# 3.8 Hydrology and Water Quality

This section provides an assessment of potential impacts related to hydrology and water quality that could result from project implementation. Potential impacts addressed in this section include surface water quality, groundwater, drainage systems, runoff, flooding, and hydrologic hazards, such as tsunamis, seiche, and mudflows.

## 3.8.1 Environmental Setting

### Hydrologic Setting

The proposed project is located in western Oceanside near the coast, and extends approximately 3.5 miles from the northern terminus of Coast Highway at Harbor Drive to Eaton Street near the city's southern boundary. Generally, the project area is relatively flat and, given its proximity to the Pacific Ocean, has low elevations. While the topography of the project area varies from parcel to parcel, overall, the project area gradually slopes to the south and the west. The project area is located within urbanized downtown Oceanside and is bounded to the north by the San Luis Rey River and to the south by Buena Vista Lagoon. Loma Alta Creek, a concrete subgrade channel, bisects the central portion of the project area.

The project area is located within the San Diego Hydrologic Region, which is composed of 11 smaller hydrologic units that encompass most of San Diego County and parts of southwestern Riverside County and southwestern Orange County. Specifically, the project area extends across two hydrologic units, the San Luis Rey Hydrologic Unit (Unit 3.0) and the Carlsbad Hydrologic Unit (Unit 4.0). The project area is primarily located within the Carlsbad Hydrologic Unit, which includes the Loma Alta Creek and Buena Vista Creek watersheds and extends from SR-76 in the north to the city of Carlsbad in the south. A small portion of the project area located immediately north of the San Luis Rey River is located within the San Luis Rey Hydrologic Unit.

The Carlsbad Hydrologic Unit covers approximately 210 square miles and encompasses the cities of Carlsbad, Oceanside, Vista, San Marcos, Escondido, Encinitas, Solana Beach, and areas of unincorporated San Diego County. Elevations within this hydrologic unit range from sea level to 2,420 feet on Bear Ridge north of Lake Wohlford (CWN 2002). Average annual precipitation ranges from approximately 10 inches within the coastal areas (the project area) to 17 inches in the mountainous areas. The middle portion of the project area is located within the Loma Alta Creek watershed, which contains Loma Alta Creek and Slough, while the southern portion of the project area is located within the Buena Vista watershed, which contains Buena Vista Creek and Lagoon.

The Loma Alta Creek watershed is almost completely contained within the city of Oceanside (CWN 2006). Loma Alta Creek is approximately 7 miles long and flows to the Loma Alta Slough, which is located within the central portion of the project area (City of Oceanside 2017a). Coast Highway extends over Loma Alta Creek and slough via the Loma Alta Creek Bridge, which is a raised structure where project activities would be elevated outside of the river channel. Loma Alta Creek and its main tributary, Garrison Creek, have been channelized to a concrete subgrade channel to help prevent flooding downstream; however, flood prevention is still a top

priority for the City within the lower sections of this watershed. Over 70 percent of the watershed is developed and includes primarily residential land uses with smaller areas of industrial, commercial, and public facility uses (City of Oceanside 2017a).

Buena Vista Creek is approximately 11 miles long, originating on the western slopes of the San Marcos Mountains and discharging into the Pacific Ocean via the Buena Vista Lagoon (City of Oceanside 2017b). The majority of the lower basin of the watershed, located north of Highway 78, is within the city of Oceanside, where Buena Vista Creek runs parallel to Highway 78 and discharges into the lagoon south of the highway and west of Jefferson Street (CWN 2006). Buena Vista Creek and Lagoon are located to the south of the project area along its southern boundary. Portions of Buena Vista Creek have been channelized to a concrete channel to reduce to potential of flooding private properties situated adjacent to the creek (City of Oceanside 2017b). Approximately 80 percent of the Buena Vista Creek watershed is developed, primarily with commercial and residential land uses and some agricultural activities (City of Oceanside 2017b).

The San Luis Rey Hydrologic Unit covers a drainage area of approximately 560 square miles. Elevations within this hydrologic unit range from over 4,300 feet to sea level (City of Oceanside 2017c). Average annual precipitation ranges from roughly 10 inches along the coastal region (the project area) to 45 inches in the mountainous area. A small portion of the project area in the northern end of the corridor is located within the Coastal Subbasin of the San Luis Rey Hydrologic Unit, which contains the San Luis Rey River. The Coastal Subbasin boundaries extend from the mouth of the San Luis Rey River at the Pacific Ocean to Rice Canyon, approximately 1 mile east of Interstate 15 (I-15). It is the third largest subbasin of the San Luis Rey Hydrologic Unit and is the most populated, containing the cities of Oceanside, Vista, Bonsall, and portions of Fallbrook (from west to east) residing within its boundaries (CWAPA 2010). The lower elevations and southern/western portions, including the project area, of the subbasin are mostly urban/residential, commercial, and light industrial areas (CWAPA 2010).

The San Luis Rey River has been channelized and altered over time. Surface water flows consist of surrounding tributaries supplied by intermittent releases from the Henshaw Dam and surfacing groundwater in the confluence of Couser Canyon Creek (CWAPA 2010). Within the city of Oceanside, the San Luis Rey River is fed by its main tributary, Pilgrim Creek, and Henshaw Dam and the Escondido Canal diversion dam are the primary hydrologic controls of the river (City of Oceanside 2017c; Kajtaniak 2010). The San Luis Rey River runs through the very northern portion of the project area, under the San Luis Rey Bridge. The San Luis Rey River Bridge is a lifted structure and is located at a higher elevation than the river.

## Surface Water Quality

Buena Vista Creek and Lagoon, Loma Alta Creek and Slough, and San Luis Rey River are listed on the State Water Resources Control Board's (SWRCB) 303(d) list of impaired water bodies, as shown below in **Table 3.8-1.** Under Section 303(d) of the Clean Water Act (CWA), states are required to develop lists of water bodies that would not attain water quality objectives after implementation of required levels of treatment by point-source dischargers (municipalities and industries). Section 303(d) requires that the state develop a total maximum daily load (TMDL) for

each of the listed pollutants as a means to alleviate the impairments within water bodies' surface water.

**TABLE 3.8-1**
**DOWNSTREAM WATER QUALITY IMPAIRMENTS**

| Water Body | Impairments | TMDL Completion Date(s) |
|---|---|---|
| Buena Vista Creek | DDT[1] | 2019 |
| | Nitrate and Nitrite | 2019 |
| | Toxicity | 2019 |
| | Selenium | 2019 |
| Buena Vista Lagoon | Indicator Bacteria, Nutrients | 2008 |
| | | 2019 |
| | Sedimentation/siltation | 2019 |
| Loma Alta Creek | Selenium | 2019 |
| | Toxicity | 2019 |
| Loma Alta Slough | Eutrophic | 2015 |
| | Indicator Bacteria | 2015 |
| San Luis Rey River, Lower (west of Interstate 15) | Chloride | 2019 |
| | Enterococcus | 2021 |
| | Fecal coliform | 2021 |
| | Phosphorous | 2021 |
| | Total Dissolved Solids | 2019 |
| | Total Nitrogen | 2021 |
| | Toxicity | 2021 |

[1]Dichlorodiphenyltrichloroethane

SOURCE: SWRCB 2010

As shown in Table 3.8-1 above, water bodies within the project area are impaired with various pollutants, including indicator bacteria, DDT, nitrates and nitrites, sedimentation, phosphorous, toxicity, and total dissolved solids. Urban runoff and storm sewers are the likely sources of these pollutants.

## Groundwater

The project area overlies the San Luis Rey Valley Groundwater Basin within the Mission sub-basin. The San Luis Rey Valley Basin underlies an east-west-trending alluvium-filled valley located along the western coast of San Diego County. The major hydrologic feature is the San Luis Rey River, which drains the valley overlying the basin. The basin is bounded on the east, northeast, and southeast by the contact of alluvium with impermeable Mesozoic granitic and pre-Cretaceous metamorphic rocks. In the northwest and southwest of the lower portion of the basin, alluvium is in contact with semi-permeable Eocene marine deposits and Tertiary non-marine deposits. The basin is bounded on the west by the Pacific Ocean (DWR 2003).

