Southern Dune Scrub, Southern Foredunes, and Southern Cottonwood Willow Riparian Forest. None of these sensitive vegetation communities are present within the impact footprints where construction would occur; therefore, there are no anticipated impacts to sensitive vegetation communities. The Bolsa Chica Ecological Reserve may have Southern Coastal Marsh present, but increasing the span of Warner Avenue Bridge, constructing a floodwall along the PCH, and the reconstruction of the tide gates on C05 would not disturb this habitat.

Modifications to the channels and the reconstruction of the tide gates on C05 are not expected to have any impacts to cultural resources. Results of the 2006 records and literature search showed no previously recorded National Register of Historic Places (NRHP) listed or eligible properties within one-half mile of C02 or C04. This was also true for the majority of C05 and C06, except for Reach 18 of C06 and Reach 1 of C05. For Reach 18 of C06, there is an historical site within the Golf Course at Mile Square Park (CA-ORA-1151H). For Reach 1 of C05 there is one historical site (CA-ORA-78/H) and two prehistoric sites (CA-ORA-83 and CA-ORA-84/289). For these two reaches, Reach 18 is not included in the Proposed Project and construction activities for Reach 1 of C05 would occur within the channel rights-of-way and would not occur on the Bolsa Chica Mesa where the historical and prehistoric sites are located. Therefore, no impacts to cultural resources are expected due to channel improvement construction or tide gate reconstruction. However, formal consultation with the State Historic Preservation Officer under Section 106 still needs to occur.

Reaches to be improved as well as bridges that may be affected need to still have their eligibility for listing on the NRHP assessed. Without additional analysis it is too speculative to discuss the probability of eligibility of individual bridges for listing on the NRHP. The channels have low probability of being eligible due to the modifications that have already been made to the original structures. In addition, in a previous response to conduct channel modifications within a reach of C05, the State Historic Preservation Officer (SHPO) concurred at the time that the C05 channel was not eligible for the National Register of Historic Places under any criteria. Since the channels within the system (i.e., C06, C02, and C04) are within the same age range as C05, and C05 was deemed not eligible for the NRHP, there is a low probability that the other channels are eligible for the NRHP.

Increasing the span of the Warner Avenue Bridge and construction of the flood wall along the PCH are not expected to have any impacts to cultural resources. However, formal consultation with the State Historic Preservation Officer under Section 106 still needs to occur. The Warner Avenue Bridge and the PCH still need to have their eligibility for listing on the NRHP assessed. In addition, the modification of the Warner Avenue Bridge also includes the removal of the constriction located upstream of the bridge. Although this area is a high traffic area and experiences erosion, there is the possibility that archaeological or paleontological resources may be present.

The eligibility of the Warner Avenue Bridge and the PCH for listing on the NRHP still needs to be assessed. In addition, an archaeological survey and paleontological survey of the land constriction that is to be removed due to the modification of the Warner Avenue Bridge still needs to be conducted. However, due to the construction of these two structures and the disturbed nature it is unlikely that cultural resources are present. Ultimately, without additional analysis it is too speculative to say whether these features would cause long-term significant impacts to cultural resources. By reducing the risk of flooding, the Proposed Project would have a beneficial impact by reducing the potential of overtopping events which could threaten culturally sensitive areas, like the Westminster Memorial Park Mortuary.

Prior to the initiation of Proposed Project related ground disturbing activities, USACE would have a fully executed Memorandum of Agreement (MOA) with the SHPO in place. The MOA would address the development and implementation of processes for identification and evaluation of cultural resources. Specific mitigation measures would be developed to address any adverse effects on historic properties in coordination with the SHPO.

Although the Proposed Project is located adjacent to existing lands used for farming by the Naval Weapons Station near Reach 23 of C02, this land use is not designated as agricultural farmland. Sections 30241 through 30243 are not applicable to this Proposed Project as it does not include any activities involving any agricultural land or timberlands. The Proposed Project is consistent with Sections 302240 and 30244 and is consistent with Article 5.

5.6 ARTICLE 6 – DEVELOPMENT (SECTIONS 30250 – 30255)

The reaches closest to the Pacific Ocean provide scenic coastal views that would be maintained and protected at the completion of the Proposed Project. Removal of impediments to flow could include removal of vegetation, sediment and other debris from the channels that could be restricting flow and that may be considered a visual nuisance to some members of the public. The removal of debris from the channel would improve the existing visual character of the site, thereby having a beneficial impact. Debris removal would not affect a scenic vista, substantially damage scenic resources, or create any new sources of light or glare. The removal of vegetation from the channels is not expected to substantially degrade the

existing visual character of the site. The channels are characterized by riprap/earthen or concrete structures, algae growths, and tufts of vegetation growing from sedimentation deposits. Vegetation growing within the channels are considered seasonal wetlands that are scoured away during the rainy season. The removal of vegetation from the channels would not affect a scenic vista, substantially damage scenic resources, or create any new sources of light or glare.

Channel modifications would temporarily affect views of the channel during construction. The presence of construction equipment within or adjacent to the channel as well as at staging areas would also temporarily affect views of the channel as well as the local view-shed. The impacts to the local view-shed due to construction, presence of construction equipment, and the stockpiling of sediment before disposal at a landfill would be temporary and would return to pre-project conditions once construction is complete. The lining of certain channel reaches with concrete would result in the removal of vegetation if present within that reach. Vegetation growing within the channels are considered seasonal wetlands that are scoured away during the rainy season. Therefore, the removal of vegetation would have a less than significant impact to the existing visual character of the site. The removal of vegetation from the channels would not affect a scenic vista, substantially damage scenic resources, or create any new sources of light or glare.

