Water Quality Assessment Report

San Jose Creek Bridge Replacement

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SB-217-PM 0.7-1.6

05-1C3600 (0512000134)

July 2018

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STATE OF CALIFORNIA

Department of Transportation

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Executive Summary

The primary purpose of the Water Quality Assessment Report (WQAR) is to fulfill the requirements of the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA), and provide information, to the extent possible, for the National Pollutant Discharge Elimination System (NPDES) permitting. This Water Quality Study Report evaluates the potential for water quality impacts to existing surface watercourses and/or groundwater resources within the project limits. The general approach of the assessment is to evaluate whether there will be significant effects from the project on the water quality. The components of this study include any proposed project activity that may result in impacts to water resources, erosion of the stream banks, and an increase in sediment load and other pollutants to surface and ground waters.

This technical study includes a discussion of the proposed project, the general environmental setting of the project area, and the regulatory framework with respect to water quality. It also provides data on surface water and groundwater resources within the project area and their water quality health, describes water quality impairments and beneficial uses, identifies potential water quality impacts/benefits associated with the proposed project, and recommends avoidance and/or minimization measures for potentially adverse impacts where necessary.

The project proposes to replace San Jose Creek Bridge (Br. No. 51-0217) to mitigate reactive aggregate in the concrete affecting the bridge. Additionally, the proposed bridge would have wider shoulders and lanes to meet current standards. The alternative which most satisfies the purpose and need would have bigger environmental footprint because of the necessity to raise the highway profile due to sea level rise. By raising the highway profile, the on and off ramps profiles will also need to be raised, along with the adjacent existing bike lane path. Impacts will be 30 to 50 feet from outside edge of shoulders in both directions of the highway, including the joining on and off-ramps. Environmental impacts are anticipated from the construction of the new bridge.

Due to staging of the proposed project, temporary detours will be necessary whereby all traffic would temporarily detour onto the existing WB lanes of the bridge in Stage 1 (moving EB vehicles and shifting north), then all traffic would temporarily detour onto the newly constructed EB lanes of the bridge in Stage 2.

One of the project's design goals will be to avoid water resources to the Maximum Extent Practicable, to promote infiltration of storm water runoff, to maximize the treatment of storm water runoff, and to reduce erosion by matching post-project runoff rates to pre-project rates. By meeting these goals and incorporating other applicable National Pollutant Discharge Elimination System requirements, water quality impacts should be minimized and therefore should not be significant.

The main areas where potential water quality impacts may occur are adjacent to and within the creeks biotic/aquatic or wetland areas adjacent to the bridge location. These areas are surface water resources under the jurisdiction of the California Department of Fish and

Wildlife, the United States Army Corps of Engineers, Regional Water Quality Control Board, and the California Coastal Commission.

The project is in the South Coast Hydrologic Unit, Goleta Hydrologic Area and an undefined Hydrologic Sub-Area (HSA). The HSA for San Jose Creek is 315.31. The project location is approximately 670 yards upstream from the Pacific Ocean. The receiving water body for this project is San Jose Creek, Goleta Slough/Estuary and the Pacific Ocean. The Pacific Ocean at the mouth of San Jose Creek, and Goleta Sough/Estuary are listed, on the 2010 303(d) list of impaired water bodies, as impaired by pathogens and priority organics. San Jose Creek is listed on the 2016 303(d) list of impaired water bodies (Category 5A) as impaired by chloride, fecal coliform, sodium, electrical conductivity, sodium and pH. Category 5 criteria is defined as a water segment where standards are not met and a TMDL is required, but not yet completed, for at least one of the pollutants being listed for this segment. A TMDL was established for fecal coliform in 2013, TMDL standards are anticipated to be adopted by 2021 for chloride, sodium, electrical conductivity and pH.

No areas of special biological significance are noted within the Central Coast Regional Water Quality Control Board boundaries. Several special status aquatic species are present or assumed to be present (tidewater goby, steelhead, red-legged frog, amongst others) within the project footprint. The beneficial uses for the San Jose Creek as listed in the September 2017 RWQCB Basin Plan are: MUN, AGR, GWR, REC1, REC2, WILD, COLD, WARM, MIGR, SPWN, BIOL, RARE, EST, FRESH and COMM.

The project is within the Goleta (Unit 3-15) groundwater basin. In addition, groundwater elevations are shallow at the project site and are within 2-3 feet from the surface but can vary though out the project site. Further borings will have to be performed during the design phase to evaluate groundwater depths beyond these areas.

The primary potential for water quality impacts from the project is soil erosion, debris being introduced into the creek due to construction activities, or from additional runoff from added impervious areas. Water quality will also be impacted by temporary and permanent encroachment into existing wetlands and Waters of the United States and the State of California. Design features for the project impacts to storm water runoff can be addressed with use of pollution control measures or Best Management Practices. Because the project disturbs over 1.0 acre of area (actual- 4.03 acres) permanent treatment BMPs will be incorporated in to project.

Consideration of Best Management Practices is required by the California Department of Transportation's National Municipal Separate Storm Sewer Systems (MS4) permit (Order No. 2012-0011-DWQ), adopted in September 2012, by the California State Water Resources Control Board. Mitigation for wetland and Waters of the United States and State impacts will be addressed through consultation with appropriate regulatory agencies.

Short-term impacts are anticipated from construction activities such as demolition, earthwork, structures work, and/or dewatering or diversions. Temporary Best Management Practices will be considered for this project to prevent potential water quality degradation during construction. Long-term impacts from the project could result from floodplain and wetland fill, and small potential increases to velocity and volume of downstream flows. Storm water runoff from the Highway 217 potentially carries pollutants that are deposited into adjacent jurisdictional biotic/aquatic areas. Permanent Best Management Practices will be incorporated into the project to address these impacts, to promote infiltration, reduce erosion, and collect and treat roadway runoff.

The proposed project includes work within jurisdictional biotic/aquatic areas within the creek banks. Temporary impacts may occur with streambed disturbance, including the installation and removal of a temporary creek diversion system.

Fish passage for juvenile and adult steelhead exists within San Jose Creek and have been analyzed for fish passage issues. According to the USGS (United States Geologic Survey) Regional Regression method using USACOE (United States of America Corp of Engineers) Hydraulic Engineering Center River Analysis Software (HEC-RAS), fish flows were favorable at the San Jose Creek and Highway 217 bridge.

The project does not propose an increase in new net impervious surface areas from widening of the existing shoulders and accommodation of a standard bike/pedestrian path. This determination was based on the following assumptions; (1) the widening of the bridge does not contribute any new impervious surface, (2) the freeway approaches to the bridge are no going to be impacted, and (3) the existing bike lane, even though it will be slightly realigned 7 feet further to the outside, will have the same 10-foot width as in the existing.

This project proposes to create 4.06 acres of DSA (disturbed surface area). Therefore, a Storm Water Pollution Prevention Plan (SWPPP) and coverage under the Construction General Permit (CGP) will be required.

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1. INTRODUCTION

1.1 APPROACH TO WATER QUALITY ASSESSMENT

The purpose of the Water Quality Assessment Report (WQAR) is to fulfill the requirements of the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA), and to provide information for National Pollutant Discharge Elimination System (NPDES) permitting. The document includes a discussion of the proposed project, the general environmental setting of the project area, and the regulatory framework with respect to water quality; it also provides data on surface water and groundwater resources within the project area and the water quality of these waters, describes water quality impairments and beneficial uses, and identifies potential water quality impacts/benefits associated with the proposed project, and recommends avoidance and/or minimization measures for potentially adverse impacts.

1.2 PROJECT DESCRIPTION

The proposed new bridge would maintain the existing two northbound and two southbound traffic lanes and provide safety improvements, including standard bridge rails with bicycle rails and standard shoulders. The roadway for this portion of SR-217 consists of standard lane and shoulder widths and work would be limited to paving necessary to conform to the new bridge. Proposed work includes cold plane, overlay, and replacement of the existing roadway approaches to the bridge, replacement of existing guardrails and end treatments, relocation of existing conflicting utilities, and minor drainage work such as new dikes and over-side drains. Bridge supports would include abutments installed along the stream banks with piles installed within the streambed.

1.2.1 PROJECT ALTERNATIVES

Three build alternatives were originally considered for this project, all of which can be described as “precast” bridges, whereby the girders will be precast but all other elements of the bridge (including the deck) will be “cast-in-place.” A former build alternative consisted of replacing the existing bridge with a precast, pre-stressed, three-span “I” girder bridge. Due to the number of new piles/columns that will be required to be installed in the streambed, this alternative was eliminated from consideration in favor of a two-span alternative. The remaining “build” alternative has a single central pier, labeled “pier 2,” located between abutment 1 (west side of the bridge) and abutment 3 (east side of the bridge). This alternative has two design variations, one that replaces the bridge in-kind and

one that provides elements for future jacking and raising of the structure to accommodate future sea level rise.

Design variation 2, the jackable variation is the preferred option at this time. However, this alternative does not involve raising the structure at this time, because that would require raising the roadway approaches, which would entail a considerably larger construction footprint than feasible at this time. The reason that a larger construction footprint was rejected at this time was because: 1) raising the roadbed approach to the east would require constructing a 1000 ft. long retaining wall along the streambank of San Jose Creek, and 2) raising the roadbed approach to the west would require re-designing the cloverleaf interchange and the intersection with Moffett Road which was out of scope for this project and would result in substantially greater impacts to wetlands and adjacent properties. A project that involves raising the structure and re-designing the road approaches will be addressed in the future when the structure needs to be raised for sea level rise.

Caltrans attempts to use Accelerated Bridge Construction when feasible, defined by Caltrans as "any type of bridge construction that utilizes the most efficient combination of innovative planning, design, materials and construction methods to significantly reduce construction related impacts by reducing the number of onsite construction days and /or minimizing traffic disruption". A free span design, which would be considered an Accelerated Bridge Construction design, is not feasible for the project, as it would require a structure depth of 12.75 ft. for a precast girder option and this would result in a much lower soffit elevation than the proposed design and not enough hydraulic capacity. As proposed, the two-span, precast, pre-stressed option provides a more reasonable structure depth, minimizes onsite construction days, and will have less environmental impacts to single-parameter wetlands and other resources outside of the stream channel as a result of a smaller overall construction footprint.