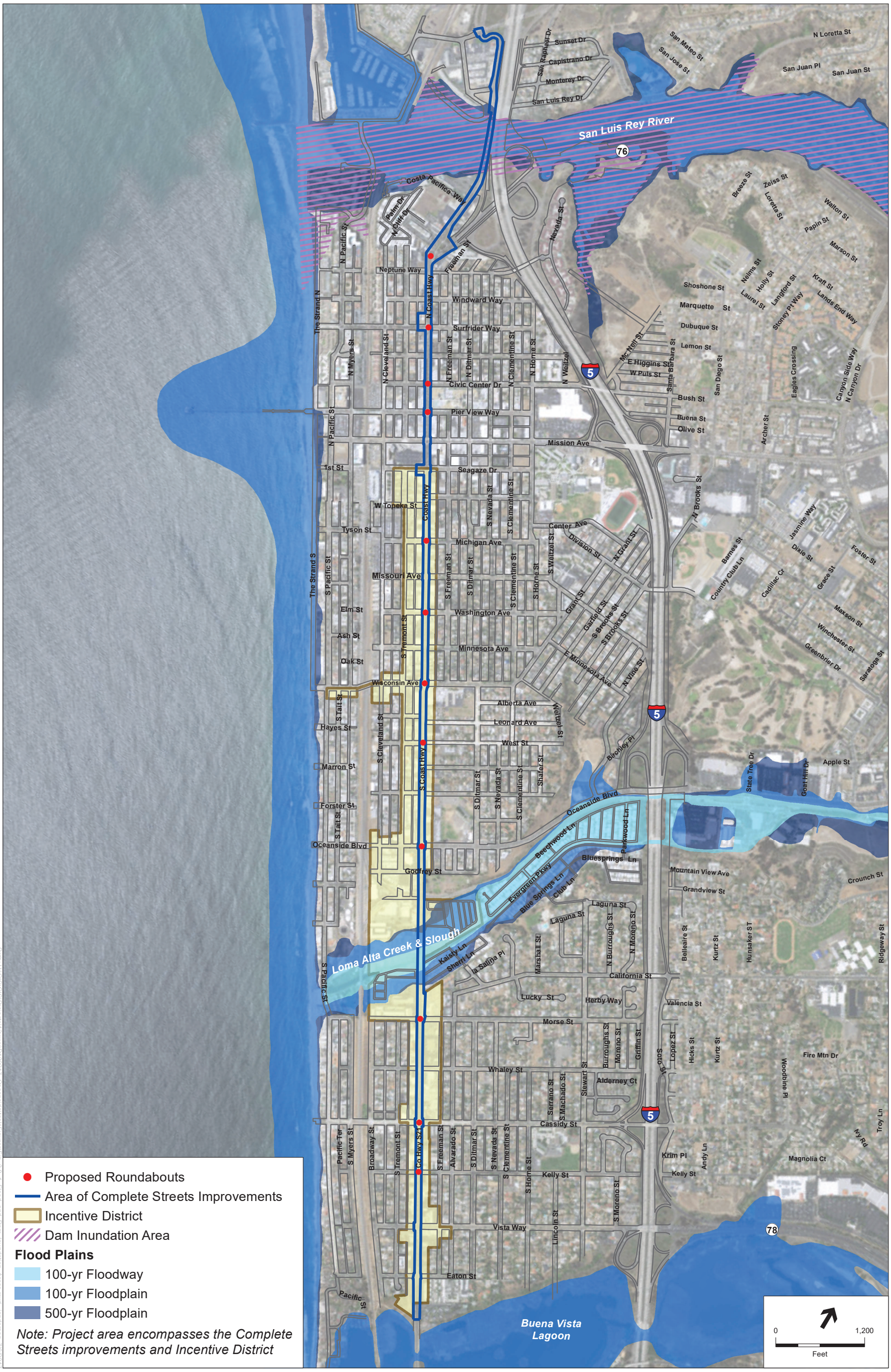
The San Luis Rey Valley groundwater basin is recharged by precipitation, imported irrigation water applied on upland areas, and by storm flow in the San Luis Rey River and its tributaries. Movement of groundwater in the alluvial aquifer is westward towards the Pacific Ocean. Water levels in the basin declined drastically in the 1950s and 1960s due to groundwater development and overpumping. Since the advent of imported water sources, groundwater levels have risen to near pre-development levels and averages range from 0 to 20 feet below land surface. The estimated total storage capacity for this basin is 240,000 acre feet (DWR 2003).

According to the City, approximately 13 percent of the city's water comes from groundwater within the Mission Basin (City of Oceanside 2016c). The brackish groundwater pumped from the Mission Basin is extracted and treated at the Mission Basin Groundwater Purification Facility to become potable water through a reverse osmosis desalting process (City of Oceanside 2016c). The City purchases the remaining 85 percent of the city's water supply from the San Diego County Water Authority (SDCWA), which includes approximately half treated water and half raw water. Treated imported water is conveyed directly to the City's water distribution system, while untreated imported water is conveyed to the Robert A. Weese Filtration Plant, which serves at a capacity of 25 million gallons per day (mgd).

## Flood Zone

**Figure 3.8-1** illustrates the parts of the project area that are located within designated floodplains around the San Luis Rey River, Loma Alta Creek and Slough, and Buena Vista Creek and Lagoon. The floodplains located within the project area are designated by the Federal Emergency Management Agency (FEMA) and are categorized by the level of flooding which would be experienced in a 100-year storm rain event. The project area spans four FEMA flood insurance rate maps (FIRMs) (No. 06073C0761G, 06073C0753H, 06073C0734H, 06073C0742G) (FEMA 2012).

According to FIRM No. 06073C0734H, the portion of the project area which crosses over the San Luis Rey River Bridge is located within Zone X, indicating that this area is outside the 0.2 percent annual chance or 500-year floodplain (FEMA 2012). Zone X indicates areas where there would be minimum flood hazards due to elevations being higher than the elevation of the 500-year flood (City of Oceanside 2017c). According to FIRM No. 06073C61G, the portions of the project area that are immediately adjacent to Loma Alta Creek and Slough are located within Zone AE, indicating that these areas are located within the 100-year floodplain. Mandatory flood insurance requirements and floodplain management standards and regulations apply to all parcels located within Zone AE (City of Oceanside 2017c). The portions of the project area that surround the parcels located within Zone AE around Loma Alta Creek and Slough are located within Zone X, or the 500-year floodplain (FEMA 2012). The parcels located within Zone X would experience minimal flood hazards due to elevations being higher than the elevation of the 500-year flood (City of Oceanside 2017c). Additionally, the portions of the project area shown on FIRM Nos. 06073C0753H and 06073C0742G are not located within a designated floodplain.




SOURCE: City of Oceanside 2016, SanGIS 2016

City of Oceanside Coast Highway Corridor Study. 130217

**Figure 3.8-1**

Flood and Dam Inundation Areas

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### Dam Inundation

According to the City's General Plan Public Safety Element, the areas of the city that would be inundated from the Henshaw Lake Dam include the areas surrounding the San Luis Rey River (City of Oceanside 2002). Figure 3.8-1 illustrates the northern portion of the project area adjacent to the San Luis Rey River that is located within the designated dam inundation area for the Lake Henshaw Dam. Located approximately 35 miles east of the project area, this dam was built in 1923 by the Vista Irrigation District with a capacity of 203,581 acre feet but generally contains water levels between 3,000 and 5,000 acre feet (City of Oceanside 2002). According to the Draft Dam Failure Map developed for County of San Diego Hazard Mitigation Planning, there are no other areas within the city of Oceanside that are susceptible to inundation from dam failure (County of San Diego 2009).

### Tsunami Inundation

**Figure 3.8-2** shows the tsunami inundation area for the city of Oceanside. Portions of the project area located immediately adjacent to the San Luis Rey River and Loma Alta Creek and Slough, as this figure shows, are within the City-designated tsunami inundation area (Cal EMA 2009). However, the areas of the Complete Streets improvements that cross over the San Luis Rey River and Loma Alta Creek and Slough would be located on existing bridges, and would be elevated out of the tsunami inundation area. A small part of the southernmost portion of the project area adjacent to Buena Vista Lagoon is also located within the city's tsunami inundation area (Cal EMA 2009).

