MURRAY STREET BRIDGE SEISMIC RETROFIT PROJECT

MITIGATED NEGATIVE DECLARATION ADDENDUM

FEBRUARY 2009

CONTENTS:

BACKGROUND

Project Title: Murray Street Bridge Seismic Retrofit Project

Lead Agency Name and Address:

City of Santa Cruz
Department of Pubic Works
809 Center Street, Room 201
Santa Cruz, CA 95060

Contact Person and Phone Number: Josh Spangrud, (831) 420-5178

Project Location: The proposed project is located at the eastern edge of the City of Santa Cruz. The project area includes the Murray Street Bridge which spans the Santa Cruz Harbor, portions of lands within the Santa Cruz Port District harbor area; portions of the harbor waters, and the area along the Murray Street road right-of-way, west of Lake Avenue (see Figure 1).

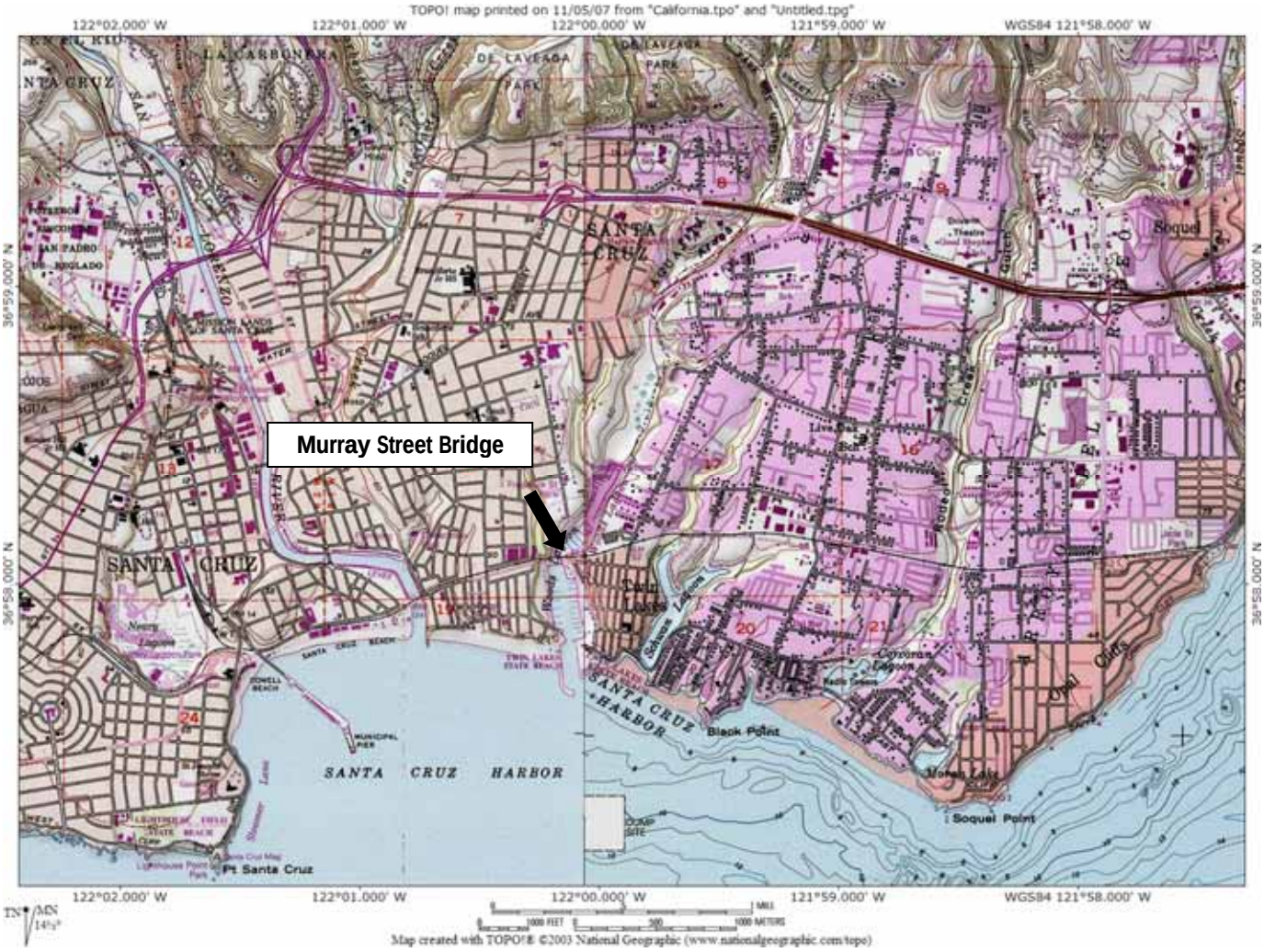
Project Applicant's/Sponsor's Name and Address:

City of Santa Cruz Public Works Department
809 Center Street, Room 201
Santa Cruz, CA 95060

General Plan Designation: Coastal Dependent

Zoning: Coastal Dependent Related

FIGURE 1: PROJECT LOCATION



PROJECT HISTORY

The existing Murray Street Bridge (Bridge # 36C-0108) crosses the Santa Cruz Small Craft Harbor in the city of Santa Cruz, California. The proposed project consists of a seismic retrofit of the existing Murray Street Bridge and additional minor modifications to replace deficient bridge barriers (widening shoulders to standard widths and replacement and improvement of sidewalks and railings). The seismic retrofit project will provide the bridge with additional vertical support and resistance to lateral seismic forces by installing additional pilings and supplemental structural elements. In order to provide sufficient area for construction operations, some boat berths, Harbor facilities, and commercial businesses will require temporary relocation and/or replacement.

An Initial Study/Mitigated Negative Declaration (IS/MND) pursuant to requirements of the California Environmental Quality Act (CEQA) was prepared and circulated for public review in November 2007. The Mitigated Negative Declaration was adopted by the Santa Cruz City Council in January 2008. Subsequently, the Santa Cruz Port District requested that replacement berths associated with the project be located on the west side of the harbor instead of the east side as originally planned as the west side presents the best opportunity to provide needed berths.