1.2.1.1 ALTERNATIVE 1 DESIGN VARIATION 1: REPLACE EXISTING BRIDGE (IN-KIND)

Alternative 1 will consist of replacing the existing bridge with a two-span precast, pre-stressed, wide flange girder bridge. The existing bridge is 192.4 ft. long, 94.3 ft. wide, and 1.5 ft. deep. It is currently supported by six piers, with a total of eleven 15-inch diameter, 12.85 ft. high columns per pier (66 total columns). 48 of these columns are within the OWHM, resulting in a total footprint of 59 ft^2 within the OHWM. The existing abutments are located behind the streambanks. The proposed bridge will be approximately 213.6 ft. long, 105 ft. wide, and 4.75 ft. deep. The east abutment will be located in approximately the same location as the existing east abutment, while the west abutment will be about 10 ft. to the west. The new abutments will also be located outside streambanks.

The existing six piers (66 columns) will be removed and replaced with one center pier supported by eight Type ll cast-in-drilled-hole (CIDH) piles. As in the existing condition, the center of the bridge and therefore the center pier will be located near the west bank (see preliminary project plans), and within the ordinary high-water mark (OHWM). Each CIDH pile will be 42-inch diameter above ground, resulting in a total footprint of 77 ft^2 above

ground within the OHWM. The steel casing around the piles will be 66-inches in diameter and only below the ground. A concrete bent cap will be formed at the top of the columns to attach them to the bridge deck, well above the OHWM. Type II CIDH piles (24-inch diameter) will also be used at each of the abutments, which are located behind the existing stream banks, not within the OHWM (see preliminary project plans).

The proposed design accommodates the 100-year flood event, which will have a surface water elevation between 10 and 11 ft. The lowest soffit elevation of the proposed replacement structure is at an elevation of 12 ft. The proposed design reduces the number of bents in the streambed by increasing the depth of the superstructure from 1.5 ft. (existing) to 4.47 ft. (proposed). This reduces the number of spans from ten to two. Despite the higher profile, this design variation will not address future sea level rise.

1.2.1.1 ALTERNATIVE 1 DESIGN VARIATION 2: REPLACE EXISTING BRIDGE (JACKABLE)

As described above, the design for the bridge is the same both design variations. The only difference with this variation is that the bridge structure will be built at a higher elevation than the existing bridge, and it will contain certain features to raise the structure approximately 33 inches in the future to accommodate sea level rise. Additional rebar with couplers and pins will be installed to allow for extension of columns, whereby the superstructure [girders and deck] could be raised by jacking at some point in the future. As described above, the bridge will not be raised at this time under this design variation.

1.2.1.2 ALTERNATIVE 2: NO-BUILD

The no-build alternative will maintain the status quo and leave the existing bridge in place with no modifications. This alternative will not meet the purpose and need because the existing bridge is structurally deficient, and without correction could lead to bridge failure.

1.2.2 CONSTRUCTION STAGES

1.2.2.1 STAGE 1 CONSTRUCTION

Stage 1 of project construction involves removing the northbound portion of the existing bridge and constructing the northbound half (south side) of the new bridge. Two-way traffic will be shifted to the existing southbound lanes with appropriate traffic controls. A temporary pedestrian walkway will also be provided. The northbound portion of the existing bridge will then be saw cut and demolished. For demolition of the existing bridge, a temporary protective cover will be constructed under the bridge and over the live stream to protect aquatic resources. Caltrans expects that the contractor will likely install collar brackets on the existing piers to support the protective cover but the means and methods will ultimately be developed by the contractor.

It is likely that the contractor will have to build a temporary working platform to access the existing bridge over the stream and to be able to build a protective platform under the existing bridge to keep the demolition debris out of the active stream. Due to the loose substrate in the stream channel, Caltrans anticipates that in-stream piles will not be used for the platform. In fact, some of the existing columns may be used to support the temporary work platform. However, if some piles are needed for the temporary platform, Caltrans will require that the contractor install the temporary piles by a vibratory or rotating/oscillating method, and not pile driving. Demolished material will be completely removed from the project site.

Prior to initiating work within the active water channel, the contractor will be required to install a temporary stream diversion and dewater the work area, as described in the following section. All work within the active water channel (including installing a temporary work platform, constructing the new columns, removing the existing columns, and removing the work platform) must be performed within an isolated and dewatered work area, and must be performed during the summer in-stream work season, described below. A crane for lifting and installing the casings and a vibratory "drilling" rig will most likely be positioned on the bank adjacent to Pier 2, also in the isolated work area.

During Stage 1 construction, four of the CIDH piles will be installed along the middle pier ("Pier 2") to support the first half of the new bridge. For the foundation, each pile will be installed to a depth of approximately 100 ft. below ground. Temporary or permanent steel casings will be installed prior to forming the concrete piles. Caltrans believes that the steel casings can be installed with a vibratory or rotating/oscillating method, and not pile driving. However, there is always a chance that a pile driving may be necessary for the final proofing. Design tip elevations for casings and CIDH foundations depend on the loads, diameter of the pile, and geotechnical site conditions. Caltrans does not have precise information regarding depth of the casings and piles, or whether the casings will be temporary or permanent at this time, because investigative geotechnical investigations have not been completed. They will occur during at a later phase in project development, and will undergo a separate environmental review process.

Even though the work area will be isolated and de-watered, steel casings are necessary to ensure a dry environment for forming the concrete piles, preventing wet concrete from leaking into the stream channel. Drilling fluid/slurry is pumped into the casing to evacuate the water. Drilling fluid will consist of water mixed with either mineral (usually bentonite powder) or polymer admixtures that make the fluid more viscous and slightly denser than water. In order to maintain an outward gradient and higher fluid elevation than the creek/water table, the casing will extend several feet above the creek/water table (typically at least 5 ft.).

Once each casing is in proper position a drill rig working from the creek bed will first remove the soil content of the casing, and then construct the rock socket (lowest portion of the pile beneath the casing). Drill spoils removed will be collected and either reincorporated into

embankment fills, or transported to an approved, off-site disposal facility. Once the rocket socket excavation is completed, a crane will place a reinforcing steel cage into the pile.

To create the CIDH pile, the casing will then be backfilled with concrete, up to a specified elevation of a construction joint within the permanent steel casing. This lower portion of the pile will serve as the base to construct the column/upper pile portion. The concrete pour will be accomplished with a concrete pump truck positioned on the roadway or adjacent embankment (area east of the bridge), then allowed to cure to obtain adequate compression strength (typically 30 days). If the casings are permanent, the top will be cut flush with the top of the piles. If temporary, they will either be removed or saw cut to a minimum depth of 3 ft. below finished grade around the concrete piles. If feasible, the existing columns will be removed completely, or removed to 3 ft. below the finished grade if there is no conflict with the new abutments.

After the CIDH piles and columns have been constructed, the concrete bent cap will be formed, most likely utilizing wood falsework. Since it is located above the stream channel, a steel casing will not be necessary. Fresh concrete will be prevented from entering the stream with the protective cover and temporary work platform described above, or other protective measures.

The CIDH piles for the new abutments will be constructed in a similar manner as the center pier, as described above, except the abutments will be installed outside of the existing abutments so the work performed well outside of the stream channel. It is assumed that casings will still be needed in case of ground water entering the work area.

Span 1 and Span 2 precast girders will be installed after the piers are constructed. If the jackable alternative is selected, additional rebar with couplers and pins will be installed to allow for future extension of columns. Deck forms will be placed between the girders followed by deck rebar and concrete placement. Once the deck concrete has reached the specified concrete strength, the deck forms will be removed. All temporary materials in the stream channel, including the temporary work platform and the temporary stream diversion, will be removed after the portions of Stage 1 bridge construction that require falsework within the channel are complete, and prior to the end of the in-stream work season.

For the roadway approaches, the abutments will be backfilled and 30-ft sections of the roadway approaching and leaving the bridge will be constructed out of reinforced concrete. The approach slabs and bridge rails will then be formed, with reinforcing steel placed followed by the placement of concrete. Expansion joint seals that allow for bridge movement will be placed between the backwall and the approach slab.

1.2.2.2 STAGE 2 CONSTRUCTION

Stage 2 construction involves removing the southbound portion of existing bridge and constructing the second (southbound) half or north side of new bridge. Stage 2 construction will most likely be performed the following year during the summer in-stream

work season, described below. When Stage 2 construction starts, two-way traffic will be shifted away from the existing southbound lanes to the newly constructed half of the bridge. The other portion of the original bridge supporting the former southbound lanes will then be demolished, and the second half of the new bridge constructed using similar methodology as previously described for Stage 1.

After bridge construction, the slopes and streambed will be graded to finished elevations, to approximate pre-construction conditions as close as feasible. The bridge deck and roadway will be subjected to profilograph testing to measure surface roughness and then smoothed as needed. Finally, road striping, metal beam guard rail, and other ancillary activities will be constructed.

1.2.3 DIVERSION AND DEWATERING

Temporary diversion/dewatering systems will be installed to allow for existing bridge demolition, and pile, column, and bridge construction. Diversion and dewatering will be timed to occur between June 1 and October 31 in any given year (or as otherwise directed by the regulatory agencies). Although the precise diversion/dewatering methodology is typically determined by the contractor prior to construction and vetted by regulatory agencies during the permitting process, the following information presents a method commonly used in similar settings.

Temporary check dams or cofferdams for water diversion may be positioned approximately 50 ft. upstream and downstream from the bridge, spanning the width of the creek, from bank to bank. Alternatively, a cofferdam will be wrapped around pier 2 work area then connecting with the nearest (east bank) stream bank, isolating pier 2 and the work area to allow stream flow towards the opposite bank. The temporary dams will be designed to ensure water does not overtop or circumvent the dams, and will remain in place during instream construction activities.

The contractor may utilize imported material to construct the temporary dams, either by working from the outside shoulders and the adjacent embankments and within State right-of-way, or by utilizing equipment (e.g., crane or backhoe) and/or manpower to place the dam materials on the downstream and upstream sides. Exact configuration (i.e., dimension, size, materials, etc.) of the temporary dams are not known at this time but if bags are used the material will be clean imported gravel rather than sand. The dams may need to be lined with plastic (i.e., Visqueen or equivalent) to help make them water-tight.

Based on recent observations, Pier 2 will may be located very close the edge of the wetted channel. Another option to full stream width diversion may be to divert the stream flow just around this pier, using a cofferdam constructed of metal sheet piling, held in place with posts or gravel behind the sheets. This may cause the wetted stream to be pushed about 10 ft. towards Abutment 1 to create some working room with temporary gravel backfill in this area. The cofferdam may start about 50 ft. upstream of the most upstream column and extend to about 50 ft. downstream of the most downstream column. Caltrans will require

that the contractor install the posts or sheets by a vibratory or rotating/oscillating method, and not pile driving.

