# City of Santa Barbara
## California

**PLANNING COMMISSION**
**STAFF REPORT**

**REPORT DATE:** March 8, 2007

**AGENDA DATE:** March 15, 2007

**PROJECT ADDRESS:** 00 East Cabrillo Boulevard (MST2004-00878/CDP2007-00001)
Cabrillo Street Bridge over Mission Creek

**TO:** Planning Commission

**FROM:** Planning Division, (805) 564-5470
Jan Hubbell, AICP, Senior Planner
Michael Berman, Project Planner/Environmental Analyst

## I. SUBJECT

Environmental hearing to receive Planning Commission and public comment on the Draft Mitigated Negative Declaration (MND) for the proposed bridge replacement and bank restoration on Cabrillo Boulevard between State Street and Helena Avenue.

No action on the Draft MND or project permit will be taken at this hearing. Written comments on the Draft MND will be accepted through March 26, 2006.

## II. PROJECT DESCRIPTION

This project would replace the existing structurally deficient Cabrillo Boulevard Bridge over Mission Creek and improve the hydraulic conveyance of Mission Creek from State Street to the Pacific Ocean. The banks of Mission Creek from Cabrillo Boulevard to State Street would be rebuilt in compliance with the Lower Mission Creek Flood Control Feasibility Report, dated September 2000, and accompanying EIS/EIR by the Corps of Engineers and approved by the City on November 30, 2001 and by the California Coastal Commission, through the issuance of a Final Coastal Determination on August 11, 2006.

## III. REQUIRED APPLICATIONS

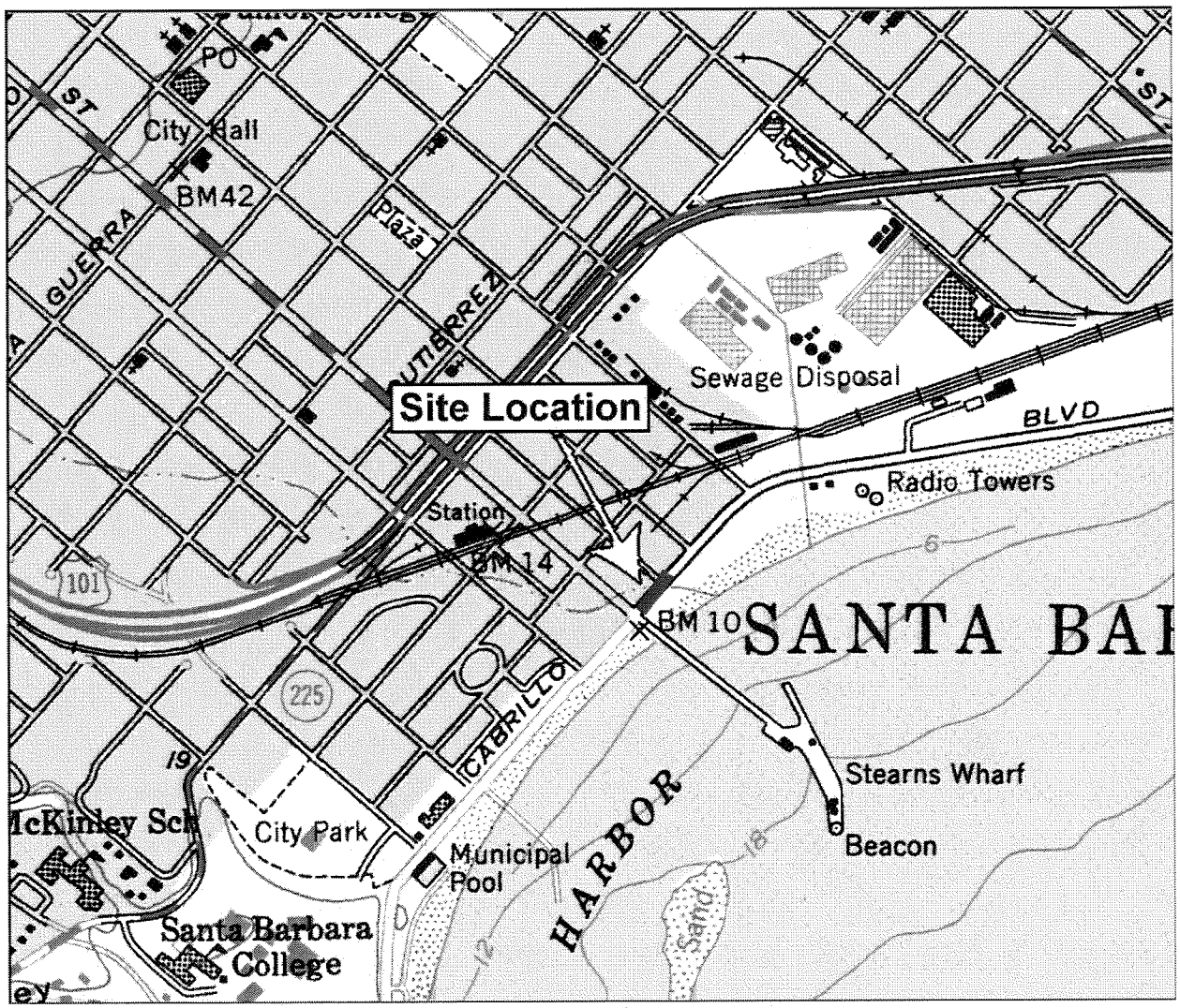
The discretionary applications required for this project are:

1. A Coastal Development Permit (CDP2007-00001) to allow the proposed development in the Appealable Jurisdiction of the City's Coastal Zone (SBMC §28.45.009), and
2. A Coastal Development Permit (CDP2007-00001) recommendation to the Coastal Commission to allow the proposed development in the Original Jurisdiction of the City's Coastal Zone (SBMC §28.45.009).

## IV. ENVIRONMENTAL REVIEW

Environmental review of the proposed project is being conducted pursuant to the California Environmental Quality Act (CEQA). An Initial Study was prepared by staff to analyze the potential environmental impacts of the project. The Initial Study indicates that there are potentially significant, mitigable impacts in the areas of biology, historic resources, hazards, noise, recreation, solid waste, and water resources. The environmental impacts can all be reduced to less than significant levels with the implementation of mitigation measures described in the Initial Study, resulting in a Mitigated Negative Declaration (MND).

Biology, hazard, and water quality concerns relate to the sensitive fish species (tidewater goby and steelhead) and the effect that dewatering, and contaminants (chemical and sediment) in the water would have on these species. Mitigation for these impacts requires procedures for dewatering while relocating the gobies, minimizing erosion, and reducing the contamination of water from concrete and other pollutants. Historic resource impacts are associated with the bridge contributing to the historic Cabrillo Boulevard entrance to the City. Mitigation requires Historic Landmark Commission (HLC) review and approval of the design, using some of the original design elements on the new bridge, and documentation of the existing bridge. Construction noise, due primarily to pile driving, can be reduced to less than significant levels by avoiding exposure of the public to high noise levels. Waste generated by the removal of the existing bridge can be mitigated by recycling most of the concrete and steel from the existing bridge. Recreation impacts are associated with reduction in Arts and Craft Show vendor area during construction. Mitigation of this impact allows the City to fill vendor location positions open due to attrition and displaced vendors who are left without a space would be provided vendor spaces at the east end of the vendor area.




Project Location Map

## V. PUBLIC REVIEW PROCEDURES

The public review and comment period for the Draft EIR began on February 22, 2007 and extends through March 26, 2007. The purpose of the environmental hearing is to provide an opportunity to receive verbal comments from the public and Commissioners on the environmental analysis. No comment letters on the Draft MND have been received to date.

Following the end of the public comment period on the Draft MND, staff will consider all comments received and will prepare a Final MND, including written responses to comments, and any clarifications or revisions to the document analysis needed. The proposed Final MND will then be forwarded to the Planning Commission along with a Staff Report providing planning analysis of the project. At the subsequent Planning Commission hearing, the Commission will consider adoption of the Final DMD and approval or denial of the project.

## VI. RECOMMENDATION

A. Receive a Staff presentation outlining the environmental and public review process, and summarizing the project description and MND analysis, and

B. Hold a public hearing to receive public, agency, and Planning Commission comments on the Draft MND.

Exhibits:

A. Letter from the Applicant, dated February 21, 2007
B. Draft MND - The Draft MND is available at the Community Development Department, 630 Garden Street, the Main Library and online at: www.SantaBarbaraCa.gov. Under Quick Links, click on Boards and Commissions then click on Planning Commission.

City of Santa Barbara
Public Works Department

# Interoffice Memorandum

**DATE:** February 21, 2007

**TO:** Planning Commission

**FROM:** Engineering Division, Public Works Department
(Prepared by Harold "Hal" Hill, Project Manager) Hal

**SUBJECT:** **CABRILLO BOULEVARD BRIDGE REPLACEMENT PROJECT**

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COMMISSION DIRECTION – FOR ACTION

The Public Works Department requests that the Planning Commission, hear comments from the public, and comment on the adequacy of the Initial Study.

DISCUSSION

The replacement of the Cabrillo Boulevard Bridge at Mission Creek has been under investigation for several years. Due to its location at the center of the City's beachfront, the timing of this project was being carefully considered. However, in 2004 an inspection of the subject bridge over Mission Creek revealed that it is deteriorating and may not withstand future earthquakes or anticipated traffic loads. Its replacement can no longer be delayed. In 2005, City staff and Bengal Engineering began conceptual design of a replacement bridge to be used in preparing environmental studies. Environmental technical reports are now complete and City staff is proceeding through the City's approval process. The estimated cost to replace the bridge is $19 Million. Staff has a tentative date to present the project to the Planning Commission on March 15, 2007 so comments from the public regarding the environmental documents can be received.
City and URS Corporation staffs have consulted with the City's Creeks Division staff and the following agencies in connection with formulating mitigations to protect all the species affected: U. S. Fish & Wildlife Service, NOAA Fisheries, and California Department of Fish and Game.

The project will require changes in activities along the water front during construction as follows:

1. Traffic will be reduced to one lane in each direction;
2. At certain times pedestrians will be rerouted to the other side of the street or onto a temporary pedestrian/bicycle bridge downstream from the bridge construction;
3. Some of the booth spaces for the Arts and Crafts Show will be relocated or eliminated; and
4. Insertion of the pilings will produce considerable noise and vibration.

Channel Islands Acoustics has prepared a report listing all required noise and vibration mitigation measures that are practical.

The project includes replacing the deteriorated wood retaining walls along Mission Creek from Cabrillo Boulevard to State Street with concrete retaining walls that have a faux sandstone pattern exposed surface. This is consistent with the approved design and EIS/EIR prepared by the Corps of Engineers for the Lower Mission Creek Flood Control Project. Plans also call for the sackcrete retaining walls

downstream from the bridge to be replaced with boulder rip rap retaining walls placed at a 45 degree angle. A 10-foot wide strip of native plants will be planted at the top of the retaining walls and above the ungrouted boulders south of the bridge, which is intended to be in coordination with the City's Tidewater Goby Management Plan for the Mission Creek lagoon.

The historical and archeological aspects of the project were addressed in reports prepared by Applied Earthworks, Inc. These documents have been approved by the Historical Landmarks Commission. The conceptual design of the project was presented to the Historical Land Marks Commission several times and the changes they recommended were made.

The project has been presented to both the Park and Recreation Commission and the Creeks Advisory Committee to solicit comments to advise the Planning Commission. Their comments will be presented to the Planning Commission at its March 8 meeting.

The City's Project Manager, Harold "Hal" Hill, would like to make a presentation that provides more details regarding the following:

1. Brief History of the project;
2. The areas of Mission Creek that will be affected and what type of construction is proposed;
3. Comments from the Park and Recreation Commission and the Creeks Advisory Committee;
4. What City staff has been doing to protect the environment;
5. The next few steps in the approval process; and
6. Schedule for construction.

The presentation will be followed by a question and answer session.

cc: Paul Casey, Director of Community Development
Pat Kelly, Assistant Public Works Director/City Engineer
Jan Hubbell, Senior Planner II
Michael Berman, Project Planner

**CITY OF SANTA BARBARA**
**COMMUNITY DEVELOPMENT DEPARTMENT**
**DRAFT MITIGATED NEGATIVE DECLARATION – MST04-00878**

Pursuant to the State of California Public Resources Code and the "Guidelines for Implementation of the California Environmental Quality Act of 1970," as amended to date, this Draft Negative Declaration has been prepared for the following project:

**PROJECT LOCATION: Cabrillo Boulevard between State Street and Helena Avenue**

**PROJECT PROPONENT: City of Santa Barbara, Public Works Department**

**PROJECT DESCRIPTION: This project would replace the existing structurally deficient Cabrillo Boulevard Bridge over Mission Creek and improve the hydraulic conveyance of Mission Creek from State Street to the Pacific Ocean. The banks of Mission Creek from Cabrillo Boulevard to State Street would be rebuilt in compliance with the Lower Mission Creek Flood Control Feasibility Report**

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**MITIGATED NEGATIVE DECLARATION FINDING:**
Based on the attached Initial Study prepared for the proposed project, it has been determined that the proposed project will not have a significant effect on the environment when proposed mitigation measures have been implemented.

Environmental Analyst

2/21/2007
Date

[Document2]
Revised 5/18/1998

**EXHIBIT B**

CITY OF SANTA BARBARA
COMMUNITY DEVELOPMENT DEPARTMENT, PLANNING DIVISION

# INITIAL STUDY/ ENVIRONMENTAL CHECKLIST MST2004-00878/CDP2007-00001

## PROJECT: REPLACEMENT OF CABRILLO STREET BRIDGE OVER MISSION CREEK

February 22, 2007

This Initial Study has been completed for the project described below because the project is subject to review under the California Environmental Quality Act (CEQA) and was determined not to be exempt from the requirement for the preparation of an environmental document. The information, analysis and conclusions contained in this Initial Study are the basis for deciding whether a Negative Declaration (ND) is to be prepared or if preparation of an Environmental Impact Report (EIR) is required to further analyze impacts. Additionally, if preparation of an EIR is required, the Initial Study is used to focus the EIR on the effects determined to be potentially significant.

**APPLICANT/ PROPERTY OWNER**

Applicant: City of Santa Barbara, Public Works Department

Applicant Representative: Hal Hill, Public Works Department

Owner: City of Santa Barbara

**PROJECT ADDRESS/LOCATION**

The project is located on Cabrillo Boulevard between State Street and Helena Avenue in the City of Santa Barbara waterfront area (Exhibit A, Figure 1). The project would replace an existing bridge over Mission Creek on Cabrillo Boulevard. The project site is located within Township 4 North, Range 27 West, on the Santa Barbara, California, U.S. Geographical Survey 7.5-minute topographic quadrangle.

**PROJECT DESCRIPTION** (See *Exhibit A-Project Graphics*)

This project would replace the existing structurally deficient Cabrillo Boulevard Bridge over Mission Creek and improve the hydraulic conveyance of Mission Creek from State Street to the Pacific Ocean. The project would continue to accommodate the same number of traffic lanes and convey the same utilities as it currently does. The pedestrian component of the new bridge would be enlarged to better accommodate the pedestrian traffic in the area. The Rusty's Pizza building is currently supported by the bridge. It may be supported by the new bridge. The banks of Mission Creek from Cabrillo Boulevard to State Street would be rebuilt in compliance with the Lower Mission Creek Flood Control Feasibility Report, dated September 2000, and accompanying EIS/EIR by the Corps of Engineers and approved by the City on November, 30, 2001, and conditionally approved by the California Coastal Commission on November 1, 2001, through the issuance of a final Coastal Zone Consistency Determination on August 11, 2006.

**Proposed Bridge Construction**

Bridge Configuration

The existing bridge would be removed and replaced with a similar bridge that would have a total deck length of 131 feet, nine feet longer than the existing bridge. Deck width would be 110 feet, the same width as the existing bridge. The bridge would be constructed in three stages. The first stage would be installation of piles. The widths of the second and third stages of bridge construction are 44 feet, and 66 feet respectively. Curb-to-curb dimensions on the bridge would be 72 feet. Sidewalks would be six feet wide on the north side and nine feet wide on the south side. The beachway would be 10 feet wide in each direction, four feet wider than the existing beachway (multi-purpose trail).

A temporary relocation of the beachway, approximately 50 feet closer to the beach, with a 14-foot wide temporary pedestrian/bicycle bridge, is being considered as one alternative to provide a place for the Arts and Crafts Show vendors, bicyclists, and pedestrians during construction. The bridge would span the channel (Exhibit A, Figure 6). The pilings and/or abutments for this bridge would be outside of the stream channel. This bridge would be removed after construction is completed.

The permanent replacement bridge would use two spans instead of three. There would be one row of piles in the middle of the bridge that aligns better with the direction of flow of Mission Creek. Therefore, the new bridge would increase hydraulic capacity. Erosion control measures would be constructed downstream of the bridge abutments. These measures will include ungrouted rock rip-rap, use of cocoanut fiber erosion control blankets, and revegetation using native plant

species to minimize erosion and scour. The existing bridge abutments would be removed after the new abutments have been constructed.

As a part of the bridge project, the banks of the Mission Creek channel, upstream from the bridge, would be reconstructed with erosion protection from State Street to Cabrillo Boulevard. Native plants would be used in the bank restoration. The attached drawing, entitled "Sections at Cabrillo Boulevard and State Street" (Exhibit A, Figure 3), shows the proposed reconstruction of the bank. At the northerly corner of Cabrillo Boulevard and State Street, the sidewalk along Cabrillo Boulevard from State street to the bridge would be widened to the north (towards Mission Creek) to allow for more pedestrian space (Exhibit A, Figure 4).

The hydraulic capacity beneath the existing bridge is limited by the fact that its two rows of pilings are not placed in a straight line. The new bridge construction will remove the old pilings and construct one row of pilings in a straight line. The new bridge will also be nine feet wider and have a thinner deck. These changes will improve hydraulic performance of Mission Creek. The proposed new bridge will have a capacity of 3,400 cubic feet per second (cfs) with one foot of freeboard from the bottom of the bridge to the water surface. The approved Lower Mission Creek Flood Control Project EIR/EIS describes how improvements for the portion of Mission Creek immediately up stream of the project would result in a hydraulic capacity that would accommodate the 20-year statistical storm which is 3,400 cfs.

Construction Method

In order to minimize the impact on the traffic in the area, the bridge would be constructed in three stages. Exhibit A, Figure 5, shows Stage 2 and Exhibit A, Figure 6, shows Stage 3. This would ensure that at least one lane of vehicular traffic would remain open in each direction on Cabrillo Boulevard at all times during construction.

Stage 1 – First the pilings would be constructed to form the foundation support for the bridge. The new support piles would be inserted behind the existing abutments and through holes bored in the deck using cast in steel shell (CISS) reinforced concrete pilings.

Stage 2 - The portion of the bridge that contains two (and a portion of a third) vehicular lanes on the north side of the bridge would be demolished and replaced. This would leave one lane of traffic in each direction on the south side of the existing bridge, plus the bicycle/pedestrian portion of the existing bridge in service. No left turns onto Stearns Warf would be permitted westbound on State Street, and Helena Avenue would be closed to vehicular traffic at Cabrillo Boulevard.

Stage 3 - The remainder of the bridge and the bicycle pedestrian bridge would be demolished. During this stage no left turns would be permitted from Helena Avenue onto State Street and westbound on State Street onto Stearns Warf. The bicycle and pedestrian traffic would be routed onto the sidewalks built during Stage 2 and/or onto a temporary bicycle/pedestrian walkway and bridge closer to the beach. The temporary bicycle/pedestrian walkway is an alternative to provide a place for the Arts and Craft Show vendors, bicyclists, and pedestrians during Stage 3.

Bridge abutments would be constructed outside of the existing abutments by installing piles behind the existing abutments and then trenching and forming a cap on top of the piles. This would allow for a concrete wall to be poured in forms parallel to the edge of the creek and behind existing abutments to create the new bridge abutments. The existing abutments and soils between the two abutments would then be removed. Rock, vegetation and other erosion controls would be installed to reduce scour around the new abutments. A new temporary support structure for the building containing Rusty's Pizza at 15 E. Cabrillo Boulevard would be constructed using timber/steel framing during construction.

During demolition of the existing bridge, a cofferdam would be constructed using silt-free gravel bags and plastic sheeting and a Porta Dam or equivalent, not more than 100 feet upstream of the State Street Bridge. Downstream of the work area, in Mission Creek, a cofferdam would be constructed using silt-free gravel bags and plastic sheeting reinforced with sheet piling and/or Porta Dam or equivalent, to resist any storm surge that may occur. The cofferdams would be connected, through the work area, with a flume allowing Mission Creek to flow through the dewatered work area, appropriately covered to keep it free of demolition debris.

The new piles would be capped with formed concrete and a pre-cast reinforced concrete deck would be laid in units on the pile caps to form the bridge deck. The process of installing the pile caps and deck would be repeated on the other side of the bridge (Stage 3) while traffic flows would be maintained on the portion of the bridge constructed in Stage 2. Pavement approaches to the bridge, railings, and pavement on the bridge would be added to complete the bridge.

The contractor would be required to take precautions to ensure that concrete does not come into contact with the water in Mission Creek when concrete is poured during construction. When it is necessary to protect the fish in Mission Creek from stream bed disturbance, the construction area would be dewatered to avoid sedimentation impacts downstream. Best

Management Practices (BPMs) would be used to further reduce impacts to the stream. Water remaining in the work area after creek diversion would be removed with a submersible pump. During pile installation and construction of the two abutments and center bent (pilings plus pile cap), or other similar activities that would increase turbidity, sediments would be removed by means of settling and filtering in a depression on the beach before they percolate into ground water. Methods for protecting the creek may include using Baker Tanks or hay bale/sandbag basins lined with filter fabric. During concrete pouring activities, when the groundwater may come in contact with fresh concrete, contaminated water would be pumped out of the work area. The contaminated water would be hauled away in trucks or pumped into a city sewer main. No water that is contaminated with fresh concrete would be returned to the creek. The bridge CISS piles, or other option pile systems, would be inserted through a water proof cylinder that would prevent concrete contact with the water flowing in the creek.

The bridge deck would be constructed off-site and would be placed by cranes. The bridge bent would be constructed in a way that avoids discharging grout and other construction materials into the live stream channel work area. The abutments and bent would be isolated from the live stream channel by dewatering when it is necessary to protect fish in Mission Creek. A temporary cofferdam would direct water into a flume that would discharge downstream of the work area. In the event of an accidental grout discharge, the contractor would be required to remove any such accidentally discharged materials from the streambed by the end of each working day.

Sensitive species would be protected by both the timing and configuration of proposed construction. Construction in the creek itself is planned when Steelhead are unlikely to be migrating through the project area. The flume is expected to allow both the goby and the steelhead to travel through the project area when the site is dewatered. The project would not dewater until a biologist has indicated that the least impact on the goby are anticipated. The construction time has also been minimized to reduce impacts to sensitive species.

**Mission Creek Retaining Wall Replacement**

The deteriorated wooden retaining walls on both sides of Mission Creek from Cabrillo Boulevard to State Street will be replaced. The replacement retaining walls will be constructed of faux sandstone pre-cast concrete panels. First, cast in steel shell reinforced concrete pilings will be installed along the creek bank in approximately the same alignment as the existing deteriorating wood retaining walls. Then, a trench will be excavated, three feet (3') deep, along the alignment of the pilings to receive the concrete panels. The panels will then be attached to the pilings and the trench backfilled.

Downstream of the bridge, for approximately one hundred ten feet (110') on the west bank and one hundred sixty feet (160') on the east bank, the existing "sackcrete" retaining walls will be replaced with rock slope protection (RSP) consisting of boulders placed on a 1:1 (horizontal to vertical) slope (Exhibit A, Figure 11). Before the rip rap is placed, a trench will be excavated, to a three foot (3') scour depth to receive the rip rap. At the top of slope a ten foot (10') wide strip of native riparian vegetation will be planted.

**Utility Relocation**

Gas Main: There are two alternatives being considered for the 16-inch diameter high pressure gas main that runs through the pedestrian bridge. The alternatives are constructing a temporary by-pass pipe, attached to the temporary pedestrian bridge, and constructing a replacement pipe in the new bridge, or constructing a temporary by-pass pipe that is independently supported, near the temporary pedestrian bridge and constructing a replacement pipe in the bridge.

Reclaimed Water Main: There are two alternatives being considered for the 14-inch diameter reclaimed water main that is attached to the south side of the pedestrian bridge, as shown on Exhibit A, Figure 2. The alternatives are temporarily relocating the reclaimed water main to the temporary pedestrian bridge during demolition and construction, then replacing it in the new bridge or leaving the pipe in place and performing demolition and construction around it.

Water Main: There are two alternatives being considered for the six-inch diameter water main that runs through the bridge as shown on Exhibit A, Figure 2. The alternatives are terminating the pipe on both sides of the bridge during most of Stage 3 construction and then replacing it in the bridge near the end of construction, or leaving the pipe in place and performing demolition and construction around it.

Electricity, Telephone & Cable TV: Electricity, Telephone & Cable TV cables would be temporarily relocated in conduit attached to the temporary pedestrian bridge during construction of Stage 3. When construction is completed, they would then be relocated through the new bridge. During Stages 2 and 3, a new conduit will be placed across Cabrillo Boulevard, on the west side of the bridge, for future fiber optic cable.

**Construction Timing**

Construction would occur over an estimated 20 month period. All construction within the creek bed itself would occur

within the dry season from April to November. Demolition would occur during different periods during construction. It is anticipated that construction would be limited to the hours from 7:00 a.m. to 8:00 p.m. However, it is possible that unknown obstacles would make it necessary to work beyond those hours to complete each stage of work before the rainy season. If the contractor proposes to work additional hours, the contractor would be required to obtain a special permit from the Chief of Building and Zoning in accordance with Section 9.16.015 of the Municipal Code. Therefore, there is a potential for work beyond 7:00 a.m. to 8:00 p.m., including night time work, to occur.

**Construction Staging**

During replacement of the bridge, it would be necessary for the contractor to have space for storage, staging, and lay down. The street right-of-way would be used; however, other areas are to be considered for such uses. One area being considered for storage is at the southeast corner of Cabrillo Boulevard and Bath Street. This is the area that wraps around the north and east sides of the existing waterfront and Army Corps of Engineers (ACOE) dredge storage (Exhibit A, Figure 9). Another area being considered is a portion of Chase Palm Park, adjacent to Cabrillo Boulevard, from the bathrooms on the southeast corner of Cabrillo Boulevard and State Street to Anacapa Street (Exhibit A, Figures 4 & 5).

**Traffic Control**

A detailed traffic control plan would be provided to the City Traffic Engineer for review and approval during construction. The plan would provide for signs, flagmen, and provision of facilities to permit the ongoing circulation of automobile, bus, bicycle, and pedestrian uses. One vehicular travel lane would be available in each direction over the bridge during Stages 2 and 3 of construction. Pedestrian and bicycle routes would be kept open in both directions for the duration of the project.

Routes for construction related traffic and parking areas would be specified in the construction contract and would be approved by the City Traffic Engineer. The proposed construction truck route for light trucks would be a loop from Highway 101 to Garden Street to Cabrillo Boulevard to State Street to Yananoli Street to Garden Street, and back to Highway 101. The construction truck route for heavy trucks would be a loop as follows: beginning at Highway 101 to Garden Street to Cabrillo Boulevard, then right on Helena Avenue, right on Mason Street, left on Anacapa Street, right on Yananoli Street, left on Garden Street, and back to Highway 101.

**Construction Traffic**

Construction equipment would be the type typically used for this type of construction and include falsework, shoring lift, backhoes, front end loaders, cranes, concrete pump, trucks, pile driver, demolition equipment (e.g., headache ball, etc.), jackhammers, dewatering pumps, vacuum pump, pre-stressing jack, sawcut machine, paving machine, etc. Heavy equipment would be used for excavations, pile installation, and demolition in accordance with the schedule (Exhibit A, Figure 10).

The Construction work force would vary from 5 to 30 with a maximum of 30 workers. Construction related employee parking would require 25 parking spaces. These 25 spaces would be provided at an existing City parking lot west of the intersection of Cabrillo Boulevard and Garden Street. An estimated 33 average worker related trips per day, and a peak of 45 worker trips per day, would be generated.

The project would require an estimated 10 average daily truck trips to carry materials, waste, and equipment with a peak of 20 trips per day.

**Demolition Materials Disposal**

Materials, including concrete and steel from the demolition process, would be recycled locally. An estimated 230 tons of steel, 2,400 cubic yards of concrete, and 500 cubic feet of timber would be generated and trucked to a recycling facility.

**Permits/Approvals/Consultations Required**

The following permits, approvals and consultations would be required:

- Streambed Alteration Agreement from the California Department of Fish and Game.
- U.S. Army Corps permit.
- Coastal Development Permit.
- Regional Water Quality Control Board permit
- City of Santa Barbara, Park Commission approval of tree removal/relocation.

- CALTRANS approval of funding.
- Historic Landmark Commission approval of bridge design.
- Historical, and archaeological consultation with the State Historic Preservation Office.
- Biological consultation with the US Fish and Wildlife Service.

## ENVIRONMENTAL SETTING

Land Use: The area has been largely developed in urban uses including roadway, curb and gutter, sidewalks, bicycle paths, commercial enterprises, and coastal parklands that are heavily used. The bridge serves a large volume of pedestrian, bicycle, vehicular and mass transit uses. The average annualized daily pedestrian/bicycle traffic exceeded 6,000 per day in 2003. On weekend peak periods, the number of pedestrian/bicycle traffic trips exceeded 20,000 per day in 2003. There were 23,000 two-way average daily vehicle trips on the bridge in 1999.

The vehicular portion of the bridge is five (5) lanes wide; two through lanes in each direction along with what serves as a two-way left turn lane. There are left turn lanes immediately off of the bridge structure (east end) onto Helena Avenue and onto Stearns Wharf (west end). In addition, the wide (approx. 11') shoulder adjacent to the eastbound traffic serves as a major Metropolitan Transit District (MTD) bus/Santa Barbara Trolley/Land Shark stop.

The existing bridge consists of the original structure built initially with two lanes and later widened to four lanes and a turning lane. The distance from curb to curb on the bridge is 71 feet. The bridge length is 122 feet and the width is 110 feet. A four-foot- wide sidewalk is located on the north side of the bridge and a 14-foot-wide sidewalk is located on the south side. In 1977, a Class I bicycle/pedestrian bridge was added immediately south (ocean side) of the bridge. The northern four feet of the bicycle/pedestrian bridge has a grated utility opening which carries several utilities including a 16-inch diameter high pressure gas main (Exhibit A, Figure 2). This grating would be replaced with a concrete sidewalk in the new bridge.

Artists and artisans set up booths as part of the Arts and Crafts Show in the adjacent Chase Palm Park most Sundayss during the year through a permit issued by the Parks and Recreation Department. The most prestigious and desirable spaces are immediately adjacent to the proposed construction area. Construction is expected to displace some of these booths, as well as bicycle and pedestrian traffic at times during construction.

The portion of the bridge added in 1977 included supporting pier geometry that is not compatible with the original structure. The existing bridge includes three spans of variable length. Two rows of piers are used to support the three spans, but the piers are not aligned in rows, which diminishes the hydraulic capacity beneath the bridge.

While the bridge was under Caltrans jurisdiction as Highway 225 (approximately 1933 through 1995), it appears that the building that now contains Rusty's Pizza (15 E. Cabrillo Boulevard) was connected to, and is now supported, by the bridge.

Topography: The project area is relative flat and slopes gently towards the south. The site includes Mission Creek that drains a large portion of the City.

Seismic/Geologic Conditions: Bengal Engineering (December 3, 2005) prepared a Preliminary Foundation Recommendation report that includes information regarding the existing seismic and geological conditions at the site. The contents of that report are summarized in this Initial Study, incorporated herein by reference, and is available for review at the Planning Division, 630 Garden Street, Santa Barbara.

The proposed bridge site is located in the western portion of the Transverse Ranges physiographic province of Southern California. The Transverse Ranges are a complex series of east-west trending mountain ranges and valleys. The structural orientation of this province is transverse to the general north-northwest structural trend of the other geologic provinces in California. The western segment of the Transverse Ranges province extends from Ventura County west to Point Arguello, and is dominated by the east-west trending Santa Ynez Mountain Range. The geology of the general area is dominated by Cretaceous-age to recent age sedimentary rock. The project site is located within an elevated portion of the Santa Barbara coastal plain characterized by a gently undulating, but generally south-sloping surface. The elevated feature of the plain is believed to be caused by tectonic uplift during the Quaternary age. Locally, the site area is underlain by alluvium over the south-dipping structure of the Santa Ynez Mountains.

The surficial geologic formations vary from Oligocene-age to recent age deposits. Locally, Holocene to upper Pleistocene age alluvium consisting of unconsolidated to weakly consolidated, poorly to moderately sorted silt, sand and gravel deposits underlie the project area.

The soil profile at the site consists of about five (5) feet of artificial fill underlain by alluvial soils to the maximum explored depth of about 110 feet below existing ground surface. The alluvium unit at the site consists of two distinguishable units: an upper recent alluvium unit (Qs) and a lower older alluvium unit (Qoa). Bedrock was not encountered within the depth of the exploratory borings.

About four (4) to five (5) feet of artificial fill soils were encountered in the exploratory borings. The artificial fill soils are comprised of about 12 to 16 inches of pavement material (aggregate base and asphalt concrete) over mainly moist, light brown, medium dense to dense fine-grained Sand and Silty Sand (SP/SM), and Sandy/Clayey Silt (ML).

Recent Alluvium (Qa): Similar to much of the Santa Barbara urban area, recent alluvial soils underlie the project site. These soils were encountered in the borings to a depth of about 95 to 100 feet. This unit consists of relatively interbedded thin layers of mainly gray to dark gray medium stiff to stiff, lean Sandy/Silty Clay (CL), and dense Silty Sand/Sand (SM/SP). The thickness of the interbedded soil layers ranges from thin lenses to greater than 5 (five) feet. The dry density and moisture content of the fined-grained cohesive soils range mainly from about 90 to 100 pcf and 27 to 40 %, respectively. Based on the laboratory unconfined compressive (UC) strength tests and empirical correlation with Cone Penetration Test (CPT) tip resistance, it is estimated that the undrained shear strength of the cohesive soils at the site varies mainly from about 800 to 1500 pounds per square foot (psf). The effective friction angle of the cohesive soils at the site is estimated to fall within the range of 28 to 30 degrees. The dry density and moisture content of the relatively coarse-grained SM/SP soils encountered at the site range mainly from about 105 to 110 pounds per cubic foot and 17 to 23 % moisture content, respectively. The effective friction angle of these granular soils, estimated based on empirical co-relations with Cone Penetration Test (CPT) tip resistance, varied mainly from about 36 to 39 degrees. The measured shear wave velocity of the alluvium soil encountered in the exploratory borings ranges from about 360 ft/sec to 780 ft/sec.

For design purpose, the alluvial soils at the site can be characterized as consisting of mainly two relatively uniform types of soil. These soil types include medium to stiff fine-grained lean Sandy/Silty Clay (CL) and dense coarse-grained Silty Sand/Sand (SM/SP) with engineering characteristics presented in the previous section.

Older Alluvium (Qoa): Older alluvial soils were encountered in the borings at depths ranging from 95 to 100 feet below the existing ground surface. This unit, to the maximum explored depth, consists of mainly very dense, brown, Silty Sand (SM) and Sand (SP) with interbedded thin layers of Silts (ML). The measured shear wave velocity of this unit is about 870 feet/second.

Groundwater was not measured in the exploratory borings. Based on the CPTu tests and the elevation of the bottom of the Mission Creek, the estimated depth to groundwater at the site ranges from about 8 to 10 feet below existing ground surface. Groundwater depth at the site should be expected to fluctuate with the water level in the Mission Creek and the tides, and over time and seasons.

Faulting and Seismicity: The project site is located within a seismically active region of Southern California. The general area has experienced strong earthquakes in the past (e.g., M6.8 in 1925 ad M5.1 in 1978), and are likely to experience more moderate to strong earthquakes in the future.

The project area is underlain by numerous active and potentially active faults. However, the bridge site is not located within any Alquist-Priolo Earthquake Fault Zone (EFZ) as defined by the California Geological Survey (CGS). Based on the CALTRANS' 1996 Seismic Hazard Map the Mesa-Rincon Creek (MRC) fault is the nearest seismogenic seismic source from the bridge site. The MRC is an unknown type of fault capable of generating a Maximum Credible Earthquake (MCE) of Moment Magnitude, M=7.0 and a median Peak Bedrock Acceleration (PBA) of 0.7g at the site. The CALTRANS Map shows the MRC fault located about 0.2 km north-northwest of the project site. However, based on Dibblee (1986), the MRC fault is located about 0.4 km south-southwest of the bridge site. The MRC is a south-dipping reverse fault.

Relevant faulting and ground motion parameters for the nearby active and potentially active faults that can produce significant ground motion at the site are presented below. The North Channel Slope fault is a major local reverse/thrust fault recently identified by the CGS as a Type B active fault (CGS, 2003) with a slip rate of 2.0 mm per year. The moment magnitude of the Maximum Magnitude Earthquake (Mmax) for this fault is estimated to be 7.4 by CGS.

Faults and Ground Motion Parameters

| ***Fault Names (Symbol)*** | Approx. Site-to-Fault Distance (km) | Fault Type | MCE Magnitude (M) | Median PBA (g) | Median PGA (g) |
|---|---|---|---|---|---|
| Mesa-Rincon Creek (MRC) | 0.4[a] | Reverse/ Oblique | 7.0 | 0.90 | 0.70 |
| North Channel Slope[b] | 1.1 | Reverse/Thrust | 7.5[c] | 0.86 | 0.70 |
| More Ranch-Mission Ranch-Arroyo Parida-Santa Ana (MMA) | 4.1 | Normal | 7.5 | 0.72 | 0.55 |
| Santa Ynez Fault (SYZ) | 10.0 | Reverse/ Oblique | 7.5 | 0.48 | 0.47 |
| Pitas Point-Ventura (PPV) | 11.4 | Reverse/ Oblique | 7.25 | 0.41 | 0.41 |
| Oak Ridge (OKE) | 17.5 | Reverse/ Oblique | 7.5 | 0.33 | 0.36 |

Notes: (a) Based on Dibblee (1986); (b) Based on CGS (2003); (c) Since no MCE magnitude is available from CALTRANS for this fault, the $M_{max}$ magnitude from CGS (2003) rounded to the nearest quarter magnitude is used.