Increasing the span of Warner Avenue Bridge and removal of the constriction upstream of the bridge would impact aesthetic quality. Construction associated with the modification of the bridge and removal of the upstream constriction would temporarily affect views of Outer Bolsa Bay with construction activities, the presence of construction equipment, and the stockpiling of any sediment before disposal at a landfill. The impacts to the local view-shed due to equipment and stockpiled sediment would be temporary and would return to pre-project conditions once construction is complete. The removal of approximately 1 acre of land upstream of Warner Avenue Bridge that is constricting flow would permanently change the local view-shed.

The building of the floodwall along PCH and the reconstruction of the tide gates on Reach 1 of C05 would have short-term impacts to aesthetic quality. Construction associated with the floodwall along PCH and the tide gates would temporarily affect views of Outer Bolsa Bay and the Bolsa Chica Ecological Reserve, respectively. The impacts to the local view-shed due to construction, presence of construction equipment, and the stockpiling of sediment before disposal at a landfill would be temporary and would return to pre-project conditions once construction is complete. The construction of the floodwall along the PCH would permanently impact the local view-shed of Outer Bolsa Bay for vehicles traveling along that portion of the PCH. The local view-shed from Outer Bolsa Bay looking west towards the Pacific Ocean would also be permanently impacted by the presence of the three foot floodwall. The new tide gates would occupy the same footprint as the former tide gates, the openings in the new gates would just be larger in size.

The Proposed Project is a flood risk management project designed to reduce flooding caused by overtopping of the C05/C06 and C02/C04 channel systems. Specifically, it aims to reduce the risk of flood damages to structures and infrastructure; reduce life-safety risk associated with overbank flooding; reduce the risk of downstream flood damages; and incorporate recreation features where compatible with flood risk management alternatives in the Westminster Watershed.

Sections 30250, 20252, and 302254.5 are not applicable to this Proposed Project as it does not include any new residential, commercial, or industrial development, mass transit, or sewage plant. The Proposed Project is consistent with Sections 30251, 30253, 30254 and 30255 and is consistent with Article 6.

5.7 ARTICLE 7 – INDUSTRIAL DEVELOPMENT (SECTIONS 30260 – 30265.5)

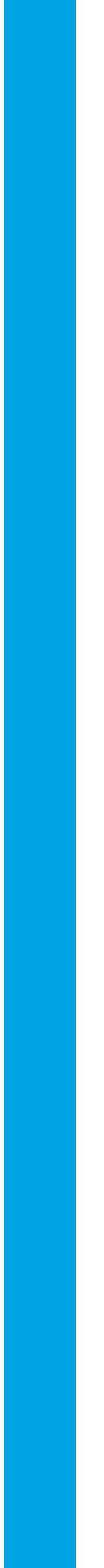
This article is not applicable to the Proposed Project.

SECTION 6.0 – REFERENCES

California State Lands Commission (CSLC), U. S. Fish and Wildlife Service, U. S. Army Corps of Engineers
2001 Final EIR/EIS for the Bolsa Chica Lowlands Restoration Project, Prepared by Chambers
Group, Inc. April 2001.

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APPENDIX A – SITE PHOTOGRAPHS



ATTACHMENT A – SITE PHOTOGRAPHS



Photo 1: Facing upstream on C05 Reach 1 from pedestrian bridge on the northeast end of the adjacent pocket marsh.



Photo 2: Facing downstream on C05 Reach 1 from pedestrian bridge on the northeast end of the adjacent pocket marsh (right) towards Bolsa Bay.



Photo 3: Facing downstream on C05 Reach 1 at the one-way tide gates towards Outer Bolsa Bay.

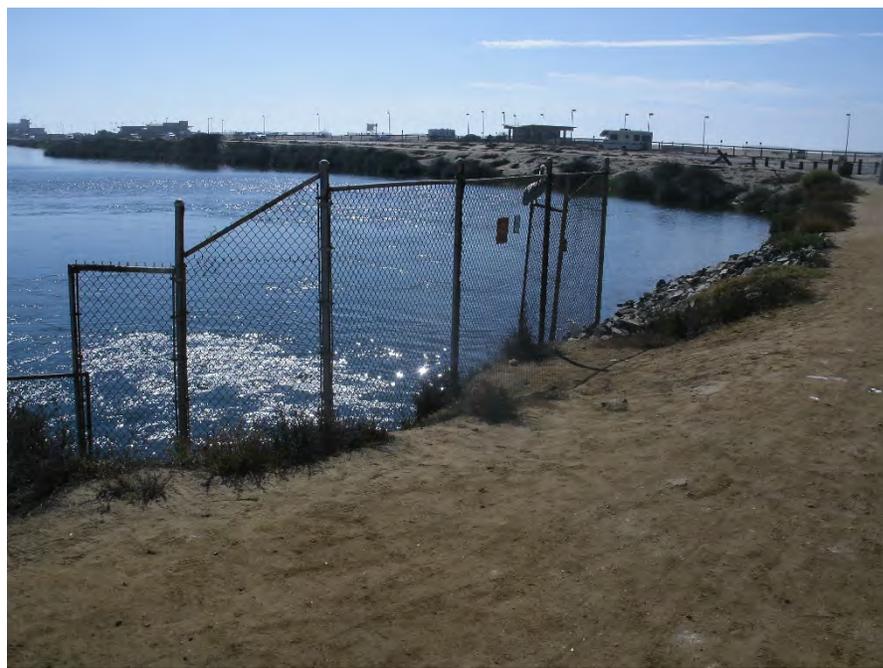


Photo 4: Facing towards Inner Bolsa Bay at culvert between Inner and Outer Bolsa Bay.



Photo 5: Facing southeast at bridge crossing to Marina High School toward Edinger Avenue across C04 Reach 20.



Photo 6: Facing upstream at diversion from C02 Reach 23 toward C02 (left fork) and C04 (right fork).