In the event that the diversion and dewatering does not completely dry the work area, steel casings will be used around each pile to prevent wet concrete from leaking into the stream, as described above. Fish and other aquatic species stranded in dewatered areas will be relocated to suitable habitat. The temporary check dams or sheet piling will be removed by end of the in-stream work season, and reinstalled the following year after the start of the in-stream work season, for each construction year as necessary (although only two construction years are anticipated).
Removal of nuisance water within the work site will be accomplished by pumping the water with low horsepower pumps and hoses. The pumps, if used, will have protective screens at intake ends to prevent fish and other aquatic species from entering the pumps. To capture water born sediment, water will be pumped to a temporary sediment basin, adjacent uplands, or a Baker tank system will be used for settlement/filtration. Dewatering discharge points will be placed downstream of the dewatered area at locations where the discharge will not result in erosion or scour. If a sediment basin is used, it will be maintained as necessary to ensure adequate functionality.

Upon completion of instream work, the contractor will remove all equipment and infrastructure associated with dewatering in a manner that will minimize adverse impacts to water quality and to ensure that stream contours are returned to pre-construction conditions, or as close as possible.

1.2.4 SITE PREPARATIONS AND CONSTRUCTION ACCESS

Environmentally Sensitive Area (ESA) fencing will be installed throughout areas of the project to limit construction activities and protect habitats of concern. Special Provisions for the installation of ESA fencing and silt fencing shall be included in the Construction Contract for this project and also identified on the project plans. ESAs will also be delineated in the field and will be approved by the project environmental division prior to beginning any construction activities, including equipment storage.

Caltrans has identified a location for construction staging and storage to the south of SR-217 and east of the stream, in an area that has been previously disturbed area and is regularly used by Santa Barbara County (SBC) Flood Control District for access to streams in the project vicinity (Padre Associates 2010).

For each of the two build alternatives, prior to bridge construction activities the contractor will need to clear and grub to provide access into the stream channel on either side of the bridge. Temporary vegetation removal to accommodate access and construction will be minimized to the extent feasible. Access to the streambed for constructing the center pier will be from the east bank which has an existing gradual slope from the bridge abutment to the water and is closer to work area for the center pier. However, access for demolition of the existing and construction of the new abutments will be from the adjacent roadway, not

the streambed. Temporary access ramps, if needed, will be graded approximately 50 ft. wide to provide access. The contractor may have to shore and cut the slope(s) of the access ramp(s), and add gravel substrate for stability and safety, which will be required to be removed after construction.

1.2.5 TYPES OF EQUIPMENT

Trucks, cranes, bulldozers, backhoes, forklifts, compactors, a vibratory pile-driving rig, drill rig, clamshells, excavators, hoe rams, jackhammers, compressors, man lifts, scrapers, paver grinders, pavers, and any other equipment that becomes necessary in the course of construction will be used.

1.2.6 CONSTRUCTION WORK SCHEDULE

The construction schedule is based on preliminary estimates and is subject to change. For both design variations, construction is projected to start in approximately March 2020, require approximately 450 work days, with completion of construction by approximately November 2021. As described above, the staged construction will most likely require two years to perform the various activities within the waterway during the in-stream work season.

2. REGULATORY SETTING

2.1 FEDERAL LAWS AND REQUIREMENTS

CLEAN WATER ACT

In 1972 Congress amended the Federal Water Pollution Control Act, making the addition of pollutants to the waters of the United States (U.S.) from any point source unlawful unless the discharge is in compliance with a NPDES permit. Known today as the Clean Water Act (CWA), Congress has amended it several times. In the 1987 amendments, Congress directed dischargers of stormwater from municipal and industrial/construction point sources to comply with the NPDES permit program. Important CWA sections are:

- Sections 303 and 304 require states to promulgate water quality standards, criteria, and guidelines.

- Section 401 requires an applicant for a federal license or permit to conduct any activity, which may result in a discharge to waters of the U.S., to obtain certification

from the State that the discharge will comply with other provisions of the act. (Most frequently required in tandem with a Section 404 permit request. See below).

- Section 402 establishes the NPDES, a permitting system for the discharges (except for dredge or fill material) of any pollutant into waters of the U.S. The Federal Environmental Protection Agency delegated to the California State Water Resources Control Board (SWRCB) the implementation and administration of the NPDES program in California. The SWRCB established nine Regional Water Quality Control Boards (RWQCBs). The SWRCB enacts and enforces the Federal NPDES program and all water quality programs and regulations that cross Regional boundaries. The nine RWQCBs enact, administer and enforce all programs, including NPDES permitting, within their jurisdictional boundaries. Section 402(p) requires permits for discharges of stormwater from industrial, construction, and Municipal Separate Storm Sewer Systems (MS4s).

- Section 404 establishes a permit program for the discharge of dredge or fill material into waters of the U.S, including wetlands. This permit program is administered by the U.S. Army Corps of Engineers (USACE).

The objective of the CWA is "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters."

The USACE issues two types of 404 permits: General and Individual. There are two types of General permits: Regional and Nationwide permits. Regional permits are issued for a general category of activities when they are similar in nature and cause minimal environmental effect. Nationwide permits are issued to authorize a variety of minor project activities with no more than minimal effects.

There are also two types of Individual permits: Standard Individual permit and Letter of Permission. Ordinarily, projects that do not meet the criteria for a Nationwide Permit may be permitted under one of USACE's Individual permits. For Standard Individual permit, the USACE decision to approve is based on compliance with U.S. Environmental Protection Agency's (EPA) Section 404 (b)(1) Guidelines (U.S. EPA CFR 40 Part 230), and whether permit approval is in the public interest. The 404(b)(1) Guidelines were developed by the U.S. EPA in conjunction with USACE, and allow the discharge of dredged or fill material into the aquatic system (waters of the U.S.) only if there is no practicable alternative which would have less adverse effects. The Guidelines state that USACE may not issue a permit if there is a least environmentally damaging practicable alternative (LEDPA), to the proposed discharge that would have less effects on waters of the U.S., and not have any other significant adverse environmental consequences. Per Guidelines, documentation is needed that a sequence of avoidance, minimization, and compensation measures have been followed, in that order. The Guidelines also restrict permitting activities that violate water quality or toxic effluent standards, jeopardize the continued existence of listed species, violate marine sanctuary protections, or cause "significant degradation" to waters of the U.S. In addition, every permit from the USACE, even if not subject to the 404(b)(1) Guidelines, must meet general requirements. See 33 CFR 320.4.

2.2 STATE LAWS AND REQUIREMENTS

PORTER-COLOGNE WATER QUALITY CONTROL ACT

California's Porter-Cologne Act, enacted in 1969, provides the legal basis for water quality regulation within California. This Act requires a "Report of Waste Discharge" for any discharge of waste (liquid, solid, or gaseous) to land or surface waters that may impair beneficial uses for surface and/or groundwater of the State. It predates the CWA and regulates discharges to waters of the State. Waters of the State include more than just waters of the U.S., like groundwater and surface waters not considered waters of the U.S. Additionally, it prohibits discharges of "waste" as defined and this definition is broader than the CWA definition of "pollutant". Discharges under the Porter-Cologne Act are permitted by Waste Discharge Requirements (WDRs) and may be required even when the discharge is already permitted or exempt under the CWA.

The State Water Resources Control Board (SWRCB) and RWQCBs are responsible for establishing the water quality standards as required by the CWA, and regulating discharges to protect beneficial uses of water bodies. Details regarding water quality standards in a project area are contained in the applicable RWQCB Basin Plan. In California, Regional Boards designate beneficial uses for all water body segments in their jurisdictions, and then set standards necessary to protect these uses. Consequently, the water quality standards developed for particular water body segments are based on the designated use and vary depending on such use. Water body segments that fail to meet standards for specific pollutants are included in a Statewide List in accordance with CWA Section 303(d). If a Regional Board determines that waters are impaired for one or more constituents and the standards cannot be met through point source or non-source point controls (NPDES permits or Waste Discharge Requirements), the CWA requires the establishment of Total Maximum Daily Loads (TMDLs). TMDLs specify allowable pollutant loads from all sources (point, non-point, and natural) for a given watershed. The SWRCB implemented the requirements of CWA Section 303(d) through Attachment IV of the Caltrans Statewide MS4, as it includes specific TMDLs for which Caltrans is the named stakeholder.

STATE WATER RESOURCES CONTROL BOARD AND REGIONAL WATER QUALITY CONTROL BOARDS

The SWRCB adjudicates water rights, sets water pollution control policy, and issues water board orders on matters of statewide application, and oversees water quality functions throughout the state by approving Basin Plans, TMDLs, and NPDES permits. RWCQBs are responsible for protecting beneficial uses of water resources within their regional jurisdiction using planning, permitting, and enforcement authorities to meet this responsibility.

- **NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PROGRAM**

Municipal Separate Storm Sewer Systems (MS4)

Section 402(p) of the CWA requires the issuance of NPDES permits for five categories of stormwater dischargers, including MS4s. The U.S. EPA defines an MS4 as "any conveyance or system of conveyances (roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, human-made channels, and storm drains) owned or operated by a state, city, town, county, or other public body having jurisdiction over storm water, that are designed or used for collecting or conveying stormwater." The SWRCB has identified the Department as an owner/operator of an MS4 pursuant to federal regulations. The Department's MS4 permit covers all Department rights-of-way, properties, facilities, and activities in the state. The SWRCB or the RWQCB issues NPDES permits for five years, and permit requirements remain active until a new permit has been adopted.

The Department's MS4 Permit, NPDES No. CAS000003, SWRCB Order No. 2012-0011-DWQ (adopted on September 19, 2012 and effective on July 1, 2013), as amended by Order No. 2014-0006-EXEC (effective January 17, 2014), Order No. 2014-0077-DWQ (effective May 20, 2014) and Order No. 2015-0036-EXEC (conformed and effective April 7, 2015) contains three basic requirements:

1. The Department must comply with the requirements of the CGP (see below);

2. The Department must implement a year-round program in all parts of the State to effectively control stormwater and non-stormwater discharges; and

3. The Department stormwater discharges must meet water quality standards through implementation of permanent and temporary (construction) Best Management Practices (BMPs) to the Maximum Extent Practicable, and other measures deemed necessary by the SWRCB and/or other agency having authority reviewing the stormwater component of the project.