Flooding/Fire Hazard: There is little fire hazard in the project area as the bridge is made of concrete and steel and little flammable vegetation is located in the area, except ornamental vegetation located along the creek banks. The project area is not located within an existing Wildland Fire Hazard Area., according to the Wildland Fire Plan.

Bengal Engineering prepared a Hydrology and Hydraulic Analysis (December 5, 2005) for the proposed project that is summarized below and incorporated by reference.

The Mission Creek watershed area is bordered on the east and west by unincorporated urbanized lands, on the north by the Santa Ynez Mountains, and on the south by the Pacific Ocean. The drainage area is located in a narrow coastal zone rising steeply to the Santa Ynez Mountains in a north-south direction. The mountains rise about 3,000-3,500 feet in less than 3 miles, with crest elevations of 3,500-4,000 feet above mean sea level in the upper portions of the drainage basin. In the upper reaches, stream gradients are as steep as 2,600 feet/mile and average 1,000 feet/mile. In the lower reaches, on the alluvial plain below the foothills, slopes average approximately 150 feet/mile. Mission Creek and its tributary, Rattlesnake Creek, drain approximately 11.38 square miles of Santa Barbara watershed.

The mountains above Santa Barbara provide significant orographic uplift and receive much higher precipitation than the coastal plain. The mean seasonal precipitation for the drainage area is approximately 18-inches-per-year along the coast and 30-inches-per-year in the mountains. The majority of the precipitation occurs between November and April. Flooding typically occurs between December and March. The majority of the precipitation is a result of general winter storms associated with extra-tropical cyclones of North Pacific origin. The rainfall events that cause flooding in the Santa Barbara area are intense and are typical in coastal California. These floods are of a short duration, with extreme flooding lasting a few hours or less.

During flood events, water overflows the banks near the upper State Street Bridge and sheet flows through the Oak Park neighborhood. The floodwaters then "splits flow" nears the Junipero Street Bridge. Part of the flow remains in the main channel while the rest flows over Hwy 101 and then drains through the San Andres Street neighborhood. The two flows that split upstream at Junipero Street converge again near Carrillo Street. The flood waters typically overflows the banks again below the De la Guerra Street Bridge because of the inadequate conveyance capacity provided by the Ortega Street Bridge. The overflow trend continues until Mission Creek reaches the ocean beyond Cabrillo Boulevard Bridge. Flooding in the lower reach is also affected by the ocean tide during storms.

Breakout from the channel occurs in various locations upstream and down stream of the project site during high floods. The actual discharge in the creek under storm conditions will be influenced by these breakouts. Some of the water leaving the creek rejoins the creek flow downstream from the breakout point. Both the timing and magnitude of the peak discharge in the creek will be affected by breakout flows.

A flood insurance study (FIS) was issued by Federal Emergency Management Agency (FEMA). Only the 100-year

discharges were used in the study. The 100-year discharge cited in the FIS for Mission Creek at De la Guerra Street was 7,400 cubic ft/Sec.

After the record flood of 1995, the Corps revisited the hydrology and the hydraulics of the Mission Creek for the Lower Mission Creek (LMC) Flood Control Project and determined that the highest conveyance achievable without replacing four bridges (Bath Street Bridge, Gutierrez Street Bridge, State Street Bridge and Cabrillo Blvd Bridge) was 3,400 cubic ft/Sec, which provides approximately a 20-year (Q20) level of protection. The Flood of Record of Mission Creek at the Mission Stream Gauge was 5,120 ft3/sec in the year 1995, which equates to the 50-year (approx.) flood.

The Corps-prepared balanced hydrographs of Mission Creek were based on the measured hydrograph of January 10, 1995 flood. The Corps applied the hydrographs in hydraulics calculations for the predictions of water surface elevations

Creeks/Drainage: The proposed project would replace an existing bridge over Mission Creek. The existing bridge is supported by several sets of pylons that were constructed at different times that are not aligned. The non-aligned pylons and the configuration of the bridge restrict the existing hydrologic capacity of the creek beneath the bridge to less than the 25-year statistical storm capacity. Overtopping the bridge occurs during larger storms.

Biological Resources:

The following description is taken from a report prepared by URS Consultants, dated December 2006, and entitled Natural Environmental Study. The contents of that study are summarized below, and the contents of the reports are hereby incorporated by reference. The report is available for review at the Planning Division, 630 Garden Street, Santa Barbara.

Mission Creek discharges to East Beach at Cabrillo Boulevard. The lower portion of the creek is tidally influenced, and is therefore called Mission Creek Estuary. It extends from the beach up to Yanonali Street. The estuary includes two geographically recognizable elements: 1) the lagoon on the beach, and 2) the confined creek channel from Cabrillo Boulevard to Yanonali Street. The term "lagoon" is defined in this report as the waterbody on the beach below Cabrillo Boulevard. However, it should be recognized that the lagoon is an integral part of the larger estuary.

The creek channel above Cabrillo Boulevard is about 70 to 90 feet wide from top of bank to top of bank, and the creek bed is from 30 to about 60 feet wide. The channel banks vary considerably from Cabrillo Boulevard to Yanonali Street, and include earthen banks with vegetation, vertical banks constructed of concrete or wood, and stone walls. The creek substrate varies from sand to remnants of a prior stone channel bottom.

A lagoon is typically present year-round at the beach. The size and configuration of the lagoon varies considerably due to runoff, waves, and beach sand management. In all but drought years, winter runoff is sufficient to enlarge the lagoon such that it breaks through the sandbar formed on the beach and discharges to the ocean. If there are large or frequent runoff events, the lagoon is absent and the creek flows across the beach. As the flows diminish, sand builds up from wave action. A berm is formed when the hydrostatic pressure and water levels in the creek decline and become insufficient to displace the sandbar. As the berm is forming, the water depth and surface area of the lagoon increase until they reach an equilibrium in which inflow from the creek is equal to seepage to the ocean, and the hydrostatic pressure in the lagoon is less than the force required to displace the sandbar.

The process of forming the lagoon each winter is very dynamic. The lagoon may form and breach several times each winter. In addition, the beach sand management actions in the winter under the City's Sediment Management Program (SMP) (information below) affect the size and timing of lagoon formation. However, once a lagoon is formed, its size in the summer appears to be relatively similar from year to year, based on a review of historic aerial photographs.

Mission Creek generally flows year-round; hence, there is a base flow to the lagoon in the summer months that maintains the lagoon at a relatively constant size. The base flows in the summer are derived primarily from groundwater discharge in the lower watershed.

The depth of the lagoon in the summer typically ranges from 5 to 8 feet. The water surface elevation in the lagoon is generally determined by the height of the sandbar, which is usually about 6 to 8 feet (NAVD 88). If water surface elevations increase above these levels, the lagoon will breach the sandbar. The top of the beachway path bridge over Mission Creek along Cabrillo Boulevard is at elevation 12.6 feet. The elevation of the tops of the concrete sandbag wingwalls near the beachway bridge is about 9 to 10 feet. The elevation of the creek bed at the beachway bridge is typically 0 to 2 feet.

In 2000, and again in 2005, the City approved a Waterfront Area Sediment Management Program (SMP), which is implemented by the Waterfront and the Parks and Recreation Departments. The SMP allows the City to maintain a certain beach configuration at East Beach. The City may grade up to 200 feet from the centerline of Mission Creek and always outside of the lagoon itself, maintaining a 10-feet elevation for the berm. This grading ensures that the alignment of the

lagoon is towards the east, away from Stearns Wharf. It facilitates the merger of the Mission Creek lagoon with the water body at the mouth of Laguna Channel.

Laguna Channel is a manmade drainage that discharges to the beach about 800 feet east of Mission Creek.. During most of the year, a low-flow pump is periodically turned on to remove water accumulating in the channel upstream due to runoff, nuisance flows, or groundwater seepage. This water is discharged to a concrete flume that passes under the beachway and discharges to the beach. Two additional high/low pumps are turned on when flows increase. When the pumps are unable to keep up with the inflow during moderate to high storm flow conditions, the water level in the channel rises to flood stage. Alternatively, the tide gates are opened but only when the tides are low, allowing water to discharge directly to the beach. Once these flows have subsided, the tide gates are closed to prevent tides from entering the channel and contributing to flooding upstream.

The study area is paved and devoid of biological habitats except for the creek channel and lagoon. The creek channel contains open water estuarine habitat that supports fish and water-dependent birds. The channel does not currently have sufficient width or the appropriate bank configurations for streamside emergent wetlands. The banks are relatively steep, greater than a 1:1.5 incline, with the existing retaining wall and bridge abutments being vertical. During most of the year, the water in the creek is relatively high and at a constant elevation. The water depth is too great to allow for the growth of emergent wetland plants such as cattails. In addition, due to high-velocity winter flows, it is likely that in-stream vegetation would be washed away each winter during high creek flows.

Upstream of the State Street Bridge, there is a small bank on the east side of the creek where weedy plants are present, including pampas grass, brome grass, palms, mustard, and coyote bush. The bank on the west side of the creek is comprised of a wooden vertical wall and does not have any vegetation. The banks between Cabrillo Boulevard and State Street contain wooden vertical walls with patches of concrete rubble. The tops of the banks support a dense thicket of myoporum shrubs.

The bottom substrate of the lagoon is fine- to medium-grained sand with patches of gravel and cobble. A layer of algae, leaves, and organic detritus accumulates on the bottom substrate after each winter, particularly in the upstream half of the lagoon. Large patches of filamentous green algae are often present on the bottom substrate in the downstream half of the lagoon.

Mussels (Mytilus spp. or Galloprovincialis spp.) and barnacles (Balanus spp.) are abundant on the hard substrate associated with the wingwall and concrete pilings of the beachway path. A variety of objects (trash and garbage) was observed beneath the beachway path including hats, shopping carts, PVC pipes, rebar, palm fronds, bottles, cans, etc.

Downstream of the multipurpose trail bridge, the banks of the lagoon are protected by very old sackcrete walls. These vertical walls extend downstream approximately 150 feet on the west side and 100 feet on the east side. Turf, palm trees, and bare sand are present above these walls.

There is a 250-foot-long reach along the east bank of the creek beginning at the end of the sackcrete wall which contains a 25-foot wide band of annual and perennial vegetation that has colonized by opportunistic native and non-native plants. These species include sea rocket (Cakile maritima), rabbitsfoot grass (Polypogon monspeliensis), white sweet clover (Melilotus albus), Atriplex triangularis, and an unidentified sedge (Cyperus sp.).

Submerged or emergent vascular plants are absent from the lagoon. Vegetation in the lagoon is limited to clumps of brownish diatoms that grow on the bottom in shallow waters, and the filamentous green algae Entermorpha spp., which often forms thick, floating mats on the water surface in summer months when water temperature and salinity are relatively high.

Field surveys of the lagoon were conducted to characterize the invertebrate fauna. Benthic samples were collected at the upper, middle, and lower portions of the lagoon. Invertebrates collected from the estuary during the field survey consisted of "epibenthic" crustaceans and insects. "Infaunal" benthic organisms were not found in the samples collected from the lagoon. Survey results indicate that the invertebrate population does not affect abundance or presence of tidewater goby in Mission Creek.

The following species have been previously recorded in the lagoon: tidewater goby, prickly sculpin, staghorn scuplin, topsmelt, striped mullet, and partially armored stickleback. Two federally listed endangered species occur in the Mission Creek Lagoon: the tidewater goby (as a year-round resident) and southern steelhead (during upstream and downstream migration periods).

The lagoon and its margins are used for resting and feeding by numerous species of migratory and resident birds including waterfowl, diving and wading fishers, and shorebirds. Common species include western gull, ring-billed gull, Heermann's gull, mew gull, California brown pelican, pied-billed grebe, American coot, mallard, common loon, great egret, snowy

egret, killdeer, willet, western sandpiper, sanderling, American crow, and rock dove. Many other species are commonly observed using the lagoon, including great blue heron, green-backed heron, black-crowned night heron, Forster's tern, California gull, belted kingfisher, western grebe, marbled godwit, black-bellied plover, and spotted sandpiper, among others.

Bird use of the lagoon varies from month to month. Spring is a season of low bird diversity and abundance on East Beach, although small numbers of non-breeding western gulls, double-crested cormorants, and brown pelicans remain in the area. In early June, seabird use of the lagoon and beach area increases as western gulls, brown pelicans, and double-crested cormorants return from nearby breeding grounds on the Channel Islands. The late summer/early fall migrations bring large numbers of shorebird species into the Santa Barbara area. Larger shorebird species such as willet, whimbrel, marbled godwit, and black-bellied plover are common. Small shorebirds are commonly observed along the margins of the Laguna Channel water body, which has finer sediments than along the Mission Creek water body.

In mid-fall, gull and tern species diversity and abundance dramatically increases in the Santa Barbara area. East Beach and Mission Creek lagoon are used extensively at this time by the large flocks of loafing California, ring-billed, Heermann's, and western gulls. These birds remain in the area until spring migration in mid-March when bird diversity and abundance begins to diminish.

Most bird species occurring at Mission Creek lagoon use the gently sloping banks with extended areas of shallow water less than 10 inches in depth. This depth profile permits gulls and terns to wade into the lagoon and bathe. The ability to bathe in relatively fresh water is important to many seabirds that must continually rinse off saltwater and sand in order to maintain good feather quality. The shallow banks along the lagoon edge also allow shorebirds to forage over larger areas of optimal depth.

There are 13 sensitive species of concern that occur or have occurred historically in Mission Creek and the lagoon. They are listed in the table below, with an indication of suitable habitat presence and potential for occurrence in the study area and status of the species..

Sensitive Species

| **Common name** | **Habitat Presence** | **Potential for Occurrence** | Status |
|---|---|---|---|
| Tidewater goby | Present | Expected | Federal Endangered, State Species of Special Concern |
| Southern Steelhead | Present | Expected | Federal Endangered, State Species of Special Concern |
| Southwestern pond turtle | Absent | Not expected | Federal Species of Concern, State Species of Special Concern |
| Red-legged Frog | Absent | Not expected | Federal Threatened |
| Western snowy plover | Present | Not expected | Federal Threatened, State Species of Special Concern |
| California Brown Pelican | Present | Transient | Federal Endangered, State Endangered |
| California least tern | Present | Likely | Federal Endangered, State Endangered, California Fully-protected |
| Peregrine falcon | Absent | Not expected | Federal Species of Concern, State Endangered |
| California Gull | Present | Unlikely | State Species of Special Concern |
| Long-billed curlew | Present | Likely | State Species of Special Concern |
| Double-crested cormorant | Present | Not expected | State Species of Special Concern |
| Elegant Tern | Present | Likely | State Species of Special Concern |
| Black skimmer | Present | Transient | State Species of Special Concern |

Cultural Resources: Applied Earthworks prepared Archaeological and Historic Resources reports for the project. These reports are summarized in the Cultural Resources section and below, are incorporated by reference, and the Historic Resources Report is available for review at the Planning Division, 630 Garden Street, Santa Barbara.

The Archaeological Area of Potential Effect (APE) was established as the area of bridge construction; both sides of Mission Creek from the beach to 100 feet upstream of the State Street Bridge; bridge abutments; utility corridors; areas where the approach would be modified to match the new bridge; areas requiring landscaping; and the equipment staging/storage area at the southeast corner of Cabrillo Boulevard and Bath Street. From west to east, it extends along

Cabrillo Boulevard from 100 feet west of State Street to Santa Barbara Street on the east.

An archaeological literature and records search for the proposed project was conducted in September of 2005 at the Central Coast Information Center of the California Historical Resources Information System at the University of California, Santa Barbara. No previously recorded archaeological sites were identified within the project Area of Potential Effects (APE) as a result of this research. One previously recorded prehistoric archaeological site, CA-SBA-27, is located approximately 225 feet (68.6 meters) from the APE. Two unrecorded historical archaeological sites, a service station and driveway demolished in the early 1950s, and the Santa Barbara Lumber Company, demolished after 1931, were identified within the APE as the result of archival research.

The archaeological APE was surveyed in its entirety in September of 2005. The survey resulted in negative findings for prehistoric archaeological resources. In addition, examination of soil from geotechnical borings within the APE did not yield any cultural materials over 50 years of age. At the location of the demolished service station, wood supports or bulkheads are visible from the Cabrillo Bridge; however, much of this area is under water. No other historic archaeological material was identified.

Based on the history of the service station and the Santa Barbara Lumber Company, the potential for other deposits associated with these sites is considered unlikely. The sites qualify as Exempt from Evaluation under the Caltrans Section 106 Programmatic Agreement Attachment 4, "Properties Exempt from Evaluation," under Property Type 1: Minor, ubiquitous, or fragmentary infrastructure elements under the following categories:

- fragments of bypassed or demolished bridges; and/or
- foundations and mapped locations of buildings or structures more than 50 years old with few associated artifacts or ecofacts and
- with no potential for subsurface archaeological deposits.

The only historical resource within the APE is the Cabrillo Boulevard Bridge over Mission Creek (P-42-040445), located just east of the intersection of East Cabrillo Boulevard and State Street. This bridge is a contributing element of the East Cabrillo Boulevard Parkway Historic District. Its period of significance is from 1923 to 1928.

The Cabrillo Boulevard Bridge is the only historic property identified within the APE. The Caltrans' 1992 evaluation of the East Cabrillo Boulevard Parkway Historic District for the Carpinteria-Santa Barbara Median Widening and Interchange Project (Scott 1992) identified the bridge as a contributing element to the district. Beautification efforts along the Santa Barbara waterfront were first initiated prior to the turn of the twentieth century, when private landowners began donating waterfront property to the City. As a result, the City passed an ordinance in 1903 dedicating lands between Santa Barbara and Quarantina streets for use as a public park. By 1924, the City had acquired considerable additional beachfront properties, leading the City Planning Commission to hire planning consultant Charles Cheney. Cheney convinced the Planning Commission to also hire the Olmsted Brothers landscape architectural firm. In 1924, Cheney and the Olmsteds submitted their Major Traffic Street Plan: Boulevard and Park System for Santa Barbara California (Cheney and Olmsted Brothers 1924). One of the primary features of the Cheney/Olmsted plan was the improvement of East Cabrillo Boulevard, which called for a realignment of the road, improved water drainage, and vegetation planting. The north railing on the bridge is a remnant from the original 1913 bridge construction. The railing along the south side of the bridge consists of open balustrade.

The Cabrillo Boulevard Bridge was first built as a two-lane structure in 1913 as part of a city-wide bridge building plan. It was constructed of reinforced concrete and closed balustrades with a panel design. In 1928, the bridge was widened to four through-lanes and one turn lane as part of the Cheney/Olmsted plan. Original improvement plans called for widening both sides of the bridge, but the final expansion was restricted to the south side. A Class I bicycle and pedestrian lane were added along the south side of the bridge in 1977.

In 1992, the East Cabrillo Boulevard Parkway Historic District was delineated during a Caltrans survey for the Carpinteria-Santa Barbara Median Widening and Interchange Project (Kane and Scott 1992). The district was evaluated as eligible for listing on the NRHP under Criterion A, for its association with the city's involvement in the early years of the city planning movement in the United States, and under Criterion C, as a good example of the Olmsted Brothers work as landscape planners. The Office of Historic Preservation concurred on January 25, 1993.

The Cabrillo Boulevard Bridge was identified as a contributing element of the district. This bridge was one of three either constructed or widened during the East Cabrillo Boulevard Parkway Project, and is the only extant bridge from the historic district's period of significance (1923–1928).

Noise: The following description of the existing noise environment is based upon a report prepared by Channel Islands

Acoustics, dated, June 19, 2006, which is hereby incorporated by reference, and is available for review at the Planning Division, 630 Garden Street, Santa Barbara.

Although the project area is primarily industrial and commercial in nature, there are a few residences and other uses that could be impacted by project noise and vibration. They include:

- Permanent Residences
- Condominiums on the northerly side of Yanonali Street; westerly of Garden Street
- Penthouse residential floor of mixed use building northerly of Cabrillo Boulevard., east of Anacapa Street.
- Transient Residences
- Hotels
- Restaurant Outdoor Dining Patios
- Rusty's Pizza Parlor at NW corner of Cabrillo Boulevard and Helena Avenue
- Eladio's at NW corner of State Street and Cabrillo Boulevard
- Outdoor Recreation Areas
- Bicycle and pedestrian paths along Cabrillo Boulevard
- Park and art walk area south of Cabrillo Boulevard
- Visitors' center and Park/carousel at Garden Street and Cabrillo Boulevard
- Skateboard Park south of Cabrillo at Anacapa Street

In order to document the ambient environment, noise levels were monitored at several locations, concentrating on early morning and daytime time periods. Measurements were taken using logging sound level meters and logging real-time Analyzers. The existing Ldn values have been estimated to be 64-66 dB at the Yanonali and Multi Use residential locations and 60 dB at the side of Helena Avenue. In addition, existing traffic noise was estimated based upon existing traffic volumes.

The spectrogram of the strongest train-induced ground vibration measured near the vibration-sensitive Italian Pottery Outlet is provided in the Noise and Vibration study. The vibration level measured was 8 Hz. at the Pottery Outlet that appears to suffer no ill effects from this level of vibration, which results two to four times daily from freight train passages.

Water Quality: Extensive water quality sampling data has been collected for Lower Mission Creek and the Mission Creek Estuary. The project area of the Cabrillo Bridge replacement corresponds to the upper reach of the Mission Creek Estuary. Water quality within this area is influenced both by flows in Mission Creek and the annual morphological changes within the Mission Creek Estuary. The results of the various water quality studies in the Mission Creek watershed, estuary, and lagoon indicate the following relative to the upper Mission Creek Estuary:

- Inflows from the watershed generally do not have high concentrations of organic compounds, petroleum hydrocarbons, and heavy metals.
- The estuary and lagoon do not have high concentrations of organic compounds, petroleum hydrocarbons, and heavy metals.
- Sediments in the estuary may contain elevated concentrations of petroleum hydrocarbons and heavy metals, which may be stabilized in the sediment.
- Bacteria concentrations in the creek as it enters the estuary are generally very high.
- Bacteria concentrations in the lagoon are very high.
- Bacteria concentrations in the surf zone near the lagoon outlet are also very high, possibly only when the creek discharges to the ocean.
- Significant stratification of temperature and salinity occurs in the Lower Mission Creek estuary and lagoon during the warmer months and when the lagoon mouth is closed.
- Dissolved oxygen levels within the Lower Mission Creek estuary and lagoon fluctuate significantly during the day based on levels of algal photosynthesis and anoxic decay; this fluctuation is most apparent

during the warmer months and when the lagoon mouth is closed.

Mission Creek has a "water contact recreation (REC-1)" beneficial use designation in the Central Coast Basin Plan. REC-1 is defined as recreational uses involving water contact where ingestion of water is possible, including swimming, surfing, scuba diving, wading, fishing, etc. Water contact recreation within the proposed project area is limited. Adults and children sometimes wade or splash within the Mission Creek Estuary down-gradient from the Cabrillo Street bridge. The Basin Plan includes a numeric water quality standard for fecal coliform for waters with a REC-1 designation that would apply to Mission Creek:

The concentration of fecal coliform , based on a minimum of not less than 5 samples for any 30-day period, shall not exceed a long mean of 200 organisms /100 ml, nor shall more than 10% of total samples during any 30-day period exceed 400 organisms /100 ml. An 8.6 mile reach of Mission Creek was listed as Impaired on the 2002 California TMDL list for pathogens; the source of pathogens was identified as being from urban run-off and transient encampments. However, the RWQCB has given developing a TMDL for pathogens in Mission Creek a low priority.

The Pacific Ocean at East Beach (Mission Creek) was also identified as being impaired for pathogens on the 2002 List of Impaired Waters. The Central Coast RWQCB is currently in the process of developing a TMDL for the outlet of Mission Creek under its Santa Barbara Beaches Bacteria TMDL. The 2004 List of Impaired Waters has not yet been approved by the SWQCB.

The City of Santa Barbara has been collecting fecal indicator bacteria data from Mission Creek and its outlet on the Pacific Ocean since June 2001 as part of an urban creek and near shore monitoring program. Results of sampling show that concentrations of fecal indicator bacteria exceed human health standards. The sources of the fecal indicator bacteria in streams and near shore ocean water are not known in the Santa Barbara area but may include direct contamination from animals and transient human populations residing in the area, contamination from leaking sewer lines, or from leaking household connections to sewer lines. Contamination may enter the streams directly or be transmitted short distances through shallow ground water before discharging to the stream. Fecal bacteria contributions from resident bird populations also may be a large source of bacteria along the oceanfront.

Water quality in the Mission Creek watershed was characterized in a joint study by the City and County of Santa Barbara. Creek water was sampled at nine sites throughout the watershed during the period August 1998 to March 1999. The results indicated that water quality in the creek was good and that no applicable water quality objectives and standards from the Central Coast Regional Water Quality Board's Basin Plan were exceeded. Metals were not detected (Cd, Cr, and Hg) or were measured at very low levels (Cu, Ni, Pb, and Zn). Nutrient levels were also very low, particularly ammonia-nitrogen. Dissolved oxygen levels were very good and sediment concentrations (outside of flood flows) were low.

During the 1998/1999 study, bacteria concentrations were elevated at all stations after the first substantial rainfall event, a commonly observed condition due to the flushing effects of the first major rainfall. There was a distinct pattern of increasing bacteria concentrations from the top of the watershed to the mouth of the creek, as the creek traverses increasingly dense urban development.

In May 2001, the City initiated a comprehensive bacteriological monitoring program for City creeks, including Mission Creek. Samples are collected weekly (when water is present) at 14 sites in the watershed and analyzed for total coliform, fecal coliform, and enterococcus. The lowermost sampling location was at Montecito Street near the Railroad Station, upstream of the Mission Creek estuary. The data collected to date indicate the following:

- There are increasing levels of bacteria concentration from the top of the watershed to the bottom.
- Concentrations vary considerably from week to week, but there is no obvious seasonal trend with the exception of high values during the first flush storm.
- Bacteria levels in the lower watershed routinely exceed the standard.

The Corps of Engineers (2000) collected water quality samples at three locations along Lower Mission Creek as part of the analysis of the proposed flood control project. The results of the analysis indicate that water quality in the estuary portion of the creek was very good. Almost all analyses were below the detection limits. For example, no organochlorine pesticides, polychlorinated biphenyls, or poly nucleated aromatic hydrocarbons were detected. No heavy metals were detected, except for a low concentration of lead which was below the federal drinking water standard. Sediment samples were also analyzed at the same location. Organic compounds were not detected in the sediment samples. However, the sediment did exhibit elevated concentrations of petroleum hydrocarbons and heavy metals. Despite the elevated levels of these constituents, the concentrations of copper, lead, zinc and HPAH (high molecular weight polycyclic aromatic hydrocarbon), did not exceed the Apparent Effects Threshold (AET) set under the California Sediment Quality Guidelines.

The City of Santa Barbara has collected data on bacteria concentrations in the Mission Creek Estuary and Lagoon on several occasions. These data indicate very high levels are present in the lagoon, including fecal coliform levels that exceed the freshwater water quality objective for water contact recreation.

Sampling of indicator parameters has been conducted within the Mission Creek Estuary as part of the various studies since 1999. Temperatures in the Mission Creek estuary and lagoon are lowest in the winter (about 50-60°F), then increase to 70-80°F in the summer. Salinity levels in the Mission Creek lagoon vary greatly from season to season and from year to year depending upon whether the mouth is open, and the amount of freshwater flow and seepage in the creek. For example, the lagoon may exhibit very low salinity in the winter when the mouth is open intermittently because the high volume of freshwater displaces saltwater inflows from tides. When the lagoon is closed, salinity may be low if freshwater input is high due to prolonged runoff. However, it is more common for salinities to increase over time in a closed lagoon due to decreasing freshwater inflow, effects of evaporation from the lagoon, and continual seepage from the tides. Seasonal fluctuations in salinity and water temperature are very important in determining which aquatic species reside in the estuary at various times of the year.

Data collected in June 2000 showed that lagoon water temperatures can reach very high levels during summer months, exceeding 85°F in the lower saltwater layer. Water in the lagoon exhibits only slight increases in temperature during the day.

Salinity measurements were taken just downgradient of the Cabrillo Bridge in late May 2002. The lagoon exhibited a moderate salinity stratification in which the denser saltwater was below the lighter freshwater. Surface water was warmer than the deeper water. In general, dense saltwater at lower depths in estuaries is warmer than surface water. However, the temperature data from April 2002 suggests that the relatively high turbidity in the lagoon during April may have reduced sunlight at lower depths and prevented the warming of the lower saltwater layer.

Temperature and salinity recordings at several sites within the Mission Creek estuary were taken between May and November of 2005 (ECOR, 2005). The locations were established as the Mission Creek lower estuary, middle estuary and upper estuary and upstream of weir. The upper estuary sampling site corresponds with just downstream of Cabrillo Bridge. Strong temperature and salinity stratification were noted at all sampling sites at the upper estuary sample site. A maximum temperature difference (6.9°C) between surface and bottom waters, and a 14-fold increase in salinity between surface and bottom water layers was recorded at the upper estuary site in September and May, respectively.

The reported TDS content for groundwater in the Santa Barbara Basin in 1999 ranged from 520 to 960 mg/L. The local groundwater is very hard, containing large amounts of calcium and magnesium ions. The principal ions in the groundwater are calcium, magnesium, bicarbonate, and sulfate. The reported electrical conductivity values ranged from 790 to 1464 μmhos in 1999.

**Existing Land Use**

Existing Facilities and Uses: The site is used for drainage and transportation purposes. A restaurant is attached to the bridge on the north side of Cabrillo Boulevard on the east side of the bridge. To the north of the project site is a parking lot and commercial use. West of the site are commercial uses and south of the site are recreation uses.

## PROPERTY CHARACTERISTICS

| | | | |
|---|---|---|---|
| **Assessor's Parcel Number:** | ROW, 033-111-011 | **General Plan Designation:** | Open Space |
| **Zoning:** | PR/S-D-3, HRC-2/S-D-3 | **Parcel Size:** | 0.33 acres |
| **Existing Land Use:** | Transportation/Commercial | **Proposed Land Use:** | Transportation |
| **Slope:** | Less than 1% | | |
| **SURROUNDING LAND USES:** | | | |
| **North:** | Commercial | | |
| **South:** | Recreation/Beach | | |
| **East:** | Roadway/Commercial/Recreation | | |
| **West:** | Roadway/Commercial/Recreation | | |

## PLANS AND POLICY DISCUSSION

**Land Use and Zoning Designations:**

The property upon which the bridge is located is designated Recreation/Open Space in the General Plan. Transportation facilities such as bridges are allowed uses in this land use category.

Attached as Exhibit B are the relevant General Plan and Local Coastal Plan Goals and Policies. A discussion of project consistency with these goals and policies is provided below.

**General Plan Policies:**

### CULTURAL AND HISTORIC RESOURCES

As discussed in the Cultural Resources section, the proposed bridge replacement would remove an existing bridge that has been determined to be eligible for listing in the National Register and is a contributing element of the East Cabrillo Boulevard Parkway Historic District. The bridge would be removed because it has deteriorated structural integrity and insufficient hydrological capacity. Bridge replacement is therefore necessary. The impact of bridge removal would be mitigated by using the historic design elements in the new bridge and by documenting the existing bridge for archival purposes. This would minimize project impacts.

The project area was surveyed and research was conducted to identify archaeological resources in the project area and no archaeological resources were identified in the project area. Therefore, the project is consistent with City goals and policies related to protection or preservation of archaeological resources.

### VISUAL RESOURCES

The proposed bridge would not result in any additional view blockage when compared to the existing bridge. The bridge is currently in deteriorated condition and landscaping in the area is not native. The proposed project would improve the visual appearance of the bridge itself and of the surrounding creek banks as they would be revegetated using more appropriate riparian plant species. Some of the creek bank protection has deteriorated and would also be replaced with Historical Landmarks Commission approved hardscape/landscape materials. This would ensure a good appearance for creek landscaping. Therefore, the project would be consistent with these policies.

### AIR QUALITY

The proposed project would not have substantial air emissions associated with operations. During construction, emissions would result from construction equipment and exposed spoils. Estimates of these pollutants indicate that the project would not exceed pollutant loads for the air basin estimated by the air district. Therefore, the proposed project would be consistent with applicable air quality goals and policies.

### BIOLOGICAL RESOURCES

The proposed project would have short term biological impacts that can be reduced to less than significant levels. The project would also result in restoration of parts of Mission Creek banks. The project would enhance biological resources

in the long term and would therefore be consistent with applicable biological goals and policies.

**DRAINAGE AND FLOOD CONTROL**
The proposed project would increase the hydrological capacity of the creek under the bridge to allow for passage of the 20 year storm. This would help reduce upstream flooding during major storms. Therefore, the project would be consistent with the City's drainage and flood control goals.

**CIRCULATION ELEMENT**
The project would replace a bridge that has begun to lose its structural integrity and would therefore ensure that the roadway would be open to traffic. Therefore, the project is consistent with the circulation goals of the General Plan.

**SCENIC HIGHWAYS ELEMENT**
The proposed project would replace a bridge that has a dilapidated appearance and provide new creek bank plantings and erosion controls, improving the appearance of the area of Mission Creek at Cabrillo Boulevard. The project would allow views to be available in much the same way as they presently are. Therefore, the project is consistent with the goals of the Scenic Highways Element of the General Plan.

**NOISE ELEMENT**
Operational noise after the project would be similar to preconstruction noise levels since the existing bridge would be replaced with a similar bridge. Construction noise would be temporary and intermittent and measures are proposed in the noise section of this Initial Study to minimize the project construction noise impacts. Therefore, the project is consistent with applicable goals and policies of the Noise Element.

**LOCAL COASTAL PLAN**
It may be necessary to temporarily relocate some of the art show booths to allow for construction of the new bridge. The Relevant policies (see exhibit B) indicate that City decision-makers have anticipated the possible need to relocate the Art Show permanently. Temporary relocation of some vendors would therefore appear to be consistent with the Local Coastal Plan (LCP) Policy 3.8.

As required by Policy 6.3, the proposed project has included hydraulic and soils studies that have indicated the type and location of erosion controls that would be constructed. The erosion controls would replace existing facilities and would be necessary to protect the bridge foundation and surrounding area from erosion during high flows in the creek. The proposed structure would minimize the alteration of natural landforms, do not impede lateral access more than existing facilities, have little impact on shoreline sand supply, and the bridge would be placed on the creek to protect public health and safety, and allow safe emergency vehicle access. Therefore, the project is consistent with Policies 6.3 through 6.7.

The project would restore the creek banks and protect water quality and biological resources during construction as discussed in the biological and water quality sections of this Initial Study. Therefore, the proposed project would be consistent with Policy 6.8.

The proposed project replaces a bridge with several sets of non-aligned pilings in the creek with one set of pilings aligned to permit maximum hydrologic capacity. Spanning the creek with a low profile bridge would not be possible and therefore a row of pilings in the creek is necessary. Since the number of pilings would be reduced, the project is consistent with Policy 6.11A.

The proposed bridge would be designed to divert all flows through percolation basins on the beach before they are allowed to enter the estuary. During construction, there will be an emergency response plan and materials onsite ready to clean up and remove any spills of toxic materials. Therefore, the project is consistent with Policies 6.11-B and C.

The project would replace an existing bridge with a similar bridge and would therefore not block any views not currently blocked. The proposed design including (materials and colors) of the bridge will be reviewed by the HLC who would ensure that the bridge materials are appropriate for the area. Therefore, the project is consistent with policies 9.1 and 9.17.

## MITIGATION MONITORING AND REPORTING PROGRAM (MMRP)

A draft Mitigation Monitoring and Reporting Program has been prepared for the project in compliance with Public Resources Code §21081.6. The draft MMRP is attached here as **Exhibit C**

## ENVIRONMENTAL CHECKLIST

The following checklist contains questions concerning potential changes to the environment that may result if this project is implemented. If no impact would occur, **NO** should be checked. If the project might result in an impact, check **YES** indicating the potential level of significance as follows:

Significant: Known substantial environmental impacts. Further review needed to determine if there are feasible mitigation measures and/or alternatives to reduce the impact.

Potentially Significant: Unknown, potentially significant impacts that need further review to determine significance level and whether mitigable.

Potentially Significant, Mitigable: Potentially significant impacts that can be avoided or reduced to less than significant levels with identified mitigation measures agreed-to by the applicant.

Less Than Significant: Impacts that are not substantial or significant.

| **1. AESTHETICS** Could the project: | | **NO** | **YES** *Level of Significance* |
|---|---|---|---|
| a) | Affect a public scenic vista or designated scenic highway or highway/roadway eligible for designation as a scenic highway? | | Less Than Significant |
| b) | Have a demonstrable negative aesthetic effect in that it is inconsistent with Architectural Board of Review or Historic Landmarks Guidelines or guidelines/criteria adopted as part of the Local Coastal Program? | | Less Than Significant |
| c) | Create light or glare? | | Less Than Significant |

### Visual Aesthetics - Discussion

**Issues:** Issues associated with visual aesthetics include the potential blockage of important public scenic views, project on-site visual aesthetics and compatibility with the surrounding area, and changes in exterior lighting.

**Impact Evaluation Guidelines:** Aesthetic quality, whether a project is visually pleasing or unpleasing, may be perceived and valued differently from one person to the next, and depends in part on the context of the environment in which a project is proposed. The significance of visual changes is assessed qualitatively based on consideration of the proposed physical change and project design within the context of the surrounding visual setting. First, the existing visual setting is reviewed to determine whether important existing visual aesthetics are involved, based on consideration of existing views, existing visual aesthetics on and around the site, and existing lighting conditions. Under CEQA, the evaluation of a project's potential impacts to scenic views is focused on views from public (as opposed to private) viewpoints. The importance of existing views is assessed qualitatively based on whether important visual resources such as mountains, skyline trees, or the coastline, can be seen, the extent and scenic quality of the views, and whether the views are experienced from public viewpoints. The visual changes associated with the project are then assessed qualitatively to determine whether the project would result in substantial effects associated with important public scenic views, on-site visual aesthetics, and lighting.