PROJECT DESCRIPTION

Project Components

Bridge Seismic Retrofit. The nine-span bridge is supported by two abutments (identified as Abutments 1 and 10, located at the western and eastern ends of the bridge, respectively) and 8 "bents" (identified as Bents 2 through 9, located at 60-foot intervals between the abutments). The seismic retrofit project consists of the following elements:

(1) Installation of concrete infill walls at Bents 2, 3, 4, and 9. These walls will span the voids between the existing concrete support columns and will be anchored to the columns with bonded dowels.

(2) Installation of shear keys and seat extenders at Abutment 1 and Bents 2 through 9.

(3) Retrofit of foundations with 16-inch diameter CISS (cast-in-steel-shell) piles at Bent 9 and Abutment 10. These piles will extend to depths of approximately –55 feet to –85 feet at Bent 9 and to depths of approximately –30 feet to –50 feet at Abutment 10.

(4) Retrofit abutment with two 96-inch CIDH piles behind Abutment 10 to a depth of -50 feet.

(5) Retrofit of both outriggers and bents with 30-inch diameter CISS piles at Bents 6, 7, and 8 and 30-inch diameter CIDH (cast-in-drilled-hole) piles at Bent 5. These piles will extend to depths of approximately -55 feet to -80 feet at Bent 5 and at approximately –85 feet to –110 feet at Bents 6-8.

(6) Installation of fenders to protect new piles.

The installation of new piles at Abutment 10 and Bents 5 through 9 will include two piles on each side for a total of 24 piles.

Additional Bridge Improvements. The project also includes replacement of deficient bridge barriers. In order to bring the bridge up to current standards, the narrow shoulders will be widened to provide standard 5-foot shoulders. The shoulder widening will consist of approximately an additional 2 feet on the north side of the bridge and 5-6 feet on the south side of the bridge. It is not anticipated that any work other than an overhang extension will be required on the north side widening. In addition, the construction of new bridge railings is required to conform to current codes. Roadway lane widths will remain the same as currently exists.

Temporary Harbor Facility Relocation. Portions of the south harbor will be used temporarily during construction, including portions of a boat yard on the east side and a parking lot on the west side for contractor staging and provision of construction access to the bridge from the waterway. To accommodate construction staging and in-water construction, a total of 12 recreational boat berths will be removed during construction: 2 berths from dock T and a portion of Dock FF (10 berths). The original proposal included replacement of the 2 berths at dock T at the completion of Phase 2; temporary relocation of 2 boats at dock AA; and construction of 8 new berths at the ends of docks N, O, P and Q on the east side of the south harbor. Construction of a temporary dock at the southern end of the dock FF was proposed to accommodate 6 boats. (Affected portions of Dock FF would be restored at the end of Phase 4.) Additionally, the berth for the commercial "Chardonnay" boat will be temporarily unavailable for a period of approximately two weeks during Phase 4 construction.

The modified project calls for construction of 11 new recreational berths at the ends of docks A through F on the west side of the south harbor at Docks A through F, which is further described in the following PROJECT MODIFICATIONS section. Although design plans have not yet been completed for the reinstalled berths, it is expected that the berth docks would be plastic, wood or concrete over polyethylene floats and would be anchored with pilings. Piles would be driven into the harbor floor by mechanical hammer. There would be no dredging or placement of fill in Harbor waters with reinstallation of docks and boat berths.

In addition to removal and replacement of boat berths, the contractor staging area on the east side of the Harbor will require that nine boats in the boat yard be temporarily relocated to boat storage for approximately four months. On the west side, row boats stored under the existing Murray Street bridge will be temporarily relocated to onland storage as detailed in the November 2007 IS/MND. Existing offices, bathroom facilities, and storage areas located north of the western staging area (and within the City's right-of-way) will be displaced during Phases 3, 4, and 5 of the project. The buildings will be protected during construction, and a temporary 600 square foot facility (modular) will be installed on the US Coast Guard parking area for a period of approximately six months, which will temporarily house these businesses. An existing memorial bench and plaque will be removed, properly stored, and reinstalled in the West Harbor upon completion of construction.

Construction Timing, Methods and Equipment

The Murray Street Bridge Retrofit project is tentatively proposed for construction in five partially overlapping phases, from approximately May 2010 through December 2011. Generally, work will begin on the eastern side of the Harbor and progress to the western side. The timing of each phase and a brief description of work to be performed during each phase is provided in Table 1. Overall, the seismic retrofit work will be executed over a period of approximately 18 months within four construction phases as described in Table 1. The

additional bridge improvements will be constructed over a period of approximately 6 months as part of Phase 5 of the construction. Due to the need for large construction equipment and harbor access, as described in Table 1, there will be traffic control on Murray Street to include various measures such as temporary lane closures, temporary one-way (alternating directions) traffic movement, and detours.

Construction methods and planned equipment for different construction activities is detailed in the November 2007 Initial Study/Mitigated Negative Declaration. These methods generally have not changed. The installation of piles both within and outside the waterway requires the use of a crane(s), a drilling rig, a pile driver, excavation and earthmoving equipment, concrete trucks and pumps, concrete vibrators, supply trucks, welding equipment, and other machinery. The piles will either be driven in with a pile driver or a vibrator. Hydraulically-powered vibratory drives reduce potential noise impacts. The vibratory hammer could be used to start each pile, but may not have enough power to penetrate the deeper rock material in which case a hydraulic impact hammer would be needed to reduce the overall noise.

Construction of concrete pile caps, infill walls, shear keys, and bent caps will include the installation and construction of various project features below the bridge roadway surface and above the piles. Sheet piling will be placed around the piles, the area dewatered and pile caps formed. Wooden forming supported from the piling would be placed for the pile caps. Wooden forming will be placed on existing footings to place infill walls. Forms would be placed atop pile caps for columns, and attached to the tops of columns for bent caps and shear keys.

Traffic Controls. In addition, traffic on Murray/Eaton will be subject to temporary controls. A portion of Lake Avenue may be also be subject to temporary traffic controls during setup of the construction staging area on the east side of the Harbor. The existing pedestrian path on both sides of the Harbor, the western concrete stairway, and the access ramp to Dock FF also will be closed during certain phases of construction. Approximately 30-50 Harbor parking spaces (for permit users) on the west side of the Harbor will be temporarily unavailable when the construction staging area is setup in that location.