To comply with the permit, the Department developed the Statewide Storm Water Management Plan (SWMP) to address stormwater pollution controls related to highway planning, design, construction, and maintenance activities throughout California. The SWMP assigns responsibilities within the Department for implementing stormwater management procedures and practices as well as training, public education and participation, monitoring and research, program evaluation, and reporting activities. The SWMP describes the minimum procedures and practices the Department uses to reduce pollutants in stormwater and non-stormwater discharges. It outlines procedures and responsibilities for protecting water quality, including the selection and implementation of BMPs. The proposed project will be programmed to follow the guidelines and procedures outlined in the latest SWMP to address stormwater runoff.

CONSTRUCTION GENERAL PERMIT

Construction General Permit (CGP) (NPDES No. CAS000002, SWRCB Order No. 2009-0009-DWQ, adopted on November 16, 2010) became effective on February 14, 2011 and was amended by Order No. 2010-0014-DWQ and Order No. 2012-0006-DWQ. The permit regulates stormwater discharges from construction sites which result in a Disturbed Soil Area (DSA) of one acre or greater, and/or are smaller sites that are part of a larger common plan of development.

Construction activity that results in soil disturbances of less than one acre is subject to this CGP if there is potential for significant water quality impairment resulting from the activity as determined by the RWQCB. Operators of regulated construction sites are required to develop a SWPPP to implement soil erosion and pollution prevention control measures, and to obtain coverage under the CGP.

The CGP contains a risk-based permitting approach by establishing three levels of risk possible for a construction site. Risk levels are determined during the planning, design, and construction phases, and are based on project risk of generating sediments and receiving water risk of becoming impaired. Requirements apply according to the Risk Level determined. For example, a Risk Level 3 (highest risk) project would require compulsory stormwater runoff pH and turbidity monitoring, and pre- and post-construction aquatic biological assessments during specified seasonal windows.

This project proposes to create 4.06 acres of DSA. Therefore, this project will require a Storm Water Pollution Prevention Plan (SWPPP) and coverage under the CGP. A preliminary project risk level assessment has determined this project to be a Risk Level 2. This is based on the variable risk level components for the project at this section of San Jose Creek with a Watershed Erosion Estimate (=RxKxLS) in tons/acre of 37.24 and sediment risk factor (Risk A).

For all projects subject to the CGP, the applicant is required to hire a Qualified Storm Water Pollution Prevention Plan (SWPPP) Developer (QSD) to develop and implement an effective SWPPP. All Project Registration Documents, including the SWPPP, are required to be uploaded into the SWRCB's on-line Stormwater Multiple Application and Report Tracking System (SMARTS), at least 30 days prior to construction.

During construction, effective combinations of temporary and permanent erosion and sediment controls will be used. Storm water management for the site will be coordinated through the contractor with Caltrans construction personnel to effectively manage erosion from the DSA's by implementing a SWPPP. The SWDR (Storm Water Data Report) prepared for this project identifies selected BMP's recommended for the project.

SECTION 401 PERMITTING

Under Section 401 of the CWA, any project requiring a federal license or permit that may result in a discharge to a water of the United States must obtain a 401 Certification, which certifies that the project will be in compliance with State water quality standards. The most common federal permit triggering 401 Certification is a CWA Section 404 permit, issued by USACE. The 401 permit certifications are obtained from the appropriate RWQCB, dependent on the project location, and are required before USACE issues a 404 permit.

In some cases, the RWQCB may have specific concerns with discharges associated with a project. As a result, the RWQCB may prescribe a set of requirements known as Waste Discharge Requirements (WDRs) under the State Water Code (Porter-Cologne Act). WDRs may specify the inclusion of additional project features, effluent limitations, monitoring, and plan submittals that are to be implemented for protecting or benefiting water quality. WDRs can be issued to address both permanent and temporary discharges of a project.

2.3 REGIONAL AND LOCAL REQUIREMENTS

The Central Coast Water Board implements the California Water Code and the Basin Plan and is intended to achieve measurable results in water quality and watershed improvement over time. The Basin Plan creates a structure to focus the Central Coast Water Board on the highest priorities for beneficial use protection and more strategically aligns the Central Coast Water Board with current and future challenges and opportunities in watershed protection.

There are no Water Quality Management Plans, anti-degradation rules, or requirements of the local agency's NPDES permit relevant to the project location.

3. AFFECTED ENVIRONMENT

3.1 GENERAL ENVIRONMENTAL SETTING

The project is located south of the City of Goleta in Santa Barbara County. State Route 217 begins at the interchange with SR 101 north of the project site and is located on marine terraces bounded by the Santa Ynez Mountains to the north. The route continues

in a south-west direction and enters flat marsh land of the San Jose Creek flood plain and the Goleta Slough/Estuary then terminates near the University of California Santa Barbara (UCSB) campus entrance adjacent to the Pacific Ocean (refer to Figure 1 - Project Location Map).

Climate in the project area is moderate year-round. The average annual precipitation is 15 inches and the average temperature is 67° F. Nearly all precipitation falls during Pacific storms between October and May, with the majority falling during winter months. The main drainage feature within the project limits is San Jose Creek, which flows beneath State Route 217 and into the Pacific Ocean. According to historical records, periods of drought lasting over several years, appear to be cyclical and recur about every 40 years in this area. The most recent drought occurred from 2011 to 2016, with steadily declining total annual rainfall for that period. Generally, droughts within the region have lasted an average of five years, with a maximum of nine years. Contrarily, the region has also experienced periods of severe flood. The most recent flood occurred in February of 2017, with a total rainfall of 21.53 inches for that month. Accordingly, the high degree of variability in precipitation is directly related to stream flows within San Jose Creek.

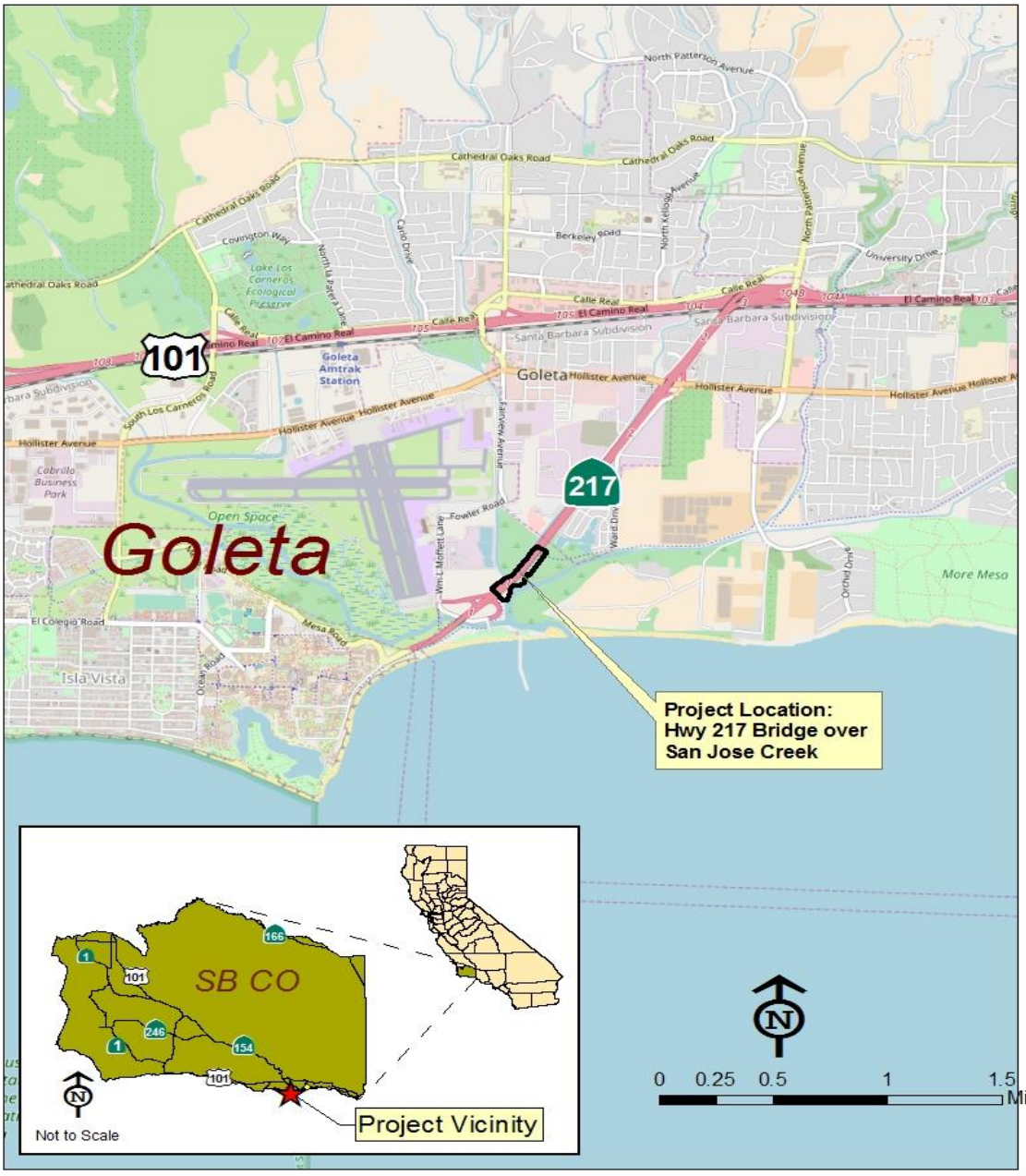

Figure 1. Project Location Map

3.1.1 POPULATION AND LAND USE

The proposed project location is located immediately south-west of the City of Goleta and north-east of UCSB. The surrounding project area is primarily business and residential use.

Figure 2. San Jose Creek at Route 217

3.1.2 TOPOGRAPHY

The region falls within the Transverse Ranges Geomorphic Province of California. Geologic units in the region consist of sedimentary rocks of the Monterey and Rincon Shale formations overlain by marine terrace deposits. Topography at the site is generally flat and consists of floodplain/ marsh deposits of fine grained sediments and organic materials originating from the Santa Ynez Mountains.

3.1.3 HYDROLOGY

The project is located in the South Coast Hydrologic Unit, South Coast Hydrologic Area and the Goleta Sub-Area (HSA). The HSA for San Jose Creek is 315.31. The receiving

water body for this project is San Jose Creek. The project location is approximately 1,440 feet up stream from the Pacific Ocean at Goleta Beach.