Significant visual aesthetics impacts may potentially result from:

- Substantial obstruction or degradation of important public scenic views, including important views from scenic highways; extensive grading and/or removal of substantial amounts of vegetation and trees visible from public areas without adequate landscaping; or substantial loss of important public open space.
- Substantial negative aesthetic effect or incompatibility with surrounding land uses or structures due to project size, massing, scale, density, architecture, signage, or other design features.
- Substantial light and/or glare that poses a hazard or substantial annoyance to adjacent land uses and sensitive receptors.

## Visual Aesthetics – Existing Conditions and Project Impacts

### 1.a and b Scenic Views On-Site Aesthetics

The project site is located on the waterfront and is visible from the beach area and roadway adjacent to the bridge. The Visual Resources Map of the Local Coastal Plan indicates that there are important views of the wharf from the area of the proposed bridge and that some views to the north, from the project area, are already partially blocked. The bridge itself is not highly visible from most viewpoints along Cabrillo Boulevard. From State Street, the bridge is clearly visible when viewed from the sidewalk on the east side but not from the west side or from automobiles traveling on State Street (except where it crosses Cabrillo Blvd.). The view of the bridge from the eastern sidewalk is degraded because the bridge is deteriorating and cracks and rusting steel are visible. The south side the bridge is relatively new and has the appearance of bridges constructed in the last 50 years without any remarkable features. The grate covering the utilities has a utilitarian appearance and is not especially attractive to the viewer. From Cabrillo Boulevard, deteriorated chain link fence is visible on much of the northern side of the bridge and continues to State Street.

Four palm trees would be removed and replaced with four 35 foot tall trees of the same species. This impact would be less than significant because there are many similar trees in the area and the loss of four trees would not be prominent, visually. Also, the trees would be replaced. See the section on historic resources for further discussion and mitigation for loss of the trees.

During construction, the project site would have an unsightly appearance to the casual viewer due to the construction work and equipment that would be present. This impact would be temporary and therefore **less than significant**.

After construction, the bridge would have a similar appearance to the existing bridge with the same railings (replicated for historic preservation purposes) and basic configuration. Less chaotic appearing piles that would be organized in a single row beneath the bridge, replacement of the chain link fence, replacement of deteriorating concrete on the existing bridge, and the elimination of the utility grate on the southern end of the bridge would result in improvements in the appearance of the bridge. The new bridge would not protrude substantially more into any viewsheds than the existing bridge. Bank restoration approved under the Lower Mission Creek Flood Control Project would remove existing deteriorated bank shoring and replace ornamental landscaping that consists of a single plant species with a variety of plants that are native to the area improving the creek banks' appearance. Bank protection downstream would result in the removal of unsightly sacrete walls and replacement of these walls with ungrouted rock boulders, vegetation and erosion control blankets of made of cocoanut fiber, further improving the visual appearance of the area. Therefore, the project impacts on scenic and on-site views would be **less than significant**. In addition, the project would be reviewed by the Historic Landmarks Commission and that review would provide additional assurance that the new bridge appearance would not impact views in the area.

### 1.c) Lighting

No lighting is proposed as a part of the project. Any lighting constructed would replace existing lighting in type and location and would therefore not result in a significant change in lighting in the area. Any replaced lighting would be required to comply with the City lighting ordinance that requires lights to be shielded and directed towards the ground. Lighting impacts would therefore be **less than significant**.

## Visual Aesthetics –Mitigation

None Required

## Visual Aesthetics - Residual Impacts

*Less than significant.*

| **2. AIR QUALITY** | | **NO** | **YES** |
|---|---|---|---|
| | Could the project: | | ***Level of Significance*** |
| a) | Violate any air quality standard or contribute to an existing or projected air quality violation? | | Less Than Significant |

| | | | |
|---|---|---|---|
| b) | Expose sensitive receptors to pollutants? | | Less Than Significant |
| c) | Create objectionable odors? | | Less Than Significant |
| Is the project consistent with the County of Santa Barbara Air Quality Attainment Plan? Yes | | | |

## Air Quality - Discussion

**Issues.** Air quality issues involve pollutant emissions from vehicle exhaust and industrial or other stationary sources that contribute to smog, particulates and nuisance dust associated with grading, construction, and operational processes, and nuisance odors.

Smog, or ozone, is formed in the atmosphere through a series of photochemical reactions involving interaction of oxides of nitrogen [$NO_x$] and reactive organic compounds [ROC] (referred to as ozone precursors) with sunlight over a period of several hours. Primary sources of ozone precursors in the South Coast area are vehicle emissions. Sources of particulate matter ($PM_{10}$) include demolition, grading, road dust, agricultural tilling and mineral quarries and vehicle exhaust ($PM_{2.5}$).

The City of Santa Barbara is part of the South Coast Air Basin. The City is subject to the National Ambient Air Quality Standards and the California Ambient Air Quality Standards (CAAQS), which are more stringent than the national standards. The CAAQS apply to six pollutants: photochemical ozone, carbon monoxide, sulfur dioxide, nitrogen dioxide, particulate matter, and lead. The Santa Barbara County Air Pollution Control District (SBCAPCD) provides oversight on compliance with air quality standards and preparation of the County Clean Air Plan.

Presently, Santa Barbara County is considered in attainment of the federal eight-hour ozone standard, but does not meet the state one-hour ozone standard or the standard for particulate matter less than ten microns in diameter (PM10). Insufficient data is available to determine our attainment status for either the federal standard for particulate matter less than 2.5 microns in diameter (PM2.5) or the state PM2.5 standard. The state recently adopted a new eight-hour ozone standard that became effective in May 2006. Although the state has not yet issued attainment designations, the data indicate Santa Barbara County will be considered in nonattainment of this standard.

**Impact Evaluation Guidelines.** A project may create a significant air quality impact from the following:

- Exceeding an APCD pollutant threshold; inconsistency with District regulations; or exceeding population forecasts in the adopted County Clean Air Plan.
- Exposing sensitive receptors, such as children, the elderly, or sick people to substantial pollutant exposure.
- Substantial unmitigated nuisance dust during earthwork or construction operations.
- Creation of nuisance odors inconsistent with APCD regulations.

Long-Term (Operational) Impact Guidelines: The City of Santa Barbara uses the SBCAPCD thresholds of significance for evaluating air quality impacts. The APCD has determined that a proposed project will not have a significant air quality impact on the environment if operation of the project will:

- Emit (from all project sources, both stationary and mobile) less than 240 pounds per day for ROC and $NO_x$, and 80 pounds per day for $PM_{10}$;
- Emit less than 25 pounds per day of ROC or $NO_x$ from motor vehicle trips only;
- Not cause a violation of any California or National Ambient Air Quality Standard (except ozone);
- Not exceed the APCD health risks public notification thresholds adopted by the APCD Board; and
- Be consistent with the adopted federal and state air quality plans for Santa Barbara.

Short-Term (Construction) Impacts Guidelines: Projects involving grading, paving, construction, and landscaping activities may cause localized nuisance dust impacts and increased particulate matter ($PM_{10}$). Substantial dust-related impacts may be potentially significant, but are generally considered mitigable with the application of standard dust control mitigation measures. Standard dust mitigation measures are applied to projects with either significant or less than significant effects.

Exhaust from construction equipment also contributes to air pollution. Quantitative thresholds of significance are not currently in place for short-term or construction emissions. However, SBCAPCD uses combined emissions from all

construction equipment that exceed 25 tons of any pollutant except carbon monoxide within a 12-month period as a guideline threshold for determining significance of construction emission impacts.

Cumulative Impacts and Consistency with Clean Air Plan: If the project-specific impact exceeds the ozone precursor significance threshold, it is also considered to have a considerable contribution to cumulative impacts. When a project is not accounted for in the most recent Clean Air Plan growth projections, then the project's impact may also be considered to have a considerable contribution to cumulative air quality impacts. The Santa Barbara County Association of Governments and Air Resources Board on-road emissions forecasts are used as a basis for vehicle emission forecasting. If a project provides for increased population growth beyond that forecasted in the most recently adopted CAP, or if the project does not incorporate appropriate air quality mitigation and control measures, or is inconsistent with APCD rules and regulations, then the project may be found inconsistent with the CAP and may have a significant impact on air quality.

## Air Quality – Existing Conditions and Project Impacts

### 2.a-b) Air Pollutant Emissions

Long-Term (Operational) Emissions:

There would be minimal change in operational emissions related to the bridge replacement because it replaces an existing bridge with a similar bridge. The bridge itself would not result in operational emissions. Traffic from other projects would continue to emit a similar level of emissions to current levels. Therefore, long term impacts would be **less than significant.**

Short-Term (Construction) Emissions:

Short term emissions for construction equipment were calculated using emission factors derived from Santa Barbara Air Pollution Control District Table 1 Construction Equipment Uncontrolled Emission Factors. Construction employee vehicle emissions were calculated using URBEMIS 2002 Version 8.7. Detailed assumptions and calculations are provided in Exhibit D. The estimates of project emissions are provided in the tables below.

**Emissions Estimates for Worker Daily Commute (lbs/day)**

| | ROG | NOX | CO | SO2 | PM10 |
|---|---|---|---|---|---|
| 50 1 way trips/day | 1.11 | 0.88 | 11.99 | 0.01 | 0.89 |

**Construction Equipment Emissions (lbs)**

| | THC | AIDEHYDE | NOX | SOX | CO | ROG | PM10 |
|---|---|---|---|---|---|---|---|
| Year 1 | 40.4 | 10.4 | 45943.5 | 48.2 | 181.6 | 106.5 | 39.1 |
| Year 2 | 38.6 | 9.7 | 31470.2 | 52.2 | 147.3 | 79.5 | 73.4 |

During the first year, construction equipment would generate approximately 23 tons of NOX and 0.05 tons of ROC. During the second year of construction (expected to last seven months) construction equipment would generate approximately 16 tons of NOX and 0.04 tons of ROC. Since the project would not exceed the threshold of 25 tons per year, project emissions would be **less than significant**. Construction emissions would be reduced by mitigation measures recommended below. Beginning in June 2006, construction equipment would be required to use ultra-low sulfur diesel only. This is a California Air Resource Board (CARB) requirement and has not been added as a mitigation measure because the project would not begin construction before June 2006.

The Santa Barbara Air Pollution Control District (APCD) regulates bridge demolition. Concrete used to construct the existing bridge may contain asbestos The APCD requires that the applicant file an asbestos notification form and remove an y asbestos found in accordance with specific regulations.

Sensitive Receptors: Sensitive receptors are defined as children, elderly, or ill people that can be more adversely affected by air quality problems. Land uses typically associated with sensitive receptors include schools, parks, playgrounds, childcare centers, retirement homes, convalescent homes, hospitals, and clinics. Construction sources of particulates and exhaust emissions are of particular concern to sensitive receptors, as is construction dust and particulate matter. The project would not include stationary sources, but sensitive receptors at the park could be affected by dust and particulates during project site grading. Exhaust and dust emissions would be intermittent during construction and park uses adjacent

to the site are expected to result in short term exposures of the public to these emissions due to the transitory nature of the park uses during construction and the availability of adjacent park areas for public use. Nuisance dust and particulates would be **less than significant** and would be further reduced through application of dust control mitigation measures. The less than significant amounts of these pollutants would result in less than significant exposure of sensitive receptors to pollutants.

**2.c) Odors**

The project is limited to construction of a replacement bridge, and would not include any new land uses involving odors or smoke. Construction may result in emissions that create nuisance odors that would be temporary. Therefore odor emissions would be related to construction and would be short-term nuisance impacts that are **less than significant**.

**Clean Air Plan Consistency.**

Consistency with the Clean Air Plan: Direct and indirect emissions associated with the project are accounted for in the CAP emissions growth assumptions. Appropriate air quality mitigation measures, including construction dust suppression, would be applied to the project, consistent with CAP and City policies. The project could be found consistent with the Clean Air Plan.

## Air Quality – Recommended Mitigation

**AQ-1** **Construction Dust Control – Minimize Disturbed Area/Speed.** Minimize amount of disturbed area and reduce on site vehicle speeds to 15 miles per hour or less.

**AQ-2** **Construction Dust Control - Watering.** During site grading and transportation of fill materials, regular water sprinkling shall occur using reclaimed water whenever the Public Works Director determines that it is reasonably available. During clearing, grading, earth moving or excavation, sufficient quantities of water, through use of either water trucks or sprinkler systems, shall be applied to prevent dust from leaving the site. Each day, after construction activities cease, the entire area of disturbed soil shall be swept to remove soil from paved areas and sufficiently moistened to create a crust in unpaved areas not in the creek.

Throughout construction, sweeping of paved areas and water trucks or sprinkler systems on unpaved areas excluding the creek, shall also be used to keep all areas of vehicle movement clean or damp enough to prevent dust raised from leaving the site. At a minimum, this will include wetting down such areas in the late morning and after work is completed for the day. Increased watering frequency will be required whenever the wind speed exceeds 15 mph.

**AQ-3** **Construction Dust Control – Tarping.** Trucks transporting fill material to and from the site shall be covered from the point of origin.

**AQ-4** **Construction Dust Control – Gravel Pads.** Gravel pads shall be installed at all access points to prevent tracking of mud on to public roads.

**AQ-5** **Construction Dust Control – Stockpiling.** If importation, exportation and stockpiling of fill material are involved, soil stockpiled for more than two days shall be covered, kept moist, or treated with soil binders to prevent dust generation.

**AQ-6** **Construction Dust Control – Disturbed Area Treatment.** After clearing, grading, earth moving or excavation is completed, the entire area of disturbed soil shall be treated to prevent wind pickup of soil. This may be accomplished by:

A. Seeding and watering until grass cover is grown;

B. Spreading soil binders;

C. Sufficiently wetting the area down to form a crust on the surface with repeated soakings as necessary to maintain the crust and prevent dust pickup by the wind;

D. Other methods approved in advance by the Air Pollution Control District.

**AQ-7** **Construction Dust Control – Paving.** All roadways, driveways, sidewalks, etc., should be paved as soon as possible. Additionally, building pads should be laid as soon as possible after grading unless seeding or soil binders are used.

**AQ-8 Construction Dust Control – PEC.** The contractor or builder shall designate a person or persons to monitor the dust control program and to order increased watering, as necessary, to prevent transport of dust offsite. Their duties shall include holiday and weekend periods when construction work may not be in progress. The name and telephone number of such persons shall be provided to the Air Pollution Control District prior to land use clearance for map recordation and land use clearance for finish grading for the structure.

The following shall be adhered to during project grading and construction to reduce NOx and PM2.5 emissions from construction equipment:

**AQ-9** Heavy-duty diesel-powered construction equipment manufactured after 1996 (with federally mandated "clean" diesel engines) shall be utilized wherever feasible.
**AQ-10** The engine size of construction equipment shall be the minimum practical size.
**AQ-11** The number of construction equipment operating simultaneously shall be minimized through efficient management practices to ensure that the smallest practical number is operating at any one time.
**AQ-12** Construction equipment shall be maintained in tune per the manufacturer's specifications.
**AQ-13** Construction equipment operating onsite shall be equipped with two to four degree engine timing retard or pre-combustion chamber engines.
**AQ-14** Catalytic converters shall be installed on gasoline-powered equipment, if feasible.
**AQ-15** Diesel catalytic converters, diesel oxidation catalysts and diesel particulate filters as certified and/or verified by EPA or California shall be installed, if available.
**AQ-16** Diesel powered equipment should be replaced by electric equipment whenever feasible.
**AQ-17** Idling of heavy-duty diesel trucks during loading and unloading shall be limited to five minutes; auxiliary power units should be used whenever possible.
**AQ-18** Construction worker trips shall be minimized by requiring carpooling and by providing for lunch onsite.
**AQ-19** Biodiesel shall be used to the maximum extent feasible.

See the SBCAPCD *Scope and Content of Air quality Sections in Environmental Documents* for land use and design measures that promote the use of alternative modes of transportation, offsite mitigation measures, energy conservation measures, and green building measures.

## Air Quality - Residual Impacts

Less than significant.

| 3. BIOLOGICAL RESOURCES<br>Could the project result in impacts to: | | NO | YES<br>*Level of Significance* |
|---|---|---|---|
| a) | Endangered, threatened or rare species or their habitats (including but not limited to plants, fish, insects, animals, and birds)? | | Potentially Significant, Mitigable |
| b) | Locally designated historic, Landmark or specimen trees? | | Potentially Significant, Mitigable |
| c) | Natural communities (e.g. oak woodland, coastal habitat, etc.). | | Potentially Significant, Mitigable |
| d) | Wetland habitat (e.g. marsh, riparian, and vernal pool)? | X | |
| e) | Wildlife dispersal or migration corridors? | | Potentially Significant, Mitigable |

## Biological Resources - Discussion

**Issues:** Biological resources issues involve the potential for a project to substantially affect biologically-important natural vegetation and wildlife, particularly species that are protected as rare, threatened, or endangered by federal or state wildlife agencies and their habitat, native specimen trees, and designated landmark or historic trees.

**Impact Evaluation Guidelines:** Existing native wildlife and vegetation on a project site are qualitatively assessed to identify whether they constitute important biological resources, based on the types, amounts, and quality of the resources

within the context of the larger ecological community. If important biological resources exist, project effects to the resources are qualitatively evaluated to determine whether the project would substantially affect these important biological resources. Significant biological resource impacts may potentially result from substantial disturbance to important wildlife and vegetation in the following ways:

- Elimination or substantial reduction or disruption of important natural vegetative communities and wildlife habitat or migration corridors, such as oak woodland, coastal strand, riparian, and wetlands.
- Substantial effect on protected plant or animal species listed or otherwise identified or protected as endangered, threatened or rare.
- Substantial loss or damage to important native specimen trees or designated landmark or historic trees.

## Biological Resources – Existing Conditions and Project Impacts

A Natural Environmental Study was prepared for the project by URS Consultants (December 2006). A summary of the report is provided in the existing conditions section above and impacts section below, and the report is hereby incorporated by reference.

No specimen or historic trees are located in the project area. No plant species of special concern or status occur at the project site.

**3.a,c,d,e) Native Wildlife and Habitat**

*Construction Impacts*

Since no plant species of special concern or status occur at the project site, or would be affected by the proposed project construction, there would be **no impacts** on these plant species.

No wetlands are located on the project site (using Army Corps criteria) and therefore **no impacts** on wetlands would occur.

The tidewater goby was listed by the U.S. Fish and Wildlife Service (USFWS) as an endangered species and the USFWS proposed a critical habitat designation for the Mission Creek/Laguna Channel lagoon. Construction of the bridge would involve dewatering approximately one third of the lagoon area (a 650 foot long stretch of Mission Creek and lagoon) to allow for reconstruction of the creek banks north of the bridge and for bridge demolition and construction in the creek itself, for a period of about six months (April to October). Installation of the cofferdams will require the capture and relocation of gobies in the work area that would be dewatered. These activities may result in the unintentional loss of individual tidewater gobies. Additionally, because of the size of the hatchlings, it is probable that hatchling mortality will occur during the project. This impact would be mitigable because all of the standard, proven measures to capture and relocate gobies would be applied to the project in accordance with a Biological Opinion issued by U.S. Fish and Wildlife Service and described in the Mitigation Measures below. Also, the cofferdams and flume would be installed prior to tidewater goby hatchlings emerging in large numbers to minimize the potential to affect this component of the seasonal population. Dewatering of the creek would result in a **potentially significant, mitigable** impact. Project impacts to the goby would be reduced to less than significant levels because the mitigation proposed by the applicant and required in this Initial Study would ensure that the species would be disturbed as little as possible and, although the natural population varies a lot, the species would not be extirpated.

More limited dewatering is also anticipated to allow construction of the temporary multi purpose bridge abutments and the area around the west bank of the creek between the State Street Bridge over Mission Creek and the proposed new bridge. Sheet piles or other approved techniques would be used to create a dry working area. The proposed approach of using qualified biologists to relocate fish from the area to be dewatered, installation of fish blocking nets to keep them out, and monitoring would minimize the potential for take of gobies or other fish species. In all dewatering operations, use of a pump with 1/8 inch screen on the intake surrounded by a ring of boulders covered with fish net would be used to ensure no fish are entrained in the pump and pressures around the inlet do not force fish into the pump inlet. Monitoring of the discharge area to find damaged gobies or rescue any fish is also proposed. Limited dewatering of the creek would result in a **potentially significant, mitigable** impact for the same reasons provided above.

Noise and vibration during pile driving, expected to occur in the creek for about 44 days, could disturb and displace the tidewater goby. The piles to be inserted in the creek bed while there is water in the creek would be inserted within a protective waterproof sleeve that has an 1/8 inch screen on the bottom end. This sleeve would be maneuvered into place under the bridge deck and would preclude any gobies from being directly adjacent to the steel pile that would be inserted into the sleeve and driven into the ground. The gobies would therefore move away from the pile insertion point and avoid being injured by the pile insertion and be encouraged to move away from the vicinity of the pile insertion point. Turbidity

generated by pile driving would also be reduced by the sleeve. Note that only the center row of piles would be driven into the creek bed as the remaining piles would be driven outside of the existing abutments, in the creek bank. Pile insertion would result in a **potentially significant, mitigable** impact, since gobies have refuge areas away from the construction area (an estimated two thirds of their habitat in the estuary would not be disturbed).

Construction work above the wetted channel could result in discharge of construction debris and materials into the estuary. Of primary concern is the discharge of wet concrete due to the associated increase in alkalinity that can be toxic to fish. Concrete debris and equipment related leak discharges could also occur. This impact would be reduced partly because of the proposed dewatering that would reduce the potential for wet cement coming into contact with water in the creek. Piles will be driven and filled with concrete in Stage 1 when the creek is flowing. During the phase of breaching the bridge deck, a plywood deck, construction diaper, or other method will be used underneath the bridge to collect any falling debris or concrete. To prevent the generation of silt from the physical movement of the pile into the creek bottom sediments, and to prevent leakage of concrete when filling the hollow pile, a temporary impermeable containment sleeve will be placed surrounding the base of the pile, before insertion (embedded in the bottom) to capture silt or leaking concrete. The secondary containment sleeve will minimize adverse effects to aquatic species. The containment sleeve will be wrapped at the bottom with 1/8-inch mesh screen before insertion to prevent fish from being trapped inside. The sleeve will be connected to the bridge deck with a thick plastic sleeve to prevent concrete or debris from falling into the creek during piling installation. A monitor provided by the contractor will ensure that the sleeve remains intact during pile construction operations, and shall inspect for leakage. If leakage occurs, the captured turbid water or concrete fluids will be tested for pH and will be pumped from between the sleeve and pipe to a portable tank (Baker tank). The waste fluids will be disposed of off-site. Discharges into the creek would therefore result in a **potentially significant, mitigable** impact.

Construction of the new bridge will result in the temporary dewatering of a 650-foot-long reach of the Mission Creek estuary which is occupied tidewater goby habitat. It appears that the most favorable habitat in the estuary extends from the upper lagoon to State Street Bridge, which coincides with the project work limits. Dewatering a 650-foot-long reach of the estuary during a 6 to 7 month period would be a **potentially significant, mitigable** impact because: 1) it only represents a fraction of the entire estuary (~33%) so gobies can find temporary refuge elsewhere in the estuary/lagoon, 2) it is temporary, and 3) the dewatered areas will have a bypass flume to allow gobies to travel between the upper estuary and the lagoon.

NOAA Fisheries has designated Mission Creek as critical habitat for steelhead. Steelhead typically migrate to marine waters after spending one to two years in fresh water, and then spend two or three years in the ocean before returning to streams to spawn. Adult steelhead are stimulated to begin their upstream migration when there are high winter flows in the stream. The fish move upstream during receding flows when the turbidity levels are improving. Steelhead may migrate upstream when there are suitable flows during the period of December through March. It appears that individual fish or a small number of adults migrate up the creek during years with good winter runoff. Suitable spawning habitat is present in the upper reaches of Mission Creek. Steelhead are expected to travel through the lagoon during upstream and downstream migration events when the lagoon is open. By completing this pile driving early in the winter, impacts to adult steelhead that may migrate upstream would be avoided. Proposed project timing reduces this **potentially significant, mitigable** and this timing is also required mitigation.

Construction of the new bridge will result in the temporary dewatering of a 650-foot-long reach of the Mission Creek estuary. Two cofferdams would be installed and maintained at each end. The creek will be dewatered during the period March through October. Adult steelhead migration typically is over by the end of March, and smolt downstream migration typically is over by the end of May. Dewatering this portion of the estuary during this 7 to 8 month period would be **potentially significant, mitigable** because: 1) the creek bypass system proposed as part of the project is designed to allow free passage of steelhead and other fish through the work area, 2) there is no evidence that smolts oversummer in the lagoon or estuary, and 3) most of the time the smolts would migrate there would be no impediments to migration of this species due to the timing of proposed construction.

The project has the potential to disturb the brown pelican due to daytime noise and vibration, and due to discharge of construction debris and materials into the lagoon. These impacts are considered to be **less than significant** for several reasons. The disturbance would be temporary and reversible. Secondly, the use of the affected area of the lagoon by the brown pelican is not considerable due to limited food resources and water visibility, and substantial adjacent foraging areas. Thirdly, the avoidance and minimization methods presented contain measures to prevent discharge of construction debris and sediment into the lagoon at all times. Fourth, the project area is heavily used by the public and so brown pelican use of the area is infrequent. Finally, mitigation is provided to cease constructiuon if the brown pelicans are present.

Western snowy plovers, a federally listed endangered species, are rarely found near the Mission Creek lagoon and Stearns Wharf area because the high concentration of people on the beach discourages plover use. Plovers may occasionally forage or rest near the lagoon, but they are not common on the beach close to the project site primarily due to its proximity to people. The project has the potential to result in disturbances to the western snowy plover due to daytime noise and vibration during the pile-driving phase (about four months) and due to discharge of construction debris and materials into the estuary. These impacts are considered to be **less than significant** because they would all be temporary and reversible; the affected reach of the estuary is rarely used by plovers due to noise, vibration and human activities at other locations hundreds of feet from the work area; and the avoidance and minimization measures proposed as part of the project contain measures to prevent discharge of construction debris and sediment into the estuary.

The proposed bridge replacement is not within known use areas for least terns. Construction activities could cause temporary disturbances to the least tern if present due to daytime noise and vibration and discharge of construction debris and materials into the lagoon. These impacts would be **less than significant** because least terns are not expected in the project area nor would disturbances be considered sizeable, if they were present, due to limited food resources and water visibility, and substantial adjacent foraging areas. Secondly, all disturbances are temporary and reversible. Thirdly, the mitigation measures proposed as a part of the project prevent discharge of construction debris and sediment into the lagoon, and require that within a 200-foot minimum distance of project construction a biologist would monitor for least terns and would stop work within 200 feet of any least terns.

Temporary dewatering of a 650-foot-long reach of the Mission Creek estuary could result in displacing southwestern pond turtles, if present. This impact would **potentially significant, mitigable** because all of the standard, proven measures to locate, capture, and relocate turtles will be instituted, and during the goby capture and relocation activity, the biological monitor will also observe for presence of southwestern pond turtles and relocate them outside the project area. Also, the habitat disturbances are temporary and reversible and there is a low potential for this species to occur on the site.

The proposed bridge replacement is not within known use areas for red-legged frogs. Construction activities could cause the following temporary disturbances to the red-legged frogs, if present: 1) daytime noise and vibration; 2) construction work that could result in an incidental take; and 3) potential erosion and sedimentation during construction. These impacts are considered to be **potentially significant, mitigable** because they are temporary and reversible, the use of the affected area of the lagoon by the red-legged frog is not expected due to unsuitable habitat, the mitigation measures proposed as a part of the project prevent discharge of construction debris and sediment into the lagoon at all times, and a biological monitor will be on site for other sensitive species monitoring requirements, and will be able to fulfill the necessary stop work and consultation services necessary in the unlikely event that a red-legged frog were to occur in the project area.

Project impacts to palm trees that would be removed are discussed in the sections on historic and aesthetic resources and would be **less than significant** from a biological perspective. Mitigation would require replacement of the trees to be removed. Project impacts to birds that could be nesting in the trees could be **potentially significant, mitigable.** Mitigation that would result in removal of the trees when no nesting birds are available or surveying the trees prior to removal if this occurs during bird nesting season would reduce this impact to less than significant levels because the nesting birds would be avoided.

*Operational Impacts*

Since no plant species of special concern or status occur at the project site, or would be affected by the proposed project, there would be no impacts on theses plant species due to operation of the bridge. Cabrillo Bridge already exists and will be replaced in substantially the same location as the existing bridge. Therefore, the proposed project would result in no impacts on wildlife due to bridge operations.

**3.b) Specimen Trees**

There are no specimen trees in the project area and so the project would have no impacts on specimen trees.

## Biological Resources – Mitigation

**BIO-1** Except for installation of sheet piles (Porta Dam or equivalent) for partial dewatering and diversion of three areas for 1) pile installation (including the temporary beachway bridge), 2) abutment construction, and 3) bank protection, construction work in the Mission Creek channel and on the banks, including construction of the cofferdams, shall not occur during the period October 1/November 1 to mid March/April 30 during an average or above-average rainfall year. The exact schedule is subject to revision dependent on weather conditions and monitoring for goby spawning. Construction work requiring dewatering/diversion in the creek shall not begin until forecasts from the National Weather Service provide reasonable assurance that the winter rainfall has ended, and/or tidewater goby monitoring shows no

reasonable evidence of initiation of spawning season.

**BIO-2** Pile driving and construction for the center line of piles on the north side of the road (Stage 1) shall be completed during the period October 1 to December 1 to avoid vibration impact in the creek during the adult steelhead migration period, which can begin as early as December 1 if there are suitable runoff conditions. Weather and other possible delays permitting, the center row of piles for the north side of the bridge will be driven and filled with concrete with the existing bridge deck intact and while the creek is not dewatered. This date may be moved forward as late as December 31 if the lagoon remains closed (i.e., has not breached by its own forces). If all the center row of pilings cannot be completed in Stage 1, the center piles on the south side of Cabrillo Boulevard currently identified for Stage 3, will be driven and filled while the cofferdams are installed and the creek is dewatered during Stage 2.

**BIO-3** Bridge demolition, center bent construction, north side abutment construction, and deck placement on the north side (Stage 2) shall occur when the creek is dewatered and diverted to the flume. Bent construction and deck placement on the south side may occur before cofferdams are constructed or after the cofferdams are removed, provided the erosion and water quality protection measures (see Water Quality section) are implemented.

**BIO-4** Piles will be driven and filled with concrete in Stage 1 when the creek is flowing. During the phase of breaching the bridge deck, a plywood deck, construction diaper, or other method will be used underneath the bridge to collect any falling debris or concrete. To prevent the generation of silt from the physical movement of the pile into the creek bottom sediments, and to prevent leakage of concrete when filling the hollow pile, a temporary impermeable containment sleeve will be placed surrounding the base of the pile, before insertion (embedded in the creek bottom) to capture silt or leaking concrete. The containment sleeve will be wrapped at the bottom with 1/8-inch mesh screen before insertion to prevent fish from being trapped inside. The sleeve shall be connected to the bridge deck with a thick plastic sleeve to prevent concrete or debris from falling into the creek during piling installation. A monitor provided by the contractor shall ensure that the sleeve remains intact during pile construction operations, and shall inspect for leakage. If leakage occurs, the captured turbid water or concrete fluids will be tested for pH and will be pumped from between the sleeve and pipe to a portable tank (Baker tank). The waste fluids will be treated and disposed of off-site in the sewer system or other approved location.

**BIO-5** A cofferdam or equivalent barrier shall be placed between the abutment being installed and the open creek channel during construction to prevent spillage of construction materials and concrete. A plywood deck or construction diaper shall be placed above the Mission Creek bed when constructing the bent and placing the bridge deck. The barrier shall be designed to capture all dry or liquid materials (including concrete) and prevent discharge to the creek.

**BIO-6** No construction work or storage of materials is allowed in the Mission Creek lagoon for installation and removal of the temporary beachway bridge. No workers shall enter the lagoon; work may occur from a boat or platform during installation of the temporary utility bypasses and temporary bridge installation. Prior to installation of piles for the temporary bridge footing, erosion control fiber blankets or a sediment barrier shall be placed around the abutment locations to prevent discharge of soil or concrete into the dewatered area.

**BIO-7** An environmental monitor shall be present during pile installation and pouring of concrete to address any discharges of concrete. The contractor will maintain spill contingency materials onsite to be mobilized in the event of a concrete spill during pile and bridge construction. These materials may include straw bales, Visqueen, gravel bags, absorbent pads, and additional fiber rolls. Any concrete spilled during construction will be removed and disposed of prior to removal of the cofferdam.

**BIO-8** The cofferdams shall be constructed of silt-free gravel bags stacked in a stable configuration with Visqueen, or similar waterproof fabric or interlocking steel plates, or a flexible temporary barrier equivalent or better than the device constructed by Portadam, Inc. may also be used to create a dry work area within the channel. Use of other inert materials shall be allowed if necessary to create a better barrier or reduce leaks, but must be approved by the California Department of Fish and Game (CDFG) and United States Fish and Wildlife Service (USFWS). The cofferdams shall be placed approximately at the locations shown in the project description. They shall form a seal along the bottom and banks of the creek and lagoon, to the maximum extent feasible. The top elevations of the cofferdams shall be at least 9 feet NAVD 88 (North American Vertical Datum, 1988), which would be sufficient to contain water in the creek and lagoon during the summer when the sandbar is closed at the beach. The downstream cofferdam will be reinforced as necessary to withstand the impact of tidal surge from Mission Creek lagoon.

**BIO-9** The installation/removal of the cofferdams and flume shall follow this sequence of tasks:

- The Contractor shall submit to the USFWS in writing, at least four weeks prior to the onset of work, the qualifications of a biologist familiar with tidewater goby biology. This biologist will be responsible for

implementing measures that involve handling and relocation of tidewater gobies. The USFWS will provide written authorization of the individual, if qualified, or denial, if unqualified.

- A qualified biologist will assist in the preparation of the drawings and specifications for the preliminary and final engineering plans for the project that will include plans, details, and specifications for the placement/removal of cofferdams, dewatering/diversion operations, and fish capture and relocations procedures.. The fish rescue and relocation will follow the procedures included in the Natural Environmental Study. Rescued fish will be relocated to adjacent channel areas in the estuary that are not dewatered or subject to construction disturbance. The dewatering and fish rescue plans will be submitted to the USFWS for review and approval to ensure that the proper procedures and safeguards are included to avoid unnecessary take of gobies.
- The qualified biologist shall conduct a training session for all personnel associated with cofferdam construction and operations within the dewatered area prior to the onset of work.
- The authorized biologist shall complete initial surveys for tidewater gobies in Mission Creek within the project area one week prior to the onset of work.
- Two parallel fish blocking nets (mesh size 1/8 inch or less) shall be placed across the creek channel immediately upstream of the upstream cofferdam to prevent fish from traveling downstream to the work area.
- Qualified biologists with federal permits to handle gobies or personnel under the supervision of a permitted biologist shall insert a seine net at the upstream cofferdam location and conduct a sweep of the channel to herd and capture all fish in the work area, ending the sweep at the downstream cofferdam location. As the sweep is ended, two parallel fish blocking nets shall be placed across the lagoon to prevent fish from traveling upstream into the work area. The authorized biologist will be approved by USFWS and CDFG for relocating tidewater goby and native species that may occur in the work area to be dewatered.
- As the initial dewatering/diversion is occurring, fish biologists shall systematically survey for fish through the work area, including tidewater gobies and south western pond turtles. Fish shall be captured with a dipping net and immediately relocated upstream of the upper cofferdam. The number and species of fish shall be recorded. This fish rescue operation shall occur until the work area is completely dewatered, or until the fish biologists are confident that no fish remain in any standing water in the work area.
- A silt fence shall be placed inside the fish blocking nets (after fish survey and relocation has occurred) when the cofferdams are being constructed to prevent silt, if any, from migrating through the meshes to the creek and lagoon outside the work area.
- The cofferdams shall be constructed with water in the creek and lagoon. This will require construction personnel to work in standing water. The flume (a narrow centralized channel created by installation of metal sheet piles, Porta dam, or equivalent) shall be placed or constructed in the creek. The system may be a continuous flexible barrier (Portadam device equivalent or better). Once the cofferdams and creek flume are installed in the wetted channel, pumping to dewater the work area between the cofferdams shall begin. Because tidewater gobies are most often on the bottom of the estuary, the intake on the pumps used for water diversion shall be covered with mesh 1/8 inch or less, and floated as long as possible to prevent tidewater gobies from being entrained and killed.
- The mesh size on the pump intake shall be 1/8 inch or less. The mesh shall be checked by the qualified biologist prior to use each day and twice daily during operation to determine that it is intact. If the mesh develops holes or other conditions that impair its function, it shall be replaced or repaired immediately.
- Once it is dewatered, the construction area may need continuous dewatering to maintain a dry working area. Three to six dewatering pits will need to be excavated within the planned work area. This will create localized low points at which to collect the water. The dewatering pits will be limited in size and depth to the maximum extent possible to achieve a dry work area.
- Each dewatering pit will be constructed using 1/8-inch or less mesh anchored by a circle of rocks. The mesh will be suspended on the perimeter of the dewatering pits and shall cover the rocks and be anchored underneath on the outside. Work area creek water shall be discharged to the beach into an excavated depression or bermed area near the lagoon. An environmental monitor with applicable USFWS and CDFG permits or authorizations shall monitor the discharge location on a continuous basis to determine if any fish are inadvertently contained in the discharge. If present, these fish shall be captured with a small net and placed in the lagoon immediately after identifying species and numbers of fish.

- The cofferdam and flume diversion shall be removed by first blocking the downstream terminus of the flume. An authorized biologist shall then conduct a sweep to clear the diversion area of fish. Once clear, the upstream end of the flume shall also be blocked. The work area will be policed by the contractor and reviewed by a biological monitor to ensure that all construction material is removed. The flume will then be dewatered and relocated to accommodate construction access or removed. During low tide, the downstream cofferdam will be removed first, followed by the upstream cofferdam.