Railroad Right-of-Way Encroachment. The Union Pacific Railroad (UPRR) maintains a bridge and track located approximately 20 to 30 feet north of the Murray Street Bridge (with the distance increasing west to east). It appears that a northwestern sliver of Murray Street is within the railroad right-of-way. Any encroachment into the right-of-way during project construction will need to be coordinated with and approved by Union Pacific and potentially the California Public Utilities Commission. Construction on the northern side of the bridge will require railroad flaggers for the protection of workmen and railroad traffic.

Table 1. Murray Street Bridge Retrofit Project: Construction Phasing & Approximate Schedule

Work Tasks	Effects on Harbor and Road Operations
Phase 1: Construction in East Zone	
2 months (5/10-7/10) [1]	
* Temporarily relocate overhead utilities north of bridge	* Install traffic control system with alternating 1-way traffic
* Prepare construction staging area (8,000 sq.ft.) at harbor boat yard	* Close Murray for 7 days for driving anchor piles
* Retrofit Bent 9 & Abutment 10; install anchor piles	* Temporary relocation (dry storage) of 9 dry-docked boats from boat yard
* Erect Girder Span 9	* Traffic controls along Lake Avenue during construction staging area setup
* Remove existing south rail	* Close east walkway under bridge
	* Close bridge sidewalk
Phase 2: Construction in Eastern Waterway	
5 months (7/10-12/10)	
* Construct new berths (11) at ends of docks A-F	* Temporary relocation of 2 boats from Dock T to AA or new dock A-F
* Construct work platform(s) (trestle or barge) for Stage 2 work [2]	* Temporary closure of East Drive & part of harbor boat yard
* Retrofit Bents 7 & 8 (includes installing anchor piles at Bents 7 & 8)	* Availability of only one boat channel under the bridge for 6 non-consecutive half-days
* Erect Girder Spans 7 & 8 and construct Deck Spans 7, 8, & 9	
* Construct north and south rails (optional) [3]	
* Restore boat yard; reopen pedestrian path	
* Remove east work platform	
Phase 3: Construction in West Zone	
6 months (12/10-5/11)	
* Install row boat storage at docks A/B & USCG area	* Closure of West Path, western concrete stairway and access ramp to Dock FF
* Install temporary building at USCG area	* Temporary relocation of affected facilities (offices, storage, restrooms, etc.)
* Temporarily relocate existing offices and row boats to above [2]	
* Close portion of western parking lot [2]	
* Construct temporary access ramp to Dock FF	
* Retrofit Abutment 1 and Bents 2, 3, & 4	
* Erect Girder Spans 1, 2, & 3 [and construct Deck Spans 1, 2, & 3]	

TABLE 1 IS CONTINUED ON THE NEXT PAGE.

Work Tasks	Effects on Harbor and Road Operations
Phase 4: Construction in Western Waterway	
5 months (5/11-10/11)	
* Construct modifications to Dock FF; move 7 boats to new Dock FF * Construct work platform(s) (trestle or barge) for Stage 4 work * Retrofit Bents 5 & 6 (including installation of anchor piles) * Erect Girder Spans 4, 5, & 6 [and construct Deck Spans 4, 5, & 6] * Construct north and south rails [3] * Remove work platform(s)	* Closure of West Path, western concrete stairway and access ramp to Dock FF * Temporary relocation of affected facilities (offices, storage, restrooms, etc.) * Temporary relocation of 8 boats from Dock FF * Availability of only one boat channel under the bridge for 6 non-consecutive half-days
Phase 5: Construction of Superstructure and Barrier Rails	
[no timing provided]	
* Remove sidewalks & temporary barrier rails * Construct new barrier rails * Restore Dock FF, parking lot, existing offices and related facilities * Restore all remaining facilities to original condition * Repair deck	

Footnotes:

[1] Note that construction phases overlap; the sum of the construction periods specified is therefore greater than the total period indicated by start and finish dates.

[2] These tasks could be initiated and/or completed during the prior stage.

[3] [These tasks could be completed either in Phase 2 or 4.

[4] Temporary closure of Murray Street bridge roadway to all traffic is possible during any phase for a short duration. The alternating one-way traffic with sign control will occur during the construction, but not during the full duration of construction activities.

PROJECT MODIFICATIONS

The project modifications primarily change the location of replacement berths as described below with a minor change in the construction start time and area of potential impact. There is no change to bridge design or construction techniques.

1. **Temporary Harbor Facility Relocation:** The modified project calls for construction of 11 new recreational berths at the ends of docks A through F on the west side of the south harbor at Docks A through F instead of 8 berths at the ends of docks N through Q on the east side of the south harbor as originally proposed. The one additional removed boat would be temporarily accommodated at an end tie. A new ramp will be provided at the southern end of dock FF to provide access to remaining berths. The 2 removed berths at dock T will continue to be replaced at the end of Phase 2. Dock FF will be restored at the end of Phase 4, although a smaller footprint is anticipated by the Port District since the bridge abutments will be expanded and encroach into the current configuration of the FF-dock (Santa Cruz Port District, July 2008). Figure 2 shows the location of the new replacement berths, and the changes are summarized below.

   Construction of the new berths are necessary to accommodate the temporary removal required for project construction. The project modification will result in a slight increase in the number of permanent boat berths from 8 to 11 with the project modifications. This results in a net increase of 3 new boat berths with the project modifications.

COMPARISON OF APPROVED AND PROPOSED PROJECT CHARACTERISTICS

	Existing Approved Project	Proposed Project Modification
Berth Removal and Replacement	Removal of 12 berths; construct 8 new berths; restore 12 berths; ▪ Remove 2 berths from dock T, temporarily store, and restore berths at end of Phase 2. ▪ Remove 10 berths from dock FF and relocate boats at new berths at ends of docks N, O, P, Q and temporary relocation to existing berths at dock AA. ▪ Construct temporary FF dock at southern end of dock. ▪ Restore 10 berths at FF dock at end of Phase 4.	**MODIFIED DESIGN:** Removal of 12 berths; construct 11 new berths; restore 12 berths; ▪ Remove 2 berths from dock T and restore berths at end of Phase 2. ▪ Construct 11 new berths at the ends of docks A through F. ▪ Remove 10 berths from dock FF and relocate boats to new berths at docks A-FF. ▪ Restore 10 berths at FF dock at end of Phase 4.