San Jose Creek watershed is located within the South Coast Hydrologic Unit and is a tributary to the Goleta Slough watershed. The San Jose Creek headwaters originate at the coastal slopes of the Santa Ynez Mountains at an elevation of 2,760 feet. The creek flows from the Santa Ynez Mountains, through the Goleta Valley and to the Pacific Ocean. From its headwaters to the Pacific Ocean, San Jose Creek flows roughly 9 miles south, draining an area of approximately 9.5 mi^2. In general, creeks in the local area drain small, steep watersheds that originate in the

Santa Ynez Mountains and continue through foothills and coastal terrace areas before emptying

into the ocean. Before reaching the ocean, the flows of some creeks may pass through wetlands such as the Goleta Slough. Flow levels in local creeks exhibit a high degree of variability through time due to a combination of factors. These include the small size and steep gradient of local watersheds, and the highly seasonal pattern of rainfall that occurs in the local area and throughout southern California as a whole. High creek flows occur during and immediately after heavy rainfall events, which occur almost exclusively between October and May in the local area. Generally, low surface flows or dry conditions exist between rainy periods. Some local creeks are also fed by mountain springs, seeps, and groundwater, and maintain perennial (year-round) flow. Perennial creek sections are usually in the mountains and

foothills, where seeps and springs are typically located. Lowland creeks and higher elevation
creeks without substantial inputs from springs, seeps, and groundwater typically have intermittent (i.e., seasonal) flow.

3.1.3.1 WATER QUALITY OBJECTIVES

The 1972 Amendments to the federal Water Pollution Control Act declared that elimination of discharge of pollutants into navigable waters (State Water Resource Control Board, 1972) is a national goal. The establishment of a base or reference point is a prerequisite to water quality control. The Regional Water Quality Control Board needs to utilize current technical guidelines, available historical data, and enforcement feasibility when formulating water quality objectives. The general water quality objectives established for all inland surface waters, enclosed bays, and estuaries within the Central Coast Region's Hydrologic Basin are color, tastes and odor, floating material, suspended material, settleable material, oil and grease, biostimulatory substances, sediment, turbidity, pH, dissolved oxygen, temperature, toxicity, pesticides, chemical constituents, organic substances, and radioactive substances.

3.1.3.2 BENEFICIAL USES OF RECEIVING WATER BODIES

Beneficial uses are critical to water quality management in California. According to state law, the beneficial uses of California's waters that may be protected against quality degradation include, but are not limited to, "...domestic; municipal; agricultural and industrial supply; power generation; recreation; aesthetic enjoyment; navigation; and preservation and enhancement of fish, wildlife, and other aquatic resources or preserves" (Water Code Section 13050). Beneficial uses for surface and ground waters are divided into the 20 standard categories with definitions listed in the Basin Plan. Protection and enhancement of existing and potential beneficial uses are the primary goals of water quality planning. The beneficial uses for San Jose Creek as listed in the September 2017 RWQCB Basin Plan are: MUN, AGR, GWR, REC1, REC2, WILD, COLD, WARM, MIGR, SPWN, BIOL, RARE, EST, FRESH and COMM.

3.1.3.3 IMPAIRMENTS OF RECEIVING WATER BODIES

There have been many studies performed to monitor and characterize highway storm water runoff throughout the State. Commonly found pollutants are Total Suspended Solids (TSS), nitrate nitrogen, Total Kjeldahl Nitrogen (TKN), phosphorous, Orthophosphate, Copper, Lead and Zinc. Some sources of these pollutants are natural erosion, phosphorus from tree leaves, combustion products from fossil fuels, and the wearing of brake pads and tires. In some cases, these storm water pollutants can lead to impairment of the receiving water body, or exacerbation of existing impairments.

The Pacific Ocean at Goleta Beach is listed on the 2014/16 303(d) list of impaired water bodies, as impaired by total coliform. San Jose Creek is listed on the 2014/2016 303(d) list of impaired water bodies (Category 5A) as impaired by Chloride, Fecal Coliform, Escherichia Coli, Specific Conductivity, sodium and pH. Category 5 criteria is defined as a water segment where standards are not met and a TMDL is required, but not yet completed, for at least one of the pollutants being listed for this segment. A TMDL was established for fecal coliform in 2013, TMDL standards are anticipated to be adopted by 2021 for chloride, sodium, electrical conductivity and pH

3.1.3.4 FLOODPLAINS

Flooding along the Pacific Coast of Santa Barbara County is typically associated with the simultaneous occurrence of very high tides, large waves, and storm swells during the winter. Flood hazards along the coast are generated by swell waves from offshore storms, by wind waves from land-falling storms, and on rare occasions by tsunamis.

The project site is adjacent to Zone “A”, which is described in the FIRM Map #06083C1362G as having a base flood elevation of 11 feet at the San Jose Creek Bridge at State Route 217. This location is designated by FEMA as a Special Flood Hazard Area.

3.1.3.5 MUNICIPAL SUPPLY

There are no drinking water and or water recharge facilities at or downstream of the project location with exception to fire suppression hydrants.

3.1.3.6 GROUNDWATER HYDROLOGY

The project is within the Goleta (Unit 3-16) groundwater basin which is separated from the
ocean on the south by the More Ranch Fault. For the purposes of water rights, the Goleta Groundwater Basin has been divided into two separate sub-basins. These sub-basins are separated by an inferred low permeability barrier that separates areas of differing water quality
running roughly north-south at Aero Camino. Specifically, San Jose Creek lies within the Goleta

North-Central Sub-basin, which encompasses approximately 5,700 acres and extends from the Modoc Fault on the east to a northwest trending line marking an inferred low permeability zone on the west. The Goleta West Sub-basin encompasses approximately 3,500 acres and extends west from the inferred low permeability zone to outcrops of Tertiary bedrock. Historically, the Goleta Groundwater Basin (including both sub-basins) was in a state of severe overdraft, which resulted in a long-term moratorium on new water connections to the Goleta Water District (GWD).

Per the Central Coast Regional Water Quality Control Board’s Basin Plan, the general water quality objectives for all groundwater in the Central Coast area include tastes, odors, and radioactivity. Groundwater shall not contain taste or odor producing substances in concentrations that adversely affect beneficial uses. In addition, radionuclides shall not be present in concentrations deleterious to humans, plants, animals, or aquatic life.

Groundwater elevations have not been determined pending geotechnical investigations.

3.1.4 GEOLOGY/SOILS

San Jose Creek is located in the western portion of the Transverse Ranges geomorphic province of southern California. The Transverse Ranges province is oriented in a general east-west direction, which is transverse to the general north-northwest structural trend of the

remainder of California's coastal mountain ranges. The Transverse Ranges province extends from the San Bernardino Mountains in Riverside County (east) to Point Arguello (west). The province is bounded to the north by the San Andreas and Santa Ynez faults, the east by the Mojave geomorphic province, the south by the Peninsular geomorphic province and Pacific Ocean, and the west by the Pacific Ocean. The San Jose Fault passes in this direction through the agriculturally influenced portion of San Jose Creek.

The western Transverse Ranges are composed of sedimentary, volcanic, and metamorphic rocks ranging in geologic age from the Jurassic (144- to 208-million years ago) to Holocene (recent). North-south tectonic compression has resulted in regional east-west trending faults and folds within rocks of the western Transverse Ranges (Norris and Webb, 1990). The Santa Ynez Mountains are one of the east-west trending mountain ranges of the western Transverse Ranges province. These mountains are formed by a large east-west trending anticline (a fold in the rocks creating a mound or ridge) that has been complexly faulted. The Santa Ynez Mountains have been tectonically uplifted, and are composed mainly of marine sandstone and shale rock formations that range in geologic age from Eocene (36 to 57 million years ago) to Holocene (recent). The highest elevation of the local mountains is at Divide Peak, 4,690 feet above sea level.

The soils located within the San Jose Creek watershed are characterized by a mixture of older alluvial sediments that have been dissected by local drainages and locally inundated by the Goleta Slough. The foothills of the Goleta Valley are composed of Miocene- to Oligocene-age sediments, consisting of Sisquoc, Monterey, Rincon, Vaqueros, Sespe, and Coldwater Formations. The Sisquoc and Monterey Formations have also been faulted to the surface along the coastal portion of the valley by the More Ranch fault zone.

Erosion and transport of sediments is especially prevalent during heavy rainfall and corresponding high creek flows. The scouring action of high gradient creek flows creates sequences of steep riffles, falls, and pools of varying depths within upper reaches of the San Jose creek channel. The creekbanks and channels are typically dominated by exposed bedrock and large boulders, some of which are tens of feet in diameter. Creek bottoms also contain smaller boulders and deposits of cobble and gravel. Sand and finer sediments (i.e., silt and clay) are less common. As the creek gradient lessens through the foothills and coastal plain areas, creek velocity and shear strength (i.e., erosive capability) are also reduced. Due to lower creek velocity, the lowland areas of the creek are typically where sands and fine sediments are deposited, rather than scoured. During high flows, lowland creeks flood over their banks, lose velocity, and deposit large volumes of cobble, gravel, sand, and finer sediments (i.e., silts, clays) that have been eroded from the mountains and foothills. This deposition creates flat, wide floodplains, which are typically covered with dense riparian forests and oak woodlands.

However, within San Jose Creek, these local floodplains have fertile soils, and have been largely encroached upon by agriculture and urban uses.

3.1.5 BIOLOGICAL COMMUNITIES

3.1.5.1. AQUATIC HABITAT

Waters of the United States are present but no areas of special biological significance are noted within the Central Coast Regional Water Quality Control Board boundaries.

3.1.5.1.1 SPECIAL STATUS SPECIES

Several special status aquatic species are present or assumed to be present (tidewater goby, steelhead, red-legged frog, amongst others) within the project footprint. There are six state endangered species anticipated (refer to Table 1). The project falls within the Federal Critical Habitat limits for California red-legged frog and Steelhead. The species list below includes all species within the Goleta Quad Map. Of these Steelhead are known to be present within the project footprint and all others listed are suspected within the footprint.

Table 1. Special Status Species

Special-status species with potential to occur within or adjacent to the project area		**Status**		
Common Name	**Scientific Name**	**Fed**	**CA**	**Other**
PLANTS				
Star Lilly	*Ziganenus fremontili var.inezianus*		SE	
Checker Bloom	*Silalcea malveflora ssp.califoenica*		SE	
Chaparral brush mallow	*Malacothammanus fasciculatus var.*		SE	
ANIMALS				
California red-legged frog	*Rana drytonii*			SC
Southern Sea Otter	*Enhydra lutris nereis*	FE	ST	
Southwestern Willow Flycather	*Empidonax traillii extimus*	FT, FCH		SC
Tidewater goby	*Eucyclogobius newberryi*	FE		SC

Special-status species with potential to occur within or adjacent to the project area		Status		
Common Name	**Scientific Name**	**Fed**	**CA**	**Other**
Steelhead	*Oncorhynchus mykiss*	FE, FCH		
Marbled Murelet	*Branchyramphus mamorathis*	FT		SC
Western Snowey Plover	*Charadrius alexandrines extimus*		ST	SC
Vernal Pool Fairy Shrimp	*Branchianecta lynchi*	FT	ST	

Key to Status

FE = Federal Endangered SE = State Endangered FCH = Federal Critical Habitat
FT = Federal Threatened ST = State Threatened PCH = Proposed Critical Habitat
FCS = Federal Candidate Species SCS = State Candidate Species SC = Species of Concern

3.1.5.1.2 STREAM/RIPARIAN HABITATS

The project site does contain wetland resources and riparian habitat.