**BIO-10** An environmental monitor shall inspect any ponded water in the dewatered portion of the work area on a daily basis (three times – before work begins, midday, and at the end of the day) to search for any fish that may have traveled through gaps in the cofferdams. Fish (excluding mosquito fish) shall be removed on an as-needed basis and relocated above the upper cofferdam. The number and species of fish shall be recorded.

**BIO-11** The dewatering system shall be inspected prior to leaving the work site at night. It shall be inspected and maintained by the contractor during non-work days (i.e., Saturdays, Sundays, holidays).

**BIO-12** The flume shall be constructed as follows:

- The flume will be installed with the cofferdams and be constructed similar to a Portadam, Inc. device or better, or of plywood, inert material, or Visqueen-wrapped, silt-free gravel bags.
- The flume will be continuous and may be constructed to retain a natural sediment or manmade bottom.
- The contractor will prepare the final flume design for agency review and approval.
- The flume will maintain natural water levels and avoid potential dry spots from forming that would not naturally occur within the channel.
- The flume shall be 3 to 6 feet wide and constructed to maintain, to the extent feasible, the existing channel water stratification for water temperature, salinity, pH, and natural tidal depth.
- The flume shall not disturb more than a 6-inch depth into the streambed or create the potential for scour.
- It is expected that flow rates within the flume will be higher than the existing channel. Therefore, one or two silt free gravel bags or a small pile of cobble shall be placed every ten feet alternating along the sides of the flume to provide refuge for tidewater gobies.
- Shade cloth shall be placed over the top of the flume and draped over each end to maintain the existing temperature stratification and to prevent birds from entering the flume.
- While the streambed through the work area is generally a continuous grade, slight microtopography or a low-flow channel may be present; to address this, the flume bottom will be installed to achieve the lowest possible elevation from downstream to upstream.

**BIO-13** During the pre-construction conference with the contractor, a biologist shall conduct a training session for all construction personnel. The training shall include:

- A description of the tidewater goby, southern steelhead, brown pelican, California least tern, western snowy plover, southwestern pond turtle, and associated habitats; the general provisions of the Endangered Species Act (ESA), including species relocation by a qualified biologist and documentation requirements
- The necessity for adhering to the provisions of the ESA
- The penalties associated with violating the provisions of the ESA
- The specific measures that are being implemented to conserve the tidewater goby and southern steelhead as they relate to the project, and measures that would be required if unexpected special status species, such as southwestern pond turtle, least tern, or snowy plover are on site during construction
- The boundaries of the project

**BIO-14** The following native plants shall be used in the upstream bank protection: Atriplex lentiformis var. lentiformis – Brewer's Saltbush, Encelia californica – Bush Sunflower, Rhus integrifolia – Lemonadeberry, Mimulus auranticus – sticky monkey flower, Suaeda taxifolia – Wooly Sea Blite, Eriogonum parvifolium – Seaside Buckwheat, and Limonium californicum – Western Marsh-Rosemary. The saltbush and dwarf willow (Salix Exigua), used to create brush mattresses for erosion control (from a local source) shall also be planted above and among the ungrouted boulders on the downstream banks. Cocoanut fiber mats would be used to stabilize the soils above the boulders providing an

opportunity for the native plants to get established. Other native plant species may be used if these are not readily available, subject to approval by a City-approved biologist and CDFG. Restoration efforts may also refer to "Guidelines to Evaluate, Modify and Develop Estuarine Restoration Projects for Tidewater Goby Habitat" (USFWS, Stillwater Science, Arcata, CA, May 2006), and the approved Adaptive Maintenance Plan for Mission Creek (ACOE, URS, Channel Design Recommendations 2005).

**BIO-15** A qualified biologist shall conduct daily inspections of the construction work areas to ensure that the cofferdams remain intact, and that no gobies have entered the work areas. The biologist shall also monitor and inspect erosion control measures to be implemented as part of the project. The biologist shall conduct periodic visual surveys of the unaffected portions of the estuary to monitor the abundance and conditions of fish during construction. Weekly reports shall be provided to the USFWS to apprise them of the status of the goby and the effectiveness of the protection measures during construction.

**BIO-16** During flume operations, decreased through-flow in Mission Creek may alter indicator parameters such as salinity, dissolved oxygen, and temperature. Although it is unlikely that the flume will alter concentrations of indicator parameters outside of historic ranges, monitoring would establish if operations were having serious effects on water quality. Indicator parameter monitoring in Mission Creek can be implemented either as a stand alone requirement or as part of the general construction permit as follows:

- Monitoring for dissolved oxygen, salinity, and temperature shall be performed twice daily at a point directly upstream and downstream of the flume. If values are found outside of historic ranges, the cause shall be identified and steps shall be taken to return the parameter to the historic range.
- The flume shall be monitored visually daily to ensure that flow is present at all times.

**BIO-17** Pre-construction monitoring surveys for tidewater goby would be implemented at the upstream, downstream, and mid-lagoon bridge areas, one year prior to construction, including one pre-spawn survey in April, and one post-spawn in August. In addition, tidewater goby monitoring surveys also would be conducted at the same time at Arroyo Burro Estuary. Pre-construction monitoring allows for collection of baseline information at the site, along with control sites trend analysis. Post-construction surveys for tidewater goby would be implemented for one year following completion of the project. A total of four surveys would be conducted including one pre-spawn survey in April/May and one post-spawn survey in August each year. Pre- and post-construction surveys would be conducted by a biologist approved to handle tidewater gobies under a Section 10a1a recovery permit to determine the general abundance of tidewater gobies. Survey methods would follow those currently being used to measure population densities at Arroyo Burro Estuary.

**BIO-18** A pre-construction clearance survey for the presence or absence of western snowy plover, within a 100-meter radius of the site shall be provided prior to construction occurring on the sandy beach. If plovers are found within this radius, work shall stop until the bird relocates itself, or work will be relocated to another area of the site outside of the 100-meter radius areas. If plover nests and/or plover protective nesting habits are observed within a 100-meter radius on the beach during breeding season (March–August) further surveys may be required. Plovers and/or nests are not anticipated during the construction.

**BIO-19** Construction workers would be informed that construction activities would halt if a California brown pelican enters the active construction area. Upon self relocation, work may be reinitiated.

**BIO-20** A clearance survey for least terns shall be conducted by a qualified biologist prior to the commencement of construction activities on the beach area. If least terns are present, any construction activities, debris, or discharge of any construction materials would require a distance of at least 200 feet from the foraging area. Additionally, the biological monitor would be given authority to stop work if a least tern is seen within 200 feet of construction.

**BIO-21** During systematic fish surveys at dewatering, monitoring for presence of southwestern pond turtles shall occur when the water level reaches a depth for visual observation of turtles. If southwestern pond turtles are observed in dewatering areas, a qualified biologist with required relocation certification shall perform relocation to an appropriate location.

**BIO-22** Prior to any trees being removed during bird nesting season (February 1 to September 1) a survey shall be conducted of the trees to ensure that there are no nesting birds in the trees. Outside of bird nesting season the trees can be removed without a survey.

Please see the Water Quality section for additional mitigation measures designed to minimize project biological impacts related to water quality.

## Biological Resources - Residual Impacts

Less than significant.

| 4. CULTURAL RESOURCES<br>Could the project: | | NO | YES<br>*Level of Significance* |
|---|---|---|---|
| a) | Disturb archaeological resources? | X | |
| b) | Affect a historic structure or site designated or eligible for designation as a National, State or City landmark? | | Potentially Significant, Mitigable |
| c) | Have the potential to cause a physical change which would affect ethnic cultural values or restrict religious uses in the project area? | X | |

## Cultural Resources - Discussion

**Issues:** Archaeological resources are subsurface deposits dating from Prehistoric or Historical time periods. Historic resources are above-ground structures and sites from historical time periods with historic, architectural, or other cultural importance. The City's built environment has a rich cultural heritage with a variety of architectural styles, including the Spanish Colonial Revival style emphasized in the rebuilding of Santa Barbara's downtown following a destructive 1925 earthquake.

**Impact Evaluation Guidelines:** Archaeological and historical impacts are evaluated qualitatively by archeologists and historians. First, existing conditions on a site are assessed to identify whether important or unique archaeological or historical resources exist, based on criteria specified in the State CEQA *Guidelines* and City Master Environmental Assessment *Guidelines for Archaeological Resources and Historical Structures and Sites*, summarized as follows:

- Contains information needed to answer important scientific research questions and there exists a demonstrable public interest in that information.
- Has a special and particular quality such as being the oldest of its type or the best available example of its type.
- Is directly associated with an important prehistoric or historic event or person.

If important archaeological or historic resources exist on the site, project changes are evaluated to determine whether they would substantially affect these important resources.

## Cultural Resources – Existing Conditions and Project Impacts

### 4.a) Archaeological Resources

Applied Earthworks prepared an Archaeological Survey Report for the Replacement of the Cabrillo Bridge over Mission Creek, (May 2006) that included a literature search, contact with interested parties, and a site survey of the project area. The report is summarized in the Existing Setting section above and a brief summary is provided below. The report is hereby incorporated by reference. The literature search indicated that within a 0.5 mile radius of the Area of Potential Effect (APE) there were 135 studies conducted and six archaeological sites were identified. The APE itself contains no previously recorded archaeological sites. The closest previously recorded archaeological sites are the Chumash Villages recorded in the 1920s. The interested parties contacts did not identify any archaeological sites within the APE.

As a result of the archaeological study, two previously undocumented historical archaeological sites were identified within the Area of Potential Effects (APE). These are a demolished service station and the site of the Santa Barbara Lumber Company. Based on the history of the service station and lumber company, the potential for other deposits associated with these sites is considered unlikely. The sites qualify as Exempt from Evaluation under the Caltrans Section 106 Programmatic Agreement (PA), "Properties Exempt from Evaluation," under Property Type 1: Minor, ubiquitous, or fragmentary infrastructure elements under the categories of fragments of bypassed or demolished bridges; and/or foundations and mapped locations of buildings or structures more than 50 years old with few or no associated artifacts or ecofacts, and with no potential for subsurface archaeological deposits.

The proposed project would have **no impact** on any significant archaeological site since none are known to occur within the project area (APE). Therefore, no mitigation measures are required. However, in the unlikely event that

archaeological resources are identified during construction procedures outlined in the Master Environmental Assessment for unanticipated discovery of archaeological resources are recommended as mitigation measures.

**4.b) Historic Resources**

Applied Earthworks prepared several Historic Resources Reports (see references below) in 2006 that included a literature search, and a site survey of the project area. The reports are briefly summarized below and additional data on existing conditions from those reports is provided in the Environmental Setting section above. The reports are hereby incorporated by reference. The reports indicate that the Cabrillo Bridge over Mission Creek is within the East Cabrillo Boulevard Parkway District created in 1992 and is a contributing element towards this district. The East Cabrillo Boulevard Parkway District encompasses the boulevard and the area south of the roadway from State Street east to the Andree Clark Bird Refuge.

There is only one substantial historic resource within the project area and it is the bridge proposed for removal and replacement. The Cabrillo Bridge over Mission Creek was one of three bridges either constructed or widened during the improvement of East Cabrillo Boulevard. Of the three bridges, it is the only extant bridge from the time of significance of the historic district (1923-1928).

Since the project would demolish the existing bridge, the project impact would be **potentially significant, mitigable.** Mitigation measures that would reduce the project impacts to a less than significant level are preparing detailed archival photo documentation and engineering details of the bridge, reproducing some of the bridge architectural features in the new bridge (i.e. the arch under the bridge, the handrail, and use of stone rip-rap south of the bridge), and having HLC review and approval of the bridge design to ensure that it is compatible with the East Cabrillo Boulevard Parkway District.

The project will require the removal of four palm trees. The removal of the four palm trees would result in a **potentially significant, mitigable** impact on the historic district. The proposed project would mitigate this impact by replacing the trees with approximately 30 foot tall trees of the same variety in the general area.

**4.c) Ethnic/Religious Resources**

There is no evidence that the site involves any ethnic or religious use or importance. The project would have **no impact** on historic, ethnic or religious resources.

## Cultural Resources – Mitigation

*Required*

**CR-1 Archive Plans and Photos.** Prior to demolition, the bridge will be recorded in accordance with the National Park Service guidelines for Historic American Engineering Record (HAER) documentation. The documentation will include historic research, a narrative report of the history of the bridge, and photo documentation of the bridge. The HAER document will be submitted to the Library of Congress.

**CR-2 HLC Review.** Bridge and restoration plans shall be subject to HLC review and approval to ensure that they are compatible with the East Cabrillo Boulevard Parkway District.

**CR-3 Design Elements:** The bridge railings shall utilize the same design and finish as the 1928 bridge railing (a pipe or wrought iron above the existing railing is permitted to achieve increased height required by code and the openings between pillars in the railing may be tapered to four inches on the interior of the railing, also to meet code), the bridge deck shall be similar in appearance to the existing structure with arch like structures, piers shall be round in one row, the existing monument shall be removed and replaced on the bridge, and all rip-rap on the channel banks, downstream of the project, would use stone rather than concrete.

**CR-4 Replacement Trees**. The project shall replace all palm trees removed as result of project construction on a one for one basis, with trees of the same variety and approximately 30 feet in height.

*Recommended*

**CR-5 Discovery Procedures and Mitigation.** Standard discovery measures shall be implemented per the City Master Environmental Assessment throughout grading and construction:

Prior to the start of any vegetation or paving removal, demolition, trenching or grading, contractors and construction personnel shall be alerted to the possibility of uncovering unanticipated subsurface archaeological features or artifacts.

If during any grading or construction on the site such archaeological resources are encountered or suspected, work shall be halted immediately, the City Environmental Analyst shall be notified and a City-approved archaeologist shall be employed to assess the nature, extent and significance of any discoveries and to develop appropriate management recommendations for archaeological resource treatment, including but not limited to redirection of grading and/or excavation activities. If the findings are potentially significant, further analysis and/or other mitigation shall be prepared and accepted by the Environmental Analyst and the Historic Landmarks Commission, and implemented by the project Work in the area may only proceed after the Environmental Analyst grants authorization.

If prehistoric or other Native American remains are encountered, a Native American representative shall be consulted, and the archaeologist and Native American representative shall monitor all further subsurface disturbances in the area of the find.

If the discovery consists of potentially human remains, the Santa Barbara County Coroner and the California Native American Heritage Commission must also be contacted.

A final report on the results of the archaeological monitoring shall be submitted by the City-approved archaeologist to the Environmental Analyst within 180 days of completion of the monitoring and prior to the issuance of final City permits.

**Residual Impacts:**

Less than significant

| **5. GEOPHYSICAL CONDITIONS** Could the project result in or expose people to: | | ***NO*** | ***YES*** ***Level of Significance*** |
|---|---|---|---|
| a) | Seismicity: fault rupture? | X | |
| b) | Seismicity: ground shaking or liquefaction? | | Less than Significant |
| c) | Seismicity: seiche or tsunami? | | Less than Significant |
| d) | Landslides or mudslides? | | Less than Significant |
| e) | Subsidence of the land? | | Less than Significant |
| f) | Expansive soils? | X | |
| g) | Excessive grading or permanent changes in the topography? | | Less than Significant |

## Geophysical Conditions - Discussion

**Issues:** Geophysical impacts involve geologic and soil conditions and their potential to create physical hazards affecting persons or property; or substantial changes to the physical condition of the site. Included are earthquake-related conditions such as fault rupture, groundshaking, liquefaction (a condition in which saturated soil looses shear strength during earthquake shaking); or seismic sea waves; unstable soil or slope conditions, such as landslides, subsidence, expansive or compressible/collapsible soils; or erosion; and extensive grading or topographic changes.

**Impact Evaluation Guidelines:** Potentially significant geophysical impacts may result from:

- Exposure to or creation of unstable earth conditions due to seismic conditions, such as earthquake faulting, groundshaking, liquefaction, or seismic waves.
- Exposure to or creation of unstable earth conditions due to geologic or soil conditions, such as landslides, settlement, or expansive, collapsible/compressible, or expansive soils.
- Extensive grading on slopes exceeding 20%, substantial topographic change, destruction of unique physical features; substantial erosion of soils, overburden, or sedimentation of a water course.

## Geophysical Conditions – Existing Conditions and Project Impacts

The Preliminary Foundation Recommendation Report for The Replacement of Cabrillo Boulevard Bridge Over Mission

Creek prepared by Bengal Engineers (December 3, 2005) that is summarized in the Environmental Setting section above and below and is hereby incorporated by reference.

**5.a-c) Seismic Hazards**

Fault Rupture:

There are no known faults in the project area and so the potential for faulting is very low and therefore there would be **no impacts** of fault rupture on the site.

Ground Shaking:

The proposed project would be subject to ground shaking in the event of an earthquake on a nearby fault. The bridge and foundations would also be designed to withstand the maximum credible groundshaking that is anticipated at the project site. Therefore, impacts of groundshaking and liquefaction would be mitigated by the project design and would be **less than significant.**

Liquefaction

Saturated Quaternary alluvial deposits encountered at the site are considered one of the types of deposits generally highly susceptible to liquefaction during earthquakes provided the other two criteria are satisfied (groundshaking and granular soils). As for the soil type and composition, the project site is underlain by interbedded layers of mainly fine-grained or cohesive Sandy/Silty Clay (CL) soil and cohesionless, granular Silty Sand (SM) and Sand (SP) soil layers. Soils within the thinner layers or the transition zones between alternating relatively thicker layers gradually grade from one of the above primary types to the other. These transition materials can be classified as mainly Clayey Silt or Sand (ML/SC).

In general, cohesive soils with greater than 10% clay content (grain size less than 0.002mm) and Liquid Limit greater than 32 or Plasticity Index greater than 10 to 12, are not considered susceptible to liquefaction. Laboratory tests indicate that the majority of fine-grained soil encountered at the site meets these criteria. Based on these observations and preliminary analysis using analysis as recommended in Youd et al (2001), the liquefaction potential of the fine-grained cohesive soils encountered at the site is considered very low.

The preliminary liquefaction analysis based on the CPT procedure included in Youd et al (2001), indicates that when the layers are thick enough to fully develop the CPT tip resistance, the granular soils underling the project site are generally dense and not susceptible to liquefaction. It appears that the measured CPT tip resistance in the interbedded thin granular soil layers and the soils in the transition zones above and below the dense granular layers are substantially affected by the presence of softer layers. It is Bengal Engineering's opinion that the "States" of the thin granular soil are similar to the non-liquefiable, thicker layers of dense to very dense granular soils.

Based on the above discussion and preliminary analysis, the liquefaction potential of subsurface soils at the site is considered low to very low. Results of a detailed liquefaction analysis and liquefaction-induced ground settlement, if any, will be included in the final Foundation Report (FR). Effects of liquefaction, if any, will be considered in the bridge foundation design. Therefore, project impacts associated with liquefaction would be **less than significant**.

Seiche or Tsunami:

Tsunamis are traveling sea-waves generated by sudden uplift of the sea bottom due to ground displacements during submarine earthquakes and/or landslides. Such waves can travel long distances across the ocean at a speed of about 600 miles per hour. As these waves reach the shore, their velocity decreases, but the wave height increases. Tsunami induced maximum wave run-up as much as 30 to 45 feet (10 to 15 m) has been reported during some past major offshore earthquakes. The maximum wave run-up at a location is the vertical height above the mean sea or stillwater level at which the rush of water reaches as it climbs up during a tsunami. Such massive waves can cause substantial damage to or even failure of bridge structures.

The project site is located very close to the California coastline. The California coast has experienced more than 20 tsunamis during the past two centuries. The Santa Barbara coastline has experienced several tsunamis in the past (Eisner, 2001, Moore and Taber, 1974), and is likely to experience more in the future. The November 4, 1927 M7.5 Point Arguello-Lompoc earthquake generated a maximum run-up of about six feet (2 m) (Moore and Taber, 1974, Borrero et al 2005). Borrero et al (2001) reported tsunami run up height of about six feet (2 m) in the Santa Barbara area from the 1918 M7.2 earthquake generated by the Mojave segment of the San Andreas Fault. Eisner et al (2001) reported 10 to 13 feet (3 to 4m) maximum run up heights from both the 1927 and the 1918 historical tsunamis. Based on Bolt (1999), the 1960 Chile M8.6 earthquake generated 5 feet (1.5 m) wave run-up in the Santa Barbara area.

According to McCarthy (1993), the potential for the Santa Barbara coastline to experience locally generated (nearshore)

tsunamis is considered high. Houston and Garcia (1978) estimated tsunami wave run-up height of 5.5 and 11 feet in the area from 100-year and 500-year return period events, respectively. More recently, Borrero et. al (2001) estimated tsunami run-up of about 6-feet in the area based on tsunamis from purely tectonic sources. Since ground surface elevation at the abutments is about 12.5 feet above MSL, it is our opinion that there is potential that tsunamis generated by earthquakes due to movement of one of the nearby or distance offshore faults may adversely affect the proposed bridge structure.

It should be noted that Eisner et al (2001) recommends, for emergency preparedness and evacuation planning, a maximum tsunami run-up height of 43 feet (13 m) or inundation of about five (5) city blocks in the area of the project. This scenario corresponds to a rare event.

The project site and area are within the tsunami run-up area, according to the Master Environmental Assessment. The proposed bridge replaces an existing bridge that forms a portion of the area transportation system. Should a tsunami occur, the bridge would be inundated and perhaps damaged. This damage could occur to the existing bridge as well as the proposed bridge and so little new hazard to the public from the potential for a tsunami would be expected. Impacts of tsunami are therefore expected to be **less than significant**.

**5.d-f) Geologic or Soil Instability**

Landslides:

There are no steep landforms in the area large enough to create a landslide. Localized sloughing of soils in trenches and along creek banks could occur. Shoring along the creek banks is aging and could fail. However, the project includes installation of piles and panels to replace existing creek bank retaining structures north of the existing bridge. Installation of these new retaining structures would ensure that creek banks do not slide into the creek. Compliance with existing regulations regarding shoring of trench walls during construction would minimize the potential for sloughing of trench walls. Therefore, the impacts of landslides would be **less than significant**.

Subsidence:

No significant ground slope exists in the vicinity of the bridge, the abutments will be supported on piles, and the liquefaction potential of the supporting soils is considered low to very low. Based on these considerations, seismic hazard associated with lateral spreading at the site is considered low.

The subsurface soils at the site consist of either fine-grained cohesive soils or dense granular soils with a significant amount of fines (fraction passing #200 sieve). Such soils are not considered susceptible to significant settlement due to ground shaking during earthquakes. Furthermore, due to similar subsurface conditions, seismically induced settlement, if any, is not likely to results in any significant differential settlement between the bridge supports. Therefore, impacts of subsidence are considered to be **less than significant**.

Expansive Soils:

Soils at the site are not considered to be expansive. Therefore, there would be **no impacts** associated with expansive soils.

**5.g) Topography; Grading/ Erosion**

Topographic Changes Grading/ Erosion:

The proposed project does not include any elements that involve substantial topographic changes. The proposed bridge abutments and restoration of the Mission Creek banks would result in some relatively minor changes to bank configuration to ensure long term stability of the banks and abutments. The temporary pedestrian bridge over the Creek would be removed and any changes to topography on approaches to the bridges would be returned to existing conditions, after construction. Therefore, topographic changes would have a **less than significant** on the environment.

Grading would be limited to minor recontouring of Mission Creek banks to facilitate the restoration of those banks, construction of bridge abutments, and construction of approaches to the temporary bridges to deal with changes in elevation. This grading would result in exposure of soils to erosion. The proposed project includes a restoration plan designed to minimize erosion in the area where grading would occur. The plan includes planting of native plants, installation of erosion control blankets and use of ungrouted rocks to protect the abutments from erosion when the creek flows are high. Grading/erosion impacts would be **less than significant** because the limited grading and erosion hazard caused by grading would be addressed by project mitigation measures designed to minimize erosion (see also water quality section for erosion control).

## Geophysical Conditions - Mitigation

G-1 The project shall utilize the foundation and bridge construction recommendations of the Preliminary and Final Geological Investigations that include the following:

- Bridge supported on Cast in Steel Shell (CISS ) piles
- Diameter, length and other specifications of piles for bridge support and for bank restoration
- Bridge engineering design

## Geophysical Conditions – Residual Impacts

Less than significant

| 6. HAZARDS<br>Could the project involve: | | NO | YES<br>*Level of Significance* |
|---|---|---|---|
| a) | A risk of accidental explosion or release of hazardous substances (including, but not limited to: oil, pesticides, chemicals or radiation)? | | Potentially Significant, Mitigable |
| b) | The creation of any health hazard or potential health hazards? | X | |
| c) | Exposure of people to existing sources of potential health hazards? | X | |
| d) | Increased fire hazard in areas with flammable brush, grass, or trees? | | Less than Significant |

## Hazards - Discussion

**Issues:** Hazardous materials issues involve the potential for public health or safety impacts from exposure of persons or the environment to hazardous materials or risk of accidents involving combustible or toxic substances.

**Impact Evaluation Guidelines:** Significant impacts may result from the following:

- Siting of incompatible projects in close proximity to existing sources of safety risk, such as pipelines, industrial processes, railroads, airports, etc.
- Exposure of project occupants or construction workers to unremediated soil or groundwater contamination.
- Exposure of persons or the environment to hazardous substances due to improper use, storage, or disposal of hazardous materials.
- Siting of development in a high fire hazard areas or beyond adequate emergency response time, with inadequate access or water pressure, or otherwise in a manner that creates a fire hazard

## Hazards – Existing Conditions and Project Impacts

### 6a Hazardous Material Release

Demolition and construction of the bridge would result in equipment use that includes use of oils, fuels, and chemicals in construction materials including concrete. Accidental spills of fuels, oil, and concrete in the water could result in a **potentially significant mitigable** impact on species in the creek if these materials were allowed to reach the water in the creek in sufficient quantities. Wet concrete increases the alkalinity in water to toxic levels for fish. Coffer dam installation and dewatering the site would reduce the impacts to sensitive species within the creek because these materials could be isolated from the rest of the dry creek and removed before they contaminate the remaining water in the creek. With proper maintenance of equipment, training of construction workers in maintenance and clean up procedures, proper design of piles and forms, and onsite storage of appropriate materials and equipment to address accidental spills, hazardous materials release impacts would be reduced to less than significant levels. Pile design types have not yet been finalized. If pile designs are chosen that have the potential to release wet concrete to surface waters, precautions should be taken to ensure that there is secondary containment should accidental spills of concrete occur. Use of these measures would reduce project impacts to less than significant levels.

**6b, c). Creation of Health Hazard**

The proposed project would replace an existing bridge and would not be expected to create a health hazard to people. There are no known health hazards on the site. Therefore, there would be **no impacts** due to health hazards. Hazards to wildlife due to accidental release of hazardous materials are discussed above under 6a and in the Biology and Water Quality sections.

**6.d) Fire Hazard**

The proposed project would replace an existing bridge. No permanent fire hazard would be created. Minor temporary fire hazard may be created during construction since construction materials and fuels could be ignited. This fire hazard would be **less than significant** due to its temporary nature and limited extent.

## Hazards - Mitigation

See Biology and Water Quality sections.

## Hazards – Residual Impacts

Less than significant.

| 7. NOISE<br>Could the project result in: | | NO | YES<br>*Level of Significance* |
|---|---|---|---|
| a) | Increases in existing noise levels? | | Potentially Significant, Mitigable: |
| b) | Exposure of people to severe noise levels? | | Potentially Significant, Mitigable: |

## Noise - Discussion

**Issues:** Noise issues are associated with siting of a noise-generator next to existing noise-sensitive land uses, and/or short-term construction-related noise.

Guidance for appropriate long-term background noise levels for various land uses are established in the City General Plan Noise Element Land Use Compatibility Guidelines. Building codes also establish maximum average ambient noise levels for the interiors of structures.

The Noise Ordinance (Chapter 9.16 of the Santa Barbara Municipal Code) governs short-term or periodic noise, such as construction noise, operation of motorized equipment or amplified sound, or other sources of nuisance noise. The ordinance establishes limitations on hours of construction and motorized equipment operations, and provides criteria for defining nuisance noise in general.

**Impact Evaluation Guidelines:** A significant noise impact may result from:

- Noise levels that exceed 85 dB for prolonged exposure, during construction.
- For isolated individual noise sources, exposure to impulsive or impact noise should not exceed 140 dB peak sound pressure level for any period during construction
- An increase in 5dB during nighttime hours.

## Noise – Existing Conditions and Project Impacts

**7.a-b) Increased Noise Level; Exposure to High Noise Levels**

The existing noise environment is described above under in the Existing Conditions section. The description of the noise environment, impacts, and mitigation measures is based upon a report prepared by Channel Islands Acoustics, dated June 19, 2006, which is hereby incorporated by reference.

Long-Term Operational Noise: The project is a bridge replacement that would not substantially increase traffic flow over the bridge. Since the project would not result in any substantial increase in long term noise, the project would have **less than significant** operational noise impacts.

Temporary Construction Noise:

Project construction traffic noise increases are a small fraction of a decibel at all locations except immediately at the edge

of the roadways designated for truck traffic. Therefore, although individual trucks passing uses along Helena, Mason, Anacapa and Yanonali Streets on average once every 15-20 minutes would result in an additional noise peak, the overall noise impact would be temporary and minimal. If truck traffic were to occur at night, it would potentially impact uses along the transportation route. The impact of nighttime construction traffic would be **potentially significant, mitigable** and mitigation therefore requires that construction truck traffic be prohibited during nighttime hours.

The primary acoustical concern for this project is the impact of noise from demolition and re-construction activities. Construction noise levels in the surrounding area above 65 dB would be expected during most of the demolition and construction period, and noise levels above 85 dB would be expected during some operations.

Pile driving produces intense repetitive impulsive noise. Pile driving at a distance of 2000 feet produces peak noise levels on the order 82 dB, which translates to 118-120 dB at 50 feet. Noise levels of 140 dB would therefore be experienced only within approximately 5 feet of the impact point. It is unlikely that passers-by would be in the area long enough to experience substantial hearing damage risk. It is therefore highly unlikely that non-construction personnel would be subjected to substantial risk of hearing damage.

Noise levels above 120 dB are consistently rated as "uncomfortably loud" in the literature. It is therefore concluded that a public protection criterion for the pile insertion portion of the project would be to minimize exposure to any noise in excess of 120 dB, which translates into keeping non-construction personnel farther than 50 ft from pile insertion points and/or providing noise barriers between pile driving and public areas. Mitigation is provided that precludes access to non-construction personnel within 50 feet of pile insertion, discourages members of the public from spending substantial periods of time within 50 feet of pile driving, or use of a noise barrier that reduces noise levels to less than 120 dB within 50 feet of pile driving..

Demolition and construction activities on the bridge will cause large temporary increases in noise levels at adjacent exterior and interior use areas. Noise level increases identified in the noise study associated with pile insertion and demolition are **potentially significant, mitigable**. This impact can be mitigated by precluding the public from within 50 feet from pile driving, using equipment that reduces noise generated, requiring construction personnel to use hearing protection, or including noise barriers to reduce noise levels to below 120 dB.

The primary issue for daytime noise impact in the environments within adjacent establishments would be speech communication interference. Information in the literature indicates that for reliable speech communication at a distance of 4 ft with normal voice effort, the background noise level should be below approximately 63 dB. Noise levels are expected to exceed this threshold during particularly noisy construction activities. At raised or "loud" voice levels, communication is possible at background noise levels up to about 75 dB. Since the noise sources will be intermittent, use of spaces exposed to noise levels above 75 dB may not be totally precluded, but the environmental quality would be temporarily diminished.

Commercial establishments (primarily Eladio's and Rusty's Pizza restaurants) located adjacent to the construction area will be subjected to temporarily high noise levels from construction and demolition, potentially impacting the indoor environment. Table 11 in the Noise Study provides interior noise with a nominal outdoor-to-indoor reduction of 20 dB based on doors and windows facing the construction area being closed. Only Rusty's Pizza exceeds the 75 dB criterion but Eladio's, an adjacent multi purpose building and hotels under construction on the South end of State Street would experience background noise levels in excess of 63 dB. These background noise levels would be sufficient to intermittently interfere with speech at least during particularly noisy construction activity. This impact would be **potentially significant, mitigable**. Mitigation would require closure of the front portion of the restaurant or temporarily retrofitting the restaurants with additional noise barriers.

There may be some operations required at night, such as pumping of water, electrical generation or occasional completion of tasks that cannot be feasibly interrupted. Noise levels from projected ongoing nighttime equipment operation would be **potentially significant, mitigable**. This impact can be mitigated by requiring use of enclosures or equipment that reduces project generated noise to within 5 dB of the measured ambient noise level at residential uses.

During bridge demolition (in Stage 2), the connection between the bridge structure and Rusty's building is to be severed and Rusty's building will be transferred to temporary supports. Details of this step are not yet determined, but it is postulated that operations such as concrete sawing, inserting temporary support pilings and load transferring would be involved. These operations will expose the Rusty's Pizza Restaurant structure to vibration that will at times be sensible in the restaurant and result in interior noise radiation at "uncomfortable" levels. In addition, some of the operations could result in plaster cracking or other damage to the structure. This impact would be **potentially significant, mitigable**. Mitigation would require that the Rusty's Restaurant support be separated from the bridge and supported independently to preclude direct transmission of vibration from the bridge to the structure and by repairing or compensating the owner for

any damage due to project vibration.

It is assumed that the southerly portion of the bridge carrying traffic during Stage 2 construction will be structurally isolated from the buildings on the north side of the bridge. This will prevent vibration induced by vehicles passing over minor pavement discontinuities (created when holes are bored through the bridge deck are temporarily patched to allow continued traffic) being transmitted into the structures. As discussed above, the process of disconnecting Rusty's Pizza from the bridge structure will result in vibration excitation of the Rusty's building. Vibration induced by these pavement discontinuities would be **potentially significant, mitigable**. This vibration impact can be minimized by severing the structural connection between the bridge and Rusty's prior to allowing traffic to use the lanes where discontinuities are created.

## Noise – Mitigation

## Required

**N-1** **Construction Notice.** At least 20 days prior to commencement of construction, the contractor shall provide written notice to all property owners and residents within 450 feet of the project area. The notice shall contain a description of the proposed project, a construction schedule including days and hours of construction, the name and phone number of the Project Environmental Coordinator (PEC) who can answer questions, and provide additional information or address problems that may arise during construction. A 24-hour construction hot line shall be provided. Informational signs with the PEC's name and telephone number shall also be posted at the site.

**N-2:** **Construction Hours.** Noise-generating construction activities (which may include preparation for construction work) shall be permitted weekdays between the hours of 7:00 a.m. and 5:00 p.m., excluding holidays observed by the City as legal holidays: New Year's Day (January 1st); Martin Luther King Jr.'s Birthday (3rd Monday in January); President's Day (3rd Monday in February); Memorial Day (Last Monday in May); Independence Day (July 4th); Labor Day (1st Monday in September); Thanksgiving Day (4th Thursday in November); Day Following Thanksgiving Day (Friday following Thanksgiving); Christmas Day (December 25th). *When a holiday falls on a Saturday or Sunday, the preceding Friday or following Monday respectively shall be observed as a legal holiday.

Occasional night work may be approved for the hours between 5 p.m. and 7 a.m. by the Chief of Building and Zoning per Section 9.13.015 of the Municipal Code) between the hours of 5 p.m. and 7 a.m. weekdays. In the event of such night work approval, the applicant shall provide written notice to all property owners and residents within 450 feet of the project property boundary and the City Planning and Building Divisions at least 48 hours prior to commencement of any work. Night work shall not be permitted on weekends and holidays.

**N-3:** **Construction Equipment Sound Control.** All construction equipment, including trucks, shall be professionally maintained and fitted with standard manufacturers' muffler and silencing devices.

**N-4** **Sound Barriers.** The project shall employ sound control devices and techniques such as noise shields and blankets during the construction period to reduce the level of noise generated by pile driving and demolition. Sound barriers shall be installed as shown in the noise study design and locations, provided landowners agree to the installation of the noise barriers. Sound barriers or temporary construction zones shall be used to reduce pile driving and demolition noise levels to 120 dB where members of the public have access.

**N-5** **Vibration.** The Rusty's Restaurant support shall be separated from the bridge and supported independently to preclude direct transmission of vibration from the bridge to the structure resulting from pavement discontinuities created by patches on the bridge deck and work on the deck.

**N-6** **Cracks.** A photographic survey of adjacent structures shall be completed prior to, during, and after construction to identify any cracking caused by the project. Any cracking occurring due to the project shall be repaired or compensation shall be provided to the owner for any damage due to project vibration.

**N-7** **Worker Hearing Protection.** Worker hearing conservation requirements shall be included in contract documents and used by construction workers.

**N-8** **Nighttime Noise.** Any equipment that must be operated during nighttime hours must be individually reviewed and treated with an enclosure, barriers, silencers or other treatments as required to limit noise at any noise sensitive use to 50 dB (A-weighted) based on measured nighttime ambient noise 45 dB and the City restriction of ambient plus 5 dB.

N-9 **Interior Noise.** The applicant shall negotiate an arrangement to provide noise shields (secondary windows) for adjacent businesses due to noise from pile driving and demolition or use of the front portions of the Rusty's Pizza Restaurant shall be temporarily discontinued during pile driving and demolition.

N-10 **Construction Truck Trips**. Prohibit large scale movements of debris or materials by trucks during nighttime hours (10 p.m. to 7 a.m.)

**Recommended**

N-11 **Warning Signs**. Post noise hazard signs at locations within 150 ft of the pile-driving areas so that passers-by would be aware that high noise levels are possible. The sign would read: "WARNING, NOISE HAZARD AHEAD, YOU ARE ADVISED TO AVOID THE AREA, USE EAR PROTECTION OR STAY FOR LESS THAN 30 MINUTES.

## Noise – Residual Impact

Less than significant.

| 8. POPULATION AND HOUSING<br>Could the project: | | NO | YES<br>Level of Significance |
|---|---|---|---|
| a) | Induce substantial growth in an area either directly or indirectly (e.g. through projects in an undeveloped area or extension of major infrastructure)? | | Less than Significant |
| b) | Displace existing housing, especially affordable housing? | X | |

## Population and Housing - Discussion

**Impact Evaluation Guidelines:** Issues of potentially significant population and housing impacts may involve:

- Growth inducement, such as provision of substantial population or employment growth or creation of substantial housing demand; development in an undeveloped area, or extension/ expansion of major infrastructure that could support additional future growth.
- Loss of a substantial number of housing units, especially loss of more affordable housing.