2. **Construction Schedule:** The construction schedule remains unchanged, although the starting date is now set in May 2010 instead of May 2009.

3. **Area of Potential Impact:** There are no significant changes in the "area of potential impact" as identified in the previous environmental documentation. The western portion of the south harbor has been added to reflect construction of replaced berths from the east side to the west side of the south harbor (see Figure 3).

FIGURE 2: BERTH RELOCATION

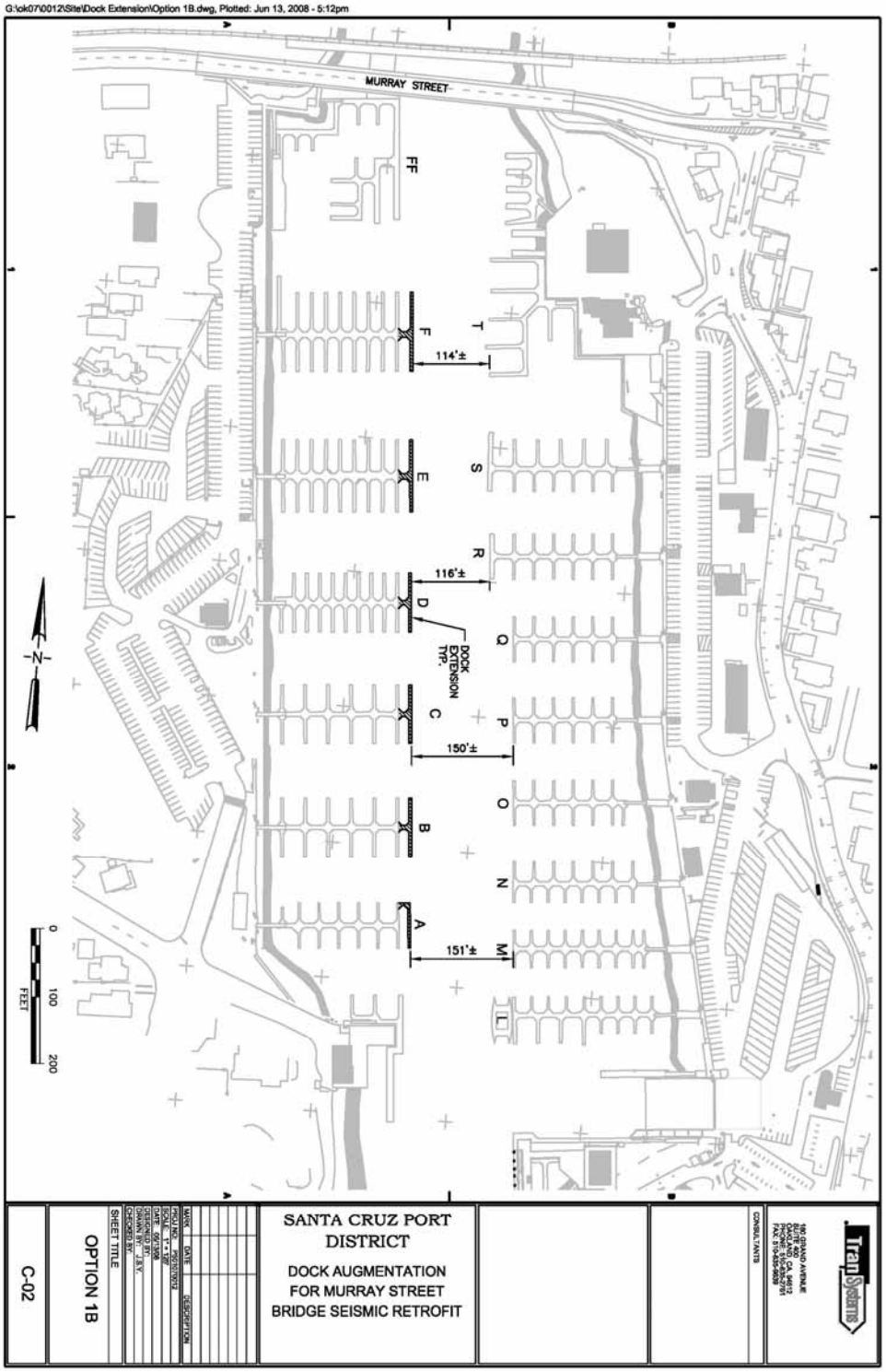
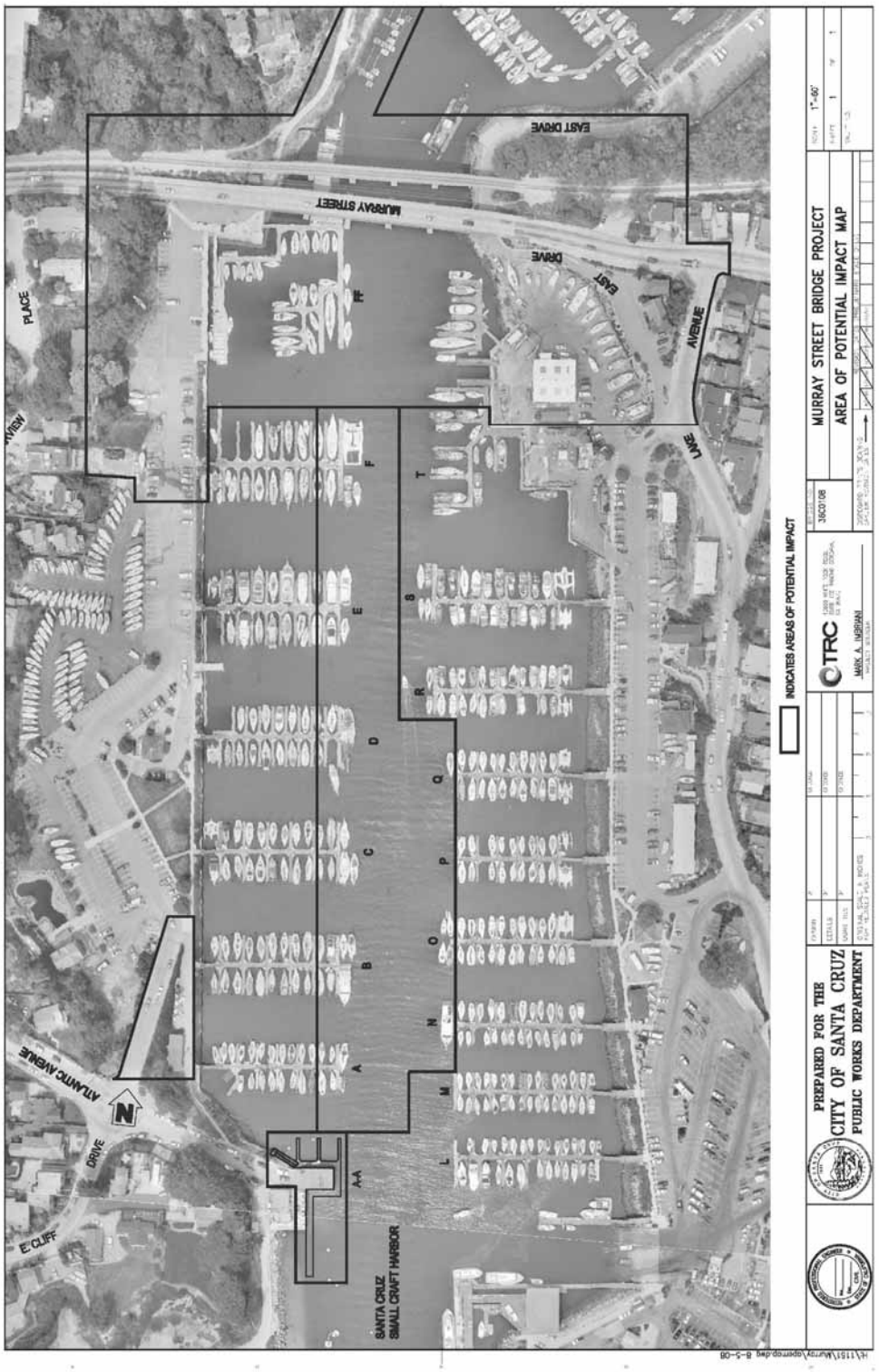