3.1.5.1.3 WETLANDS

The project site is included in the 440-acre Goleta Slough Ecological Reserve and includes a variety of habitat types: estuarine, riverine, and palustrine wetlands; coastal bluff scrub; introduced grassland; coastal sage scrub; and Southern coastal oak woodland. Species include ducks, shorebirds, rails, herons, raptors, mice, voles, raccoons, weasels, skunk, snakes, and invertebrates.

The Slough's history involves the diking and filling of extensive areas of salt marsh and alluvial fan, the realignment of the Slough's creeks and their channelization, and the destruction of upland habitats within and adjacent to the Slough. The purpose of the reserve is to protect critical coastal salt marsh habitat. The property was designated as an ecological reserve by the Fish and Game Commission in 1983.

3.1.5.1.4 FISH PASSAGE

The existing conditions for San Jose Creek at Route 217 meet fish passage criteria for adult salmonids through high and low tide cycle. All fish passage criteria are met for juvenile

salmonids at high and low fish passage flows. The project location within State ROW does not have fish passage issues. However, barriers to upstream migration do exist. This project is located outside of the effects of these barriers.

4. ENVIRONMENTAL CONSEQUENCES

4.1 INTRODUCTION

This section provides an overview of the proposed storm water drainage system, including post-construction BMPs, the use of any existing systems, and any proposed Low-Impact Development (LID) concepts. Impact to water quality can be temporary and or a long-term effect.

Generally, temporary impact applies to the construction phase of a project. Projects involving 1.0 acre or more of Disturbed Soil Area (DSA) soil are required to obtain coverage under Construction General NPDES Permit Number CAS000002 (CGP). Projects disturbing less than 1.0 acre are covered by Caltrans Statewide Municipal Separate Storm water Sewer System (MS4) NPDES Permit Number CAS000003 (Caltrans' Statewide MS4 NPDES).

Long-term impact is usually caused by the addition of new impervious surfaces (NIS). Caltrans projects that create one (1) acre or more of NIS are subject to 'Post-Construction Treatment Control' requirements of Caltrans' Statewide MS4 NPDES Permit Number CAS000003.

4.2 POTENTIAL IMPACTS TO WATER QUALITY

Potential impacts to water quality both temporary and permanent potential impacts are addressed below. This section provides an overview of the proposed storm water drainage system, including post-construction BMPs, the use of any existing systems, and any proposed Low-Impact Development (LID) concepts. Impact to water quality can be temporary and or a long-term effect.

Generally, temporary impact applies to the construction phase of a project. Projects involving 1.0 acre or more of Disturbed Soil Area (DSA) soil are required to obtain coverage under Construction General NPDES Permit Number CAS000002 (CGP). Projects disturbing less than 1.0 acre are covered by Caltrans Statewide Municipal Separate Storm water Sewer System (MS4) NPDES Permit Number CAS000003 (Caltrans' Statewide MS4 NPDES).

Long-term impact is usually caused by the addition of new impervious surfaces. Caltrans projects that create one (1) acre or more of NIS are subject to 'Post-Construction Treatment Control' requirements of Caltrans' Statewide MS4 NPDES Permit Number CAS000003.

During construction, the project has the potential for temporary water quality impacts due to grading and excavation activities and removal of existing vegetation on the roadway portion of the project, which can cause increased erosion. Demolition of the existing bridge is expected to generate large amounts of waste, construction debris, and dust. Additionally, demolition of the bridge and its sub-structure will likely disturb stream bed sediments. Storm water runoff from the project site and Highway 217 storm drains may transport pollutants to San Jose Creek from construction activities if BMP's are not properly implemented. Storm water runoff drains into the creek and eventually discharges to the Pacific Ocean at Goleta beach. Generally, as the disturbed soil area increases, the potential for temporary water quality impacts also increases.

The DSA for this project is estimated to be 4.03 acres. This was calculated by summing up the total bridge construction area, structure excavation area, potential local road excavation areas, and potential contractor stockpiling/staging areas.

4.2.1 ANTICIPATED CHANGES TO THE PHYSICAL/CHEMICAL CHARACTERISTICS OF THE AQUATIC ENVIRONMENT

4.2.1.1 SUBSTRATE

The substrate in San Jose creek at the bridge site is anticipated to be disturbed due to the demolition and construction phases of the project. During bridge demolition the existing driven concrete pile extensions will require physical removal resulting in substrate disturbance at depth within the live channel. Likewise, disturbance of the substrate will occur during the installation of the new CISS pile extensions of the new bridge. If in the case a coffer dam system is constructed for purposes of removal and installation of piles, the impact to water quality will be reduced. Abutment removal and installation may also contribute to substrate disturbance if appropriated BMP's are not deployed to control. sediment transport into the stream channel

4.2.1.2 CURRENTS, CIRCULATION OR DRAINAGE PATTERNS

Minor temporary changes are anticipated to occur in the live channel regarding circulation, drainages patterns and rates of flow to the creek as the old bridge piles are removed and replaced with new piles and pier. Tidal phases will not be impacted by the project.

Post construction drainage patterns, flow, volume, rate, depth, should return to near existing conditions based on the foot print and design of the new bridge.

4.2.1.3 SUSPENDED PARTICULATES

Some turbidity is anticipated to occur with the removal and installation of bridge

components however provisions for minimizing turbidity from sediment disturbance will be incorporated into GCP.

4.2.1.4 OIL, GREASE AND CHEMICAL POLLUTANTS

Oil, grease and other pollutants including metals and pesticides are not anticipated to enter the creek channel when proper BMP's are applied to construction activities.

4.2.1.5 TEMPERATURE, OXYGEN DEPLETION AND OTHER PARAMETERS

Temperature, oxygen depletion including litter are not anticipated to change or enter the creek.

4.2.1.6 FLOOD CONTROL FUNCTIONS

Flood control will not be influenced from demo, construction and post construction conditions.

4.2.1.7 STORM, WAVE AND EROSION BUFFERS

Storm, Wave and Erosion Buffers will not be affected by the project. Wetlands may serve as buffer zones, shielding upland areas from wave actions, storm damage and erosion, per 40 CFR § 230.41.

4.2.1.8 EROSION AND ACCRETION PATTERNS

Erosion of stream banks is possible during the demolition and construction phases of the project, however if proper engineering controls are applied to the project during planning, design and construction, degradation to water quality will be minimized or to a level of less than significant.

4.2.1.9 AQUIFER RECHARGE/GROUNDWATER

Aquifer recharge will be insignificant based on the increase of net impervious surface from the project.

The proposed project would have minimal localized impacts to the flow of groundwater. Existing groundwater recharge areas within the project limits would be negligibly affected due to the small increase in impervious area, which negligibly decreases the amount of area available for infiltration. The impacts would not be significant in comparison to the overall groundwater area and due to the highly variable nature of the existing groundwater flow paths. In addition, because groundwater resources in the area do not represent a sole source aquifer, no significant impacts to water quality in groundwater wells are anticipated.

Land based excavation work would consist of abutment and supporting pile construction for the new bridges with some minor earthwork for abutment slopes and bent foundations. Dewatering may be needed if seasonally high groundwater is encountered. If any groundwater occurs, perforated manifolds would be installed in the ground and water

would be suctioned out into a baker tank or settling basins for treatment. The proposed improvements do not involve substantial excavations that would affect groundwater resources.

4.2.2 ANTICIPATED CHANGES TO THE BIOLOGICAL CHARACTERISTICS OF THE AQUATIC ENVIRONMENT

4.2.2.1 SPECIAL AQUATIC SITES

San Jose Creek is within the greater Goleta Slough State Marine Conservation Area (SMCA) and is a marine protected area in Goleta in Santa Barbara County on California's south coast. The SMCA covers .25 square miles and consists of wetland habitat including creek channels and mudflats. It is designated as critical habitat for several threatened and endangered species.

4.2.2.2 HABITAT FOR FISH AND OTHER AQUATIC ORGANISMS

The SMCA is designated as critical habitat for several threatened and endangered species.

4.2.2.2.1 FISH PASSAGE (BENEFICIAL USES)

There are currently no barriers to fish or aquatic species passage in San Jose Creek between the Pacific Ocean and upstream of the SR-217 bridge. According to Caltrans' fish passage analysis (completed in November 2017), the existing bridge at SR-217 does not negatively affect fish passage conditions along San Jose Creek and the proposed bridge replacement will maintain existing fish passage characteristics. The existing and proposed conditions meet NMFS and CDFW fish passage criteria. A total fish passage barrier was present in San Jose Creek approximately 2,000 ft. upstream of the bridge, over 1,000 ft. outside of the project limits and BSA, where the stream channel was lined in concrete for at least 4,000 feet. In 2013, SBC Flood Control District replaced this with a wider and articulated concrete revetment bottom that includes fish passage weirs. The status of fish passage through this revetment is currently undetermined.

4.2.2.3 WILDLIFE HABITAT

The Goleta Slough and its tributary streams may play an important role as migration/movement corridors for fish and wildlife species moving between the Pacific Ocean and coastal areas to the upper watersheds, and the wildlife habitats of the Santa Ynez Mountains (Padre Associates 2010). Riparian corridors provide cover and forage, and facilitate wildlife movement through developed areas such as that located north of the Goleta Slough. The Goleta Slough may also function as important habitat for bird species during migration through the Pacific Flyway. Goleta Point is known for providing views of northward seabird migration in spring.

4.2.2.3.1 WILDLIFE PASSAGE (BENEFICIAL USES)

Wildlife migration corridors serve as connections between habitat patches that allow for physical and genetic exchange between otherwise isolated animal populations. Migration corridors may be local such as between foraging and nesting or denning areas, or they may be regional or “large-scale.” "Habitat linkages" are migration corridors that contain contiguous stands of native vegetation between source and receiver areas. Wildlife migration corridors are essential to the regional ecology of an area as they provide avenues of genetic exchange and allow animals to access alternative territories as fluctuating dispersal pressures dictate.