## Population and Housing – Existing Conditions and Project Impacts

### 8.a) Growth-Inducing Impacts

The project would replace an existing bridge. The project would not involve a substantial increase in major public facilities such as extension of water or sewer lines or roads that would facilitate additional growth in the area. The project would not involve substantial employment growth that would increase population and housing demand. Nor would the project include any housing that could induce growth. The project would temporarily increase employment in the area for construction related purposes. This would be a minor increase in employment and it would be temporary. Therefore, growth-inducing impacts would be **less than significant**.

### 8.b) Housing Displacement

The project would not involve any housing displacement. **No impact** would result from the project.

## Population and Housing - Mitigation

No mitigation is required.

## Population and Housing – Residual Impact

Less than significant.

| 9. PUBLIC SERVICES<br>Could the project have an effect upon, or result in a need for new or altered services in any of the following areas: | NO | YES<br>*Level of Significance* |
|---|---|---|
| a) Fire protection? | | Less than Significant |
| b) Police protection? | | Less than Significant |
| c) Schools? | | Less than Significant |
| d) Maintenance of public facilities, including roads? | | Less than Significant |
| e) Other governmental services? | | Less than Significant |
| f) Electrical power or natural gas? | | Less than Significant |
| g) Water treatment or distribution facilities? | | Less than Significant |
| h) Sewer or septic tanks? | | Less than Significant |
| i) Water distribution/demand? | | Less than Significant |
| j) Solid waste disposal? | | Potentially Significant, Mitigable |

## Public Services - Discussion

**Issues:** This section evaluates project effects on fire and police protection services, schools, road maintenance and other governmental services, utilities, including electric and natural gas, water and sewer service, and solid waste disposal.

**Impact Evaluation Guidelines:** The following may be identified as significant public services and facilities impacts:

- Creation of a substantial need for increased police department, fire department, road maintenance, or government services staff or equipment.
- Generation of substantial numbers of students exceeding public school capacity where schools have been designated as overcrowded.
- Inadequate water, sewage disposal, or utility facilities.
- Substantial increase in solid waste disposal to area sanitary landfills.

## Public Services – Existing Conditions and Project Impacts

### 9a,b Fire and Police Protection

The proposed project would replace an existing bridge. No substantial new demand for fire and police services would be created. One traffic lane would remain open in each direction during project construction which would allow for continued emergency access across the bridge. Also, alternative routes are available on City Streets and the 101 Freeway. A minor delay in emergency services may occur temporarily during construction if traffic volumes are high over the bridge at the time the emergency occurs. This impact would be **less than significant** because it would be temporary, intermittent, and alternative routes are available in the event that emergency access to uses on either side of the bridge is needed.

### 9c Schools

The proposed project does not include any residential, commercial, or industrial development. No new students would be generated by the project and there are no schools within a quarter mile of the project. Construction employees could enroll their children ion local school while they work in the city. This would result in a small increase in the number of student enrollments at local schools during construction. Since few students would be generated and there are vacancies in the local school systems, project impacts to schools would be **less than significant**.

### 9 d, e, f Public Facilities/Roads/Governmental Service/ Utilities

The proposed project would replace an aging bridge that would fail if not replaced. The project therefore involves replacement of existing facilities and would not increase the need for public facilities, roads, government services and utilities. No substantial new increase in demand for government services facilities, and utilities would be created. There

are existing utilities including reclaimed water, water, natural gas, cable, and electricity lines that use the bridge to cross the creek. The project includes plans to either, relocate the utilities and replace them later or to work around them while they are in place. Some of these lines could be temporarily disconnected without disrupting service because there is redundancy in the system. Therefore, the proposed project would not substantially disrupt the utilities supported by the bridge and any disruptions would be of short duration while utilities are reconnected, if necessary. Therefore, project impacts would be **less than significant**.

**9.g,h,i Water and Sewer**

Water

The City of Santa Barbara's water supply comes from the following sources, with the actual share of each determined by availability and level of customer demand: Cachuma Reservoir and Tecolote Tunnel, Gibraltar Reservoir and Mission Tunnel, 300 Acre Feet per Year (AFY) of contractual transfer from Montecito Water district, groundwater, State Water Project entitlement, desalination, and recycled water. Conservation and efficiency improvements are projected to contribute to the supply by displacing demand that would otherwise have to be supplied by additional sources. In 1994, based on the comprehensive review of the City's water supply in the Long Term Water Supply Alternatives Analysis (LTWSAA), the City Council approved the Long Term Water Supply Program (LTWSP). The LTWSP outlines a strategy to use the above sources to meet the projected demand of 17,900 AFY (including 1,500 AFY of demand projected to be met with conservation) plus a 10 percent safety margin for a total of 19,700 AFY. Therefore, the target for the amount of water the system will actually have to supply, including the safety margin, is 18,200 AFY. The 2003 Water Supply Management Report documents an actual system demand of 13,460 AFY and a theoretical commitment of 16,170 AFY. Of the total system production, 95% was potable water and 5% was reclaimed water.

The project involves replacement of an existing bridge and does not use water for operational purposes. Some water would be used for construction purposes and for temporary irrigation while plants in the restoration areas are established. The City's long-term water supply and existing water treatment and distribution facilities with proposed irrigation connections using reclaimed water for the landscaping would adequately serve the project. The potential increase in demand would constitute a **less than significant** impact to the City water supply.

Sewer

The project would not require any sewer connection because it is a bridge replacement project but there could be an incremental increase in the amount of waste generated by project workers that would need to be treated. Since there is sufficient capacity at the waste water treatment plant to accommodate the project there would be **less than significant** on sewer service.

**9j) Solid Waste Generation/Disposal**

Most of the waste generated in the City is transported on a daily basis to seven landfills located around the County. The County of Santa Barbara, which operates the landfills, has developed impact significance thresholds related to the impacts of development on remaining landfill capacity. The County thresholds are based on the projected average solid waste generation for Santa Barbara County from 1990-2005. The County assumes a 1.2% annual increase (approximately 4000 tons per year) in solid waste generation over the 15-year period.

The County's threshold for project specific impacts to the solid waste system is 196 tons per year (this figure represents 5% of the expected average annual increase in solid waste generation [4000 tons/year]). Source reduction, recycling, and composting can reduce a project's waste stream by as much as 50%. If a proposed project generates 196 or more tons per year after reduction and recycling efforts, impacts would be considered **significant and unavoidable**.

Proposed projects with a project specific impact as identified above (196 tons/year or more) would also be considered cumulatively significant, as the project specific threshold of significance is based on a cumulative growth scenario. However, as landfill space is already extremely limited, any increase in solid waste of 1% or more of the expected average annual increase in solid waste generation [4000 tons/year], which equates to 40 tons per year, is considered an adverse cumulative impact.

Long-Term (Operational). The project would not generate much operational solid waste because it involves construction of a replacement bridge and creek bank restoration. Maintenance of the restored area would generate a small amount of green waste that would be recycled into compost. Therefore, long tem impacts on landfill capacity would be **less than significant.**

Short-Term (Demolition and Construction) Materials, including concrete and steel, from the demolition process would be recycled locally. An estimated 230 tons of steel, 2,400 cubic yards of concrete, and 500 cubic feet of timber would be

generated and trucked to a recycling facility. Concrete, steel, and green waste generated during construction would be short-term and **potentially significant, mitigable.** Application of recommended standard mitigation to reduce, re-use, and recycle construction waste to the extent feasible would minimize this effect because recycled items would not be sent to a landfill but would be reused.

## Public Services - Mitigation

**PS 1** Green waste, concrete, and steel from construction and operation shall be sent to a local recycling facility and be recycled, as proposed by the applicant.

## Public Services – Residual Impacts

Less than significant.

| **10. RECREATION** Could the project: | | **NO** | **YES** *Level of Significance* |
|---|---|---|---|
| a) | Increase the demand for neighborhood or regional parks or other recreational facilities? | | Less than Significant |
| b) | Affect existing parks or other public recreational facilities? | | Potentially Significant, Mitigable |

## Recreation - Discussion

Issues: Recreational issues are associated with increased demand for recreational facilities, or loss or impacts to existing recreational facilities.

Impact Evaluation Guidelines: Recreation impacts may be significant if they result in:

- Substantial increase in demand for park and recreation facilities in an area under-served by existing public park and recreation facilities.
- Substantial loss or interference with existing park space or other public recreational facilities such as hiking, cycling, or horse trails.

## Recreation – Existing Conditions and Project Impacts

10.a) Recreational Demand

The proposed project would replace an existing bridge and would not result in a substantial increase in demand for recreation opportunities. Therefore, project impacts on recreation demand would be **less than significant**.

10.b) Existing Recreational Facilities

The project site is located in an area where recreation facilities exist. The sidewalks, bicycle trails and park areas are heavily used for recreational purposes. On Sundays, the sidewalk and area around the multiuse trail is used by vendors at the Arts and Crafts Show, to sell their work. Considerable pedestrian traffic is generated by shoppers and park users in this area. Construction at the bridge could temporarily preclude the use of this area for these purposes.

The project would result in the temporary loss of an estimated 7, 200 square feet of recreation space for one week for installation of the temporary pedestrian bridge and another week for removal of the temporary pedestrian bridge. Construction, during Stage 3 of the project (one year), would result in the temporary loss of approximately 7,000 square feet of recreation area. The temporary loss of park space used for passive recreation purposes would be **less than significant** because it is temporary, the amount of space is small relative to the passive park located in the waterfront, and there are large areas of similar parkland in the vicinity that can be used for recreational purposes.

In Stage 3 (one year) the proposed project would result in the temporary loss of 12 vendor stalls. An estimated 16 assigned vendor stalls along Cabrillo Boulevard would be temporarily eliminated. There are currently 25 unassigned stalls west of Mission Creek. During stage 3, 29 new stalls would be created along the temporary pedestrian/bicycle path for a net loss of 12 stalls. This is a **less than significant** impact. Normal attrition of vendors using stalls is approximately 2 to 3 per year. Mitigation would require the City to allow the vacancies to be filled with displaced vendors. Displaced vendors who are left without a space would be provided vendor spaces at the east end of the vendor area.

The project includes plans to construct a pedestrian bridge over Mission Creek south of the existing bridge. The temporary bridge would be sufficient to accommodate east to west pedestrian and bicycle traffic during construction.

There would be a temporary inconvenience to pedestrians since their path of travel would be slightly longer and there would potentially be noise and dust in the area during construction hours.

No construction is planned to occur on Sundays so pile driving activities would not directly impact the vendor activity.

The project would result in the permanent loss of 4 premier vendor stalls due to reconfiguration of the bridge and creek. The loss of these spaces would be **potentially significant, mitigable**. This will be mitigated by the City offering alternative premier vendor spaces to the vendors who have used the spaces being eliminated as the alternative premier vendor spaces become available.

**Recreation - Mitigation**

**REC-1:** The City will allow vacancies due to attrition to be filled with vendors displaced by the project. Displaced vendors who are left without a space would be provided vendor spaces at the east end of the vendor area.

**Recreation – Residual Impacts**

Less than significant

| **11. TRANSPORTATION/CIRCULATION** Could the project result in: | | **NO** | **YES** *Level of Significance* |
|---|---|---|---|
| a) | Increased vehicle trips? | | Less than Significant |
| b) | Hazards to safety from design features (e.g. sharp curves, inadequate sight distance or dangerous intersections)? | X | |
| c) | Inadequate emergency access or access to nearby uses? | | Less than Significant |
| d) | Insufficient parking capacity on-site or off-site? | | Less than Significant |
| e) | Hazards or barriers for pedestrians or bicyclists? | | Less than Significant |

**Transportation - Discussion**

**Issues:** Transportation issues include traffic, access, circulation, safety, and parking. Vehicle, bicycle and pedestrian, and transit modes of transportation are all considered, as well as emergency vehicle access. The City General Plan Circulation Element contains policies addressing circulation, traffic, and parking in the City.

**Impact Evaluation Guidelines:** A proposed project may have a significant impact on traffic/ circulation/ parking if it would:

Vehicle Traffic

- Cause an increase in traffic that is substantial in relation to the existing traffic load and street system capacity (see traffic thresholds below).
- Cause insufficiency in transit system.
- Conflict with the Congestion Management Plan (CMP) or Circulation Element or other adopted plan or policy pertaining to vehicle or transit systems.

Circulation and Traffic Safety

- Create potential hazards due to addition of traffic to a roadway that has design features (e.g., narrow width, roadside ditches, sharp curves, poor sight distance, inadequate pavement structure) or that supports uses that would be incompatible with substantial increases in traffic.
- Diminish or reduce safe pedestrian and/or bicycle circulation.
- Result in inadequate emergency access on-site or to nearby uses.

Parking

- Result in insufficient parking capacity for the projected amount of automobiles and bicycles.

**Traffic Thresholds of Significance:** The City uses Levels of Service (LOS) "A" through "F" to describe operating

conditions at signalized intersections in terms of volume-to-capacity (V/C) ratios, with LOS A (0.50-0.60 V/C) representing free flowing conditions and LOS F (0.90+ V/C) describing conditions of substantial delay. The City General Plan Circulation Element establishes the goal for City intersections to not exceed LOS C (0.70-0.80 V/C).

For purposes of environmental assessment, LOS C at 0.77 V/C is the threshold Level of Service against which impacts are measured. An intersection is considered "impacted" if the volume to capacity ratio is .77 V/C or greater.

Project-Specific Significant Impact: A project-specific significant impact results when:

(a) Project peak-hour traffic would cause a signalized intersection to exceed 0.77 V/C, or

(b) The V/C of an intersection already exceeding 0.77 V/C would be increased by 0.01 (1%) or more as a result of project peak-hour traffic.

For non-signalized intersections, delay-time methodology is utilized in evaluating impacts.

Significant Cumulative Contribution: A project would result in a significant contribution to cumulative traffic impacts when:

(a) Project peak-hour traffic together with other cumulative traffic from existing and reasonably foreseeable pending projects would cause an intersection to exceed 0.77 V/C, or

(b) Project would contribute traffic to an intersection already exceeding 0.77 V/C.

## Transportation – Existing Conditions and Project Impacts

### 11.a) Increased vehicle trips

Long-Term Traffic

The proposed project would replace an existing bridge with a new bridge that has slightly increased capacity. Traffic would not be generated by the bridge in the long term. Therefore, the project would have **no impacts** on long term traffic.

Short-Term Construction Traffic

The overall project construction process is estimated to last approximately 22 months. An estimated 25 morning and evening hour trips would be generated by workers commuting to the site. Construction worker trips would be expected to occur outside of the morning and evening peak hours. These trips would be the maximum worker related trips and the numbers of trips would vary to lower amounts, according to the labor requirements of the project. The project would require an estimated 10 average daily truck trips to carry materials, waste, and equipment with a peak of 20 trips per day. The project would generate construction-related traffic that would occur over the 19-month construction period and would vary depending on the stage of construction.

Temporary construction traffic is generally considered an adverse but **less than significant impact**. In this case, given traffic levels in the area and the duration of the construction process, short-term construction-related traffic would be a **less than significant impact.** Standard mitigation measures are included in the project description and are recommended, including restrictions on the hours permitted for construction trips and approval of routes for construction traffic.

During the 19 month construction period there will be at least one vehicular lane open in each direction, at all times. This means that up to two lanes and a turning lane would be closed in each direction, during construction. Therefore, the capacity of the highway over the bridge would be reduced and temporary traffic delays would occur for traffic using the bridge. Given the number of traffic trips currently using the bridge these delays may, at times, be substantial. Since these delays would be temporary and other routes are available to go around the construction area, this impact would be **less than significant.**

### b. Hazards to safety from design features (e.g. sharp curves, inadequate sight distance or dangerous intersections)?

The proposed project would replace a bridge in substantially the same configuration as currently exists. Therefore, the project would not create any hazards to safety due to any design features. The project would improve pedestrian facilities on the northeast side to State Street resulting in additional room for pedestrians to wait for the change in the signal. This would result in an improvement in conditions at this intersection and reduce the potential for pedestrian and vehicular conflicts at the intersection. The project impact on traffic safety would therefore be **beneficial.**

### c. Inadequate emergency access or access to nearby uses?

The project as proposed would maintain at least on lane of traffic in each direction during construction. Since the project would reduce the capacity of the highway from four to two lanes over the bridge during construction, emergency vehicles may experience delays using the route during construction. Other routes for emergency vehicles are available. Also, the delays would be temporary, during construction. Therefore, project impacts on emergency routes or access would be **less than significant.**

**d. Insufficient parking capacity on-site or off-site?**

Within the Waterfront area and located within easy walking distance of the project site are four waterfront parking areas (B and C north and south), according to the Waterfront Area Transportation Study (WATS 2), that combined provide a total of 2,247 stalls. There are approximately 1347 on-street and 899 off-street parking stalls within the project area. Parking is also provided by private parking lots at area hotels/motels, restaurants, and retail establishments in the waterfront area.

During phases 1 and 2, there would be 6 parking spaces temporarily eliminated. During phase 3 there would be temporary loss of 12 parking spaces. The impact on street parking loss would **less than significant** because it would be temporary and would be less than 0.9% of area on-street parking, about 1.4% of area off-street parking and less than 0.6% of total area parking, representing a small fraction of available public parking. The project would also result in the permanent removal of six parking spaces along the road to make way for a new expanded turn-out pocket for the Trolley, Land Shark and bus parking. Combining the highest temporary and the permanent loss of parking spaces, the project results in the loss of less than 1.4% of area on-street parking, about 2% of area off-street parking and less than 1% of total area parking, representing a small fraction of available public parking. This impact is also **less than significant** because the removed parking spaces would be used for public transportation that discourages use of the automobile and increases the number of people that can use public transit to access the waterfront area and because the parking loss is s small proportion of parking lost and would be a temporary loss.

The number of employees anticipated at the site is expected to vary from 5 to 30. The project proponent has arranged to reserve up to 25 spaces at an existing City parking lot west of the intersection of Cabrillo Boulevard and Garden Street, during construction. In addition, staging areas are provided as described in the project description and this would provide additional parking for construction related vehicles. Most of the construction would occur during the day but not on Sundays and may overlap with events when they occur during the week and on Saturdays. However, the parking requirement for the project is a small percentage of available parking capacity in the area, would vary from less than five spaces to approximately 25 spaces, and would be temporary during construction. Most of the time there parking spaces would be available to the public on Sundays as construction is not proposed on Sundays when demand for parking peaks. There are alternative parking spaces on area surface streets to accommodate periodic overflow from the lots. Therefore, construction employee parking impacts would be **less than significant**.

**e. Hazards or barriers for pedestrians or bicyclists?**

Operational barriers and hazards would not be created because the project would replace the existing bridge in substantially the same configuration as the existing bridge. The existing and proposed bridges provide access along the Cabrillo Boulevard corridor.

During construction, pedestrians and cyclists using the all purpose path would be routed around the project site for safety purposes. A temporary pedestrian (all purpose) bridge is proposed as a part of the project south of the existing bridge to accommodate east/west pedestrian traffic that would have otherwise used the bridge. (see also Noise and Recreation section discussions).

## Transportation – Recommended Mitigation

**T-1** **Construction Traffic.** The haul routes for all construction-related trucks, three tons or more, entering or exiting the site, shall be approved by the Transportation Engineer. Construction-related truck trips shall not be scheduled during peak hours (7:00 a.m. to 9:00 a.m. and 4:00 p.m. to 6:00 p.m.) to help reduce truck traffic and noise on adjacent streets and roadways. The route of construction-related traffic shall be established to minimize trips through surrounding residential neighborhoods.

**T-2** **Construction Parking.** Construction parking and vehicle/equipment/materials storage shall be provided as follows:

A. During construction, free parking spaces for construction workers shall be provided in a location subject to the approval of the Transportation and Parking Manager.

B. Storage area shall be provided for construction materials, equipment, and vehicles.

## Transportation – Residual Impact

Less than significant.

| 12. WATER ENVIRONMENT | | NO | YES |
|---|---|---|---|
| | Could the project result in: | | *Level of Significance* |
| a) | Changes in absorption rates, drainage patterns, or the rate and amount of surface runoff? | X | |
| b) | Exposure of people or property to water related hazards such as flooding? | X | |
| c) | Discharge into surface waters? | | Potentially Significant, Mitigable |
| d) | Change in the quantity, quality, direction or rate of flow of ground waters? | | Potentially Significant, Mitigable |
| e) | Increased storm water drainage? | | Less than Significant |

## Water – Discussion

**Issues**: Water resources issues include changes in offsite drainage and infiltration/groundwater recharge; storm water runoff and flooding; and water quality.

**Impact Evaluation Guidelines:** A significant impact would result from:

Water Resources and Drainage

- Substantially changing the amount of surface water in any water body or the quantity of groundwater recharge.
- Substantially changing the drainage pattern or creating a substantially increased amount or rate of surface water runoff that would exceed the capacity of existing or planned drainage and storm water systems.

Flooding

- Locating development within 100-year flood hazard areas; substantially altering the course or flow of flood waters or otherwise exposing people or property to substantial flood hazard

Water Quality

- Substantial discharge of sediment or pollutants into surface water or groundwater, or otherwise degrading water quality, including temperature, dissolved oxygen, or turbidity.

## Water Resources – Existing Conditions and Project Impacts

Existing conditions are described above in the Environmental setting section. The information used for the preparation of the hydrological components of this study was summarized from a report prepared by Bengal Engineering, Hydrology and Hydraulic Analysis, December 5, 2005. The report is hereby incorporated by reference.

Water quality existing conditions, project impact and mitigation measures were derived from URS Corporation, Water Quality Assessment, December 2006. The report is hereby incorporated by reference.

**12 a) Absorption rates, drainage patterns, or the rate and amount of surface runoff.** The proposed project would remove and replace an existing bridge and restore the creek banks in a similar configuration to the existing facilities. The hydraulic capacity beneath the bridge would be increased. As the bridge would be slightly wider and piles and the new bridge would be better aligned to improve hydraulic efficiency the hydraulic capacity of the bridge would be increased to accommodate the 20-year statistical storm consistent with the Lower Mission Creek Flood Control project. Absorption rates and drainage patterns would not be substantially altered because the bridge would be replaced. The project would increase the amount of surface runoff that could be conveyed the through the project site because the hydraulic capacity of the bridge would be increased. This would be a **beneficial impact** of the proposed project.

**12 b) Flooding.** The proposed project would have a **beneficial impact** on flooding since it would increase conveyance of flood waters to the ocean compared to the existing structure.

**12 c) Discharge to Surface Waters.** Mission Creek discharges to the ocean south of the project site. Mission Creek will continue to discharge to the ocean but the amount of flows would be increased. The project has the potential to discharge pollutants into Mission Creek during construction. This impact would be **potentially significant, mitigable.** Mitigation measures are provided that minimize the potential for project related pollutants from entering the creek. During construction, dewatering of the construction area may be necessary. The project includes a proposal to store, test, and treat the contaminated water from construction before discharging it to the sewer plant. Methods may include using Baker Tanks or hay bale/sandbag basins lined with filter fabric. During concrete pouring activities, when the water may come in contact with fresh concrete, contaminated water would be pumped out of the work area. The contaminated water would be hauled away in trucks to a licensed treatment facility or pumped into tanks where settling would occur and water would be tested to ensure that it is suitable for disposal prior to disposal in the city sewer main.

**12 d) Water Quality.**

The URS Corporation, Water Quality Assessment, December 2006, prepared for this project was used as a basis for the description of existing water quality, impact analysis, and mitigation measures provided in this Initial Study. The data summarized in that report are hereby incorporated by reference.

Permanent impacts to water quality in Mission Creek as a result of construction of the Cabrillo Bridge could result in continuous erosion of sediment from unstabilized channel banks, discharge of sediments from scour around the abutments during storm events and, changes to average temperatures, salinities, or dissolved oxygen concentrations due to changes in average water depths and flow velocity. Long term erosion would be **less than significant** because the creek banks would be repaired or armored with boulders, cocoanut fiber, and vegetation designed to minimize soil erosion during high flow events.

The concrete bank stabilization will resist erosion and scour within the creek channel. Vegetated buffers and rock riprap constructed as part of the upstream and downstream bank stabilization and abutments will minimize the erosion of sediments into the creek. Upon full replacement of the Cabrillo Street bridge, there will be **less than significant** long-term impacts to water quality in Mission Creek due to the construction.

Replacement of the Cabrillo Bridge will increase its hydraulic capacity to allow for the flow from the 20-year 24-hour storm event. However, the construction of the bridge will not alter the creek bottom substrate, channel width, and thalweg. Average water depths and velocities during dry weather will not be substantially changed from the existing condition. Long term impacts to water quality parameters such as temperature, salinity, or dissolved oxygen as a result of the increased hydraulic capacity would be **less than significant**.

Pollutants that could impact water quality in Mission Creek and that have the potential to be discharged during construction include the following:

- Sediment from the disturbed stream channel as a result of pile driving, dewatering operations, and construction
- Oil and grease resulting from equipment spills within the dewatered areas in Mission Creek
- Discharges of debris, concrete, or sediment during bridge demolition
- Discharge of sediment and oil and grease in stormwater discharged from construction staging areas
- Changes in pH due to spills of wet concrete during pouring of bridge piles, bent and abutment construction
- Changes in flow, dissolved oxygen, temperature, and salinity in Mission Creek due to operation of the flume

Construction Best Management Practices (BMPs) incorporated into the project Storm Water Pollution Prevention Program (SWPPP) and Detailed Erosion/Sediment Control Plan will address the potential water quality impacts from the discharge to Mission Creek of sediment, oil and grease, concrete (wet and dry), or construction debris. Post-storm event inspections will be performed to assess the success of the implementation of the stormwater BMPs. During concrete operations, non-stormwater BMPs for concrete waste management will be implemented. Twice daily pH monitoring of Mission Creek and the dewatering operation will be conducted. During operation of the flume, twice daily observations will be made of flow levels within the flume to ensure that flow is maintained at all times. Indicator parameters such as temperature, dissolved oxygen, and salinity will be measured on a daily basis upstream and downstream of the flume to ensure that parameters remain within historic ranges. Impacts associated with the construction of the replacement bridge would be temporary and result in a **potentially significant, mitigable** impact. Mitigation measures proposed as a part of the project would reduce construction related water quality impacts to a less than significant level.

## Water Resources - Mitigation

**WQ-1** The creek shall be dewatered to allow for the installation of upstream and downstream bank protection,

demolition of the existing bridge, construction of the center bent, abutments, and placement of the new bridge deck. The following measures shall be implemented during these activities to prevent water quality impacts.

- Any concrete (or grout) or other construction materials that are discharged to the dewatered creek shall be removed and disposed of off site. If the material is dry, it shall be physically removed from the work site by equipment or manual labor. If the material is liquid discharged to ponded water in the work area, the water shall be pumped and discharged to a Baker tank, and the affected muddy sediments shall be removed by equipment and disposed offsite. The contaminated water shall be tested and pH adjusted before it is disposed of at the wastewater treatment plant or other approved location.
- An environmental monitor, or other qualified contractor personnel, shall be present during the construction activities listed above to monitor for discharges to the dewatered creek, particularly discharges of concrete. The monitor shall measure pH levels in any standing water near the work area on a regular basis during the day to determine if there is any discharge of concrete into the groundwater below the ground surface. Ponded water with elevated pH shall be pumped to a Baker tank and not discharged to the beach. A biological monitor will document compliance.
- The contractor shall maintain spill contingency materials onsite to be mobilized in the event of a concrete spill to the dewatered channel. These materials shall include weed-free, straw bales, Visqueen, gravel bags, and absorbent pads. They would be deployed if concrete is spilled in the channel, even if it is fully dewatered, to immediately isolate and remove the concrete.
- Limited equipment is expected to be operated within the dewatered work area. Equipment may include rubber tire backhoes and loaders or other equipment that can be lifted into the creek bed. The contractor will be required to minimize streambed disturbance. The substrate of the creek bed may be disturbed to a depth of 6 inches by equipment and personnel movement. If the streambed is too saturated, even with dewatering, then the contractor will work from creosote-free wood planks or other temporary inert platform typical for wetland construction Best Management Practices.

**WQ-2** Prior to commencement of construction, a Storm Water Pollution Prevention Plan (SWPPP) shall be prepared for implementation during construction that incorporates all feasible Best Management Practices (BMPs) to reduce erosion from construction activities, to minimize the discharge of sediment during storm events, and to eliminate the discharge of non-stormwater pollutants to the maximum extent possible. The following measures shall be incorporated into the project SWPPP, which must meet state NPDES General Construction Permit requirements:

- Temporary stockpiles at the project site shall be protected from erosion by the combined use of temporary berms around the perimeter, perimeter interceptor ditches, and temporary downstream catchments as necessary and appropriate.
- Stockpiles that are present during the winter season shall be protected from erosion due to direct precipitation or runoff during the winter by the use of surface stabilization (such as erosion control blankets).
- Sediment filters/barriers will be constructed along the perimeter of the work area above Mission Creek to prevent sheet flow from discharging sediment into Mission Creek. Protection measures shall remain in place and be maintained in good condition until all disturbed soil areas are permanently stabilized by installation and establishment of landscaping, grass, mulching, or are otherwise covered and protected from erosion.
- If the streambed is determined to be unsuitable for equipment and personnel movement to the point of disturbing the streambed to a depth greater than 6 inches, then the contractor will implement a work plan equivalent to a wetland construction. This will include working from creosote-free wood planks or other temporary inert work pad. Sediment fabric will be placed under any pad to protect the streambed to the maximum extent possible.
- The SWPPP must include a contingency plan to protect the exposed work site during the winter months in the event of high runoff in the creek or tidal surges that could overtop banks and inundate work areas.
- BMPs to prevent discharge of construction materials, contaminants, wash-water, concrete, fuels, and oils that include the following measures:
    - Ensure that all construction vehicles and equipment are properly maintained (off site) to prevent leaks of fuel, oil, and other vehicle fluids.
    - Refuel only in bermed areas with impermeable surfaces at least 50 feet from the creek or culvert.

- Implement measures and provide materials to contain any accidental spills or leakage during the fueling of construction equipment at the site.
- Place all stored fuel, lubricants, paints, and other construction liquids in secured and covered containers within a bermed or otherwise contained area at least 200 feet from the creek.
- Prohibit equipment washing and major maintenance at the project site except at the construction staging area. Prohibit concrete washout except at the construction staging area. Concrete washout water shall be collected and stored in an onsite Baker tank to be disposed of off site. Place berms around the active work area on the road when installing piles through the roadbed during the winter to capture any construction debris or concrete in the event of rainfall; place sandbag or straw bale barriers at all storm drain inlets near the work area to capture any site runoff during winter construction. Remove all refuse and construction debris from the site as soon as possible.
- During concrete pours, the contractor shall have a qualified monitor present to measure pH within any standing water adjacent to the pour. The monitor will have onsite suitable material such as acid to neutralize contaminated water.

- A Storm Inspection Program. During extended storm events, inspections must be made during each 24-hour period focusing on times when high floods are predicted and when tides are high). The goals of these inspections are: 1) to identify areas contributing to a storm water discharge, 2) to evaluate whether measures to reduce pollutant loadings identified in the SWPPP are adequate and properly installed and functioning in accordance with the terms of the General Permit, and 3) whether additional control practices or corrective maintenance activities are needed. Equipment, materials, and workers must be available for rapid response to failures and emergencies. All corrective maintenance to BMPs shall be performed as soon as possible, depending upon worker safety. Each discharger shall certify annually that the construction activities are in compliance with the requirements of this General Permit. Dischargers who cannot certify annual compliance shall notify the appropriate RWQCB.
- The trenching, stockpiling, and back-filling activities associated with the temporary gas line will be incorporated into the SWPPP for this project and will incorporate BMPs for the following
    - Laydown yard procedures for the storage and maintenance of equipment
    - Stockpile stormwater management
    - Implementation of wind erosion controls during trenching
    - Stabilization of excavated material during pipeline laydown and removal
    - Erosion control measures during backfill and temporary pipeline operation
    - Revegetation of trenched areas post removal
- Prior to construction, a SWPPP for the project will incorporate the City of Santa Barbara Procedures for the Control of Runoff into Storm Drains and Watercourses for implementation during construction,. In addition the SWPPP will incorporate specific Caltrans Category IB design BMPs. The text of the specific Caltrans requirements is incorporated as Appendix E in the URS Corporation Water Quality Assessment; the basic requirements of each BMP are summarized below as follows:

Category Non-Stormwater; NS02 Update Dewatering Operations:

- Dewatering shall be conducted in accordance with the Field Guide to Construction Site Dewatering, October 2001, CTSW-RT-01-010.
- The RWQCB may require a separate NPDES permit prior to the dewatering discharge of non-storm water.
- Non-storm water dewatering for discharges meeting certain conditions are allowed under an RWQCB general dewatering NPDES permit.
- Non-storm water discharges must be free of pollutants other than sediment; the discharge must be <0.25 mgd.
- Discharges must comply with regional and watershed-specific discharge requirements.
- Additional permits or permissions from other agencies may be required for dewatering cofferdams or diversions.

- Dewatering discharges must not cause erosion at the discharge point.

Category Non-Stormwater; NS05 Clearwater Diversion:

- Diversion structures must be adequately designed to accommodate fluctuations in water depth or flow volume due to tides, storms, flash floods, etc.
- Heavy equipment driven in wet portions of a water body to accomplish work shall be completely clean of petroleum residue, and water levels shall be below the gearboxes of the equipment in use, or lubricants and fuels are sealed such that inundation by water shall not result in leaks.
- Mechanical equipment operated in the water shall not be submerged to a point above any axle of said mechanical equipment.
- Excavation equipment buckets may reach out into the water for the purpose of removing or placing fill materials. Only the bucket of the crane/excavator/backhoe may operate in a water body. The main body of the crane/excavator/backhoe shall not enter the water body, except as necessary to cross the stream to access the work site.
- Clear water diversions that require dewatering shall be conducted in accordance with policies and guidelines presented in Field Guide to Construction Site Dewatering, October 2001, CTSW-RT-01-010.
- Stationary equipment such as motors and pumps, located within or adjacent to a water body, shall be positioned over drip pans.
- When any artificial obstruction is being constructed, maintained, or placed in operation, sufficient water shall, at all times, be allowed to pass downstream to maintain aquatic life downstream.
- The exterior of vehicles and equipment that will encroach on a water body within the project shall be maintained free of grease, oil, fuel, and residues.
- Equipment shall not be parked below the high-water mark unless allowed by a permit.
- Drip pans shall be placed under all vehicles and equipment placed on docks, barges, or other structures over water bodies when the vehicle or equipment is planned to be idle for more than one hour.
- Diversion structures shall be constructed with materials free of potential pollutants such as soil, silt, sand, clay, grease, or oil.

•Category Non-Stormwater; NS11 Pile Driving Operations:

- Use drip pans or absorbent pads during vehicle and equipment maintenance, cleaning, fueling, and storage.
- Have spill kits and cleanup materials available at all locations of pile driving.
- Park equipment over plastic sheeting or equivalent where possible.
- Implement other BMPs as applicable, such as NS-2 "Dewatering Operations."
- When not in use, store pile-driving equipment away from concentrated flows of storm water, drainage courses, and inlets.
- Use less hazardous products, e.g., vegetable oil instead of hydraulic fluid.

Category Non-Stormwater; NS13 Material Use over Water:

- Use drip pans and absorbent materials for equipment and vehicles and ensure that an adequate supply of spill cleanup materials is available.
- Drip pans shall be placed under all vehicles and equipment placed on docks, barges, or other structures over water bodies when the vehicle or equipment is expected to be idle for more than one hour.
- Maintain equipment in accordance with BMP NS-10, "Vehicle and Equipment Maintenance." If a leaking line cannot be repaired, remove equipment from over the water.
- Provide watertight curbs or toe boards to contain spills and prevent materials, tools, and debris from leaving the barge, platform, dock, etc.
- Secure all materials to prevent discharges to receiving waters via wind.

- Identify types of spill control measures to be employed, including the storage of such materials and equipment. Ensure that staff is trained regarding the deployment and access of control measures and that measures are being used.
- Discharges to waterways shall be reported to the Resident Engineer immediately upon discovery. A written discharge notification must follow within seven days.
- The SWPPP for the Cabrillo Bridge project will include a chemical monitoring plan to ensure that non-visible pollutants do not impact the water quality of Mission Creek during construction. As concrete fluids may alter pH, the non-visible pollutant to be monitored would be pH. The contractor or environmental monitor will conduct pH monitoring during concrete preparation, pouring, and curing operations. Water pH will be monitored twice daily at the following points during piling construction and construction in the dewatered area:
    - Mission Creek during piling construction at points just upstream and downstream of the pilings
    - Any standing water between the protective sleeve and steel pile casing prior to pumping and disposal
    - Any standing water within the dewatered construction zone
    - At the point of discharge of dewatering fluids onto the beach
    - Results will be recorded and a contingency plan implemented if pH exceeds the applicable surface water quality standard

**WQ-3** Prior to construction a detailed Erosion Control Plan shall be prepared for implementation during construction, including basic requirements as follows:

- Proposed schedule
- Description of potentially affected areas
- Description of soils, geology, vegetation, and creeks
- Site Plan including contours, elevations, limits of clearing, grading, and creek configuration
- Description of erosion control measures
- Description of sediment detention basins
- Description of emergency erosion and sediment control measures

**WQ-4** During dewatering of the construction area, the removed water will be discharged to temporary infiltration areas on the beach near the lagoon. The discharge shall occur in accordance with NPDES General Permit (Order No. 01-119) for Low Threat Discharges, issued by the Regional Water Quality Control Board (RWQCB).

## Water Resources – Residual Impact

Less than significant

| MANDATORY FINDINGS OF SIGNIFICANCE. | | YES | NO |
|---|---|---|---|
| a) | Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildfire population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory? | | x |
| b) | Does the project have the potential to achieve short-term, to the disadvantage of long-term, environmental goals? | | x |
| c) | Does the project have potential impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)? | | x |
| d) | Does the project have potential environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly? | | x |

## INITIAL STUDY CONCLUSION

On the basis of this initial evaluation it has been determined that with identified mitigation measures agreed-to by the applicant, potentially significant impacts would be avoided or reduced to less than significant levels. A Mitigated Negative Declaration will be prepared.