FIGURE 3: REVISED AREA OF POTENTIAL IMPACT



USE OF AN ADDEDNUM

In analyzing the proposed project, the City must consider the extent to which the current proposal represents a change in the project, and whether existing environmental documents provide an adequate analysis of those changes. The City has determined that the project modifications are minor and do not represent a "new" project as the modifications represent a refinement of a project that has already undergone environmental review. The changes associated with the proposed project are described above. Thus, the City must consider the extent to which these changes, or changes in the circumstances surrounding the project, necessitate further environmental review. In particular, the City must consider whether to perform supplemental environmental review and, if so, whether that supplemental review should take the form of a supplemental or subsequent Negative Declaration or Mitigated Negative Declaration, an EIR, or an addendum.

Pursuant to Section 15164 of the State CEQA Guidelines, an addendum to an adopted negative declaration may be prepared if only minor technical changes or additions are necessary and none of the conditions described in State CEQA Guidelines Section 15162 that call for preparation of a subsequent EIR or negative declaration have occurred. Under State CEQA Guidelines Section 15162, no subsequent EIR would need to be prepared unless the lead agency determines, on the basis of substantial evidence, one or more of the following:

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

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

- ✓ New information of substantial importance, which was not known and could not have been known, at the time the previous EIR was prepared shows any of the following:

    - The project will have one or more significant effects not discussed in the previous EIR;
    - Significant effects previously discussed will be substantially more severe than shown in the previous EIR;
    - Mitigation measures or alternatives previously found not to be feasible, and would substantially reduce one or more significant effects of the project, but the project proponents decline to adopt the mitigation measures or alternatives; or
    - Mitigation or alternatives which are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the project proponents decline to adopt the mitigation or alternative.

The City has determined that the proposed modifications represent a refinement of a conceptual project that has already undergone environmental review, and the project changes are not substantial (see Table 1). None of the bridge or roadway elements are changed. The only change is to relocate removed berths from the east side to the west side with a corresponding expansion of the area of potential impact and revision of the construction start date from 2009 to 2010. Removal and relocation of the berths were addressed in the Initial Study.

These minor changes will not result in new significant environmental impacts or a substantial increase in the severity of previously identified significant impacts. Similarly, there are no substantial changes with respect to the circumstances under which the project is undertaken or new information of substantial importance that would result in new significant impacts or a substantial increase in significance of previously identified impacts as summarized below:

The project will result in construction of 11 new berths on the west side instead of 8 new berths on the east side. Impacts related to construction (biological and water quality) will not substantially increase with a minor net increase in three new boat berths from 8 to 11.

Based on the level of previous environmental review and project changes, the City has determined that the project changes are minor and no substantial changes in the project or environmental conditions have occurred since preparation and adoption of the 2008 MND. Thus, the City has determined that an Addendum to the 2008 MND is the appropriate environmental review document for the proposed project modifications.

ENVIRONMENTAL SETTING

The existing concrete Murray Street bridge structure, built in 1962, is approximately 544 feet long and 35 feet wide, with eight piers in the Santa Cruz Small Craft Harbor. The bridge structure carries two lanes of traffic, and has a sidewalk on the south side. The roadway is a portion of the Pacific Coast Bicycle Route, although there are only narrow bike lanes/shoulders on the bridge.

The bridge carries both a 12" water main and a 3" gas main, which are suspended underneath the structure. A sanitary sewer line conveying wastewater from the unincorporated area of the County to the City is located underneath the Harbor in the project vicinity. There are overhead power lines and street lighting facilities just north of the bridge, which will need to be relocated for the pile driving operation.