## 3.8.2 Regulatory Framework

### Federal

#### *Clean Water Act*

The CWA regulates discharges into "waters of the United States" and establishes a regulatory framework to reduce pollutant discharges into waterways, finance municipal wastewater treatment facilities, and manage polluted runoff. A key component of the CWA is Section 402, which regulates point-source and nonpoint-source discharges to surface waters through the National Pollutant Discharge Elimination System (NPDES) program. In California, the SWRCB oversees the NPDES program, which is administered by the RWQCBs. The NPDES program provides for both general permits (those that cover a number of similar or related activities) and individual permits. General permits in California designed for compliance with the NPDES program include the Construction General Permit and Industrial General Permit issued by the State Water Resources Control Board (SWRCB), as well as Municipal Separate Storm Sewer System (MS4) permits issued by the Regional Water Control Boards (RWQCBs). The Construction General Permit and the MS4 permits discussed below comply with Section 402.

#### *National Pollutant Discharge Elimination System Program*

The NPDES permit program is administered in the State of California by the SWRCB and RWQCBs under the authority of the U.S. Environmental Protection Agency (USEPA) to control water pollution by regulating point sources that discharge pollutants into waters of the United

States. If discharges from industrial, municipal, and other facilities go directly to surface waters, those project applicants must obtain permits. An individual NPDES permit is specifically tailored to a discharge to waters of the United States. A general NPDES permit covers multiple facilities within a specific activity category such as construction activities. A general permit applies with same or similar conditions to all dischargers covered under the general permit. The proposed project would be covered under the general permits discussed below.

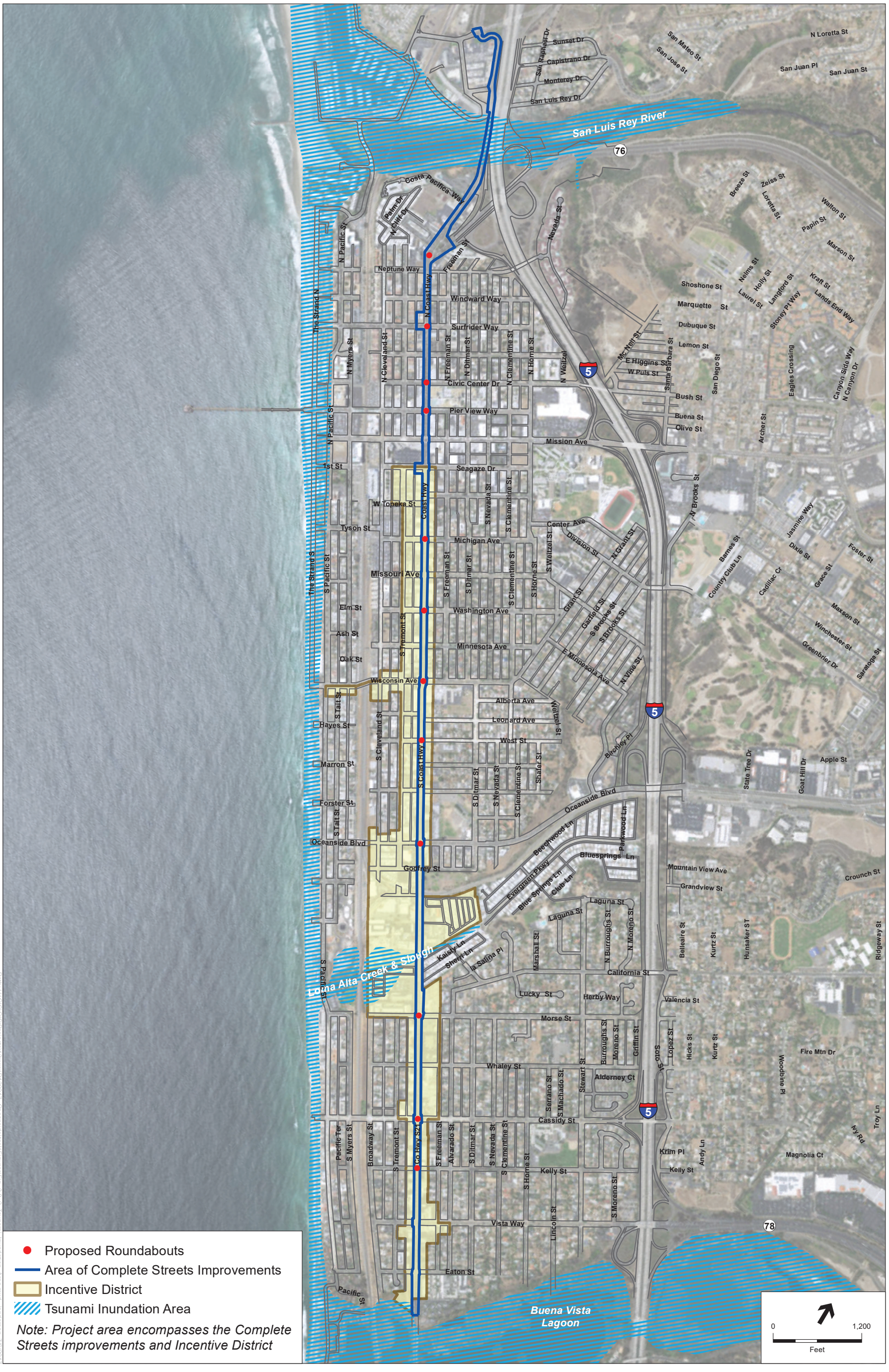
### Construction General Permit

Construction associated with the proposed project would disturb more than 1 acre of land surface affecting the quality of stormwater discharges into waters of the United States. The proposed project would therefore be subject to the *NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities* (Order 2009-0009-DWQ, NPDES No. CAS000002; as amended by Orders 2010-0014-DWQ and 2012-006-DWQ). The Construction General Permit regulates discharges of pollutants in stormwater associated with construction activity to waters of the United States from construction sites that disturb 1 or more acres of land surface, or that are part of a common plan of development or sale that disturbs more than 1 acre of land surface. The permit regulates stormwater discharges associated with construction or demolition activities, such as clearing and excavation; construction of buildings; and linear underground projects, including installation of water pipelines and other utility lines.

The Construction General Permit requires that construction sites be assigned a Risk Level of 1 (low), 2 (medium), or 3 (high), based both on the sediment transport risk at the site and the receiving waters risk during periods of soil exposure (e.g., grading and site stabilization). The sediment risk level reflects the relative amount of sediment that could potentially be discharged to receiving water bodies and is based on the nature of the construction activities and the location of the site relative to receiving water bodies. The receiving waters risk level reflects the risk to the receiving waters from the sediment discharge. Depending on the risk level, the construction projects could be subject to the following requirements:

- Effluent standards
- Good site management "housekeeping"
- Non-stormwater management
- Erosion and sediment controls
- Run-on and runoff controls
- Inspection, maintenance, and repair
- Monitoring and reporting requirements

The Construction General Permit requires the development and implementation of a Stormwater Pollution Prevention Plan (SWPPP) that includes specific best management practices (BMPs) designed to prevent sediment and pollutants from contacting stormwater from moving off site into receiving waters. The BMPs fall into several categories, including erosion control, sediment control, waste management, and good housekeeping, and are intended to protect surface water quality by preventing the off-site migration of eroded soil and construction-related pollutants from the construction area. Routine inspection of all BMPs is required under the provisions of the Construction General Permit. In addition, the SWPPP is required to contain a visual monitoring program, a chemical monitoring program for non-visible pollutants, and a sediment monitoring plan if the site discharges directly to a water body listed on the 303(d) list for sediment.