MBerman 2/21/07

Initial Study Preparer: Michael Berman, Environmental Analyst — Date

Janice M. Hubbell 2/21/07

Jan Hubbell, Senior Planner — Date

**EXHIBITS:**

- **A. Vicinity Map and Project Plans**
- **B. General Plan and Local Coastal Plan Policy**
- **C. Mitigation Monitoring and Reporting Program**
- **D. Air Quality Calculations**

## LIST OF SOURCES USED IN PREPARATION OF THIS INITIAL STUDY

The following sources used in the preparation of this Initial Study are located at the Community Development Department, Planning Division, 630 Garden Street, Santa Barbara and are available for review upon request.

Applied Earthworks, Finding of Adverse Effect for the Replacement of the Cabrillo Bridge over Mission Creek, May 2006

Applied Earthworks, Archaeological Survey Report for the Replacement of the Cabrillo Bridge over Mission Creek, May 2006

Applied Earthworks, Historic Resources Evaluation Report for the Replacement of the Cabrillo Bridge over Mission Creek, May 2006

Applied Earthworks, Historic Property Survey Report for the Replacement of the Cabrillo Bridge over Mission Creek, June 2006

Applied Earthworks, Programmatic 4(f) Evaluation for the Replacement of the Cabrillo Bridge over Mission Creek, June

2006

Associated Transportation Engineers, Waterfront Area Transportation Study 2, May 25, 2001

Bengal Engineering, Preliminary Foundation Recommendation Report for the Replacement of the Cabrillo Bridge over Mission Creek, December 3, 2005

Bengal Engineering, Hydrology and Hydraulic Analysis, December 5, 2005

California Environmental Quality Act (CEQA) & CEQA Guidelines

Channel Islands Acoustics, Noise and Vibration Report Cabrillo Boulevard Bridge Replacement Project, June 19, 2006

General Plan Circulation Element

General Plan Conservation Element

1995 Housing Element

General Plan Land Use Element

General Plan Noise Element w/appendices

General Plan Map

General Plan Seismic Safety/Safety Element

Geology Assessment for the City of Santa Barbara

Institute of Traffic Engineers Parking Generation Manual

Institute of Traffic Engineers Trip Generation Manual

Local Coastal Plan

Master Environmental Assessment

Parking Design Standards

Santa Barbara Municipal Code & City Charter

Special District Map

Uniform Building Code as adopted by City

URS Corporation, Natural Environmental Study, December 2006

URS Corporation, Water Quality Assessment, December 2006

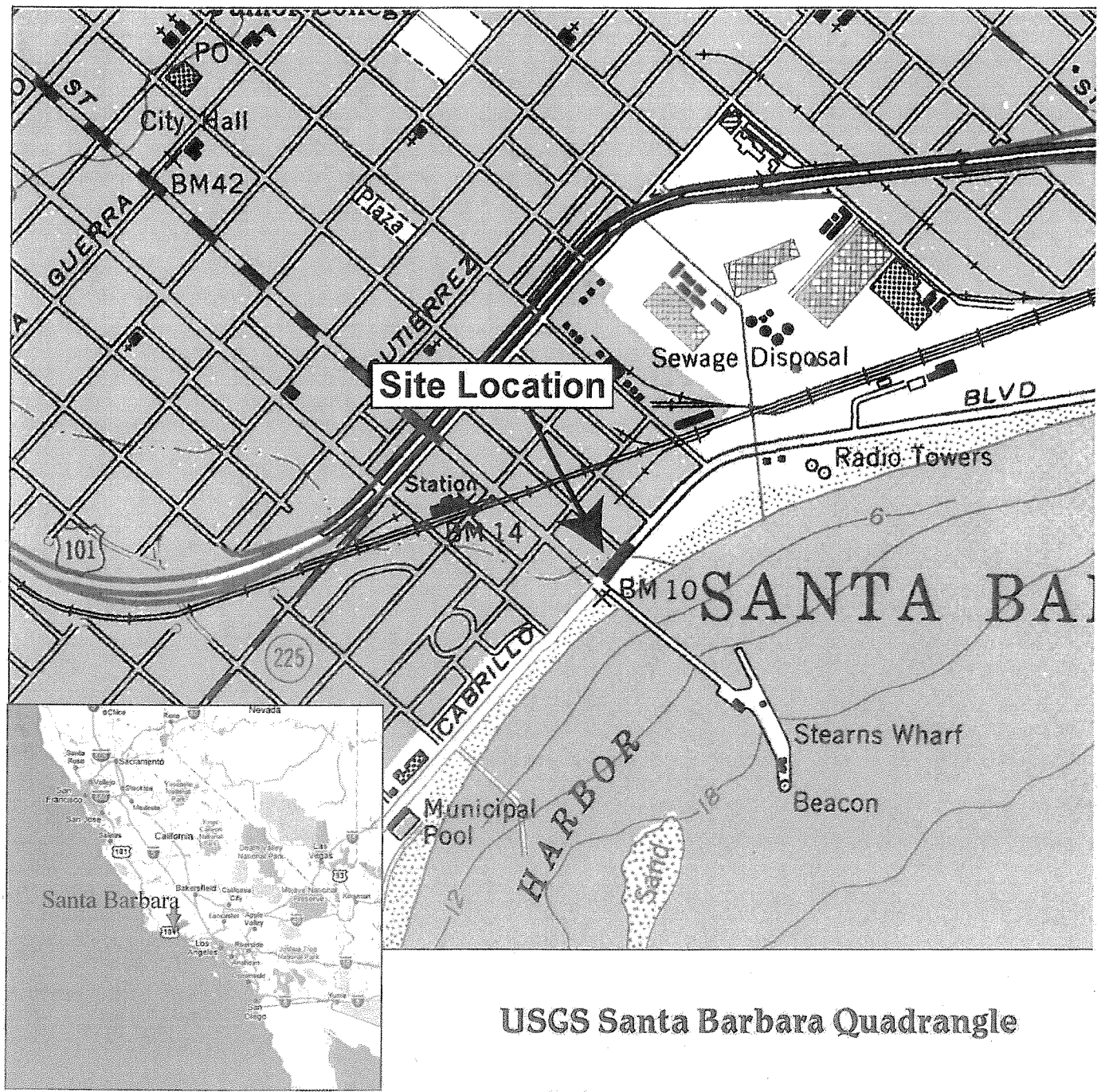
US Army corps of Engineers, Lower Mission Creek Flood Control Study Final EIS/EIR, September 2000

Wildland Fire Plan

Zoning Ordinance & Zoning Map

# Project Location Map

# CABRILLO STREET BRIDGE OVER MISSION CREEK




USGS Santa Barbara Quadrangle

North
West East
South

Figure 1
Regional and Local
Location Map

EXHIBIT A

| DIST | COUNTY | ROUTE | POST MILE TOTAL PROJECT | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 05 | SB | | | | |

In Progress

REGISTERED ENGINEER – CIVIL

PLANS APPROVAL DATE

DESIGN CONSULTANT:
BENGAL ENGINEERING
250 BIG SUR DRIVE
GOLETA, CA 93117

Md. Wahdazzaman
No. C49838
Exp. 9/30/08
CIVIL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

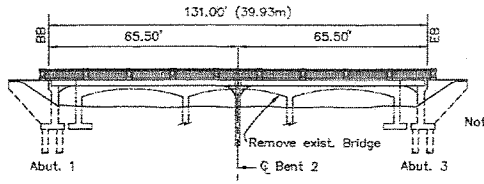
NOTES

1. For Design Notes see "Deck Contours" Sheet.
2. The contractor shall verify all controlling field dimensions before ordering or fabricating any materials.
3. For Pile Data Table, see "DECK CONTOURS" sheet.
4. Utilities not shown, See civil plans for utility locations.
5. See Road Plans for Lane and Sidewalk layout.

Section identification

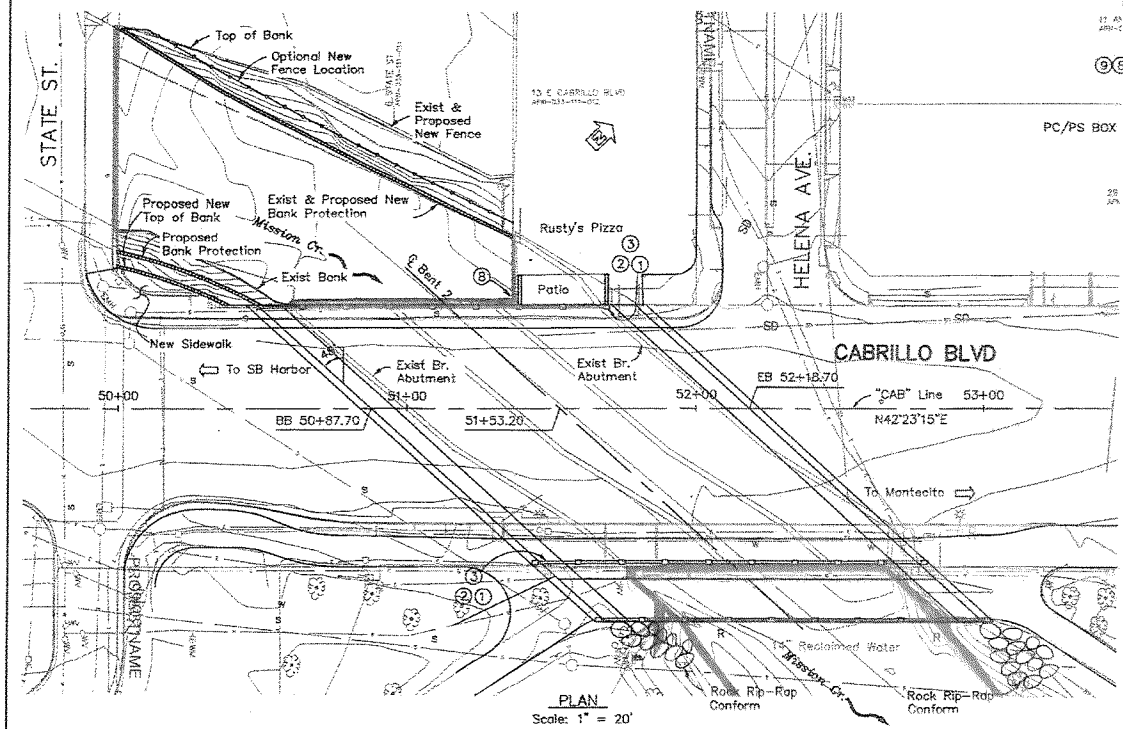
Standard plan sheet No.
Detail number

1. Paint "Br. No. 51C-350" and year completed
2. Paint "Cabrillo Blvd. Bridge"
3. Barrier Rail Aesthetics and Layout, See Civil Plans
4. See "Typical Section" Sheet for utility openings.
5. 2-10"ø Reclaimed Water
6. 16"ø High Pressure Gas lf. needed
7. 6"ø Water
8. Rusty's Pizza Structure Connection
9. Concrete Barrier (Type 26 Mod.)
10. Future Utility Opening (Typ.)

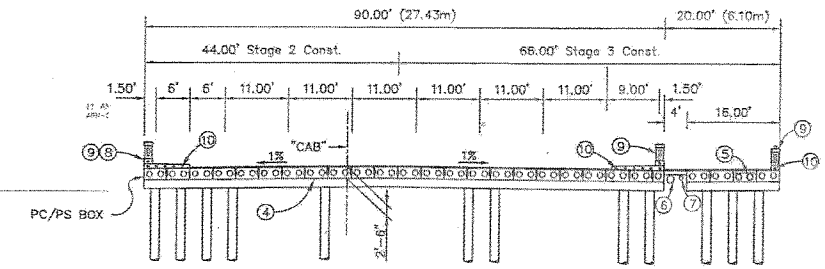



ELEVATION
Scale: 1" = 20'

Note: Bridge skew not shown
Upstream Barrier Rail Shown
See Barrier Rail aesthetic details for railing architecture




PLAN
Scale: 1" = 20'




TYPICAL SECTION
Scale: 1" = 10'-0"

Note: Not all piles shown
Bridge Pile Installation constitutes Stage 1 Construction.
Existing Structure and Utility not shown.

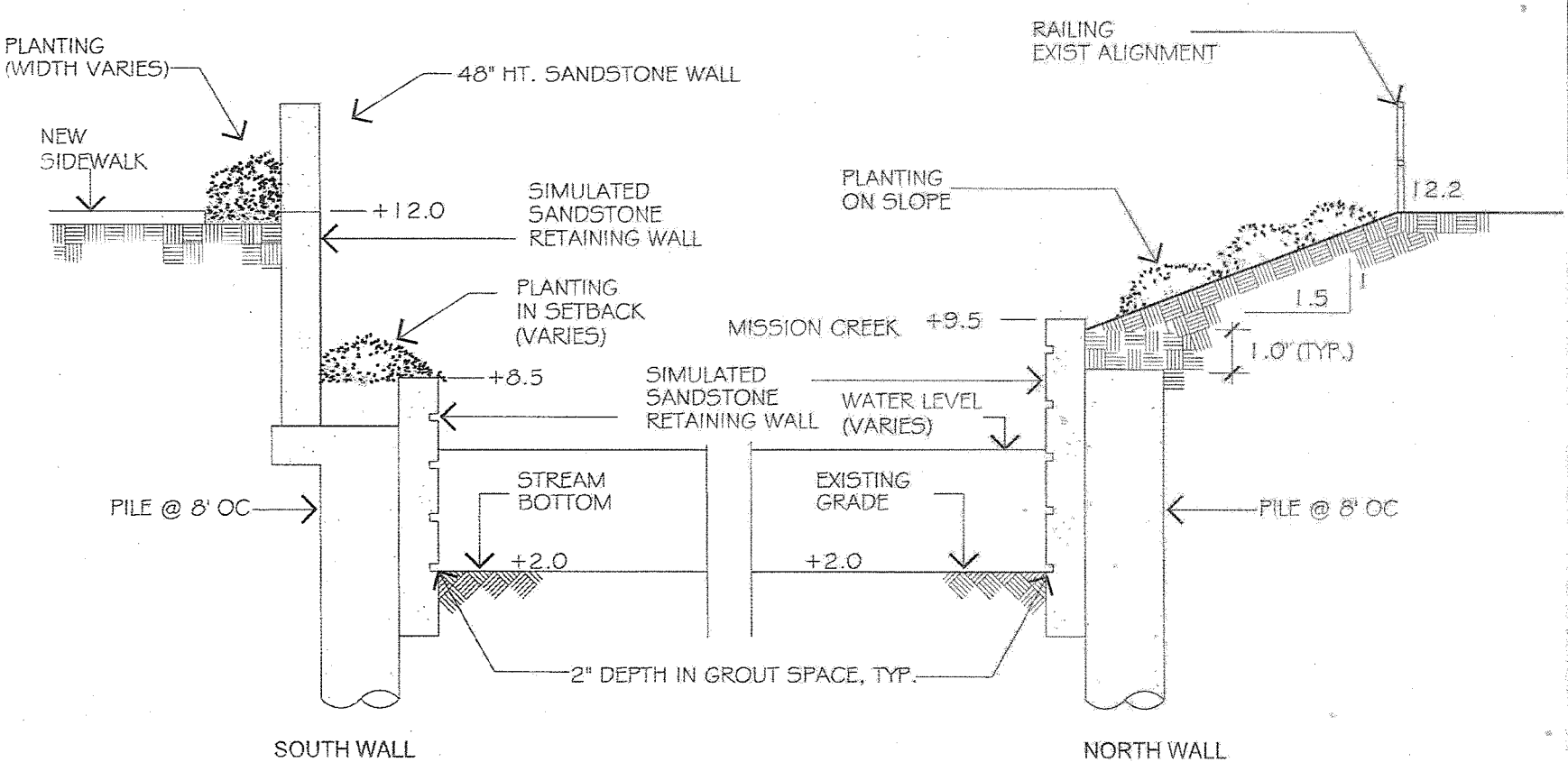
STANDARD PLANS, DATED MAY, 2006

| | |
|---|---|
| A10-A,B | ABBREVIATIONS AND SYMBOLS |
| A62-A | EXCAVATION AND BACKFILL MISCELANEOUS DETAILS |
| A62-C | LIMITS OF PAYMENT FOR EXCAVATION AND BACKFILL-BRIDGE |
| A77K | GUARD RAIL CONNECTION TO BRIDGE SIDEWALK AND CURBS |
| B0-1 | BRIDGE DETAILS |
| B0-3 | BRIDGE DETAILS |
| B0-5 | BRIDGE DETAILS |
| B0-13 | BRIDGE DETAILS |
| B2-8 | PILE DETAILS-CLASS 45C & CLASS 70C |
| B6-21 | JOINT SEALS (MAXIMUM MOVEMENT RATING =2") |
| B11-54 | CONCRETE BARRIER TYPE 26 |
| B13-2 | SLOPE PROTECTION DETAIL NO. 2 |

FIGURE 2: Cabrillo Boulevard Bridge - General Plan

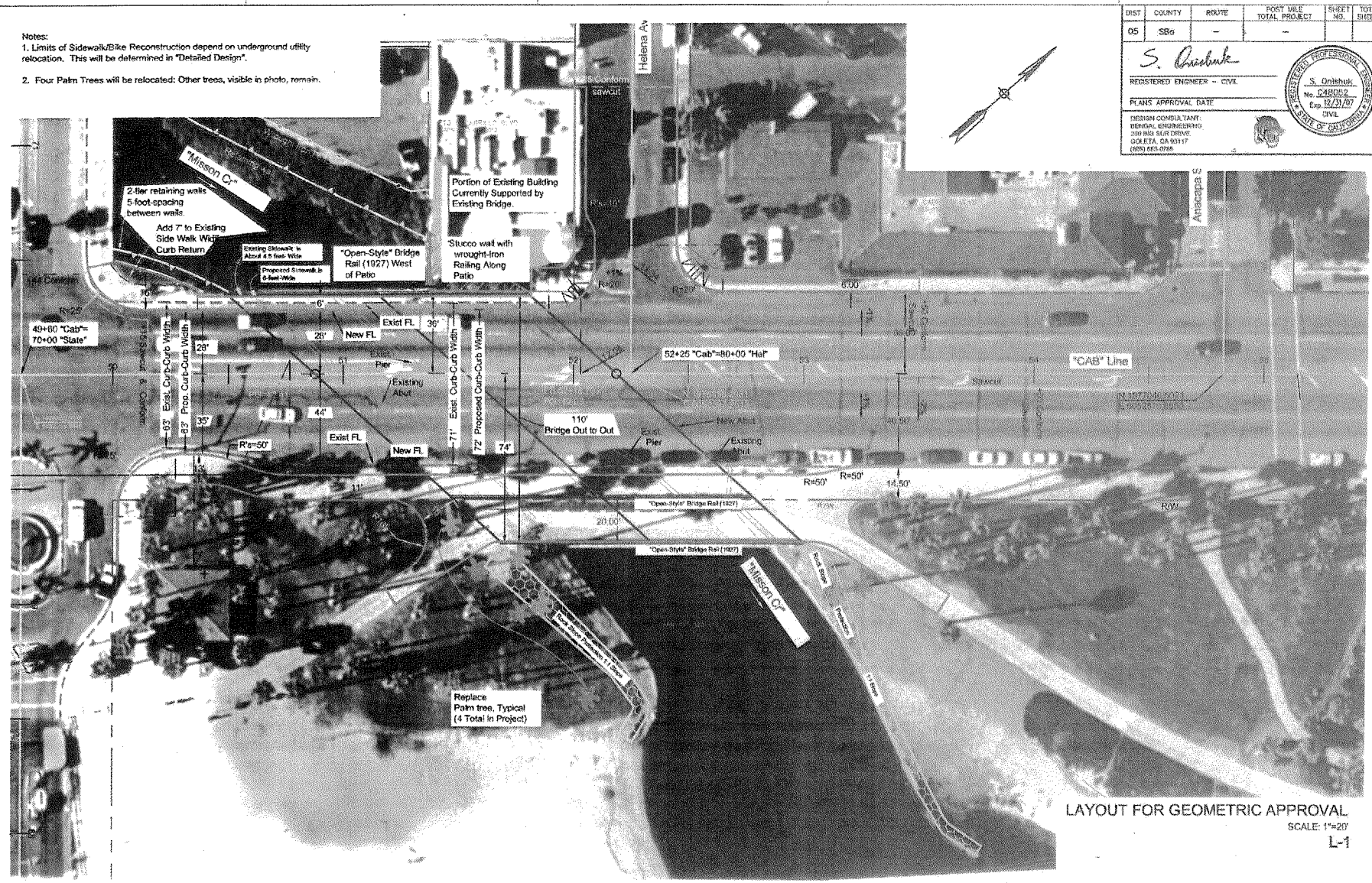
| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| DESIGN OVERSIGHT | DESIGN | BY MDW | CHECKED XX | LOAD FACTOR DESIGN | LIVE LOADING: HS20-44 AND ALTERNATIVE AND PERMIT DESIGN LOAD | PREPARED FOR THE CITY OF SANTA BARBARA DEPARTMENT OF PUBLIC WORKS | ENGINEERING DIVISION | BRIDGE NO. 51C-350 | CABRILLO BLVD BRIDGE (REPLACE) |
| | DETAILS | BY | CHECKED | LAYOUT | BY MDW | CHECKED | | POST MILE * | GENERAL PLAN |
| SIGNOFF DATE | QUANTITIES | BY | CHECKED | SPECIFICATIONS | BY * | PLANS AND SPECS COMPARED | CU EA | DISREGARD PRINTS BEARING EARLIER REVISION DATES — | REVISION DATES (PRELIMINARY STAGE ONLY) 5/26 8/09 12/8 1/31 6/16 9/8 10/12 2/14 — SHEET * OF * |

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3




Scale: 1/4" = 1'-0"

**FIGURE 3**
Sections at Cabrillo Blvd and State Street.




| DIST | COUNTY | ROUTE | POST MILE TOTAL PROJECT | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 05 | SBa | – | – | | |

S. Onishuk
REGISTERED ENGINEER – CIVIL
PLANS APPROVAL DATE

S. Onishuk
No. C48052
Exp. 12/31/07
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STATE OF CALIFORNIA

DESIGN CONSULTANT:
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(805) 683-0788

Harold Hill, P.E. – Project Manger, Dept. of Public Works, City of Santa Barbara

PROJECT ENGINEERS: Md. Wahiduzzaman, PE; Scott Onishuk, PE

CALCULATED/DESIGNED BY | CHECKED BY

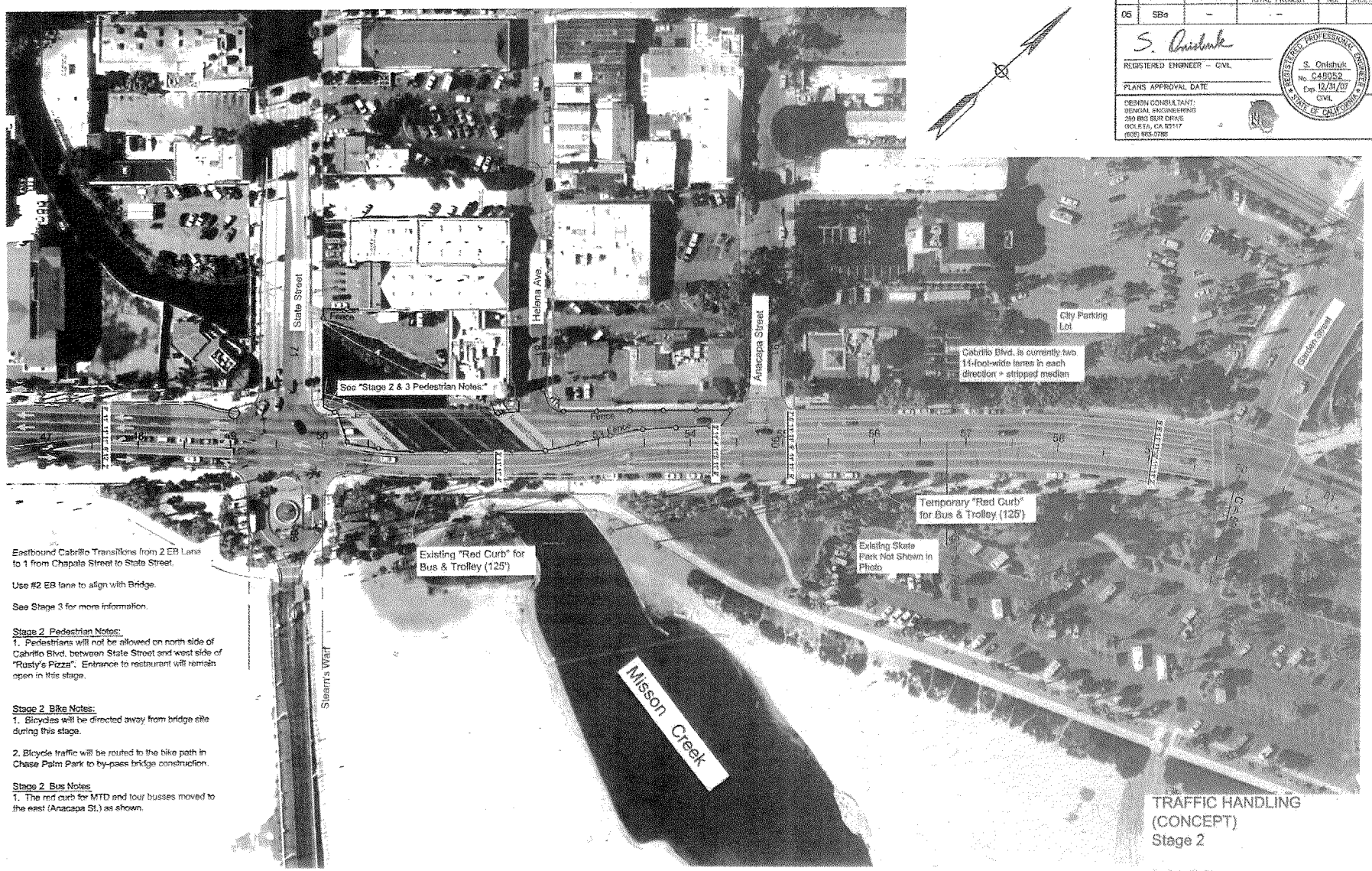
DATE | REVISED BY | DATE REVISED

SUBMITTED FOR GEOMETRIC APPROVAL
2/20/07

FOR REDUCE PLANS ORIGINAL SCALE IS IN INCHES 0 1 2 3

USER NAME:
DWG FILE:

**FIGURE 4**
**Layout for Geometric Approval**




| DIST | COUNTY | ROUTE | POST MILE TOTAL PROJECT | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 05 | SBa | - | - - | | |

S. Onishuk
REGISTERED ENGINEER – CIVIL
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER – S. Onishuk – No. C48052 – Exp. 12/31/07 – CIVIL – STATE OF CALIFORNIA

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(805) 965-0783

CALCULATED/ DESIGNED BY
CHECKED BY
DATE
DATE REVISED:
REVISED BY:

PROJECT ENGINEERS
Md. Wahiduzzaman, PE
Scott Onishuk, PE

Harold Hill, PE - Project Manger, Dept. of Public Works, City of Santa Barbara

FOR REDUCE PLANS ORIGINAL SCALE IS IN INCHES 0 1 2 3

USER NAME:
DWG FILE:

LAST REVISION 2/20/07

CONCEPTUAL TRAFFIC HANDLING PLAN

**FIGURE 5**
**Traffic Handling (Concept) Stage 2**


Stage 3 "Pedestrian Notes":
1. New northern sidewalk, completed in Stage 2, is open for pedestrians in this Stage.

2. Pedestrians on south side of Cabrillo Blvd. will be routed away from the existing sidewalk on the South side of Cabrillo Blvd., because the sidewalk area is needed for construction zone. Pedestrians will be directed to the existing multi-user path, and the new (temporary) pedestrian bridge constructed further south.

Stage 3 "Bicycle Notes":
1. A class-2 bike lane will be created on the north side of Cabrillo Blvd., crossing the portion of the bridge constructed in previous stage. This will accommodate west-bound bike traffic.

2. East-bound bike traffic is routed to a temporary bridge downstream of the existing bridge. A temporary bike path in Chase palm park directs bike traffic to the existing cross walk at Anacapa Street.

Stage 3 Bus Notes
1. The red curb for MTD and tour busses moved to the east (Anacapa St.) as shown.

| DIST | COUNTY | ROUTE | POST MILE TOTAL PROJECT | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 05 | SBa | – | – | | |

S. Onishuk
REGISTERED ENGINEER – CIVIL
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
S. Onishuk
No. C48052
Exp. 12/31/07
CIVIL
STATE OF CALIFORNIA

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RENCAL ENGINEERING
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(805) 563-0768

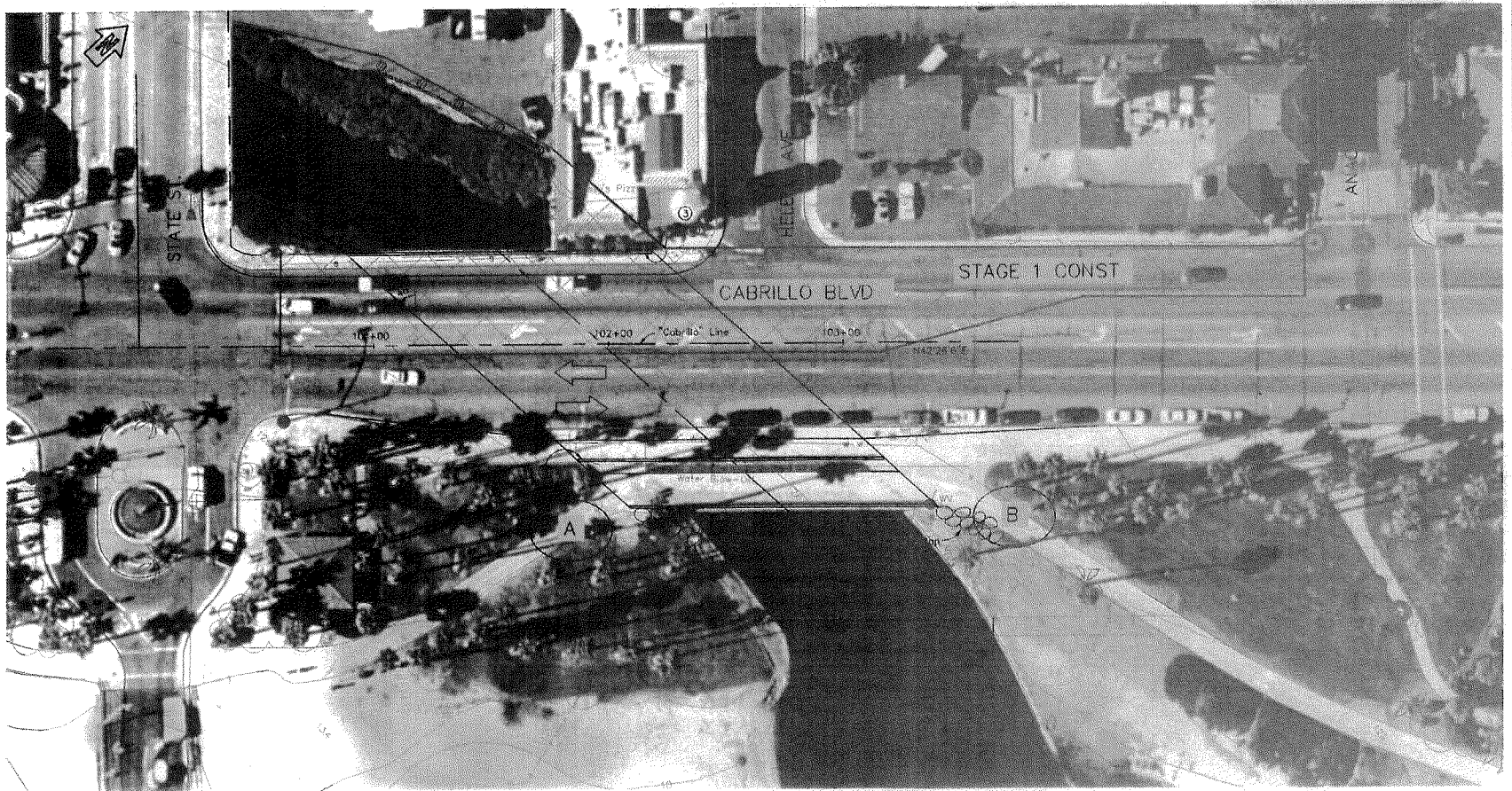
Harold Hill, PE - Project Manger, Dept. of Public Works, City of Santa Barbara
PROJECT ENGINEERS: Md. Wahiduzzaman, PE; Scott Onishuk, PE
CALCULATED/DESIGNED BY
CHECKED BY
DATE
REVISED BY
DATE REVISED:

USER NAME:
DWG FILE:
FOR REDUCE PLANS ORIGINAL SCALE IS IN INCHES 0 1 2 3

USER DESIGNED 2/20/07

CONCEPTUAL TRAFFIC HANDLING PLAN

**FIGURE 6**
**Traffic Handling (Concept) Stage 3**




PLAN
Scale: 1" = 20'

Bengal Engineering, Inc.
Civil, Bridge, Hydraulics, Structural & Highway Engineers

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| DESIGN OVERSIGHT | DESIGN | MDW | XX | LOAD FACTOR DESIGN | LIVE LOADING: HS20-44 AND ALTERNATIVE AND PERMIT DESIGN LOAD | PREPARED FOR THE CITY OF SANTA BARBARA DEPARTMENT OF PUBLIC WORKS | ENGINEERING DIVISION | BRIDGE NO. 51C-NEW ROAD NO. | CABRILLO BLVD BRIDGE (REPLACE) |
| SIGNOFF DATE | DETAILS | | | LAYOUT | MDW | | | | PLANNING STUDY – STAGE 1 CONST. |
| | QUANTITIES | | | SPECIFICATIONS | | | CU EA | DISREGARD PRINTS BEARING EARLIER REVISION DATES | REVISION DATES (PRELIMINARY STAGE ONLY) 4/15 |

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

FIGURE 7: Planning Study - Stage 1 Construction

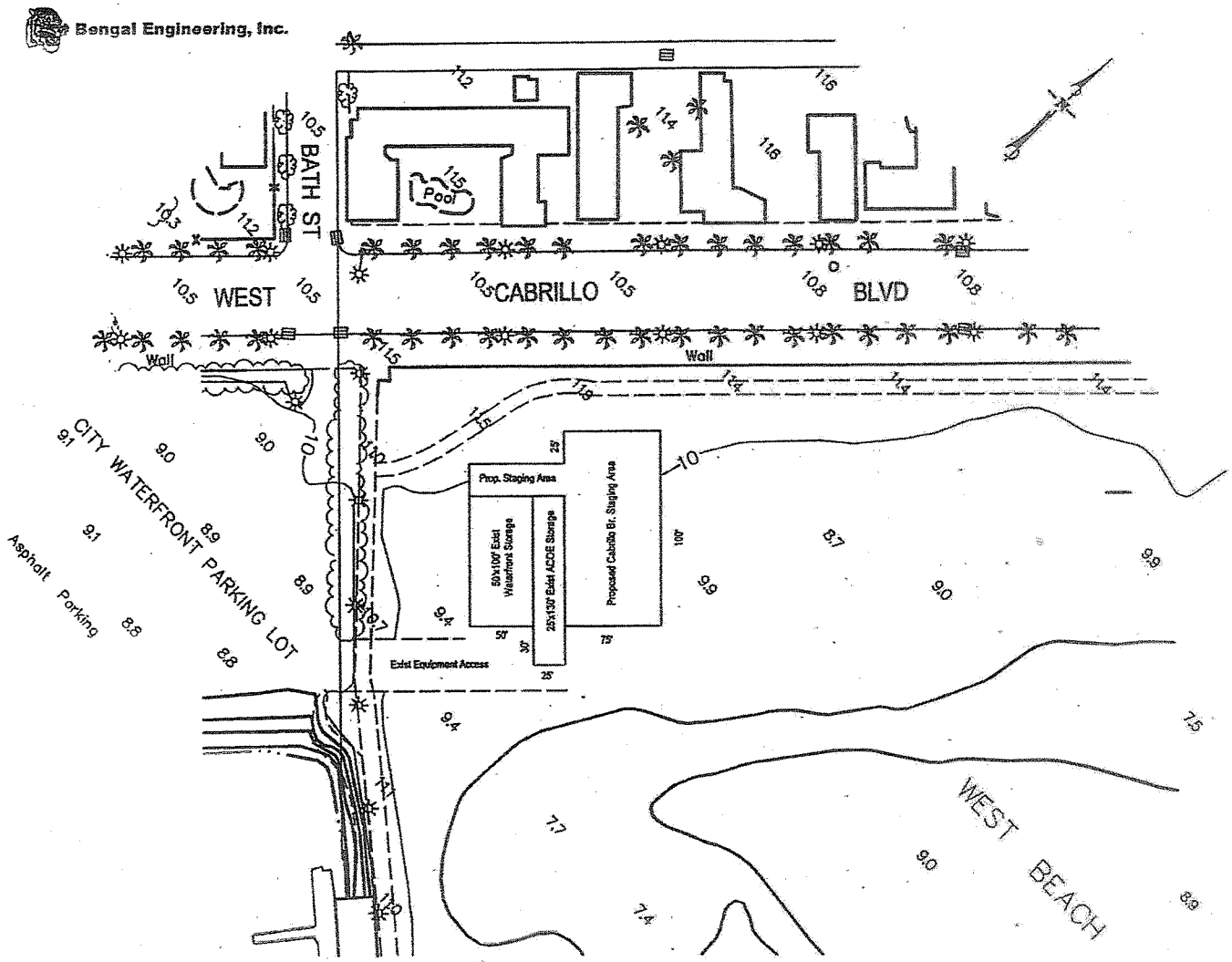
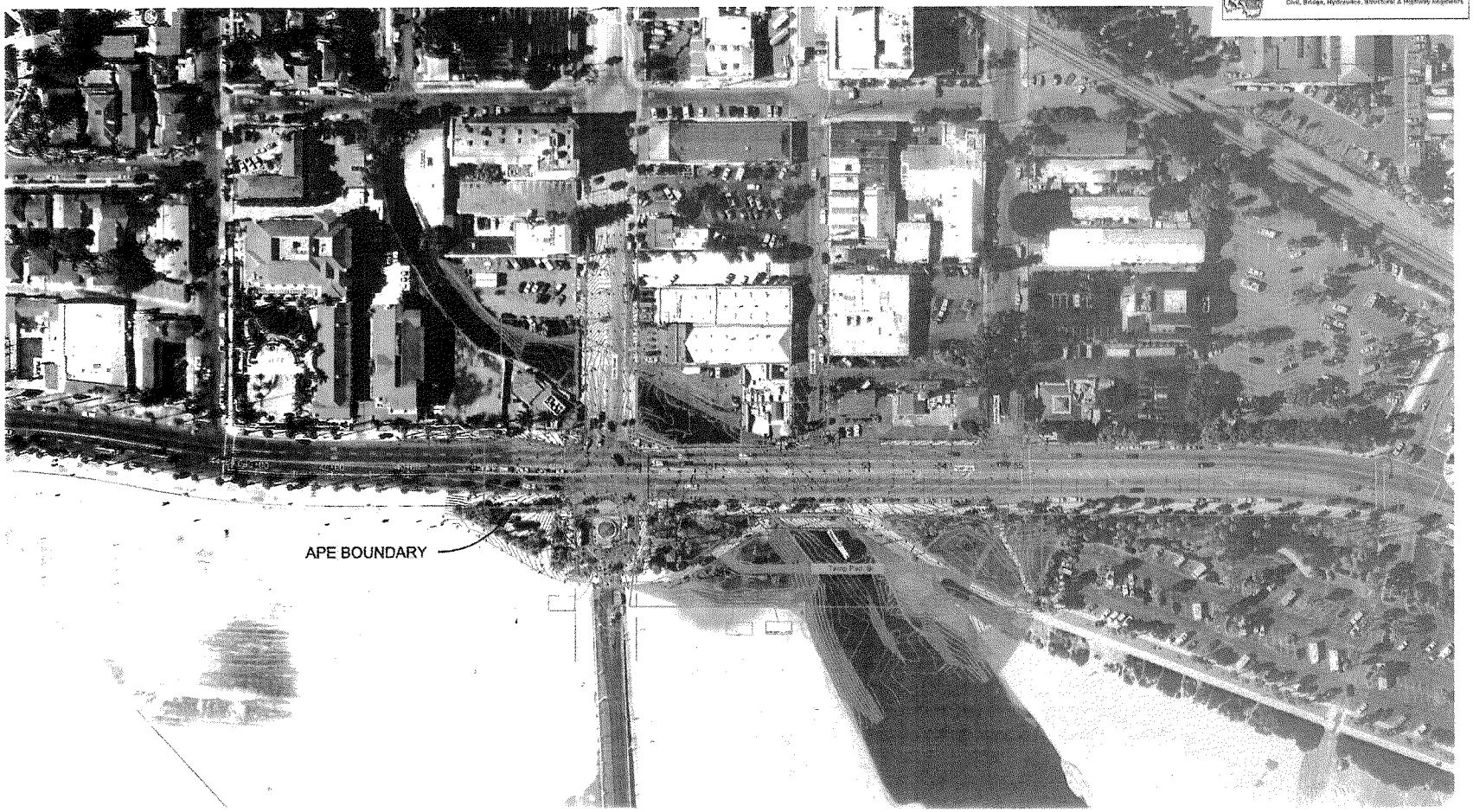