The Santa Cruz Harbor is located directly beneath the bridge. The Harbor accommodates 920 boat berths that support both commercial and recreational boating activities. In the immediate project vicinity, the Santa Cruz Rowing Club boat storage and UCSC rowing berth facility are located underneath the bridge and immediately south of bridge, respectively, on the west side of the Harbor. There are two waterway openings beneath the bridge through which all boats berthed in the northern portion of the harbor must pass. These two openings are required for efficient operations in the harbor.

A pedestrian path/sidewalk loops around the Harbor from Aldos Restaurant on the west side to the Crow's Nest Restaurant commercial area on the east side, a portion of which is located within the construction area on both sides of the harbor. Bicyclists and other recreational users also occasionally use the path, although bicyclists mostly use the harbor service road and use the path/sidewalk where the service road does not exist. Residential uses generally surround the harbor area on all sides (see aerial photo on Figure2). The city-owned Arana Gulch greenbelt area is located to the north of the project area, outside of the proposed project construction zone.

REVIEW OF ENVIRONMENTAL IMPACTS

The following analysis addresses whether, and to what extent the project and circumstances surrounding the project have changed. Table 2 summarizes the project impacts, mitigation measures and recommended conditions of approval that were identified in the 2007 MND/Initial Study. Table 2 also summarizes the extent to which the proposed project, as modified, is consistent with the analyses and mitigation measures identified in the 2008 MND/Initial Study. No impacts were identified for the following topics for either the project analyzed in the Initial Study or the currently proposed project modifications, and thus, these topics are not discussed below: agricultural resources, land use, mineral resources, population and housing, public services, recreation, and utilities.

AESTHETICS

The project site is not part of a mapped scenic view. The proposed bridge improvements would not affect or remove a designated scenic vista or scenic resource. The overall bridge design would remain unchanged with the proposed project modifications. The project would replace the existing concrete barrier railing with a new metal bridge railing with a more open design. The replacement railing would not create a significant visual disruption or degradation to the visual character of the surrounding area. New bridge lighting would not create a significant source of light or glare as lighting along the bridge currently exists.

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- *Project Modification:* The change in location of replacement boat berths would not change visual impacts associated with the bridge or create new visual impacts. The modifications would not change the impact related to light and glare or the recommended condition of approval to require all bridge lighting to be hooded and directed downward.

TABLE 2: **SUMMARY OF IMPACTS WITH PROPOSED MODIFICATIONS**		
2007 MND Impact	**IS/MND Required Mitigation & Recommended Conditions**	**Project Modifications & Impacts**
Aesthetics Impact: Bridge lighting would not create a new source of substantial light or glare. (No Impact)	**Recommended Condition of Approval:** Require all bridge lighting to be hooded and directed downward.	NO CHANGE TO LIGHT/GLARE IMPACT: Project modifications do not affect bridge structure or lighting. The change in location of replacement boat berths would not change visual impacts associated with the bridge or create new visual impacts. The recommended condition remains in effect for other project components.
Air Quality Impact: Air Emissions from construction are less than Air District thresholds. (Less-than-Significant Impact)	**Recommended Construction Specification:** Require that all stockpiles of debris, soil and other materials which can become windblown be covered.	NO SUBSTANTIAL CHANGE TO AIR QUALITY IMPACT: The net increase in three additional boat berths over the original project would result in a minor increase in construction duration. Construction-related emissions may slightly increase, but would not substantially increase the severity of the impact due to the limited area involved with three additional boat berths. No new impacts would occur. The recommended condition remains in effect.
Biological Resource Impact: Potential indirect impacts to steelhead that may be present during installation of piles and future reinstallation of docks and floats for boat berths. (Less-than-Significant Impact with Mitigation)	**Mitigation Measure 1:** Conduct pile driving activities in Harbor waters from July 1 to mid-November, unless otherwise permitted by the National Marine Fisheries Service (NFS).	NO SUBSTANTIAL CHANGE TO SPECIAL STATUS SPECIES (STEELHEAD) IMPACT (Construction Only): The net increase in three additional boat berths over the original project would slightly increase the in-water construction duration. Construction of 3 additional berths would not substantially increase the severity of the impact to steelhead that may be present in harbor waters because Mitigation Measure 1 will continue to be implemented which requires pile driving activities to be conducted during specified times to avoid steelhead migration periods.
Biological Resource Impact: Potential disruption to roosting pallid bats, Townsends' big-eared bats, fringed myotis, and/or long-legged myotis if any of these species are using joint crevices of the Murray Street bridge for roosting or maternity roosting. (Less-than-Significant Impact with Mitigation)	**Mitigation Measure 2:** Conduct focused pre-construction surveys of the Murray Street bridge by a qualified biologist to determine if bats are roosting in the bridge's expansion joint crevices if bridge construction activities are scheduled during the breeding season of native bat species (April 1 through August 31), and seal bat crevices prior to reproduction. (See full mitigation text in Attachment A).	NO CHANGE TO SPECIAL STATUS SPECIES (BATS) IMPACT (Construction Only): The project modifications do not affect bridge construction or potential bat habitat. Mitigation Measure 2 remains in effect for other components of project construction.
Biological Resource Impact: Project construction could result in indirect harm or harassment to marine mammals that may be in the vicinity. (Less-than-Significant Impact with Mitigation)	**Mitigation Measure 3:** Remove known or potential marine mammal resting sites prior to construction based on the outcome of preconstruction survey to assess if and how marine mammals utilize the construction area of potential impact. (See full mitigation text in Attachment A). **Mitigation Measure 4:** Require a qualified biological monitor be present during in water construction activities to search for target marine mammal species and halt project activities that could result in injury or mortality to these species. (See	NO SUBSTANTIAL CHANGE TO SPECIAL STATUS SPECIES (MARINE MAMMALS) IMPACT (Construction Only): The net increase in three additional boat berths over the original project would slightly increase the in-water construction duration. This would not substantially increase the severity of the impact to marine mammals that may be present in harbor waters because Mitigation Measures 3-5 will continue to be implemented which require implementation of specified measures to ensure no harm to marine mammals.