SOURCE: City of Oceanside 2016, SanGIS 2016

City of Oceanside Coast Highway Corridor Study. 130217

**Figure 3.8-2**

Tsunami Inundation Area

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The SWPPP must be prepared before the construction begins and must contain a site map that delineates the construction work area, existing and proposed buildings, parcel boundaries, roadways, stormwater collection and discharge points, general topography both before and after construction, and drainage patterns across the project area. The SWPPP must list the type and placement of those BMPs that the applicant would use to protect stormwater runoff. Examples of typical construction BMPs include scheduling or limiting certain activities to dry periods, installing sediment barriers such as silt fence and fiber rolls, and maintaining equipment and vehicles used for construction. Non-stormwater management measures include installing specific discharge controls during certain activities, such as paving operations, vehicle and equipment washing and fueling. The Construction General Permit also sets post-construction standards (i.e., implementation of BMPs to reduce pollutants in stormwater discharges from the site following construction).

In the project area, the Construction General Permit is implemented and enforced by the San Diego RWQCB, which administers the stormwater permitting program. Dischargers are required to electronically submit a notice of intent (NOI) and permit registration documents (PRDs) in order to obtain coverage under this Construction General Permit. Dischargers are responsible for notifying the RWQCB of violations or incidents of non-compliance, as well as for submitting annual reports identifying deficiencies of the BMPs and how the deficiencies were corrected. The risk assessment and SWPPP must be prepared by a state Qualified SWPPP Developer and implementation of the SWPPP must be overseen by a state Qualified SWPPP Practitioner. A Legally Responsible Person, who is legally authorized to sign and certify PRDs, is responsible for obtaining coverage under the permit.

### *National Flood Insurance Program*

FEMA is responsible for determining flood elevations and floodplain boundaries based on USACE studies. FEMA is also responsible for distributing the FIRMs used in the National Flood Insurance Program. These maps identify the locations of special flood hazard areas, including the 100-year floodplain. FEMA allows nonresidential development in the floodplain; however, construction activities are restricted within flood hazard areas, depending on the potential for flooding within each area. Federal regulations governing development in a floodplain are set forth in Title 44, Part 60 of the Code of Federal Regulations, enabling FEMA to require municipalities that participate in the National Flood Insurance Program to adopt certain flood hazard reduction standards for construction and development in 100-year floodplains. The City's Flood Plain Management Division regulations detail methods and provisions for construction and development in 100-year floodplains (City of Oceanside 2017).

## State

### *Porter-Cologne Water Quality Act*

The Porter-Cologne Water Quality Control Act, also known as the California Water Code, is California's statutory authority for the protection of water quality. The Porter-Cologne Water Quality Act is promulgated in the California Code of Regulations Title 22. Under this act, the State must adopt water quality policies, plans, and objectives that protect the State's waters. The

act sets forth the obligations of the SWRCB and RWQCBs pertaining to the adoption of Basin Plans and establishment of water quality objectives. Unlike the federal CWA, which regulates only surface water, the Porter-Cologne Act regulates both surface water and groundwater.

## Regional

### *Regional Municipal Separate Storm Sewer System Permit*

On May 8, 2013, the RWQCB approved a regional municipal separate storm sewer system (MS4) permit for San Diego, southern Orange, and southwestern Riverside counties (Order No. R9-2013-0001). The region-wide NPDES Permit (commonly referred to as the Regional MS4 Permit) sets the framework for municipalities, including the City of Oceanside, to implement a collaborative watershed-based approach to restore and maintain the health of surface waters. The Regional MS4 Permit requires development of a Water Quality Improvement Plan (WQIP) that will allow the City Oceanside (and other watershed stakeholders) to prioritize and address pollutants through an appropriate suite of best management practices in each watershed. The City of Oceanside lies within the San Luis Rey Watershed Management Area and is one of the responsible municipalities for the watershed's WQIP. The San Luis Rey Watershed WQIP was developed by the City of Oceanside, City of Vista, County of San Diego and California Department of Transportation and approved in in March 2016 (City of Oceanside 2016). Development and redevelopment projects enabled by the Ovelay would be required to comply with the MS4 regulations during operations.

### *Carlsbad Watershed Management Area Water Quality Improvement Plan*

The Carlsbad Watershed Management Area WQIP was developed to demonstrate compliance with the Regional MS4 Permit (Order No. R9-2013-0001) discussed above. This watershed-specific plan was developed by the Copermittees of the Carlsbad Watershed Management Area (City of Oceanside, City of Carlsbad, City of Encinitas, City of Escondido, City of San Marcos, City of Solana Beach, City of Vista, and the County of San Diego), and is intended to provide a process by which the Copermittees can select and address the highest priority water quality issues (Project Clean Water 2019). The ultimate goal of the Carlsbad Watershed Management Area WQIP is to protect, preserve, enhance, and restore water quality of receiving water bodies. These improvements in water quality will be accomplished through an adaptive planning and management process that identifies the highest priority water quality conditions within the watershed and implements strategies to address them. The WQIP includes drainage area assessments of the highest priority areas in order to identify the pollutant discharges and other sources that are causing the high priority condition. It also provides strategies to address high-priority water quality conditions, interim and final water quality targets for these strategies, and timelines to achieve the targets. While the primary focus of the WQIP is on water quality, it also provides multi-benefit project goals, targets, identification, assessment, prioritization, and timelines for implementation within the Watershed Management Area.

### *San Luis Rey River Watershed Management Area Water Quality Improvement Plan*

The San Luis Rey River Watershed Management Area WQIP was developed to demonstrate compliance with the Regional MS4 Permit (Order No. R9-2013-0001) discussed above. This watershed-specific plan was developed by the Copermittees of the San Luis Rey River Watershed Management Area (City of Oceanside, City of Vista, County of San Diego and Caltrans), and is intended to provide a process by which the Copermittees can select and address the highest priority water quality issues. The WQIP includes descriptions of the highest priority pollutants or conditions within the watershed as well as goals and strategies to address those pollutants or conditions, and time schedules associated with those goals and strategies. The WQIP includes drainage area assessments of the highest priority areas in order to identify the pollutant discharges and other sources that are causing the high priority condition. It also provides strategies to address high-priority water quality conditions, interim and final water quality targets for these strategies, and timelines to achieve the targets. While the primary focus of the WQIP is on water quality, it also provides multi-benefit project goals, targets, identification, assessment, prioritization, and timelines for implementation within the Watershed Management Area.

## Local

### *City of Oceanside General Plan*

The City's General Plan Community Facilities Element contains the following stormwater system management objectives and policies related to the proposed project:

> **Objective:** To provide adequate stormwater management facilities and services for the entire community in a timely and cost effective manner, while mitigating the environmental impacts or construction of the storm drainage system as well as stormwater runoff.
>
> > **Policy 6.1:** The Master Drainage Plan for the City of Oceanside shall establish standards for citywide drainage. Within each major watercourse addressed by the Plan, the City and/or developers shall assure that adequate drainage improvements and facilities are provided to handle runoff when the drainage basin is fully developed to the intensity proposed by the Land Use Element of the General Plan.
> >
> > **Policy 6.2:** All new development in the City of Oceanside shall pay drainage impact fees to defray that development's proportionate share of drainage facilities serving the basin where the new development is located.
> >
> > **Policy 6.3:** The City shall continue to participate in the National Flood Insurance Program. Any development application for construction within the 100-year floodplain shall be reviewed to ensure that the project complies with flood protection measures required by the National Flood Insurance Program. For existing developed areas within the 100-year floodplain, these same measures and standards shall be applied if City approval of substantial improvements or upgrades is sought.

**Policy 6.4:** To the degree that it is economically feasible and consistent with sound engineering practices and maintenance criteria, the City shall discourage disruption of the natural landform and encourage the maximum use of natural drainage ways in new development. Non-structural flood protection methods, which avoid major construction programs such as channels and favor vegetative measures to protect and stabilized land areas, should be considered as an alternative to constructing concrete channels where feasible.

**Policy 6.5:** The City shall locate and/or design new critical facilities to minimize potential flood damage from the 100-year flood. Such facilities include those that provide emergency response (hospitals, fire stations, police stations, civil defense headquarters, utility lines, ambulance services, and sewage treatment plants). Such facilities also include those that do not provide emergency response but attract large numbers of people, such as schools, theaters, and other public assembly facilities.

**Policy 6.7:** The City shall require appropriate and sufficient screening, fencing, landscaping, open space setbacks, or other permanent mitigation or buffering measures between drainage way corridors and adjacent and surrounding land uses. The employed measures shall be of sufficient scope to minimize, to the maximum extent possible, negative impacts to adjacent surrounding land uses from the particular drainage way corridor.