FIGURE 9
Proposed Staging Area (Scale 1" = 100')




| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| DESIGN OVERSIGHT | DESIGN | MDW | XX | LOAD FACTOR DESIGN | LIVE LOADING: HS20-44 AND ALTERNATIVE AND PERMIT DESIGN LOAD | PREPARED FOR THE CITY OF SANTA BARBARA DEPARTMENT OF PUBLIC WORKS | ENGINEERING DIVISION | BRIDGE NO. 51C-NEW | CABRILLO BLVD. BRIDGE (REPLACEMENT) |
| | DETAILS | | | LAYOUT | MDW | | | POST MILE * | AREA OF POTENTIAL EFFECT (APE) MAP |
| SIGNOFF DATE | QUANTITIES | | | SPECIFICATIONS | | | CU EA | DISREGARD PRINTS BEARING EARLIER REVISION DATES | REVISION DATES (PRELIMINARY STAGE ONLY) 11/28 |

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 3

APE MAP NOV 28 2005

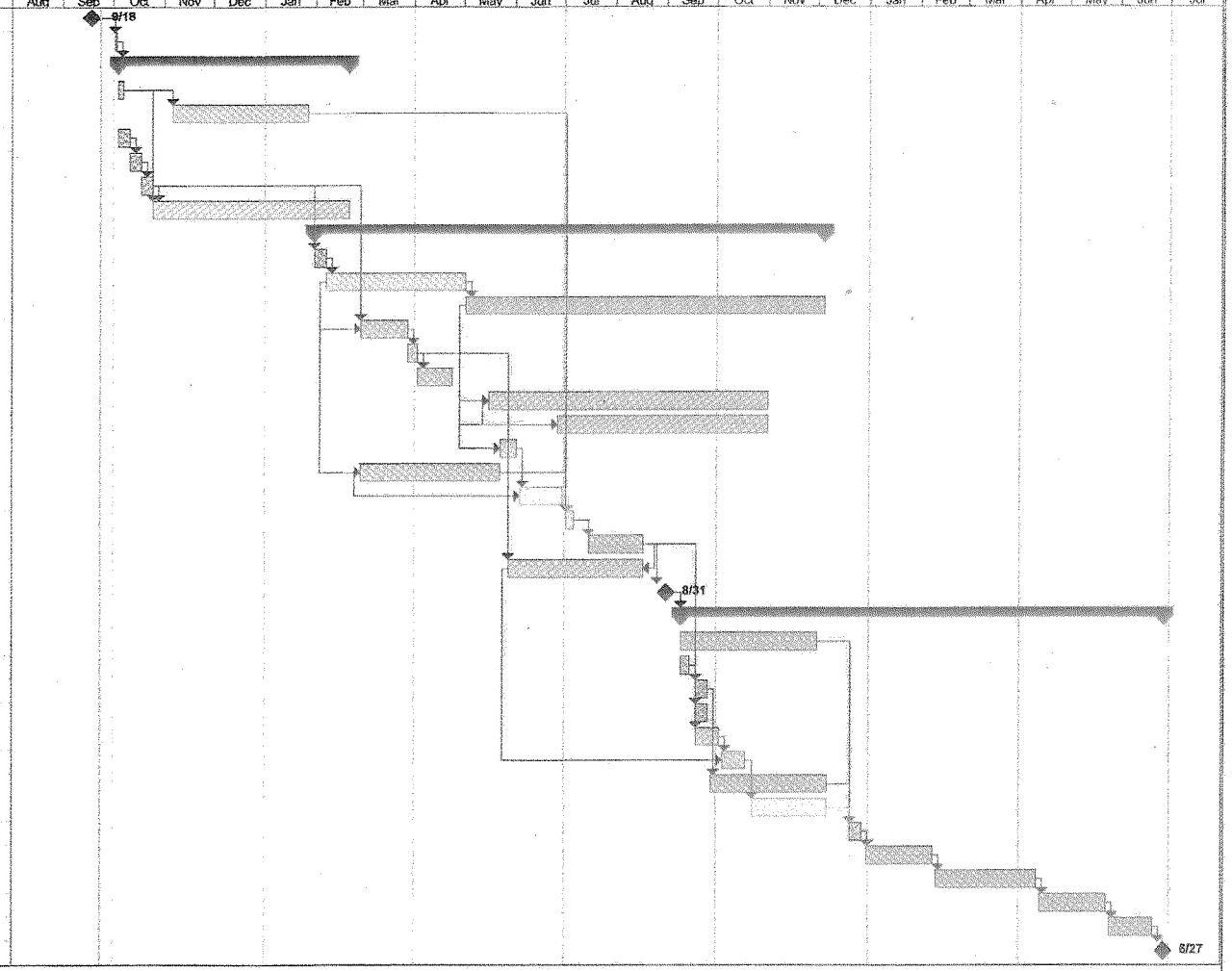
FIGURE 8: Area of Potential Effect (APE) Map

Project: Cabrillo Blvd Const 3S Compa
Date: Sat 9/23/06

Bengal Engineering, Inc.

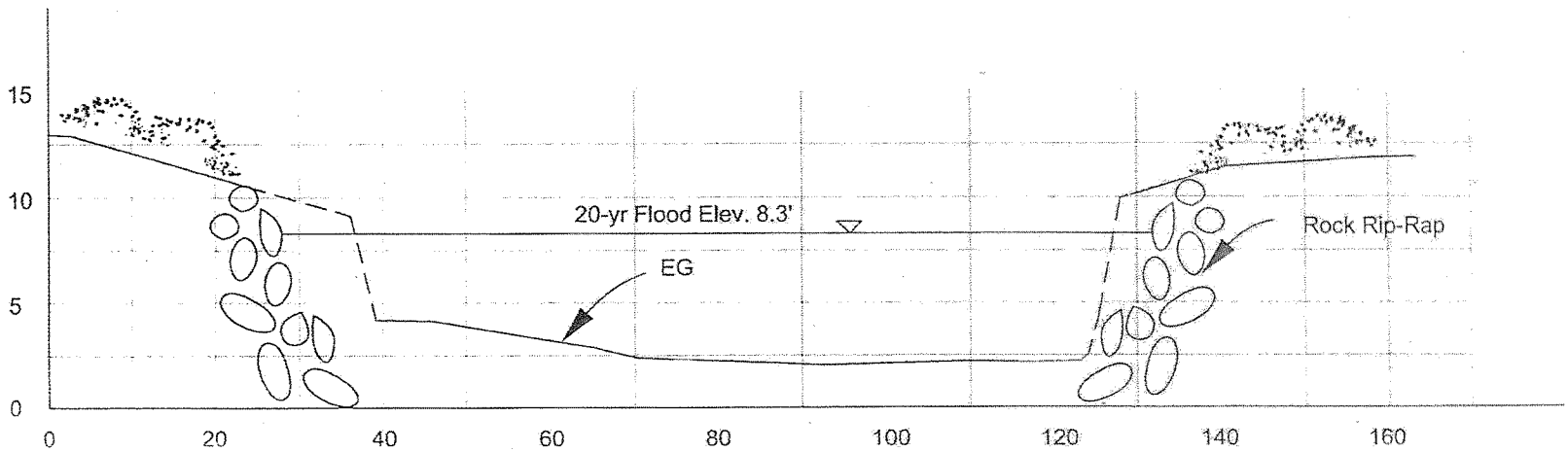
## Cabrillo Blvd Bridge 3-Stage Compact Construction Winter Schedule

| ID | Task Name |
|---|---|
| 1 | NTP |
| 2 | Pre-Con Mtg |
| 3 | Stage 1 Const |
| 4 | Biological Monitoring |
| 5 | Order PC/PS Box Deck. |
| 6 | Traffic Handling,Sign, Barrier, detour |
| 7 | Relocate Street Light |
| 8 | Temp Ped Bridge Pile Installation |
| 9 | Pile Installation (Abuts + Pier Br. North) |
| 10 | Stage 2 Const |
| 11 | Biological Monitoring |
| 12 | Partial and Localized Dewatering |
| 13 | Dewatering |
| 14 | Temporary Ped Bridge Fnds |
| 15 | Temp Br. Placement |
| 16 | Ped Detour (if needed) & Temp Utility Support |
| 17 | Up Stream Ret Wall Const |
| 18 | Dn Stream Ret Wall/Bank Const |
| 19 | Br Demolition (North Side) |
| 20 | Abutment Construction |
| 21 | Bent Const |
| 22 | PC/PS Conc Box Placement |
| 23 | Conc. Cure |
| 24 | Relocate Gas Line |
| 25 | Complete Stage 2 Const |
| 26 | Stage 3 Const |
| 27 | Order PC/PS Box Deck |
| 28 | Traffic Handling,Sign, Barrier, detour |
| 29 | Temp Utility Support |
| 30 | Relocate Street Light |
| 31 | Pile Installation (Pier Br. South, if necessary) |
| 32 | Br Demolition (South Side) |
| 33 | Abutment Construction |
| 34 | Bent Const |
| 35 | PC/PS Conc Box Placement |
| 36 | Conc. Cure |
| 37 | Establish Utilities |
| 38 | Approach & Walkway |
| 39 | Landscape |
| 40 | Complete Stage 3 Const |




Task | Progress | Summary | External Tasks | Deadline
Split | Milestone | Project Summary | External Milestone

FIGURE 10: 3-Stage Compact Construction Winter Schedule




X-Section (20' Downstream of Bridge, Looking Upstream)

CABRILLO BLVD. BRIDGE
DOWNSTREAM RIP-RAP BANK PROTECTION
1"=20'

**FIGURE 11**

Exhibit B

# General Plan and Local Coastal Plan Policy

**General Plan Policies:**

## CULTURAL AND HISTORIC RESOURCES

### Goals

- Sites of significant archaeological, historic, or architectural resources will be preserved and protected wherever feasible in order that historic and prehistoric resources will be preserved.
- Selected structures which are representative of architectural styles of fifty or more years ago (pre-1925) will be preserved wherever feasible.

### Policies

- Activities and development which could damage or destroy archaeological, historic, or architectural resources are to be avoided.
- The requirements and restrictions administered by the Landmarks Committee and the Architectural Board of Review will apply to City and other public agencies as well as private projects.

## VISUAL RESOURCES

### Goals

- Restore where feasible, maintain, enhance, and manage the creekside environments within the City as visual amenities, where consistent with sound flood control management and soil conservation techniques.
- Protect and enhance the scenic character of the City.
- Protect significant open space areas from the type of development which would degrade the City's visual resources.

### Policies

- Development adjacent to creeks shall not degrade the creeks or their riparian environments.
- New development shall not obstruct scenic view corridors, including those of the ocean and lower elevations of the City viewed respectively from the shoreline and upper foothills, and of the upper foothills and mountains viewed respectively from the beach and lower elevations of the City.

### Implementation

### Strategies

- Development adjacent to creeks shall not degrade the creeks or their riparian environments.

## AIR QUALITY

### Goals

- Maintain air quality above Federal and State ambient air quality standards.

**Policy**

- Improve the attractiveness and safety of bicycle use as an alternate mode of travel for short- and medium-distance trips.

## BIOLOGICAL RESOURCES

**Goal**

- Enhance and preserve the City's critical ecological resources in order to provide a high-quality environment necessary to sustain the City's ecosystem.

**Policy**

- Intertidal and marine resources shall be maintained or enhanced.

## DRAINAGE AND FLOOD CONTROL

**Goals**

- Ensure that human habitation of the City's floodplains does not adversely affect public health, safety, and welfare.

## TRANSPORTATION ELEMENT

- Provide a major street system adequate to serve the City's projected population at a level of service below that which would allow the free flow of peak hour traffic.

## SCENIC HIGHWAYS ELEMENT

**Goal**

- The purpose of the scenic highway designation is the protection and enhancement of the natural scenic resources of the highway corridor, and the assurance that the highway incorporates not only safety, utility and economy, but also beauty.
- Improve Mission Creek at Cabrillo Boulevard

## NOISE ELEMENT

**Goal**

To ensure that the City of Santa Barbara is free from excessive noise and abusive sounds such that: a) sufficient information concerning the City noise environment is provided for land use planning; b) strategies are developed for abatement of excessive noise levels; and c) existing low noise levels are maintained and protected.

In defining this goal, primary emphasis should be placed on protecting the general public from noise levels which may be hazardous to hearing. Second in importance is the minimization of noise induced stress, annoyance, and activity interference.

## LOCAL COASTAL PLAN

Policy 3.8: The City of Santa Barbara shall consider relocation of the Arts and Crafts Show in the event one of the following site relocation opportunities becomes available:

(1) Palm Park expansion allows for more suitable relocation and enhanced parking, or

(2) Development inland of Cabrillo Boulevard provides public open space and parking such that the show may be moved to the north side of Cabrillo Boulevard, or

(3) Any other suitable location made available.

Action

- Under the ordinance establishing the Art Show, moving to an alternate location would require an approval of the electorate.

Policy 6.3: Seawalls, revetments and bulkheads shall not be permitted unless the City has determined that they are necessary to, and will accomplish the intent of protecting existing principal structures, and that there are not less environmentally or aesthetically damaging alternatives such as relocation of structures, sand augmentation, groins, drainage improvements, etc. Determinations permitting such structures shall be based upon the findings and recommendations of geology, soils and engineering reports prepared by licensed and registered professionals in those fields.

Policy 6.4: Where permitted, such structures as seawalls, revetments and bulkheads, shall minimize, to the degree possible, alterations of the natural landform.

Policy 6.5: Seawalls, revetments, bulkheads and all other permitted structures shall not encroach upon any beach area to a degree which impedes lateral access along the beach at any tide condition.

Policy 6.6: Revetments, seawalls, bulkheads, groins, pipelines, outfalls and other necessary permitted construction shall be designed to eliminate or mitigate to the maximum extent adverse impacts on local shoreline sand supply.

Policy 6.7: To avoid the need for future protective devices that could impact sand movement and supply, no permanent above-ground structures shall be permitted on the dry sandy beach except facilities necessary for public health and safety, such as lifeguard towers and restrooms.

Policy 6.8: The riparian resources, biological productivity, and water quality of the City's coastal zone creeks shall be maintained, preserved, enhanced, and, where feasible, restored.

Policy 6.11-A: New highway bridges or other highway improvements should be designed to provide clear spans of the stream or creek and to avoid the use of pilings within the stream or creek corridor. Culverting of the creek channel shall not be permitted.

Policy 6.11-B: New highway structures shall be designed to protect stream and creek environments from non-point pollutants (such as oil and rubber residues from the road surface) and from accidental spills of toxic materials.

Policy 6.11-C: When highway bridges or other structures are replaced or renovated in the vicinity of streams or creeks, a emergency response and cleanup plan shall be prepared by the applicant to address accidental releases of toxic materials.

Policy 9.1: The existing views to, from, and along the ocean and scenic coastal areas shall be protected, preserved, and enhanced.

Policy 9.17: Materials, colors, and textures used in new highway structures shall be appropriate to the Santa Barbara region. Concrete, when used in sound barriers, safety barriers, overpasses, ramps, and other highway structures shall be textured and/or colored in such a manner that the appearance of these structures will be compatible with landscaping, surrounding structures, and exposed soil. Use of wooden barriers and structures shall be encouraged where feasible. Use of metal beam guard rails shall be minimized

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**Cabrillo Bridge Replacement Project (MST2004-00878/CDP2007-00001)**

MITIGATION MONITORING AND REPORTING PROGRAM

PURPOSE

The purpose of the Cabrillo Bridge Replacement Project Mitigation Monitoring and Reporting Program (MMRP) is to ensure compliance with all mitigation measures identified in the Addendum to the Final Mitigated Negative Declaration to mitigate or avoid potentially significant adverse environmental impacts resulting from the proposed project. The implementation of this MMRP shall be accomplished by City staff and the Public Works Department, consultants and representatives. The MMRP program shall apply to all of the actions occurring under the Permit for the Cabrillo Bridge Replacement Project.

I. RESPONSIBILITIES AND DUTIES

A qualified representative from the Public Works Department, approved by the City Planning Division and paid for by the Public Works Department shall be designated as the Project Environmental Coordinator (PEC) for each department. The PEC shall be responsible for assuring full compliance with the provisions of this mitigation monitoring and reporting program to the City for actions undertaken under the Cabrillo Bridge Replacement Project. The PEC shall have authority over all other monitors/specialists, the contractor, and all construction personnel for those actions that relate to the items listed in this program.

It is the responsibility of the Public Works Department to comply with all mitigation measures listed in the attached MMRP matrix table. Any problems or concerns between monitors and construction personnel shall be addressed by the PEC and the responsible department. Staff and/or contractors hired to do work under the Cabrillo Bridge Replacement Project shall provide a schedule of activities for review and approval of the PEC. The staff or contractor shall inform the PEC of any major revisions to the construction schedule at least 48 hours in advance. The respective PEC, staff, and contractor shall meet on a weekly basis in order to assess compliance and review future activities anticipated under the construction of the Cabrillo Bridge Replacement Project.

A PRE-IMPLEMENTATION BRIEFING

The PEC shall prepare a pre-implementation briefing report. The report shall include a list of all mitigation measures and a plot plan delineating all sensitive areas to be avoided. This report shall be provided to all personnel performing work under this permit.

The pre-implementation briefing shall be conducted by the PEC. The briefing shall be attended by the PEC, supervisors of staff working on the project, necessary consultants, Planning Division Case Planner, and all contractors and subcontractors associated with the project. Additional pre-construction briefings shall be conducted when changes in the PEC, staff working on the project, and a change in contractor occurs.

This MMRP shall be presented to those in attendance at the meeting. The briefing presentation shall include project background, the purpose of the MMRP,



**EXHIBIT C**

duties and responsibilities of each participant, communication procedures, monitoring procedures, filling out of the mitigation monitoring matrix and summary reports, and duties and responsibilities of the PEC, staff, contractors, and project consultants.

It shall be emphasized at this briefing that the PEC and project consultants have the authority to stop construction and redirect construction equipment in order to comply with all mitigation measures.

## II. IMPLEMENTATION PROCEDURES

### A. REPORTING PROCEDURES

The PEC for the Public Works shall utilize the MMRP Matrix Table, attached to the Addendum to the Mitigated Negative Declaration, as the basis for daily monitoring of activities approved as a part of the project. As long as no compliance with mitigation measure issues is identified on the completed matrix table, the MMRP forms shall be kept on file at the Public Works and Parks and Recreation Departments. If the PEC identifies non-compliance or other problems with mitigation measure issues, the completed forms shall be forwarded to the Planning Division. In addition, monthly summary reports and annual summary reports on the mitigation monitoring program shall be submitted to the Planning Division by the PEC.

### B. MMRP MATRIX

The following MMRP Matrix Table provides each mitigation measure, identifies the responsible party, and allows the monitor to indicate the date monitoring occurred, whether the mitigation measure has been implemented, and comments on activities, if necessary. .

The MMRP Matrix Table is intended to be used by all parties involved in monitoring the project mitigation measures, as well as project contractors and others working in the field. The Matrix Table shall be used as a compliance checklist to aid in compliance verification and monitoring requirements for all activities conducted under the Cabrillo Bridge Replacement Project, whenever activities authorized under this permit are conducted. A copy of the MMRP matrix table shall be kept in the project file at the Public Works Department as verification that compliance with all mitigation measures has occurred.

## CABRILLO STREET BRIDGE REPLACEMENT (MST2004-00878/CDP2007-00001)
## MITIGATION MONITORING AND REPORTING PROGRAM MATRIX TABLE

| MITIGATION MEASURE | PARTY RESPONSIBLE FOR IMPLEMENTATION | VERIFICATION | | |
|---|---|---|---|---|
| | | Date | Accomplished? | Comments |
| A-1 Design Review. Prior to building permit issuance, proposed project grading and landform alteration, structural design, landscaping, and lighting is subject to preliminary and final review and approval by the Historic Landmarks Commission for consistency with design guidelines for views, visual aesthetics and compatibility with the Historic appearance of the entryway to the City.. | | | | |
| A-2 Lighting. Lighting design shall conform with City Lighting Ordinance requirements, including shielding and direction to the ground to avoid off-site lighting and glare effects, and shall be approved by the Historic Landmarks Commission. | | | | |
| AQ-1 Construction Dust Control – Minimize Disturbed Area/Speed. Minimize amount of disturbed area and reduce on site vehicle speeds to 15 miles per hour or less. | | | | |
| AQ-2 Construction Dust Control - Watering. During site grading and transportation of fill materials, regular water sprinkling shall occur using reclaimed water whenever the Public Works Director determines that it is reasonably available. During clearing, grading, earth moving or excavation, sufficient quantities of water, through use of either water trucks or sprinkler systems, shall be applied to prevent dust from leaving the site. Each day, after construction activities cease, the entire area of disturbed soil shall be sufficiently moistened to create a crust.<br><br>Throughout construction, water trucks or sprinkler systems shall also be used to keep all areas of vehicle movement damp enough to prevent dust raised from leaving the site. At a minimum, this will include wetting down such areas in the late morning and after work is completed for the day. Increased watering frequency will be required whenever the wind speed exceeds 15 mph. | | | | |
| AQ-3 Construction Dust Control – Tarping. Trucks transporting fill material to and from the site shall be covered from the point of origin. | | | | |
| AQ-4 Construction Dust Control – Gravel Pads. Gravel pads shall be installed at all access points to prevent tracking of mud on to public roads. | | | | |
| AQ-5 Construction Dust Control – Stockpiling. If importation, exportation and stockpiling of fill material are involved, soil stockpiled for more than two days shall be covered, kept moist, or treated with soil binders to prevent dust generation. | | | | |
| AQ-6 Construction Dust Control – Disturbed Area Treatment. After clearing, grading, earth moving or excavation is completed, the entire area of disturbed soil shall be treated to prevent wind pickup of soil. This may be accomplished by:<br><br>A. Seeding and watering until grass cover is grown;<br><br>B. Spreading soil binders;<br><br>C. Sufficiently wetting the area down to form a crust on the surface with repeated soakings as necessary to maintain the | | | | |

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| crust and prevent dust pickup by the wind;<br>D. Other methods approved in advance by the Air Pollution Control District. | | | | |
| AQ-7 Construction Dust Control – Paving. All roadways, driveways, sidewalks, etc., should be paved as soon as possible. Additionally, building pads should be laid as soon as possible after grading unless seeding or soil binders are used. | | | | |
| AQ-8 Construction Dust Control – PEC. The contractor or builder shall designate a person or persons to monitor the dust control program and to order increased watering, as necessary, to prevent transport of dust offsite. Their duties shall include holiday and weekend periods when construction work may not be in progress. The name and telephone number of such persons shall be provided to the Air Pollution Control District prior to land use clearance for map recordation and land use clearance for finish grading for the structure. | | | | |
| AQ-9 Heavy-duty diesel-powered construction equipment manufactured after 1996 (with federally mandated "clean" diesel engines) shall be utilized wherever feasible. | | | | |
| AQ-10 The engine size of construction equipment shall be the minimum practical size. | | | | |
| AQ-11 The number of construction equipment operating simultaneously shall be minimized through efficient management practices to ensure that the smallest practical number is operating at any one time | | | | |
| AQ-12 Construction equipment shall be maintained in tune per the manufacturer's specifications. | | | | |
| AQ-13 Construction equipment operating onsite shall be equipped with two to four degree engine timing retard or pre-combustion chamber engines. | | | | |
| AQ-14 Catalytic converters shall be installed on gasoline-powered equipment, if feasible. | | | | |
| AQ-15 Diesel catalytic converters, diesel oxidation catalysts and diesel particulate filters as certified and/or verified by EPA or California shall be installed, if available. | | | | |
| AQ-16 Diesel powered equipment should be replaced by electric equipment whenever feasible. | | | | |
| AQ-17 Idling of heavy-duty diesel trucks during loading and unloading shall be limited to five minutes; auxiliary power units should be used whenever possible. | | | | |
| AQ-18 Construction worker trips shall be minimized by requiring carpooling and by providing for lunch onsite. | | | | |
| BIO-1 Except for installation of sheet piles (Porta Dam or equivalent) for partial dewatering and diversion of three areas for 1) pile installation (including the temporary beachway bridge), 2) abutment construction, and 3) bank protection construction work in the Mission Creek channel and on the banks, including construction of the cofferdams, shall not occur during the period October/November 1 to mid March/April 30 during an average or above-average rainfall year. The exact schedule is subject to | | | | |

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| revision dependent on weather conditions and monitoring for goby spawning. Construction work requiring dewatering/diversion in the creek shall not begin until forecasts from the National Weather Service provide reasonable assurance that the winter rainfall has ended, and/or tidewater goby monitoring shows no reasonable evidence of initiation of spawning season. | | | | |
| BIO-2 Pile driving and construction for the center line of piles on the north side of the road (Stage 1) shall be completed during the period October 1 to December 1 to avoid vibration impact in the creek during the adult steelhead migration period, which can begin as early as December 1 if there are suitable runoff conditions. Weather and other possible delays permitting, the center row of piles for the north side of the bridge will be driven and filled with concrete with the existing bridge deck intact and while the creek is not dewatered. This date may be moved forward as late as December 31 if the lagoon remains closed (i.e., has not breached by its own forces). If all the center row of pilings cannot be completed in Stage 1, the center piles on the south side of Cabrillo Boulevard currently identified for Stage 3, will be driven and filled while the cofferdams are installed and the creek is dewatered during Stage 2. | | | | |
| BIO-3 Bridge demolition, center bent construction, north side abutment construction, and deck placement on the north side (Stage 2) shall occur when the creek is dewatered and diverted to the flume. Bent construction and deck placement on the south side may occur before cofferdams are constructed or after the cofferdams are removed, provided the erosion and water quality protection measures (see Water Quality section) are implemented. | | | | |
| BIO-4 Piles will be driven and filled with concrete in Stage 1 when the creek is flowing. During the phase of breaching the bridge deck, a plywood deck, construction diaper, or other method will be used underneath the bridge to collect any falling debris or concrete. To prevent the generation of silt from the physical movement of the pile into the creek bottom sediments, and to prevent leakage of concrete when filling the hollow pile, a temporary impermeable containment sleeve will be placed surrounding the base of the pile, before insertion (embedded in the creek bottom) to capture silt or leaking concrete. The containment sleeve will be wrapped at the bottom with 1/8-inch mesh screen before insertion to prevent fish from being trapped inside. The sleeve shall be connected to the bridge deck with a thick plastic sleeve to prevent concrete or debris from falling into the creek during piling installation. A monitor provided by the contractor shall ensure that the sleeve remains intact during pile construction operations, and shall inspect for leakage. If leakage occurs, the captured turbid water or concrete fluids will be tested for pH and will be pumped from between the sleeve and pipe to a portable tank (Baker tank). The waste fluids will be treated and disposed of off-site in the sewer system or other approved location. | | | | |
| BIO-5 A cofferdam or equivalent barrier shall be placed between the abutment being installed and the open creek channel during construction to prevent spillage of construction materials and concrete. A plywood deck or construction diaper shall be | | | | |

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| placed above Mission Creek bed when constructing the bent and placing the bridge deck. The barrier shall be designed to capture all dry or liquid materials (including concrete) and prevent discharge to the creek. | | | | |
| BIO-6 No construction work or storage of materials is allowed in the Mission Creek lagoon for installation and removal of the temporary beachway bridge. No workers shall enter the lagoon; work may occur from a boat or platform during installation of the temporary utility bypasses and temporary bridge installation. Prior to installation of piles for the temporary bridge footing, erosion control fiber blankets or a sediment barrier shall be placed around the abutment locations to prevent discharge of soil or concrete into the dewatered area. | | | | |
| BIO-7 An environmental monitor shall be present during pile installation and pouring of concrete to address any discharges of concrete. The contractor will maintain spill contingency materials onsite to be mobilized in the event of a concrete spill during pile and bridge construction. These materials may include straw bales, Visqueen, gravel bags, absorbent pads, and additional fiber rolls. Any concrete spilled during construction will be removed and disposed of prior to removal of the cofferdam. | | | | |
| BIO-8 The cofferdams shall be constructed of silt-free gravel bags stacked in a stable configuration with Visqueen, or similar waterproof fabric or interlocking steel plates, or a flexible temporary barrier equivalent or better than the device constructed by Portadam, Inc. may also be used to create a dry work area within the channel. Use of other inert materials shall be allowed if necessary to create a better barrier or reduce leaks, but must be approved by the California Department of Fish and Game (CDFG) and United States Fish and Wildlife Service (USFWS). The cofferdams shall be placed approximately at the locations shown in the project description. They shall form a seal along the bottom and banks of the creek and lagoon, to the maximum extent feasible. The top elevations of the cofferdams shall be at least 9 feet NAVD 88 (North American Vertical Datum, 1988), which would be sufficient to contain water in the creek and lagoon during the summer when the sandbar is closed at the beach. The downstream cofferdam will be reinforced as necessary to withstand the impact of tidal surge from Mission Creek lagoon. | | | | |
| BIO-9 The installation/removal of the cofferdams and flume shall follow this sequence of tasks:<br>• The Contractor shall submit to the USFWS in writing, at least four weeks prior to the onset of work, the qualifications of a biologist familiar with tidewater goby biology. This biologist will be responsible for implementing measures that involve handling and relocation of tidewater gobies. The USFWS will provide written authorization of the individual, if qualified, or denial, if unqualified.<br>• The qualified biologist shall conduct a training session for all personnel associated with cofferdam construction and operations within the dewatered area prior to the onset of work. | | | | |

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| • A qualified biologist will assist in the preparation of the drawings and specifications for the preliminary and final engineering plans for the project that will include plans, details, and specifications for the placement/removal of cofferdams, dewatering/diversion operations, and fish capture and relocations procedures.. The fish rescue and relocation will follow the procedures included in the Natural Environmental Study. Rescued fish will be relocated to adjacent channel areas in the estuary that are not dewatered or subject to construction disturbance. The dewatering and fish rescue plans will be submitted to the USFWS for review and approval to ensure that the proper procedures and safeguards are included to avoid unnecessary take of gobies. After blocking nets have been placed to control fish access to the area a biologist will use nets to remove any remaining fish in the area where the dewatering and flume would be constructed.<br>• The authorized biologist shall complete initial surveys for tidewater gobies in Mission Creek within the project area one week prior to the onset of work.<br>• Two parallel fish blocking nets (mesh size 1/8 inch or less) shall be placed across the creek channel immediately upstream of the upstream cofferdam to prevent fish from traveling downstream to the work area.<br>• Qualified biologists with federal permits to handle gobies or personnel under the supervision of a permitted biologist shall insert a seine net at the upstream cofferdam location and conduct a sweep of the channel to herd and capture all fish in the work area, ending the sweep at the downstream cofferdam location. As the sweep is ended, two parallel fish blocking nets shall be placed across the lagoon to prevent fish from traveling upstream into the work area. The authorized biologist will be approved by USFWS and CDFG for relocating tidewater goby and native species that may occur in the work area to be dewatered.<br>• As the initial dewatering/diversion is occurring, fish biologists shall systematically survey for fish through the work area, including tidewater gobies and western pond turtles. Fish shall be captured with a dipping net and immediately relocated upstream of the upper cofferdam. The number and species of fish shall be recorded. This fish rescue operation shall occur until the work area is completely dewatered, or until the fish biologists are confident that no fish remain in any standing water in the work area.<br>• A silt fence shall be placed inside the fish blocking nets (after fish survey and relocation has occurred) when the cofferdams are being constructed to prevent silt, if any, from migrating through the meshes to the creek and lagoon outside the work area.<br>• The cofferdams shall be constructed with water in the creek and lagoon. This will require construction personnel to work in standing water. The flume (a narrow centralized channel created by installation of metal sheet piles, Porta dam, or equivalent) shall be placed or constructed in the creek. The system may be a continuous flexible barrier (Portadam device equivalent or better). Once the cofferdams and creek flume are installed in the wetted channel, pumping to dewater the work area between the cofferdams shall begin. Because tidewater gobies are most often on the bottom of the estuary, the intake on the pumps used for water diversion shall be covered with mesh 1/8 inch or less, and floated as long as possible to prevent tidewater gobies from being entrained and killed. | | | | |

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| • The mesh size on the pump intake shall be 1/8 inch or less. The mesh shall be checked by the qualified biologist prior to use each day and twice daily during operation to determine that it is intact. If the mesh develops holes or other conditions that impair its function, it shall be replaced or repaired immediately.<br>• Once it is dewatered, the construction area may need continuous dewatering to maintain a dry working area. Three to six dewatering pits will need to be excavated within the planned work area. This will create localized low points at which to collect the water. The dewatering pits will be limited in size and depth to the maximum extent possible to achieve a dry work area.<br>• Each dewatering pit will be constructed using 1/8-inch or less mesh anchored by a circle of rocks. The mesh will be suspended on the perimeter of the dewatering pits and shall cover the rocks and be anchored underneath on the outside. Work area creek water shall be discharged to the beach into an excavated depression or bermed area near the lagoon. An environmental monitor with applicable USFWS and CDFG permits or authorizations shall monitor the discharge location on a continuous basis to determine if any fish are inadvertently contained in the discharge. If present, these fish shall be captured with a small net and placed in the lagoon immediately after identifying species and numbers of fish.<br>• The cofferdam and flume diversion shall be removed by first blocking the downstream terminus of the flume. An authorized biologist shall then conduct a sweep to clear the diversion area of fish. Once clear, the upstream end of the flume shall also be blocked. The work area will be policed by the contractor and reviewed by a biological monitor to ensure that all construction material is removed. The flume will then be dewatered and relocated to accommodate construction access or removed. During low tide the downstream cofferdam will be removed first and followed by the upstream cofferdam. | | | | |
| BIO-10 An environmental monitor shall inspect any ponded water in the dewatered portion of the work area on a daily basis (three times – before work begins, midday, and at the end of the day) to search for any fish that may have traveled through gaps in the cofferdams. Fish (excluding mosquito fish) shall be removed on an as-needed basis and relocated above the upper cofferdam. The number and species of fish shall be recorded. | | | | |
| BIO-11 The dewatering system shall be inspected prior to leaving the work site at night. It shall be inspected and maintained by the contractor during non-work days (i.e., Saturdays, Sundays, holidays). | | | | |
| BIO-12 The flume shall be constructed as follows:<br>• The flume will be installed with the cofferdams and be constructed similar to a Portadam, Inc. device or better, or of plywood, inert material, or Visqueen-wrapped, silt-free gravel bags.<br>• The flume will be continuous and may be constructed to retain a natural sediment or manmade bottom.<br>• The contractor will prepare the final flume design for agency review and approval.<br>• The flume will maintain natural water levels and avoid potential dry spots from forming that would not naturally occur within the channel. | | | | |