TABLE 2: **SUMMARY OF IMPACTS WITH PROPOSED MODIFICATIONS**		
2007 MND Impact	**IS/MND Required Mitigation & Recommended Conditions**	**Project Modifications & Impacts**
	full mitigation text in Attachment A). **Mitigation Measure 5:** Prohibit pile driving activities within a 500-foot radius if marine mammals are present with implementation of specified measures if animals move into the construction area. (See full text in Attachment A).	
Biological Resource Impact: Project would result in minor placement of fill within "waters of the U.S" due to pile driving. (Less-than-Significant Impact)	None required.	NO SUBSTANTIAL CHANGE TO WETLANDS) IMPACT: The net increase in three additional boat berths over the original project would result in a minor increase in new berth piles and fill in the waters of the U.S. Although the net increase in berths and piles may slightly increase, it would be considered negligible compared to the remainder of the harbor and would not substantially increase the severity of the impact related to fill within waters of the U.S. due to the limited area involved with three additional boat berths.
Biological Resource Impact: Project construction could result in potential disturbance to nesting bird species either under the bridge or in nearby eucalyptus trees. (Less-than-Significant Impact with Mitigation)	**Mitigation Measure 6:** Require that a pre-construction survey for special-status nesting avian species and postpone construction within 100 feet of the nest site if nesting is found. (See full mitigation text in Attachment A). **Mitigation Measure 7:** If project activities are to be initiated outside of the breeding season, remove existing nests and/or install exclusion netting under the bridge to prevent nesting for the season. (See full mitigation text in Attachment A).	NO CHANGE IN NESTING BIRD IMPACT: The re-location of replacement boat berths to the west side of the harbor will not result in new significant impacts. The proposed berth relocation would not involve construction in areas near potential bird nesting sites, and the requirements of Mitigation Measure 1 preclude in-water pile driving during the bird nesting season. Mitigation Measures 6 and 7 remain in effect for other components of project construction.
Biological Resource Impact: Project construction could result in inadvertent damage to nearby eucalyptus trees during construction. (Less-than-Significant Impact)	**Recommended Condition of Approval:** Implement measures to protect existing retained heritage trees in order to minimize damage to protected trees and their root zones during construction. (See full text in Attachment A).	NO CHANGE IN HERITAGE TREE IMPACT: The site of the proposed relocated replacement boat berths is not adjacent to trees requiring protection during construction. The recommended condition remains in effect for other project components.
Cultural Resource Impact: Unidentified archaeological resources may be discovered during construction. (No Impact)	**Recommended Condition of Approval:** Implement specify measures if unknown archaeological resources are found during construction. (See full text in Attachment A).	NO CHANGE IN CULTURAL RESOURCES IMPACT: The site of the proposed relocated replacement boat berths is located in the harbor that was disturbed during its initial development. The recommended condition remains in effect.
Geology and Soils Impact: The project would be subject to seismic hazards but will be designed in accordance with geotechnical recommendations. The proposed seismic retrofit of the existing bridge will substantially improve safety. (Less-than-Significant Impact)		NO CHANGE IN GEOLOGY/SOILS IMPACT: There have been no changes to geologic or soils conditions in the project area. The re-location of replacement boat berths to the west side of the harbor will not result in new significant impacts. The project impacts related to seismic hazards (liquefaction) would not change, and the project would continue to be subject to mitigation measures regarding preparation of a geotechnical study.

TABLE 2: **SUMMARY OF IMPACTS WITH PROPOSED MODIFICATIONS**		
2007 MND Impact	**IS/MND Required Mitigation & Recommended Conditions**	**Project Modifications & Impacts**
Hazards & Hazardous Materials Impact: Project construction could result in short-term, localized disturbance or exposure to hazardous materials found in the soils. (Less-than-Significant Impact with Mitigation)	**Mitigation Measure 8:** Test, treat, and/or properly dispose of contaminated fill soils excavated from the east end of the bridge. (See full text in Attachment A).	NO CHANGE IN HAZARDS IMPACT: The site of the proposed relocated replacement boat berths is not adjacent to the east side of the harbor. Mitigation Measure 8 remains in effect for other components of project construction.
Hydrology and Water Quality Impact: Construction activities within the Harbor waterway could result in inadvertent erosion or discharge of materials in harbor waters if construction activities and dock replacement are not property contained and managed, resulting in potential water quality impairment and potential indirect effects to aquatic species. (Less-than-Significant Impact with Mitigation)	**Mitigation Measure 9:** Incorporate BMPS into construction specifications to protect water quality. (See full text in Attachment A).	NO SUBSTANTIAL CHANGE IN HYDROLOGY IMPACT: (Construction Only): The net increase in three additional boat berths over the original project would slightly increase the in-water construction duration. This would not substantially increase the severity of water quality impacts during construction because Mitigation Measure 9 will continue to be implemented which requires implementation of Best Management Practices to prevent water quality degradation.
Noise Impact: Pile installation and construction will result in temporary increases in ambient noise levels. (Less-than-Significant Impact)	**Recommended Conditions of Approval:** ▪ Require all stockpiling and vehicle staging areas and stationary noise-generating construction equipment to be located as far as possible from nearby residential areas as practicable. ▪ As part of construction specifications, require all equipment to be kept in good repair and fitted with superior quality mufflers. All equipment shall be properly maintained to assure that no additional noise, due to worn or improperly maintained parts, would be generated. ▪ Require the contractor to assure that mobile noise-generating equipment and machinery are shut off when not in use.	NO SUBSTANTIAL CHANGE IN NOISEC IMPACT: (Construction Only): The net increase in three additional boat berths over the original project would slightly increase the in-water construction duration. This would not substantially increase of temporary noise impacts due to the limited area and duration of construction. The recommended conditions would be in effect for all project construction activities.
Noise Impact: Pile installation and construction will result in temporary vibration to residences closest to the construction activities, but vibration levels will significantly decrease with increasing distance from the construction site. (Less-than-Significant Impact with Mitigation)	**Mitigation Measure 10:** Require that property owners and residents located within 150 feet of the pile installation locations be notified at least one week prior to construction.	NO SUBSTANTIAL CHANGE IN NOISE IMPACT: (Construction Only): The net increase in three additional boat berths over the original project would slightly increase the in-water construction duration. This would not substantially increase of temporary noise impacts due to the limited area and duration of construction. Mitigation Measure 10 would remain in effect.
Traffic Impact: Project construction will result in temporary increase of peak hour trips and will result in temporary closure of one or both lanes of Murray Street	**Recommended Construction Specification:** ▪ Prepare and implement a traffic control plan that includes: installation of signals on each side of the Murray Street bridge to allow controlled access for each	NO CHANGE IN TRAFFIC IMPACT: The relocation and slight increase in boat berths will have no effect on traffic controls on Murray Street or local roads. Recommended construction specifications will remain in effect for other project