**Policy 6.9:** The City shall comply with the sections of the Federal Clean Water Act in regard to stormwater drainage.

**Objective:** To provide financing for the orderly and planned construction of adequate public facilities to serve existing and future development in the City of Oceanside.

**Policy 14.1:** All new development shall pay its proportionate share of the costs of the public facilities necessitated by that development through payment of impact fees for roads, parks and recreation, stormwater management, police service, fire protection and emergency services, City administrative space and City corporation yard, and library services, and payment of connection fees for water and wastewater service.

### *City of Oceanside Municipal Code, Chapter 40*

Chapter 40 of the City of Oceanside Municipal Code is known as the Urban Runoff Management and Discharge Control Ordinance. The overall intent of this ordinance is to "protect the health, safety and general welfare of Oceanside residents; to protect water resources and to improve water quality; to cause the use of management practices by the city and its citizens that will reduce the adverse effects of polluted runoff discharges on waters of the state; to secure benefits from the use of stormwater as a resource; and to ensure the city is compliant with applicable state and federal law" (City of Oceanside 2015). General provisions of the Urban Management and Discharge Control Ordinance include compliance with the current and applicable RWQCB discharge permits, requirements for discretionary approvals subject to discharge control,

development of Urban Runoff Standards Manuals, and designations for permitted use of collected stormwater.

### *City of Oceanside Standard Urban Stormwater Mitigation Plan*

The City has prepared a Standard Urban Stormwater Mitigation Plan (SUSMP) that details measures that must be implemented on site to protect stormwater quality from on-site conditions, including erosion. The SUSMP includes requirements for all development projects, such as implementation of appropriate source-control BMPs, temporary construction BMPs, and permanent stabilization/erosion control BMPs. The SUSMP includes a low-impact development (LID) design guide for projects that includes incorporation of design features on site that would control runoff (City of Oceanside 2010).

All development and redevelopment projects applying for discretionary or administrative permits within the city of Oceanside are subject to a formal SUSMP Determination. The objective of the SUSMP Determination is to provide a consistent and thorough method for the initial review of development and redevelopment projects, with the purpose of categorizing projects and determining applicable SUSMP requirements. The SUSMP Determination also demonstrates to the RWQCB that each project receives a consistent review and enables the City to document project categorization and satisfy MS4 Permit requirements. Development and redevelopment projects must provide, at a minimum, a completed Stormwater Quality Assessment form, site plans, and the project description and justification in order to submit an application for formal SUSMP Determination. Upon review completion, the projects receive a formal SUSMP Determination, which indicates the type of stormwater document required to meet MS4 Permit and SUSMP requirements.

As part of the SUSMP compliance process, development and redevelopment projects must prepare a Stormwater Mitigation Plan (SWMP) to demonstrate compliance with stormwater mitigation requirements prior to project approval and issuance of local permits. Requirements that apply during the planning phase and prior to project entitlement include minimum standards for the implementation of LID practices and the integration of flow control criteria designed to mitigate storm runoff peaks and durations from development sites. This unified LID approach combines site planning and design measures coupled with engineered integrated management practices (IMPs), such as bioretention facilities, flow-through planters, dry wells, infiltration basins, and cisterns. By implementing the unified LID design procedure, projects may develop a single integrated design that demonstrates compliance with federal, state, and local stormwater regulations.

A SWQMP would be required for the proposed project if the project creates or replaces 2,500 square feet or more of impervious surface (collectively over the entire corridor), and would discharge directly to a Water Quality Environmentally Sensitive Area (WQESA). “Discharging directly to” includes flow that is conveyed overland a distance of 200 feet or less from the project to the WQESA, or conveyed in a pipe or open channel any distance as an isolated flow from the project to the WQESA (i.e., not commingled with flows from adjacent lands). Additionally, the

SWQMP would need to provide a water quality assessment for the roundabouts proposed to be installed at specific intersections.

### *City of Oceanside Grading Ordinance*

The City Grading Ordinance established a set of standards regulating the design and construction of building sites and the development of property by grading. The purpose of the ordinance is to regulate the alteration of the ground surface; to minimize differential settlement and the slipping or sliding of the earth; and to require engineering analysis of expansive soil conditions, erosion control and drainage. This ordinance involves grading permit provisions (City of Oceanside 1982). All projects requiring grading must submit a grading and erosion control plan to the City Engineering Division for review. This plan encompasses multiple components, including but not limited to an erosion control plan, drainage study, soils report, and site plan (City of Oceanside 2016).

## 3.8.3 Impacts and Mitigation Measures

### Significance Criteria

Based on Appendix G of the CEQA Guidelines, the project would result in a significant impact related to hydrology and water quality if it would:

1. Violate water quality standards or waste discharge requirements.
2. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been approved).
3. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion, siltation on- or offsite.
4. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site.
5. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.
6. Otherwise substantially degrade water quality.
7. Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map.
8. Place structures within a 100-year flood hazard area which would impede or redirect flood flows.
9. Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam.
10. Result in inundation by seiche, tsunami or mudflow.

## Impact Analysis

**Issues 1 and 6: Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade water quality?**

### *Complete Streets Improvements*

As shown in Table 3.8-1, the San Luis Rey River, Loma Alta Creek and Slough, and Buena Vista Creek and Lagoon are all designated as impaired on the SWRCB 303(d) list of impaired water bodies. The primary impairments within the three water bodies encompassed within the project area include toxicity, sedimentation/siltation, indicator bacteria, and total dissolved solids. Construction of the Complete Streets improvements would generate pollutants that could potentially further degrade the surface water quality of the downstream receiving waters mentioned above. Common pollutants, such as sediments; hydrocarbons, such as fuels; asphalt materials; oils; debris and trash; and hazardous materials, such as paints and concrete slurries, may be discharged from the construction areas. Stormwater and non-stormwater runoff could potentially carry these pollutants directly into the water bodies contained within the project area or into the existing storm drain system along Coast Highway, which would ultimately discharge to the San Luis Rey River, Loma Alta Creek and Slough, and Buena Vista Creek and Lagoon, which ultimately discharge into the Pacific Ocean.

Construction activities for the Complete Streets improvements adjacent to the San Luis Rey River would be limited to road restriping and would not require asphalt grinding or other activities that would result in creation of debris, sedimentation, or runoff. Physical construction activities that could affect Loma Alta Creek and Slough and Buena Vista Creek and Lagoon waters include mid-block crosswalks proposed across Coast Highway adjacent to the Loma Alta Creek footpath (south of the existing Loma Alta Creek bridge) and near the Buena Vista Audubon Society driveway south of Eaton Street near Buena Vista Lagoon. However, compliance with the Construction General Permit would be required and a SWPPP would be implemented to minimize or eliminate the potential for pollutants to be discharged from physical construction activities into adjacent water bodies, as discussed in greater detail below.

While the specific construction schedule of the Complete Streets improvements is unknown at this time, the Complete Streets improvements would be constructed over five phases. Should construction of any phase of the Complete Streets improvements disturb 1 acre or more of ground surface at a time, compliance with the Construction General Permit would be required. The Construction General Permit requires the preparation and implementation of a SWPPP in order to obtain grading and building permits. The SWPPP would identify site-specific construction BMPs to reduce or eliminate sediment and other pollutants in stormwater and non-stormwater runoff from the project area. Construction BMPs would include, but not be limited to, the following:

- Minimization of disturbed areas to the portion of the project site necessary for construction
- Stabilization of exposed or stockpiled soils and cleared or graded slopes
- Establishment of permanent re-vegetation or landscaping as early as feasible

- Removal of sediment from surface runoff before it leaves the project site by silt fences or other similar devices around the site perimeter
- Diversion of upstream runoff around disturbed areas of the project site
- Protection of all storm drain inlets on site or downstream of the project site to eliminate entry of sediment
- Prevention of tracking of soil through use of a gravel strip or wash facilities at exits from the project area
- Proper storage, use, and disposal of construction materials
- Continual inspection and maintenance of all specified BMPs through the duration of construction

Additionally, areas of ground disturbance that are less than 1 acre would also be required to reduce discharge of sediment and water quality pollutants through compliance with City requirements. Consequently, all five phases of the Complete Streets improvements would be required to comply with regulations that would prevent the discharge of pollutants into waterways regardless of the size of the phase.