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| • The flume shall be 3 to 6 feet wide and constructed to maintain the existing channel water stratification for water temperature, salinity, pH, and natural tidal depth.<br>• The flume shall not disturb more than a 6-inch depth into the streambed or create the potential for scour.<br>• It is expected that flow rates within the flume will be higher than the existing channel. Therefore, one or two silt free gravel bags or a small pile of cobble shall be placed every ten feet alternating along the sides of the flume to provide refuge for tidewater gobies.<br>• Shade cloth shall be placed over the top of the flume and draped over each end to maintain the existing temperature stratification and to prevent birds from entering the flume.<br>• While the streambed through the work area is generally a continuous grade, slight microtopography or a low-flow channel may be present; to address this, the flume bottom will be installed to achieve the lowest possible elevation from downstream to upstream. | | | | |
| BIO-13 During the pre-construction conference with the contractor, a biologist shall conduct a training session for all construction personnel. The training shall include:<br>• A description of the tidewater goby, southern steelhead, brown pelican, California least tern, western snowy plover, southwestern pond turtle, and associated habitats; the general provisions of the Endangered Species Act (ESA), including species relocation by a qualified biologist and documentation requirements<br>• The necessity for adhering to the provisions of the ESA<br>• The penalties associated with violating the provisions of the ESA<br>• The specific measures that are being implemented to conserve the tidewater goby and southern steelhead as they relate to the project, and measures that would be required if unexpected special status species, such as southwestern pond turtle, least tern, or snowy plover are on site during construction<br>• The boundaries of the project | | | | |
| BIO-14 The following native plants shall be used in the upstream bank protection: Atriplex lentiformis var. lentiformis – Brewer's Saltbush, Encelia californica – Bush Sunflower, Rhus integrifolia – Lemonadeberry, Mimulus auranticus – sticky monkey flower, Suaeda taxifolia – Wooly Sea Blite, Eriogonum parvifolium – Seaside Buckwheat, and Limonium californicum – Western Marsh-Rosemary. The saltbush and dwarf willow (Salix Exigua), used to create brush mattresses for erosion control (from a local source) shall also be planted above and among the ungrouted boulders on the downstream banks. Cocoanut fiber mats would be used to stabilize the soils above the boulders providing an opportunity for the native plants to get established. Other native plant species may be used if these are not readily available, subject to approval by a City-approved biologist and CDFG. Restoration efforts may also refer to "Guidelines to Evaluate, Modify and Develop Estuarine Restoration | | | | |

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| Projects for Tidewater Goby Habitat" (USFWS, Stillwater Science, Arcata, CA, May 2006), and the approved Adaptive Maintenance Plan for Mission Creek (ACOE, URS, Channel Design Recommendations 2005). | | | | |
| BIO-15 A qualified biologist shall conduct daily inspections of the construction work areas to ensure that the cofferdams remain intact, and that no gobies have entered the work areas. The biologist shall also monitor and inspect erosion control measures to be implemented as part of the project. The biologist shall conduct periodic visual surveys of the unaffected portions of the estuary to monitor the abundance and conditions of fish during construction. Weekly reports shall be provided to the USFWS to apprise them of the status of the goby and the effectiveness of the protection measures during construction. | | | | |
| BIO-16 During flume operations, decreased through-flow in Mission Creek may alter indicator parameters such as salinity, dissolved oxygen, and temperature. Although it is unlikely that the flume will alter concentrations of indicator parameters outside of historic ranges, monitoring would establish if operations were having serious effects on water quality. Indicator parameter monitoring in Mission Creek can be implemented either as a stand alone requirement or as part of the general construction permit as follows:<br>• Monitoring for dissolved oxygen, salinity, and temperature will be performed twice daily at a point directly upstream and downstream of the flume. If values are found outside of historic ranges, the cause shall be identified and steps shall be taken to return the parameter to the historic range.<br>• The flume will be monitored visually daily to ensure that flow is present at all times. | | | | |
| BIO-17 Pre-construction monitoring surveys for tidewater goby would be implemented at the upstream, downstream, and mid-lagoon bridge areas, one year prior to construction, including one pre-spawn survey in April, and one post-spawn in August. In addition, tidewater goby monitoring surveys also would be conducted at the same time at Arroyo Burro Estuary. Pre-construction monitoring allows for collection of baseline information at the site, along with control sites trend analysis. Post-construction surveys for tidewater goby would be implemented for one year following completion of the project. A total of four surveys would be conducted including one pre-spawn survey in April/May and one post-spawn survey in August each year. Pre- and post-construction surveys would be conducted by a biologist approved to handle tidewater gobies under a Section 10a1a recovery permit to determine the general abundance of tidewater gobies. Survey methods would follow those currently being used to measure population densities at Arroyo Burro Estuary. | | | | |
| BIO-18 A pre-construction clearance survey for the presence or absence of western snowy plover, within a 100-meter radius of the site shall be provided prior to construction occurring on the sandy beach. If plovers are found within this radius, work shall stop until the bird relocates itself, or work will be relocated to another area of the site outside of the 100-meter radius areas. If plover nests and/or plover protective nesting habits are observed within a 100-meter radius on the beach during breeding season (March–August) further surveys may be required. Plovers and/or nests are not anticipated during the construction. | | | | |
| BIO-19 Construction workers would be informed that construction activities would halt if a California brown pelican enters the active construction area. Upon self relocation, work may be reinitiated. | | | | |

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| BIO-20 A clearance survey for least terns shall be conducted by a qualified biologist prior to the commencement of construction activities on the beach area. If least terns are present, any construction activities, debris, or discharge of any construction materials would require a distance of at least 200 feet from the foraging area. Additionally, the biological monitor would be given authority to stop work if a least tern is seen within 200 feet of construction. | | | | |
| BIO-21 During systematic fish surveys at dewatering, monitoring for presence of southwestern pond turtles shall occur when the water level reaches a depth for visual observation of turtles. If southwestern pond turtles are observed in dewatering areas, a qualified biologist with required relocation certification shall perform relocation to an appropriate location. | | | | |
| BIO-22 Prior to any trees being removed during bird nesting season March 1 to August 1) a survey shall be conducted of the trees to ensure that there are no nesting birds in the trees. Outside of bird nesting season the trees can be removed without a survey. | | | | |
| CR-1 Archive Plans and Photos. Prior to demolition the bridge will be recorded in accordance with the National Park Service guidelines for Historic American Engineering Record (HAER) documentation. The documentation will include historic research, a narrative report of the history of the bridge, and photo documentation of the bridge. The HAER document will be submitted to the Library of Congress.- | | | | |
| CR-2 HLC Review. Bridge and restoration plans shall be subject to HLC review and approval to ensure that they are compatible with the East Cabrillo Boulevard Parkway District. | | | | |
| CR-3 Design Elements: The bridge railings shall utilize the same design and finish as the 1928 bridge railing (a pipe or wrought iron above the existing railing is permitted to achieve increased height required by code and the openings between pillars in the railing may be tapered to four inches on the interior of the railing, also to meet code), the bridge deck shall be similar in appearance to the existing structure with arch like structures, piers shall be round in one row, the existing monument shall be removed and replaced on the bridge, and all rip-rap on the channel banks, downstream of the project, would use stone rather than concrete. | | | | |
| CR-4 Replacement Trees. The project shall replace all palm trees removed as result of project construction on a one for one basis, with trees of the same variety and approximately 30 feet in height. | | | | |
| CR-5 Discovery Procedures and Mitigation. Standard discovery measures shall be implemented per the City Master Environmental Assessment throughout grading and construction:<br><br>Prior to the start of any vegetation or paving removal, demolition, trenching or grading, contractors and construction personnel shall be alerted to the possibility of uncovering unanticipated subsurface archaeological features or artifacts.<br><br>If during any grading or construction on the site such archaeological resources are encountered or suspected, work shall be halted immediately, the City Environmental Analyst shall be notified and a City-approved archaeologist shall be employed to assess the nature, extent and significance of any discoveries and to develop appropriate management recommendations for | | | | |

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| archaeological resource treatment, including but not limited to redirection of grading and/or excavation activities. If the findings are potentially significant, further analysis and/or other mitigation shall be prepared and accepted by the Environmental Analyst and the Historic Landmarks Commission, and implemented by the project Work in the area may only proceed after the Environmental Analyst grants authorization.<br><br>If prehistoric or other Native American remains are encountered, a Native American representative shall be consulted, and the archaeologist and Native American representative shall monitor all further subsurface disturbances in the area of the find.<br><br>If the discovery consists of potentially human remains, the Santa Barbara County Coroner and the California Native American Heritage Commission must also be contacted.<br><br>A final report on the results of the archaeological monitoring shall be submitted by the City-approved archaeologist to the Environmental Analyst within 180 days of completion of the monitoring and prior to the issuance of final City permits. | | | | |
| G-1 The project shall utilize the foundation and bridge construction recommendations of the Preliminary and Final Geological Investigations that include the following:<br><br>• Bridge be supported on Cast in Steel Shell (CISS ) piles<br><br>• Diameter, length and other specifications of piles for bridge support and for bank restoration<br><br>• Bridge engineering design | | | | |
| N-1 Construction Notice. At least 20 days prior to commencement of construction, the contractor shall provide written notice to all property owners and residents within 450 feet of the project area. The notice shall contain a description of the proposed project, a construction schedule including days and hours of construction, the name and phone number of the Project Environmental Coordinator (PEC) who can answer questions, and provide additional information or address problems that may arise during construction. A 24-hour construction hot line shall be provided. Informational signs with the PEC's name and telephone number shall also be posted at the site. | | | | |
| N-2: Construction Hours. Noise-generating construction activities (which may include preparation for construction work) shall be permitted weekdays between the hours of 8:00 a.m. and 5:00 p.m., excluding holidays observed by the City as legal holidays: New Year's Day (January 1st); Martin Luther King Jr.'s Birthday (3rd Monday in January); President's Day (3rd Monday in February); Memorial Day (Last Monday in May); Independence Day (July 4th); Labor Day (1st Monday in September); Thanksgiving Day (4th Thursday in November); Day Following Thanksgiving Day (Friday following Thanksgiving); Christmas Day (December 25th). *When a holiday falls on a Saturday or Sunday, the preceding Friday or following Monday respectively shall be observed as a legal holiday.<br><br>Occasional night work may be approved for the hours between 5 p.m. and 8 a.m. by the Chief of Building and Zoning per Section 9.13.015 of the Municipal Code) between the hours of 5 p.m. and 8 a.m. weekdays In the event of such night work approval, the applicant shall provide written notice to all property owners and residents within 450 feet of the project property | | | | |

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| boundary and the City Planning and Building Divisions at least 48 hours prior to commencement of any. Night work shall not be permitted on weekends and holidays. | | | | |
| N-3: Construction Equipment Sound Control. All construction equipment, including trucks, shall be professionally maintained and fitted with standard manufacturers' muffler and silencing devices. | | | | |
| N-4 Sound Barriers. The project shall employ sound control devices and techniques such as noise shields and blankets during the construction period to reduce the level of noise generated by pile driving and demolition. Sound barriers shall be installed as shown in the noise study design and locations, provided landowners agree to the installation of the noise barriers. Sound barriers or temporary construction zones shall be used to reduce pile driving and demolition noise levels to 120 dB where members of the public have access. | | | | |
| N-5 Vibration. The Rusty's Restaurant support shall be separated from the bridge and supported independently to preclude direct transmission of vibration from the bridge to the structure resulting from pavement discontinuities created by patches on the bridge deck and work on the deck. | | | | |
| N-6 Cracks. A photographic survey of adjacent structures shall be completed prior to, during, and after construction to identify any cracking caused by the project. Any cracking occurring due to the project shall be repaired or compensation shall be provided to the owner for any damage due to project vibration. | | | | |
| N-7 Worker Hearing Protection. Worker hearing conservation requirements shall be included in contract documents and used by construction workers. | | | | |
| N-8 Nighttime Noise. Any equipment that must be operated during nighttime hours must be individually reviewed and treated with an enclosure, barriers, silencers or other treatments as required to limit noise at any noise sensitive use to 50 dB (A-weighted) based on measured nighttime ambient noise 45 dB and the City restriction of ambient plus 5 dB. | | | | |
| N-9 Interior Noise. The applicant shall negotiate an arrangement to provide noise shields (secondary windows) for adjacent businesses due to noise from pile driving and demolition or use of the front portions of the Rusty's Pizza Restaurant shall be temporarily discontinued during pile driving and demolition. | | | | |
| N-10 Construction Truck Trips. Prohibit large scale movements of debris or materials by trucks during nighttime hours (10 p.m. to 7 a.m.) | | | | |
| N-11 Warning Signs. Post noise hazard signs at locations within 150 ft of the pile-driving areas so that passers-by would be aware that high noise levels are possible. The sigh would read: "WARNING, NOISE HAZARD AHEAD, YOU ARE ADVISED TO AVOID THE AREA, USE EAR PROTECTION OR STAY FOR LESS THAN 30 MINUTES. | | | | |
| PS 1 Green waste, concrete, and steel from construction and operation shall be sent to a local recycling facility and be recycled, as proposed by the applicant. | | | | |

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| REC-1: The City will allow vacancies due to attrition to be filled with vendors displaced by the project. Displaced vendors who are left without a space would be provided vendor spaces at the east end of the vendor area. | | | | |
| T-1 Construction Traffic. The haul routes for all construction related trucks, three tons or more, entering or exiting the site, shall be approved by the Transportation Engineer. Construction-related truck trips shall not be scheduled during peak hours (7:00 a.m. to 9:00 a.m. and 4:00 p.m. to 6:00 p.m.) to help reduce truck traffic and noise on adjacent streets and roadways. The route of construction-related traffic shall be established to minimize trips through surrounding residential neighborhoods.<br><br>spaces for construction workers shall be provided in a location subject to the approval of the Transportation and Parking Manager. | | | | |
| T-2 Construction Parking. Construction parking and vehicle/equipment/materials storage shall be provided as follows:<br><br>A. During construction, free parking<br><br>B. Storage area shall be provided for construction materials, equipment, and vehicles. | | | | |
| WQ-1 The creek shall be dewatered to allow for the installation of upstream and downstream bank protection, demolition of the existing bridge, construction of the center bent, abutments, and placement of the new bridge deck. The following measures shall be implemented during these activities to prevent water quality impacts.<br><br>• Any concrete (or grout) or other construction materials that are discharged to the dewatered creek shall be removed and disposed of off site. If the material is dry, it shall be physically removed from the work site by equipment or manual labor. If the material is liquid discharged to ponded water in the work area, the water shall be pumped and discharged to a Baker tank, and the affected muddy sediments shall be removed by equipment and disposed offsite. The contaminated water shall be tested and ph adjusted before it is disposed of at the sewer treatment plant or other approved location.<br><br>• An environmental monitor, or other qualified contractor personnel, shall be present during the construction activities listed above to monitor for discharges to the dewatered creek, particularly discharges of concrete. The monitor shall measure pH levels in any standing water near the work area on a regular basis during the day to determine if there is any discharge of concrete into the groundwater below the ground surface. Ponded water with elevated pH shall be pumped to a Baker tank and not discharged to the beach. A biological monitor will document compliance.<br><br>• The contractor shall maintain spill contingency materials onsite to be mobilized in the event of a concrete spill to the dewatered channel. These materials shall include weed-free, straw bales, Visqueen, gravel bags, and absorbent pads. They would be deployed if concrete is spilled in the channel, even if it is fully dewatered, to immediately isolate and remove the concrete.<br><br>• Limited equipment is expected to be operated within the dewatered work area. Equipment may include rubber tire backhoes and loaders or other equipment that can be lifted into the creek bed. The contractor will be required to minimize streambed disturbance. The substrate of the creek bed may be disturbed to a depth of 6 inches by equipment and personnel | | | | |

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| movement. If the streambed is too saturated even with dewatering then the contractor will work from creosote-free wood planks or other temporary inert platform typical for wetland construction Best Management Practices. | | | | |
| | | | | |
| WQ-3 Prior to construction a detailed Erosion Control Plan shall be prepared for implementation during construction, including basic requirements as follows:<br>• Proposed schedule<br>• Description of potentially affected areas<br>• Description of soils, geology, vegetation, and creeks<br>• Site Plan including contours, elevations, limits of clearing, grading, and creek configuration<br>• Description of erosion control measures<br>• Description of sediment detention basins<br>• Description of emergency erosion and sediment control measures | | | | |
| WQ-4 During dewatering of the construction area, the removed water will be discharged to temporary infiltration areas on the beach near the lagoon. The discharge shall occur in accordance with NPDES General Permit (Order No. 01-119) for Low Threat Discharges, issued by the Regional Water Quality Control Board (RWQCB). | | | | |

*Cabrillo Bridge Replacement Construction Equipment Emissions*

**Phase 1 = 12 months**
**Phase 1 Demolition**

| Equipment Category | Construction Equipment UEF Code | Approx. Horsepower | Fraction of use per Day | No Days | Hours of construction per day | Equip Use per day in hours | THC Factor | THC Amount | ALDEHYDE Factor | ALDEHYDE Amount | NOX Factor | NOX Amount | SOX Factor | SOX Amount | CO Factor | CO Amount | PM Factor | PM Amount | | ROG Amount | | PM10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hoe Ram | 4 | 150 | 0.8 | 5 | 13 | 10 | 0.55 | 858.0 | 0.28 | 436.80 | 11 | 17160.0 | 0.9 | 1404.0 | 2.45 | 3822.00 | 0.79 | 1232.40 | | 1217.6 | | 1183.104 |
| Back Hoe | 3 | 150 | 0.5 | 5 | 13 | 7 | 0.37 | 360.8 | 0.16 | 156.00 | 11 | 10725.0 | 0.87 | 848.3 | 2.28 | 2223.00 | 0.41 | 399.75 | | 484.28 | | 383.76 |
| Excavator | 3 | 250 | 0.75 | 5 | 13 | 10 | 0.37 | 901.9 | 0.16 | 390.00 | 11 | 26812.5 | 0.87 | 2120.6 | 2.28 | 5557.50 | 0.41 | 999.38 | | 1210.7 | | 959.4 |
| Cutting Torch | 10 | 5 | 0.5 | 5 | 13 | 7 | 1.01 | 32.8 | 0.20 | 6.50 | 11 | 357.5 | 0.93 | 30.2 | 4.6 | 149.50 | 0.9 | 29.25 | | 36.371 | | 28.06 |
| Hauling Truck | 8 | 300 | 0.8 | 5 | 13 | 10 | 0.37 | 1154.4 | 0.22 | 686.40 | 11 | 34320.0 | 0.89 | 2776.8 | 2.28 | 7113.60 | 0.5 | 1560.00 | | 1736.9 | | 1497.6 |
| Catcher | 10 | 150 | 0.8 | 5 | 13 | 10 | 1.01 | 1575.6 | 0.20 | 312.00 | 11 | 17160.0 | 0.93 | 1450.8 | 4.6 | 7176.00 | 0.9 | 1404.00 | | 1745.8 | | 1347.84 |
| Fork Lift | 6 | 150 | 0.8 | 5 | 13 | 10 | 0.97 | 1513.2 | 0.20 | 312.00 | 11 | 17160.0 | 0.86 | 1341.6 | 2.71 | 4227.60 | 0.81 | 1263.60 | | 1689 | | 1213.056 |
| Crane | 10 | 200 | 0.8 | 5 | 13 | 10 | 1.01 | 2100.8 | 0.20 | 416.00 | 11 | 22880.0 | 0.93 | 1934.4 | 4.6 | 9568.00 | 0.9 | 1872.00 | | 2327.7 | | 1797.12 |
| Skip Box | 10 | 5 | 0.8 | 5 | 13 | 10 | 1.01 | 52.5 | 0.20 | 10.40 | 11 | 572.0 | 0.93 | 48.4 | 4.6 | 239.20 | 0.9 | 46.80 | | 58.193 | | 44.928 |
| Air Compressor | 10 | 20 | 0.9 | 5 | 13 | 12 | 1.01 | 236.3 | 0.20 | 46.80 | 11 | 2574.0 | 0.93 | 217.6 | 4.6 | 1076.40 | 0.9 | 210.60 | | 261.87 | | 202.176 |
| Front End Loader | 6 | 150 | 0.8 | 5 | 13 | 10 | 0.97 | 1513.2 | 0.20 | 312.00 | 11 | 17160.0 | 0.86 | 1341.6 | 2.71 | 4227.60 | 0.81 | 1263.60 | | 1689 | | 1213.056 |
| SUB TOTAL Grams / Day | | | | | | | | 10299.5 | | 3084.9 | | 166881 | | 13514.3 | | 45380.4 | | 10281.4 | | 12457 | | 9870.12 |
| SUB TOTAL lbs / Day | | | | | | | THC | 22.69 | ALDEHYDE | 6.79 | NOX | 367.58 | SOX | 29.77 | CO | 99.96 | PM | 22.65 | ROC | 27.44 | PM10 | 21.74 |

**Phase 1 Construction**

| Equipment Category | Construction Equipment UEF Code | Approx. Horsepower | Fraction of use per Day | No Days | Hours of construction per day | Equip Use per day in hours | THC Factor | THC Amount | ALDEHYDE Factor | ALDEHYDE Amount | NOX Factor | NOX Amount | SOX Factor | SOX amount | CO Factor | CO Amount | PM Factor | PM Amount | | ROG Amount | | PM 10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Crane | 10 | 200 | 0.25 | 160 | 13 | 3 | 1.01 | 656.5 | 0.2 | 130.00 | 11 | 7150.0 | 0.93 | 604.5 | 4.6 | 2990.00 | 0.3 | 195.00 | | 727.42 | | 167.2 |
| Pile Dirving Hammer | 15 | 200 | 0.75 | 200 | 13 | 10 | 0.31 | 604.5 | 0 | 0.00 | 11 | 21450.0 | 0.75 | 1462.5 | 2.9 | 5655.00 | 1.1 | 2145.00 | | 550.1 | | 2059.2 |
| Pile Dirving Crane | 10 | 200 | 0.75 | 200 | 13 | 10 | 1.01 | 1969.5 | 0.2 | 390.00 | 11 | 21450.0 | 0.93 | 1813.5 | 4.6 | 8970.00 | 0.3 | 585.00 | | 2182.2 | | 561.6 |
| Deck Placement Crane | 10 | 250 | 0.9 | 7 | 13 | 12 | 1.01 | 2954.3 | 0.2 | 585.00 | 11 | 32175.0 | 0.93 | 2720.3 | 4.6 | 13455.00 | 0.3 | 877.50 | | 3273.4 | | 842.4 |
| Fork Lift | 6 | 150 | 0.8 | 200 | 13 | 10 | 0.97 | 1513.2 | 0.2 | 312.00 | 11 | 17160.0 | 0.86 | 1341.6 | 2.71 | 4227.60 | 0.81 | 1263.60 | | 1689 | | 1213.056 |
| Back Hoe | 6 | 150 | 0.5 | 200 | 13 | 7 | 0.97 | 945.8 | 0.2 | 195.00 | 11 | 10725.0 | 0.86 | 838.5 | 2.71 | 2642.25 | 0.81 | 789.75 | | 1055.6 | | 758.16 |
| Hauling Truck | 8 | 300 | 0.5 | 240 | 13 | 7 | 0.37 | 721.5 | 0.22 | 429.00 | 11 | 21450.0 | 0.89 | 1735.5 | 2.28 | 4446.00 | 0.5 | 975.00 | | 1085.6 | | 936 |
| Pickup Truck | 8 | 200 | 0.5 | 240 | 13 | 7 | 0.37 | 481.0 | 0.22 | 286.00 | 11 | 14300.0 | 0.89 | 1157.0 | 2.28 | 2964.00 | 0.5 | 650.00 | | 723.71 | | 624 |
| Skip Box | 14 | 5 | 0.75 | 100 | 13 | 10 | 0.44 | 21.5 | 0 | 0.00 | 9.78 | 476.8 | 0.71 | 34.6 | 1.96 | 95.55 | 0.82 | 39.98 | | 19.52 | | 38.376 |
| Concrete Pump | 10 | 15 | 0.8 | 15 | 13 | 10 | 1.01 | 157.6 | 0.2 | 31.20 | 11 | 1716.0 | 0.93 | 145.1 | 4.6 | 717.60 | 0.9 | 140.40 | | 174.58 | | 134.784 |
| Air Compressor | 10 | 5 | 0.9 | 240 | 13 | 12 | 1.01 | 59.1 | 0.2 | 11.70 | 11 | 643.5 | 0.93 | 54.4 | 4.6 | 269.10 | 0.9 | 52.65 | | 65.467 | | 50.544 |
| Asphalt Paver | 10 | 300 | 0.8 | 2 | 13 | 10 | 1.01 | 3151.2 | 0.2 | 624.00 | 11 | 34320.0 | 0.93 | 2901.6 | 4.6 | 14352.00 | 0.9 | 2808.00 | | 3491.6 | | 2695.68 |
| Front End Loader | 6 | 150 | 0.8 | 240 | 13 | 7 | 0.97 | 945.75 | 0.2 | 195.00 | 11 | 10725.0 | 0.86 | 838.5 | 2.71 | 2642.25 | 0.81 | 789.75 | | 1055.6 | | 758.16 |
| SUB TOTAL Grams / Day | | | | | | | | 14181.2 | | 3188.9 | | 193741.3 | | 15647.5 | | 63426.35 | | 11311.6 | | 16094 | | 10859.16 |
| SUB TOTAL lbs / Day | | | | | | | THC | 31.2 | AIDEHYDE | 7.02 | NOX | 426.7429 | SOX | 34.47 | CO | 139.71 | PM | 24.9155 | ROC | 35.449 | PM10 | 23.918855 |
| | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | **Phase 1 Totals (Lbs/Day)** | THC | 53.92 | AIDEHYDE | 13.82 | NOX | 794.32 | SOX | 64.23 | CO | 239.66 | PM | 47.56 | ROC | 62.89 | PM10 | 45.659207 |
| | | | | | | | | | | Construction period | | 79.43222 | tons/200 days | | | | | | | 6.2888 | tons/200 days | |

Phase 2 = 7 months
**Phase 2 Demolition**

| Equipment Category | Construction Equipment UEF Code | Approx. Horsepower | Fraction of use per Day | No Days | Hours of construction per day | Equip Use per day in hours | THC Factor | THC Amount | ALDEHYDE Factor | ALDEHYDE Amount | NOX Factor | NOX Amount | SOX Factor | SOX Amount | CO Factor | CO Amount | PM Factor | PM Amount | | ROC Amount | | PM 10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hoe Ram | 4 | 150 | 0.25 | 10 | 13 | 3 | 0.55 | 268.1 | 0.28 | 136.5 | 11 | 5362.50 | 0.9 | 438.6 | 2.45 | 1194.38 | 0.79 | 385.13 | | 380.49 | | 369.72 |
| Back Hoe | 3 | 150 | 0.5 | 10 | 13 | 7 | 0.37 | 360.8 | 0.16 | 156.0 | 11 | 10725.00 | 0.87 | 848.3 | 2.28 | 2223.00 | 0.41 | 399.75 | | 484.28 | | 383.76 |
| Excavator | 3 | 250 | 0.75 | 10 | 13 | 10 | 0.37 | 901.9 | 0.16 | 390.0 | 11 | 26812.50 | 0.87 | 2120.6 | 2.28 | 5557.50 | 0.41 | 999.38 | | 1210.7 | | 959.4 |
| Cutting Torch | 10 | 10 | 0.5 | 10 | 13 | 7 | 1.01 | 65.7 | 0.2 | 13.0 | 11 | 715.00 | 0.93 | 60.5 | 4.6 | 299.00 | 0.9 | 58.50 | | 72.742 | | 56.16 |
| Hauling Truck | 8 | 300 | 0.8 | 10 | 13 | 10 | 0.37 | 1154.4 | 0.22 | 686.4 | 11 | 34320.00 | 0.89 | 2776.8 | 2.28 | 7113.60 | 0.5 | 1560.00 | | 1736.9 | | 1497.6 |
| Catcher | 10 | 150 | 0.8 | 10 | 13 | 10 | 1.01 | 1575.6 | 0.2 | 312.0 | 11 | 17160.00 | 0.93 | 1450.8 | 4.6 | 7176.00 | 0.9 | 1404.00 | | 1745.8 | | 1347.84 |
| Fork Lift | 6 | 150 | 0.8 | 10 | 13 | 10 | 0.97 | 1513.2 | 0.2 | 312.0 | 11 | 17160.00 | 0.86 | 1341.6 | 2.71 | 4227.60 | 0.81 | 1263.60 | | 1689 | | 1213.056 |
| Crane | 10 | 200 | 0.6 | 10 | 13 | 8 | 1.01 | 1575.6 | 0.2 | 312.0 | 11 | 17160.00 | 0.93 | 1450.8 | 4.6 | 7176.00 | 0.9 | 1404.00 | | 1745.8 | | 1347.84 |
| Skip Box | 10 | 5 | 0.75 | 10 | 13 | 10 | 1.01 | 49.2 | 0.2 | 9.8 | 11 | 536.25 | 0.93 | 45.3 | 4.6 | 224.25 | 0.9 | 43.88 | | 54.556 | | 42.12 |
| Air Compressor | 10 | 20 | 0.9 | 10 | 13 | 12 | 1.01 | 236.3 | 0.2 | 46.8 | 11 | 2574.00 | 0.93 | 217.6 | 4.6 | 1076.40 | 0.9 | 210.60 | | 261.87 | | 202.176 |
| Front End Loader | 6 | 150 | 0.8 | 10 | 13 | 10 | 0.97 | 1513.2 | 0.2 | 312.0 | 11 | 17160.00 | 0.86 | 1341.6 | 2.71 | 4227.60 | 0.81 | 1263.60 | | 1689 | | 1213.056 |
| SUB TOTAL Grams / Day | | | | | | | | 9213.98 | | 2686.45 | | 149685.3 | | 12092.6 | | 40495.3 | | 8992.43 | | 11071 | | 8632.73 |
| SUB TOTAL lbs / Day | | | | | | | THC | 20.2951 | AIDEHYDE | 5.92 | NOX | 329.7032 | SOX | 26.6358 | CO | 89.20 | PM | 19.81 | ROC | 24.4 | PM 10 | 19.01 |

**Phase 2 Construction**

| Equipment Category | Construction Equipment UEF Code | Approx. Horsepower | Fraction of use per Day | No Days | Hours of construction per day | Equip Use per day in hours | THC Factor | THC Amount | ALDEHYDE Factor | ALDEHYDE Amount | NOX Factor | NOX Amount | SOX Factor | SOX Amount | CO Factor | CO Amount | PM Factor | PM Amount | | ROC Amount | | PM 10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Crane | 10 | 200 | 0.25 | 140 | 13 | 3 | 1.01 | 656.5 | 0.2 | 130.0 | 11 | 7150.0 | 0.93 | 604.5 | 4.6 | 2990.00 | 0.9 | 585.00 | | 727.42 | | 698.3 |
| Pile Dirving Hammer | 15 | 200 | 0.75 | 20 | 13 | 10 | 0.31 | 604.5 | 0 | 0.0 | 11 | 21450.0 | 0.75 | 1462.5 | 2.9 | 5655.00 | 1.1 | 2145.00 | | 550.1 | | 528.1 |
| Pile Dirving Crane | 10 | 200 | 0.75 | 20 | 13 | 10 | 1.01 | 1969.5 | 0.2 | 390.0 | 11 | 21450.0 | 0.93 | 1813.5 | 4.6 | 8970.00 | 0.9 | 1755.00 | | 2182.2 | | 2095.0 |
| Deck Placement Crane | 10 | 250 | 0.9 | 15 | 13 | 12 | 1.01 | 2954.3 | 0.2 | 585.0 | 11 | 32175.0 | 0.93 | 2720.3 | 4.6 | 13455.00 | 0.9 | 2632.50 | | 3273.4 | | 3142.4 |
| Fork Lift | 6 | 150 | 0.8 | 200 | 13 | 10 | 0.97 | 1513.2 | 0.2 | 312.0 | 11 | 17160.0 | 0.86 | 1341.6 | 2.71 | 4227.60 | 0.81 | 1263.60 | | 1689 | | 1621.5 |
| Back Hoe | 6 | 150 | 0.5 | 200 | 13 | 7 | 0.97 | 945.8 | 0.2 | 195.0 | 11 | 10725.0 | 0.86 | 838.5 | 2.71 | 2642.25 | 0.81 | 789.75 | | 1055.6 | | 1013.4 |
| Hauling Truck | 8 | 300 | 0.5 | 200 | 13 | 7 | 0.37 | 721.5 | 0.22 | 429.0 | 11 | 21450.0 | 0.89 | 1735.5 | 2.28 | 4446.00 | 0.5 | 975.00 | | 1085.6 | | 1042.1 |
| Pickup Truck | 8 | 200 | 0.5 | 200 | 13 | 7 | 0.37 | 481.0 | 0.22 | 286.0 | 11 | 14300.0 | 0.89 | 1157.0 | 2.28 | 2964.00 | 0.5 | 650.00 | | 723.71 | | 694.8 |
| Skip Box | 14 | 5 | 0.75 | 100 | 13 | 10 | 0.44 | 21.5 | 0.22 | 10.7 | 9.78 | 476.8 | 0.71 | 34.6 | 1.96 | 95.55 | 0.82 | 39.98 | | 30.245 | | 29.0 |
| Concrete Pump | 10 | 15 | 0.8 | 15 | 13 | 10 | 1.01 | 157.6 | 0.2 | 31.2 | 11 | 1716.0 | 0.93 | 145.1 | 4.6 | 717.60 | 0.9 | 140.40 | | 174.58 | | 167.6 |
| Air Compressor | 10 | 5 | 0.9 | 200 | 13 | 12 | 1.01 | 59.1 | 0.2 | 11.7 | 11 | 643.5 | 0.93 | 54.4 | 4.6 | 269.10 | 0.9 | 52.65 | | 65.467 | | 62.8 |
| Asphalt Paver | 10 | 300 | 0.8 | 4 | 13 | 10 | 1.01 | 3151.2 | 0.2 | 624.0 | 11 | 34320.0 | 0.93 | 2901.6 | 4.6 | 14352.00 | 0.9 | 2808.00 | | 3491.6 | | 3351.9 |
| Front End Loader | 6 | 150 | 0.8 | 200 | 13 | 7 | 0.97 | 945.8 | 0.2 | 195.0 | 11 | 10725.0 | 0.86 | 838.5 | 2.71 | 2642.25 | 0.81 | 789.75 | | 1055.6 | | 1013.4 |
| | | | | | | | | 14181.2 | | 3199.625 | | 193741.3 | | 15647.5 | | 63426.35 | | 14626.6 | | 16105 | | 15460.376 |
| | | | | | | | THC | 31.24 | AIDEHYDE | 7.05 | NOX | 426.7429 | SOX | 34.47 | CO | 139.71 | PM | 32.22 | ROC | 35.47 | PM10 | 34.05 |
| | | | | | | **Phase 2 Totals (Lbs/day)** | THC | 51.53 | AIDEHYDE | 12.96 | NOX | 756.45 | SOX | 61.10 | CO | 228.90 | PM | 52.02 | ROC | 59.86 | PM10 | 53.06861 |
| | | | | | | | | | | Construction period | | 75.6 | Tons/200days | | | | | Construction period | | 6.0 | Tons/200days | |

NOTES:
All Emission Factors derived from Santa Barbara Air Pollution Control District Table 1 Construction Equipment Uncontrolled Emission Factors.
Above tables reflect on-site and off-site construction equipment. Transportation to and from the site for workers emissions and for asphalt estimated separately and added below.

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Phase 1 Totals (Lbs/Day)** | THC | 53.92 | AIDEHYDE | 13.82 | NOX | 794.32 | SOX | 64.23 | CO | 239.66 | PM | 47.56 | ROC | 62.89 | PM10 | 45.66 |
| **Phase 2 Totals (Lbs/day)** | THC | 51.53 | AIDEHYDE | 12.96 | NOX | 756.45 | SOX | 61.10 | CO | 228.90 | PM | 52.02 | ROC | 59.86 | PM10 | 53.07 |

| Asphalt | Acreage | Factor | ROG (lbs/day) |
|---|---|---|---|
| **Phase 1** | 0.4 | 2.62 | 1.05 |
| **Phase 2** | 0.9 | 2.62 | 2.48 |

| Fugitive Dust | Acreage | Factor | PM | PM 10 (lbs/day) |
|---|---|---|---|---|
| **Phase 1** | 0.7 | 10.91 | 7.34 | 4.70 |
| **Phase 2** | 0.7 | 10.91 | 7.51 | 4.81 |

**Construction Workers Commute**

| Urbemis 2002 8.7 | | ROG | NOX | CO | SO2 | PM10 |
|---|---|---|---|---|---|---|
| 50 1 way trips/day | | 1.11 | 0.88 | 11.99 | 0.01 | 0.89 |

**SUMMARY**

| *Phase 1* | | | THC | | AIDEHYDE | | NOX | | SOX | | CO | | PM | | ROG | SO2 | PM10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Construct Equip | | | 53.9 | | 13.8 | | 794.3 | | 64.2 | | 239.7 | | 47.6 | | 62.9 | | 45.66 |
| Fugitive Dust | | | | | | | | | | | | | 7.3 | | | | 4.70 |
| Asphalt | | | | | | | | | | | | | | | 1.1 | | |
| Worker Commute | | | | | | | 0.2 | | | | 1.8 | | | | 0.2 | 0 | 0.12 |
| **Phase 1 TOTAL** | | | 53.9 | | 13.8 | | 794.5 | | 64.2 | | 241.5 | | 54.9 | | 64.1 | 0 | 50.48 |
| | | | | | | | | | | | | | | | | | |
| *Phase 2* | | | | | | | | | | | | | | | | | |
| Construct Equip | | | 51.5 | | 13.0 | | 756.4 | | 61.1 | | 228.9 | | 52.0 | | 59.9 | | 53.07 |
| Fugitive Dust | | | | | | | | | | | | | 7.5 | | | | 4.81 |
| Asphalt | | | | | | | | | | | | | | | 2.5 | | |
| Worker Commute | | | | | | | 0.2 | | | | 1.8 | | | | 0.2 | 0 | 0.12 |
| **Phase 2 TOTAL** | | | 51.5 | | 13.0 | | 756.6 | | 61.1 | | 230.7 | | 59.5 | | 62.5 | 0 | 58 |

Significance emissions

| | NOX | ROC | |
|---|---|---|---|
| **Phase 1** | 79.4 | 6.3 | tons |
| | | | |
| **Phase 2** | 75.6 | 6.0 | tons |

# EXHIBIT D