4.2.2.4 ENDANGERED OR THREATENED SPECIES

San Jose Creek and Goleta Slough/Estuary are inhabited by several species that are threatened and endangered including the California Steelhead Trout, Western Snowy Plover,Tidewater Goby to name a few.

4.2.2.5 INVASIVE SPECIES

The introductions of exotic species into estuarine and marine habitats has been well documented and can be intentional (e.g., for the purpose of stock or pest control) or unintentional (e.g., fouling organisms). Exotic fish, shellfish, pathogens, and plants can enter the environment from industrial shipping (e.g., as ballast), recreational boating, aquaculture, biotechnology, and aquariums. The transportation of nonindigenous organisms to new environments can have many severe impacts on habitat.

4.2.3 ANTICIPATED CHANGES TO THE HUMAN USE CHARACTERISTICS OF THE AQUATIC ENVIRONMENT

4.2.3.1 EXISTING AND POTENTIAL WATER SUPPLIES; WATER CONSERVATION

The Goleta Water District is responsible for providing the Goleta Valley with a safe and reliable supply of water for residential, commercial, agricultural, industrial, and institutional uses. Since the early 1950s, the District has supplied water from a variety of sources, including local surface water, groundwater, and imported supplies. Future imported water supplies from distant sources are becoming more restricted and less reliable. Environmental commitments, periods of dry years, and judicial decisions have all contributed to significant cuts in imported supplies in recent years, and reduced reliability for future years.

4.2.3.2 RECREATIONAL OR COMMERCIAL FISHERIES

Recreational and commercial fisheries are not commonly practiced within the lower San Jose Creek and Goleta Slough/Estuary. However, recreational and commercial fisheries opportunities are found within the Goleta beach and offshore. San Jose creek remains an important juvenile habitat for anadromous and inshore aquatic species.

4.2.3.3 OTHER WATER RELATED RECREATION

San Jose Creek and Goleta Slough/Estuary provide opportunities for boating, bird watching and other related activities.

4.2.3.4 AESTHETICS OF THE AQUATIC ECOSYSTEM

Access to the coast along this fully marine protected area is available from Goleta Beach County Park, various coastal access points on University property (parking fees apply), staircases and trails in the community of Isla Vista, and from the Ellwood Beach area of Goleta, California. Each area offers excellent beachgoing, swimming, surfing and other beach and surf recreational opportunities. Off Isla Vista and towards Coal Oil Point, snorkeling and diving are excellent. A large open space adjoining the west edge of Isla Vista connects with the University's Coal Oil Point Reserve, offering spectacular open coastal views with hiking and picnicking opportunities. The dunes and blufftop here are part of an elaborate restoration effort, including a docent program to protect and interpret the nesting area of rare snowy plover shorebirds.

Goleta Beach is home to the Beachside Bar and Grill, and Isla Vista offers many student-oriented eateries, services and businesses. Kayaking rentals are available in season at Goleta Beach.

4.2.3.5 PARKS, NATIONAL AND HISTORIC MONUMENTS, NATIONAL SEASHORES, WILD AND SCENIC RIVERS, WILDERNESS AREAS, ETC.

The project is located within the larger Goleta Slough State Marine Conservation Area (SMCA) is a marine protected area in Goleta in Santa Barbara County on California's south coast. The SMCA covers .25 square miles. Goleta Beach County Park is located within the SMCA.

4.2.3.6 TRAFFIC/TRANSPORTATION PATTERNS

State Route 217 is the main corridor for access to UCSB Campus, Goleta Beach County Prk and the City of Goleta Transportation pattern normally revolve around student, faculty and support staff attendance at the University. Likewise, closer to the 217 -101 interchanges the City of Goleta is serviced both routes.

4.2.3.7 ENERGY CONSUMPTION OF GENERATION

The project will not generate energy however it will consume energy by means of street lighting and /or traffic control devices if deemed necessary.

4.2.3.8 NAVIGATION

The bridge project should not impede navigable traffic unless otherwise by impermissible navigable standards or access restrictions.

4.2.4 TEMPORARY IMPACTS TO WATER QUALITY

During construction, the build alternatives (Alternative 1 Design - variation 1 and Alternative 1 Design - variation 2) has potential for temporary water quality impacts to jurisdictional biotic/aquatic (wetland) areas and Waters of the United States. Potential temporary impacts would occur to United States Army Corps of Engineers, California Department of Fish and Wildlife, or California Coastal Commission jurisdictional biotic/aquatic (wetland) areas associated with San Jose Creek, Goleta Slough/Estuary and the Pacific Ocean by potentially changing the waters' chemical and biological compositions. These temporary impacts can result from temporary stream diversion installation and removal, streambed disturbance, vegetation removal, and road/bridge construction.

Stage 1 of the project would include rerouting all traffic to the SB lanes of the bridge and demolishing the existing NB portion of the bridge, and then replacing the NB portion. The SB portion of the bridge will be treated in the reverse order. Demolition of the bridge and reconstruction would temporarily impact San Jose Creek from removal of the bridge components and their reconstruction. A proposed cofferdam would be installed upstream and downstream 50 feet of the SR-217 bridge and connected to a diversion pipe or channel. The diversion pipe would run from the dam, under the bridges, then terminate downstream of the bridges. If pools remain within the cofferdam excluded area, these pools would be dip netted and cleared of fish and other organisms that may remain. Any remaining water would be suctioned out of pools using a mesh screen to a baker tank or settling basin.

4.2.4.1 NO BUILD ALTERNATIVE

The no-build alternative will maintain the status quo and leave the existing bridge in place with no modifications. This alternative will not meet the purpose and need because the existing bridge is structurally deficient, and without correction could lead to bridge failure.

4.2.4.2 BUILD ALTERNATIVES

The "build" alternatives both have a single central pier, labeled "pier 2," located between abutment 1 (west side of the bridge) and abutment 3 (east side of the bridge). This alternative has two design variations, one that replaces the bridge in-kind and one that provides elements for future jacking and raising of the structure to accommodate future sea level rise.

4.2.5 LONG-TERM IMPACTS DURING OPERATION AND MAINTENANCE

Bridge demolition and construction within jurisdictional wetlands and Waters of the United States also have potential permanent water quality impacts due to permanent filling of existing water resources. In addition, removal of riparian vegetation and stream bank modification can also lead to increased erosion. The project has the potential to cause permanent impacts to the United States Army Corps of Engineers, California Department of Fish and Wildlife, and California Coastal Commission jurisdictional areas associated with creeks and drainages that cross or are

located adjacent to the project area. Permanent impacts include the loss of biotic/aquatic (wetland) areas serving important water quality or water resources functions, changes to the stream bank configurations, and the loss of riparian habitat from the existing waterways. These potential permanent impacts are the result of bridge construction and shoulder widening, new drainage features, culvert extensions, or additional discharge of storm water.

This project however, will maintain the original line and grade, hydraulic capacity, and original purpose of the facility. The only new impervious surfaces created are due to widening for bicycle and pedestrian use. This will create approximately 0.1 acres of net new impervious surfaces. This project is located within an Urban MS4 area. In comparison with the overall watershed of the creek, the slight increase in flow due to the proposed project would be negligible.

4.2.5.1 NO BUILD ALTERNATIVE

The no Build Alternative would not meet the purpose and need of the project. Additionally, the existing bridge support system consists 66 piers/columns with half of those piers in the active channel. By removal of those piers flow patterns will revert to a more natural configuration aiding in sediment transport, esthetics and a possible reduction in “debris catch” under the bridge in high flow conditions during rain events and/or tidal movements.

4.2.5.2 BUILD ALTERNATIVES

The build alternatives, though creating short-term impacts to water quality, will improve long - term condition as discussed in the “No Build Alternative”.

4.3 IMPACT ASSESSMENT METHODOLOGY

Avoidance measures for the project were evaluated through preliminary consultation with local and regulatory agencies, and the PDT. There are wetlands and Waters of the United States and State within the project limits that are anticipated to be impacted. Other Environmentally Sensitive Areas (ESAs) that could have water quality impacts if disturbed include critical areas such as floodplains or disturbance of problem soils and steep slopes. Measures to minimize impacts to wetlands and Waters of the United States were done through consultation with regulatory partners and subsequent design modifications, such as the use of retaining walls. The project would maximize the avoidance of Environmentally Sensitive Areas that exist within or are adjacent to the project limits. Delineation of these areas can be achieved through field verification. Once verified, these locations would be delineated on all project contract plans. In addition, all proposed construction work in jurisdictional areas would be scheduled per regulatory construction windows to minimize impacts.

4.3.2 AVOIDANCE AND/OR MINIMIZATION MEASURES FOR STORM WATER AND GROUNDWATER

The overall design features for water quality impacts is a condition of the NPDES permit with the State Water Resource Control Board and other regulatory agencies requirements.

Implementation of Best Management Practices would be developed and incorporated into the project design and operations prior to the project startup. With the proper implementation of Best Management Practices, short-term construction related water quality impacts and permanent water quality impacts to surface and groundwater would be avoided or minimized.

The receiving water risks are confirmed by examining whether the project receiving water bodies are on the 303(d) List for sedimentation/siltation and/or have the beneficial uses of COLD, SPWN and MIGR. Storm water sampling is required at all discharge locations for this project. Numeric Effluent Limitations are applicable to Risk Level 2 areas such as this project. Risk Level 2 areas would require compulsory storm water runoff pH and turbidity monitoring. This project will not be required to incorporate bioassessment monitoring for impaired receiving waters within Risk Level 2 areas since the disturbed soil area is less than 30 acres. Bioassessment is only required on Risk level 3 projects that have more than 30 acres of disturbance.

Best Management Practices (BMP's) will be incorporated into the contract documents of this project to reduce the discharge of pollutants temporarily, during construction, and permanently to the Maximum Extent Practicable.

4.4 CUMULATIVE IMPACTS

The disturbed soil area (DSA) for this project is estimated to be 4.03 acres. This accounts for the bridge construction area, structure excavation area, potential local road excavation areas, road shoulder approaches to the bridge and potential contractor stockpiling/staging areas. No new net impervious surfaces are anticipated from the new bridge construction including new shoulders and 5-foot wide bicycle /pedestrian lane. This project is located within an Urban MS4 area; therefore, it could present minimal to potential cumulative increased volume related water quality impacts.

Other potential cumulative impacts typically include increases in: temperature, nutrients, litter, invasive species, etc.; which are all being addressed within the scope of the projects regulatory permit conditions of project approval. As such, minimal to no long-term cumulative impacts are anticipated from this project.