Due to the Complete Streets improvements being roadway improvements in nature, construction activities associated with the Complete Streets improvements would be categorized by the City as a project not subject to SUSMP Treatment Requirements. However, while the Complete Streets improvements would be exempt for SUSMP compliance, the City's contractor would be required to submit a completed Stormwater Quality Assessment form and receive a formal SUSMP determination (City of Oceanside 2017d). Further, while exempt from the SUSMP Treatment requirements, the Complete Streets improvements would still be required to implement all appropriate source-control BMPs, temporary construction BMPs, and permanent stabilization and erosion control BMPs during construction (City of Oceanside 2017d). Implementation of the abovementioned BMPs in combination with the BMPs included in the project-specific SWPPP and City requirements would minimize or eliminate the potential for sediment and other pollutants to be discharged from the project area. Therefore, impacts to water quality during construction of the Complete Streets improvements would be less than significant.

Following completion of the Complete Streets improvements, the majority of the Complete Streets improvements area would continue to be paved and developed, and would not contain large areas of exposed soil or other construction-related materials. Areas of landscaping within the Complete Streets improvements would contain permeable soils, stabilized by vegetation, resulting in less runoff being discharged into the existing storm drain system, and ultimately the Pacific Ocean. Per City SUSMP requirements, all development projects must implement permanent stabilization and erosion control BMPs to prevent erosion and topsoil loss from occurring during the lifetime of the development. Thus, with implementation of operational BMPs and vegetation, the potential for sediment and other pollutants to be discharged from the Complete Streets improvements area would be minimized. Therefore, impacts related to water quality during operation of the Complete Streets improvements would be less than significant.

### *Incentive District*

The Incentive District would encourage redevelopment, including increased residential, commercial, and mixed-use development in an area that is entirely developed with urban uses. Construction activities associated with future development and redevelopment projects could involve ground-disturbing activities, such as demolition of existing buildings, trenching, excavation, and grading. Common pollutants, such as sediments; hydrocarbons, such as fuels; asphalt materials; oils; debris and trash; and hazardous materials, such as paints and concrete slurries, may be discharged from the construction sites. Stormwater and non-stormwater runoff could potentially carry these pollutants into the existing storm drain system along Coast Highway and could potentially degrade the surface water quality of downstream receiving waters, including ultimately the Pacific Ocean.

Areas of ground disturbance 1 acre or more in size would be required to comply with the Construction General Permit, which requires the preparation and implementation of a project-specific SWPPP in order to obtain grading and building permits. As outlined above, the SWPPP would identify site-specific construction BMPs to reduce or eliminate sediment and other pollutants in stormwater and non-stormwater runoff from the project site.

Regardless of size, development and redevelopment projects which could occur under the Incentive District would be required to prepare and submit a project-specific application to the City's Engineering Department for a formal SUSMP Determination. The City would determine which type of stormwater document and construction BMPs would be required on a project-by-project basis to meet the requirements of the MS4 Permit and SUSMP (City of Oceanside 2017d). Further, development and redevelopment projects determined not to be exempt from the SUSMP Treatment Requirements, would be required to prepare a SWMP that includes source-control BMPs as well as LID features, such as, but not limited to, conserving natural topographic features, minimizing site imperviousness, maximizing infiltration, and retaining and reducing the rate of runoff (City of Oceanside 2017d). Implementation of the construction BMPs and LID features contained in the SWPPP and SWMP would minimize or eliminate the potential for sediment and other pollutants to be discharged from construction sites into downstream receiving waters, including the San Luis Rey River, Loma Alta Creek and Slough, Buena Vista Creek and Lagoon, and Pacific Ocean. For these reasons, impacts to water quality associated with construction of development and redevelopment projects which could occur under the Incentive District would be less than significant.

During operation of the development enabled by the Incentive District, individual development projects would be designed to comply with all applicable water quality or waste discharge regulations and standards. All future projects would be required to incorporate various LID features and BMPs into their design per City SUSMP requirements; these LID features are intended to control site runoff and in doing so minimize the amount of pollutants being discharged from the project site. Further, as each individual development project is proposed, the City would have the opportunity through the development review process to review and consider site-specific effects related to water quality and waste discharge. For these reasons, impacts

related to water quality during operation of development enabled by the Incentive District would be less than significant.

**Mitigation Measures:** No mitigation measures are required.

**Significance Determination:** Less than significant

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**Issue 2: Would the project substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?**

### *Complete Streets Improvements*

The Complete Streets improvements would consist of reducing Coast Highway from four travel lanes to two travel lanes, as well as constructing 12 roundabouts, mid-block crosswalks, and bulbouts and providing streetscaping throughout the corridor. Groundwater would not be used during construction of the Complete Streets improvements. Once complete, roadway improvements would only require water for irrigation of ornamental landscaping within roadway medians and along sidewalks. Landscaping would be completed with drought-resistant and low to medium water-use plants. The proposed landscaping would use the existing irrigation systems along Coast Highway and would require minimal irrigation expansion to the medians, but the increased water demand would be negligible compared to current conditions. Thus, the Complete Streets improvements would not substantially increase demand on the city's water supply, which includes groundwater sources, and would not deplete groundwater supplies within the city.

The Complete Streets improvements would occur within the existing right-of-way (ROW) of Coast Highway, which is currently developed, impervious surface. Implementation of the Complete Streets improvements would not introduce new areas of impervious surface within the corridor and would not interfere with or substantially alter the existing rate of groundwater recharge within the city. Further, streetscaping activities as part of the Complete Street improvements would reduce the amount of impervious surface as it would be converted to permeable, vegetated areas. Impacts to groundwater supplies and recharge would be less than significant.

### *Incentive District*

The city of Oceanside is an urban, developed landscape with few vacant parcels. The project area overlies the San Luis Rey Valley Groundwater Basin within the Mission sub-basin. As discussed above, 13 percent of the city's water supply comes from groundwater, where additional growth within the city could affect groundwater supply. However, the intent of the Incentive District is to provide a stimulus in the project area and to encourage the type of development that the City envisions in the project area. While implementation of the Incentive District could increase the rate and intensity of population growth, the growth that could occur under the Incentive District

would be required to be consistent with the City's General Plan and, thus, would not exceed the population growth anticipated by the General Plan.

Due to the highly urbanized character of the city, future development enabled by the Incentive District would not substantially increase the amount of impervious surface within the project area and groundwater recharge would be similar to existing conditions. Development and redevelopment within the Incentive District could encourage new open space, as project applicants would be able to receive a residential density bonus by providing public open space. The addition of potential open space within the project area could increase the amount groundwater recharge within the project area and city overall. For these reasons, impacts to groundwater supply and recharge during operation of development enabled by the Incentive District would be less than significant.

**Mitigation Measures:** No mitigation measures are required.

**Significance Determination:** Less than significant

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**Issues 3 and 4: Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner, which would result in substantial erosion or siltation on- or off-site or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?**

### *Complete Streets Improvements*

While Coast Highway crosses over the San Luis Rey River and Loma Alta Creek and Slough, all construction work for the Complete Streets improvements located on the bridges or in areas adjacent to these water bodies would be within the existing ROW and limited in extent and duration. No construction activities would occur within the channels of the San Luis Rey River or Loma Alta Creek and Slough and all work on the bridges would be elevated outside of the river/stream channel. In addition, no construction activities are proposed within Buena Vista Creek or Lagoon and construction work adjacent to this water body would consist of roadway restriping and landscaping. Implementation of the Complete Streets improvements would not result in the alteration of any of the water bodies located within the project area.

Throughout the rest of the project area, the majority of construction activities for the Complete Streets improvements would occur on the existing paved road surface itself and would not alter existing drainage patterns along Coast Highway. However, the construction of roundabouts, curb adjustments, and raised medians would require ground disturbance and excavation, which could alter existing drainage patterns within specific locations along the corridor. Construction of the Complete Streets improvements would occur in phases, and may or may not affect 1 acre or more of ground surface at a time. If 1 acre or more of ground surface is disturbed at a time, the project would be required to comply with the Construction General Permit, which required the preparation and implementation of a site-specific SWPPP. The site-specific SWPPP would

include erosion and sediment control BMPs designed to prevent erosion from occurring on site and to retain any eroded soils within site boundaries to be redeposited on site following construction. Areas of ground disturbance that are less than 1 acre would also be required to reduce erosion and sedimentation through compliance with City requirements.

The City Grading Ordinance requires submittal of a Grading and Erosion Control Plan to the City for review prior to issuance of a grading permit, which would ensure erosion control measures proposed on site are appropriate for stabilizing soils during construction. The ordinance also requires the submittal of a project-specific drainage study, which would analyze existing and post-construction drainage patterns and recommend any further project design features necessary to reduce flows to existing rates.

Further, while the Complete Streets improvements constitute a project type that is exempt from City SUSMP Treatment requirements, the City's SUSMP requires all development projects to implement LID features, including design features to retain and slow runoff from the project site. Stabilization of exposed or stockpiled soils and cleared or graded slopes would be implemented to reduce the potential for erosion and siltation and would control surface runoff such that flooding would not occur. Therefore, impacts to drainage alternations during construction of the Complete Streets improvements would be less than significant.

After completion of construction, the Complete Streets improvements would continue to operate as a transportation corridor and would not introduce additional impervious surfaces or increase runoff above existing conditions. Areas of landscaping would contain permeable soils, stabilized by vegetation, resulting in less potential for sediment to be discharged in stormwater runoff. Per City SUSMP requirements, all development projects must implement permanent stabilization and erosion control BMPs to prevent erosion and topsoil loss from occurring during development operation. Therefore, operation of the Complete Streets improvements would not result in substantial erosion or siltation on or off site nor would it result in on- or off-site flooding. For these reasons, impacts related to drainage alterations during operation of the Complete Streets improvements would be less than significant.

### *Incentive District*

The Incentive District would encourage redevelopment, including increased residential, commercial, and mixed-use development in an area that is entirely developed with urban uses. Construction activities associated with future development and redevelopment projects could involve ground-disturbing activities, such as demolition of existing buildings, trenching, excavation, and grading. Construction of development and redevelopment projects which could occur under the Incentive District may or may not affect 1 acre or more of ground surface at a time. If 1 acre or more of ground surface is disturbed at a time, those development and redevelopment projects would be required to comply with the Construction General Permit, which requires the preparation and implementation of a site-specific SWPPP. The site-specific SWPPP would include erosion and sediment control BMPs designed to prevent erosion from occurring on site and to retain any eroded soils within site boundaries to be redeposited on site

following construction. Areas of ground disturbance that are less than 1 acre would also be required to reduce erosion and sedimentation through compliance with City requirements.

The City Grading Ordinance requires submittal of a Grading and Erosion Control Plan to the City for review prior to issuance of a grading permit, which would ensure erosion control measures proposed on site are appropriate for stabilizing soils during construction. The ordinance also requires the submittal of a project-specific drainage study, which would analyze the existing and post-construction drainage patterns and recommend any further project design features necessary to reduce flows to existing rates.

Additionally, development and redevelopment projects which could occur under the Incentive District would be required to prepare and submit a project-specific application to the City's Engineering Department for a formal SUSMP Determination. The City would determine which type of stormwater document and construction BMPs would be required on a project-by-project basis to meet the requirements of the MS4 Permit and SUSMP (City of Oceanside 2017d). Development and redevelopment projects determined not to be exempt from the SUSMP Treatment Requirements, would be required to prepare a SWMP that includes source-control BMPs and LID features, such as, but not limited to, conserving natural topographic features, minimizing site imperviousness, maximizing infiltration, and retaining and reducing the rate of runoff (City of Oceanside 2017d). Therefore, construction of development and redevelopment projects which could occur under the Incentive District would not result in substantial erosion or siltation on or off site, nor would it result in on- or off-site flooding. For these reasons, impacts to drainage would be less than significant during construction of future development enabled by the Incentive District.

During operation of the development enabled by the Incentive District, individual development projects would be designed to comply with all applicable drainage-related regulations and standards. All future projects would be required to incorporate various LID features and BMPs into their design per City SUSMP requirements; these LID features are intended to control site runoff and in doing so would minimize the amount of on- and off-site erosion and siltation and on- and off-site flooding. Further, as each individual development project is proposed, the City would have the opportunity through the development review process to review and consider site-specific effects related to drainage patterns and alterations. Impacts related to drainage during operation of development enabled by the Incentive District would be less than significant.

**Mitigation Measures:** No mitigation measures are required.

**Significance Determination:** Less than significant

**Issue 5: Would the project create or contribute runoff water, which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?**

### *Complete Streets Improvements*

The majority of construction activities for the Complete Streets improvements would occur on the existing paved road surface itself and would not alter the existing drainage patterns along Coast Highway or cause runoff to increase over existing conditions. Implementation of the Complete Streets improvements would not introduce new areas of impervious surface within the corridor that could increase the amount of stormwater runoff. Additionally, landscaping activities as part of the Complete Street improvements would reduce the amount of impervious surface within the corridor, as impervious surfaces would be converted to permeable, vegetated areas. With the introduction of more landscaping throughout the corridor, the amount of runoff could potentially decrease with the increase of pervious surfaces. Construction activities would be required to comply with all applicable stormwater runoff regulations, including the Construction General Permit, which requires the preparation and implementation of a site-specific SWPPP. Refer above to Issue 3 and 4 for a detailed discussion regarding the Construction General Permit and SWPPP, SUSMP requirements, LID features and BMPs during construction.

After completion of construction, the Complete Streets improvements would continue to operate as a transportation corridor and would not introduce additional impervious surfaces or increase runoff above existing conditions. Areas of landscaping would contain permeable soils, stabilized by vegetation, resulting in less potential for sediment to be discharged in stormwater runoff. Per City SUSMP requirements, all development projects must implement permanent stabilization and erosion control BMPs to prevent erosion and topsoil loss from occurring during development operation. Therefore, operation of the Complete Streets improvements would not generate additional runoff flows which could exceed the capacity of the City's stormwater drainage system. Impacts related to the capacity of the City's stormwater drainage system during operation of the Complete Streets improvements would be less than significant.

### *Incentive District*

The Incentive District would encourage redevelopment, including increased residential, commercial, and mixed-use development in an area that is entirely developed with urban uses. Construction activities associated with future development and redevelopment projects could involve ground-disturbing activities, such as demolition of existing buildings, trenching, excavation, and grading, which could contribute to off-site erosion and siltation. Construction of development and redevelopment projects which could occur under the Incentive District may or may not affect 1 acre or more of ground surface at a time. If a development or redevelopment projects disturb 1 acre or more of ground surface, it would be required to comply with the Construction General Permit, which requires the preparation and implementation of a site-specific SWPPP. The site-specific SWPPP would include BMPs designed to prevent erosion and other pollutants from being discharged from the project area. Areas of ground disturbance that are less than 1 acre would also be required to reduce erosion and sedimentation through compliance with City requirements. The City Grading Ordinance requires submittal of a Grading and Erosion

Control Plan to the City for review prior to issuance of a grading permit, which would ensure erosion control measures proposed on site are appropriate for stabilizing soils during construction as well as requires the submittal of a drainage study.

Additionally, development and redevelopment projects which could occur under the Incentive District would be required to prepare and submit a project-specific application to the City's Engineering Department for a formal SUSMP Determination. The City would determine which type of stormwater document and construction BMPs would be required on a project-by-project basis to meet the requirements of the MS4 Permit and SUSMP (City of Oceanside 2017d). Development and redevelopment projects determined not to be exempt from the SUSMP Treatment Requirements, would be required to prepare a SWMP that includes source-control BMPs and LID features, such as, but not limited to, conserving natural topographic features, minimizing site imperviousness, maximizing infiltration, and retaining and reducing the rate of runoff (City of Oceanside 2017d). Therefore, construction of development and redevelopment projects which could occur under the Incentive District would not result in an increase of stormwater runoff that would exceed the capacity of the City's stormwater drainage system.