5. AVOIDANCE AND MINIMIZATION MEASURES

This WQA has determined that short-term water quality impacts could occur during project construction. The section discusses water quality Avoidance and Minimization Measures specifically for Construction, since there will be negligible permanent long-term impacts. The basis by which minimization measures are assessed and selected to avoid or minimize water quality impacts associated with the project have been determined by implementing BMP's that address Planning, Stabilization, and Sediment Control, which would be considered for application to the proposed creek improvements project as discussed below.

Planning. Proper planning, design, and construction techniques can minimize impacts normally associated with in-stream construction activities. Poor planning can adversely

affect soil, fish, and wildlife resources, land uses, or land users. Planning should consider: scheduling, minimizing disturbance area and construction time period; using pre-disturbed areas; and selecting appropriately sized equipment for the job.

Scheduling. Construction activities should be scheduled according to the relative sensitivity of the environmental concerns. Scheduling considerations will vary when working near San Jose Creek and Goleta Slough/Estuary within the project area. Work should be performed during the dry season and preferably low tide phases. By their very nature ephemeral drainages are usually dry in the summer, and therefore, in-stream construction activities will not cause significant water quality concerns. When working near streams, erosion and sediment controls should be implemented to keep sediment out of stream channel.

Minimize Disturbance. Minimize disturbance through: selection of the narrowest crossing location; limiting the number of equipment trips across a stream during construction; and minimizing the number and size of work areas (equipment staging areas and spoil storage areas).

Isolate equipment staging and spoil storage areas away from the stream channel using appropriate storm water control barriers. Provide stabilized access to the stream when in-stream work is required.

Use of Pre-Disturbed Areas. Locate project sites and work areas in pre-disturbed areas when possible.

Equipment Selection. Select equipment that reduces the amount of pressure exerted on the ground surface, and therefore, reduces erosion potential and/or use overhead or aerial access for transporting equipment across drainage channels.

STREAMBANK STABILIZATION

Preserve existing vegetation outside of the active work area. In a streambank environment preservation of existing vegetation provides the following benefits:

- Water Quality Protection. Vegetated buffers on slopes trap sediment and promote groundwater recharge.
- Streambank Stabilization. The root system of riparian vegetation stabilizes streambanks by increasing tensile strength in the soil. The presence of vegetation modifies the moisture condition of slopes (infiltration, evapotranspiration, interception) and increases bank stability.

- Riparian Habitat. Buffers of diverse riparian vegetation provide food and shelter for riparian and aquatic organisms. Potential stream bank stabilization BMPs to be considered for inclusion in the SWPPP are as follows:

STREAMBANK SEDIMENT CONTROL

- Silt Fences. Install silt fences to control sediment. Silt fences should only be installed where sediment-laden water can pond, thus allowing the sediment to settle out.
- Fiber Rolls. Install fiber rolls along slope contour above the high-water level to intercept runoff, to reduce flow velocity, and to release the runoff as sheet flow and provide removal of sediment from the runoff. In a stream environment, fiber rolls should be used in conjunction with other sediment control methods.
- Gravel Bag Berm. A gravel bag berm or barrier can be utilized to intercept and slow the flow of sediment-laden sheet flow runoff. In a stream environment gravel bag barriers can allow sediment to settle from runoff before water leaves the construction site and can be used to isolate the work area from the stream. Gravel bag barriers are not recommended as a perimeter sediment control practice around streams.

CLEAR WATER DIVERSION

In-channel systems put in place to divert water around the work area are required during the winter season, and should also be pre-designed for rapid deployment to respond to un-anticipated rain events outside of the winter season.

- Place a cofferdam (such as gravel composition wrapped with an impermeable plastic liner) upstream of the work area to direct base flows through an appropriately sized diversion pipe. Extend a diversion pipe through the Contractor's work area and outlet through a gravel bag dam with filter fabric at the downstream end of the work area.
- Retain a monitoring biologist on site prior to dewatering to ensure no sensitive aquatic species are stranded.
- Construct sediment catch basins across stream channels immediately below the project site when performing in-channel construction to prevent silt- and sediment laden water from exiting the project site. Periodically remove accumulated sediments from the catch basins.
- Remove the cofferdams, filter fabric, corrugated steel pipe, and sediment catch basins from the creek bed after project construction completion.

The portion of the creek within the cofferdam would be backfilled with clean fill dirt over the plastic sheeting (visqween) and the deep layer of dirt would cushion the impact of falling concrete. The existing bridge section would then be saw cut and demolished on to the clean fill below. Broken bridge debris would then be removed from the streambed, along with the fill dirt, and plastic sheeting. Alternatively, the contractor may select a catchment method of the debris if extraction of the debris from within the creek is determined to be

unfeasible. The whole demolition process and removal of the NB Bridge section would take about 22 days.

The upper portion of the existing piles would serve as the base to re-construct the new central pier 2 and column footing. To construct the remainder of the bridge, falsework of scaffolding and forms will be erected and the bridge soffit (i.e., underside of the bridge) would then be constructed. This would involve forming of the bridge deck beam, placing of reinforcing steel and pre-cast girders. The bridge deck would then be constructed, which would involve forming the deck portion of the bridge, placing of reinforcing steel, and concrete pouring of the deck. The concrete pour would be conducted from the areas immediately adjacent to the abutments and would utilize a concrete pump truck. Once the deck is poured, the bridge concrete must obtain adequate compression strength.

During bridge curing, the contractor may commence roadway-related work (i.e., drainage work, grading, striping, etc.). Once the bridge deck concrete obtains adequate compression strength, it would be post-tensioned and any falsework would be removed. The bridge deck and roadway would then be subjected surface treatment. Finally, the road striping, guard rail installation, and other ancillary activities would be completed.

STAGE 2 – REROUTE TRAFFIC TO NEW NB BRIDGE AND REPLACE EXISTING SB BRIDGE

Stage 2 construction involves removing the southbound portion of existing bridge and constructing the second (southbound) half or north side of new bridge. Stage 2 construction will most likely be performed the following year during the summer in-stream work season, described below. When Stage 2 construction starts, two-way traffic will be shifted away from the existing southbound lanes to the newly constructed half of the bridge. The other portion of the original bridge supporting the former southbound lanes will then be demolished, and the second half of the new bridge constructed using similar methodology as previously described for Stage 1.

After bridge construction, the slopes and streambed will be graded to finished elevations, to approximate pre-construction conditions as close as feasible. The bridge deck and roadway will be subjected to profilograph testing to measure surface roughness and then smoothed as needed. Finally, road striping, metal beam guard rail, and other ancillary activities will be constructed.

5.1 CONCLUSIONS AND RECOMMENDATIONS

Short-term surface water quality impacts may result from implementation of the project. No groundwater impacts are expected. Potential surface water quality impacts may include:

Increased in sediments, turbidity and Total Dissolved Solids Toxicity due to chemical substances originating from construction activities.

By incorporating proper and accepted engineering practices and BMPs, the proposed project would not produce significant impacts to water quality during construction.

The contractor will be required to comply with water pollution protection provisions of Caltrans Standard Specifications and the NPDES permit for Caltrans, as well as Section 20-3, “Erosion Control” of Caltrans Standard Specifications. As part of the NPDES permit, Caltrans will approve and implement a Storm Water Pollution Prevention Plan (SWPPP) for the project. These practices will provide adequate protection of water resources and associated habitats.

6. REFERENCES

Caltrans Division of Design Stormwater homepage for guidance and tools (Project Risk Level, Estimating for CGP, Erosion Prediction software, etc.): http://www.dot.ca.gov/design/hsd/index.html

Caltrans Division of Environmental Analysis Stormwater Homepage:http://www.dot.ca.gov/hq/env/stormwater/

Caltrans Standard Environmental Reference (SER) Volume I

- For wetlands, hydromorphic method and water assessment information, see Chapter 15 - Waters of the U.S. and the State: http://www.dot.ca.gov/ser/vol1/sec3/natural/ch15wetland/ch15wetland.htm

- For hydraulic studies and floodplain encroachment information, see Chapter 17 - Floodplains: http://www.dot.ca.gov/ser/vol1/sec3/special/ch17flood/chap17.htm

- For Coastal Zone permits information, see Volume 5 - Coastal Zone: http://www.dot.ca.gov/ser/vol5/vol5.htm

- For Wild and Scenic Rivers information, see Chapter 19 - Wild and Scenic Rivers: http://www.dot.ca.gov/ser/vol1/sec3/special/ch19wsrivers/chap19.htm

Caltrans Stormwater Quality Handbook Project Planning and Design Guide (PPDG): http://www.dot.ca.gov/design/hsd/ppdg/PPDG-Final_2017-07.pdf

Caltrans Stormwater Quality Practice Guidelines: http://www.dot.ca.gov/hq/env/stormwater/special/newsetup/_pdfs/management_ar_rwp/CTSW-RT-02-009.pdf

Caltrans Water Quality Planning Tool: http://www.water-programs.com/wqpt.htm

Regional Water Quality Control Board website and Basin Plans: http://www.swrcb.ca.gov/plans_policies/

State Water Resources Control Board Storm Water Program, 2009-0009-DWQ Construction General Permit: http://www.waterboards.ca.gov/water_issues/programs/stormwater/constpermits.shtml

State Water Resources Control Board Watershed Management:http://www.swrcb.ca.gov/water_issues/programs/watershed/

United States (U.S.) Environmental Protection Agency Section 404(b)(1) guidelines: http://www.epa.gov/owow/wetlands/pdf/40cfrPart230.pdf

U.S. Department of Agriculture, Natural Resources Conservation Service, Web Soil Survey: http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm

City of Santa Barbara Local Coastal Plan – Airport and Goleta Slough - https://www.santabarbaraca.gov/services/planning/plan.asp

6.1 Works Cited

Santa Barbara County Flood Control and Water Conservation District – Flood Control Maintenance Activities in the Goleta Slough- Final Subsequent Impact Report SCH No. 2000031092, October 2010

Goleta Water District – Storm Water Resource Plan, Storm Water Capture: A Water Supply Resources, Spring, 2017.

Draft San Jose Creek Watershed Plan – Prepared for the County of Santa Barbara Water Resources Agency. Prepared by Padre Associates Inc. January 2003

Pacific Coast Ground Fish Fishery Management Plan for The California, Oregon, And Washington Ground Fish Fishery **Appendix D** Non-fishing Effects on West Coast Ground fish

6.2 Preparer Qualifications

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