The City of Oceanside requires developers to pay a drainage fee to provide funding to accommodate the demand generated by future development on the city's stormwater drainage system. Currently, the City has established a drainage fee range of $3,596 to $20,195 per acre depending on the Drainage Zone District the project site is located within (City of Oceanside 2016b). This fee would be required of all residential and nonresidential developments within the Incentive District boundaries. If the Incentive District accelerates development within the project area and additional development occurs (as compared to conditions without the Incentive District incentives), additional drainage fees would be collected. These drainage fees would then provide for the development of additional drainage facilities to service the new development. However, the specific location, timing, and nature of these additional facilities are not known at this time. While consideration of the environmental effects of these future safety facilities within the city would be speculative and is not within the scope of this CEQA document, development of those facilities will be required to adhere to the requirements of CEQA when they are proposed by the City of Oceanside in the future.

Because all future project applicants and private developers proposing residential and nonresidential projects under the Incentive District would be required to pay the drainage fee before the issuance of a building permit and these fees would be used to provide for additional facilities to service the new development enabled by the Incentive District, it can be reasonably assumed that the City of Oceanside will continue to keep pace with the development growth within the city. For these reasons, impacts to the City's existing stormwater drainage system would be less than significant during construction of future development enabled by the Incentive District.

During operation of the development enabled by the Incentive District, individual development projects would be designed to comply with all applicable drainage and water quality regulations and standards. All future projects would be required to incorporate various LID features and

BMPs into their design per City SUSMP requirements; these LID features are intended to control site runoff and would not exceed the existing capacity of the City's stormwater drainage system. Further, as each individual development project is proposed, the City would have the opportunity through the development review process to review and consider site-specific effects related to the capacity of the existing stormwater drainage system. For these reasons, impacts related to City's existing stormwater drainage system during operation of development enabled by the Incentive District would be less than significant.

**Mitigation Measures:** No mitigation measures are required.

**Significance Determination:** Less than significant

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**Issues 7 and 8: Would the project place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map or place structures within a 100-year flood hazard area which would impede or redirect flood flows?**

### *Complete Streets Improvements*

The Complete Streets improvements would consist of reducing Coast Highway from four travel lanes to two travel lanes as well as constructing 12 roundabouts, mid-block crosswalks, and bulbouts, and providing streetscaping throughout the corridor. No residential components are proposed. Further, while portions of Coast Highway are currently located within 100-year flood hazards areas, the Complete Streets improvements would be constructed within the existing ROW and would not develop currently vacant parcels within a designated flood hazard area. Therefore, the Complete Streets improvements would not construct housing within a 100-year flood hazard area and no impact would occur.

### *Incentive District*

The Incentive District would encourage development and redevelopment, including increased residential, commercial, and mixed-use development in an area that is entirely developed with urban uses. As shown in Figure 3.8-1, the parcels located immediately adjacent to Loma Alta Creek and Slough are located areas designated as within the 100-year floodway and the 100-year floodplain (FEMA 2012). These parcels are all currently developed with urban uses. Additionally, parts of the project area that surround the parcels located within Zone AE around Loma Alta Creek and Slough are located within the 500-year floodplain, where flood hazards would be minimum due to elevations being higher than the elevation of the 500-year flood (FEMA 2012; City of Oceanside 2017c). Future development and redevelopment that could occur under the Incentive District could place residential uses within a designated 100-year floodplain.

Development and redevelopment that could occur under the Incentive District on parcels designated within the 100-year floodplain would be required to comply with mandatory flood insurance requirements and floodplain management standards and regulations established by the City (City of Oceanside 2017c). In compliance with flood hazard regulations and standards,

future projects proposed for parcels designated within Zone AE would be required to incorporate site-specific project design features, such as increased fill to raise structures out of the 100-year flood hazard zone, to reduce the risk of flooding hazards. Additionally, Policy 6.3 within the Public Safety Element of the City's General Plan states that any development application for new construction and/or substantial improvements or upgrades to existing development within the 100-year floodplain shall be reviewed by the City to ensure that the project complies with flood protection measures required by the National Flood Insurance Program. During the development review process of future projects located within the 100-year floodplain, the City would review design plans and the overall development applications to ensure projects are meeting the standards and requirements in order to minimize flood hazards. Therefore, with compliance with the National Flood Insurance Program and the City's regulations and standards, impacts associated with development and redevelopment on parcels within the 100-year floodplain would be less than significant.

**Mitigation Measures:** No mitigation measures are required.

**Significance Determination:** Less than significant

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**Issue 9: Would the project expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?**

### *Complete Streets Improvements*

The Complete Streets improvements would consist of reducing Coast Highway from four travel lanes to two travel lanes as well as constructing 12 roundabouts, mid-block crosswalks, bulbouts, and providing streetscaping throughout the corridor. While the northern portion of Coast Highway adjacent to the San Luis Rey River is located within the dam inundation area for the Henshaw Lake Dam, the Complete Streets improvements in that area would consist primarily of restriping and streetscaping activities. Therefore, the Complete Streets improvements would not expose people or structures to a significant risk associated with failure of a levee or dam. No impact would occur.

### *Incentive District*

As shown on Figure 3.8-1, the Incentive District area does not include any parcels designated within the dam inundation area for Henshaw Lake Dam (City of Oceanside 2002). Additionally, according to the Draft Dam Failure Map developed for County of San Diego Hazard Mitigation Planning, there are no other areas within the city of Oceanside that are susceptible to inundation from dam failure (County of San Diego 2009). Therefore, development and redevelopment which could occur under the Incentive District would not expose people or structures to significant risks associated with dam failure. No impact would occur.

**Mitigation Measures:** No mitigation measures are required.

**Significance Determination:** No impact

**Issue 10: Would the project result in a substantial increase in risk of exposure to inundation by seiche, tsunami, or mudflow?**

Tsunamis are giant sea waves created by the sudden uplift of the sea floor, generally caused by a seismic activity. As shown on Figure 3.8-2, portions of the project area which are located immediately adjacent to the San Luis Rey River and Loma Alta Creek and Slough are designated within the city's tsunami inundation area (Cal EMA 2009). The portions of the Complete Streets improvements within the designated tsunami inundation areas would be constructed within the existing ROW for Coast Highway, and the risk of exposure to tsunami inundation would be similar to existing conditions. The Complete Streets improvements within the designated tsunami inundation areas would be located at higher elevations on existing bridges over the San Luis Rey River and Loma Alta Creek and Slough, which would further reduce the risk of tsunami inundation.

As shown on Figure 3.8-2, a small number of currently developed parcels located immediately adjacent to Loma Alta Creek and Buena Vista Lagoon within the Incentive District area are within the designated tsunami inundation zone (Cal EMA 2009). However, the probability of a tsunami large enough to exceed the bank elevations within the Loma Alta Creek Slough and Buena Vista Lagoon and overflow to the adjacent parcels is low. For future development or redevelopment which could occur under the Incentive District on those parcels located within immediately adjacent to Loma Alta Creek and Slough and Buena Vista Lagoon the risk of tsunami inundation would be similar to existing conditions. Therefore, impacts associated with the increased risk of tsunami inundation would be less than significant.

A seiche is an oscillating wave in an enclosed or restricted body of water generated by ground motion during an earthquake (City of Oceanside 2002). These waves can cause the overflow of a lake, reservoir, or lagoon. According to the City's General Plan Public Safety Element, there is minimal potential for seiche to occur within the lagoons within the city and thus minimal potential to affect the project area (City of Oceanside 2002). Therefore, impacts associated with seiche would be less than significant.

Mudflows are rivers of liquid and flowing mud on the surface of normally dry land, often caused by a combination of brush loss and subsequent heavy rains (FEMA 2015). As discussed in Section 3.5, Geology, Soils, and Seismicity, the project area is relatively flat and is located in the vicinity of the coast in an area where susceptibility to landslides is very low. Therefore, the project area would not likely be subject to mudflows during heavy rain events. As a result, increased risk of mudflows would be less than significant.

**Mitigation Measures:** No mitigation measures are required.

**Significance Determination:** Less than significant