TABLE 2: **SUMMARY OF IMPACTS WITH PROPOSED MODIFICATIONS**		
2007 MND Impact	**IS/MND Required Mitigation & Recommended Conditions**	**Project Modifications & Impacts**
Bridge for intermittent periods over the 18-month construction period. (Less-than-Significant Impact)	direction; changing existing signal phasing as recommended in the traffic analysis; and implementation detours and advance warning signs to address delays. ▪ To the extent possible, restrict any temporary lane closures on Murray Street to times outside peak traffic periods, which are generally 7-9 AM and 4-6 PM, and require implementation of traffic controls during times of lane closures consistent with provisions of a traffic control plan that includes a signal to control eastbound and westbound traffic during times of lane closures. ▪ Provide advance notice to emergency providers of the construction schedule, lane/road closures on Murray Street, and potential traffic disruption.	components.
Traffic Impact: Project construction will temporarily reduce the water channel under the Murray Street Bridge for intermittent periods over the 18-month construction period. (Less-than-Significant Impact)	**Recommended Condition of Approval:** Require water traffic controls, i.e. patrol/flagger, during periods when the boat channel must be reduced to one-way traffic, consistent with USCG bridge permit requirements.	NO CHANGE IN BOAT TRAFFIC IMPACT: The re-location of replacement boat berths to the west side of the harbor will not affect boat passage under the Murray Street Bridge. The relocation and slight increase in boat berths will have no effect on traffic controls on Murray Street or local roads. Recommended condition of approval will remain in effect for other project components.

AIR QUALITY

The project consists of improvements to an existing bridge structure and would not result in new population or growth or inconsistencies with the existing air quality management plan for the region. Project construction could result in short-term, localized increases in emissions due to construction activities, but would not exceed construction thresholds established by the Monterey Bay Unified Air Pollution Control District (MBUAPCD) or result in permanent mobile or stationary emissions upon completion of the bridge retrofit construction. Generation of onstruction-related emissions is considered a less-than-significant impact. Potential dust generation (particulates) resulting from grading (on the east side of the south harbor for construction staging) would be minimal due to the limited excavation area.

- *Project Modification:* Conditions in the air basin have not changed since the adoption of the 2008 MND, although the MBUAPCD updated its Air Quality Management Plan and CEQA Guidelines in 2008. The changes do not affect the analyses in the 2007 IS/MND. The re-location of replacement boat berths to the west side of the harbor will not result in new significant impacts. The net increase in three additional boat berths over the original project would result in a minor increase in construction duration. Construction-related emissions may slightly increase, but would not substantially increase the severity of the impact due to the limited area involved with three additional boat berths. The modifications would not change the less-than-significant impact related to construction-related emissions or the recommended condition of approval to require all stockpiles to be covered. The modifications would not result in new impacts.

BIOLOGICAL RESOURCES

Special Status Species. The 2008 MND found no known listed endangered or threatened species that inhabit or potentially inhabit the study area, except for steelhead, monarch butterflies, and some marine mammals that have been observed swimming in harbor waters. Habitat for the tidewater goby is not present in the Harbor. No impacts were identified for monarch butterflies.

Steelhead trout (*Oncorhynchus mykiss*) is a federally listed threatened species, and the proposed project site is also located within the designated critical habitat for Central California Coast ESU steelhead trout. Steelhead have been found within Harbor waters and the upstream Arana Gulch that discharges into the Upper Harbor has supported steelhead passage in the past. Upstream migration season for steelhead is generally between December and April, and the downstream migration season generally peaks from March through May.

The proposed Murray Bridge Seismic Retrofit project could result in potential indirect impacts to steelhead that may be present during installation of piles and future reinstallation of docks and floats for boat berths. The project will not result in alteration of Harbor water habitat, but could result in temporary disturbances to steelhead installation of piles. Vibration from pile driving may disrupt steelhead migration through the Harbor. Fish movement and passage within and through the harbor would be possible if not disrupted by pile driving. Due to the species' listed status, this is considered a potentially significant impact. Other potential indirect effects relates to disturbance of sediments when the pile casing is installed. Generally, this would be very localized, and would not result in a level of increased turbidity that would be

detrimental to fish. The best way to avoid impacts to steelhead would be to schedule pile driving outside of the steelhead migration period.

Pallid and Townsend's big-eared bats are California Species of Special Concern. Neither of these bats were observed or acoustically detected at the project site. One unidentified bat was observed in a tunnel on the northwest side of the Murray Street Bridge. Roosting habitat for special status bat species exists in the expansion joint crevices of Murray Street bridge and in the weep holes of the Union Pacific Rail Road Bridge. Project construction could result in disruption to roosting special status bats if any are using joint crevices of the Murray Street bridge for roosting or maternity roosting. This is considered a potentially significant impact. Mitigation measures are included to require pre-construction surveys and implementation of measures to seal potential roosting crevices prior to the reproduction season, if necessary

Some marine mammals have been observed in the harbor. The southern sea otter is federally listed as threatened, and State-listed as "California Fully Protected." The species is also protected under the Marine Mammal Protection Act (MMPA). One individual sea otter was observed swimming in the open water of the main Harbor channel, north of the Murray Street bridge. Seals and sea lions are also protected by the MMPA, but do not retain any other federal or state threatened or endangered status. One individual California sea lion was observed swimming under the western section of the Murray Street Bridge, and six Pacific harbor seals were observed resting on dock FF at night. The waters under Murray Street bridge do not provide rookery habitat or mating grounds for sea otters, California sea lion or Pacific harbor seal. Dock FF does not provide rookery habitat, mating grounds, or habitat of a similar ecological significance for harbor seals.

Project construction could result in indirect harm or harassment to marine mammals that may be in the vicinity. However, if the Harbor area is utilized as a regular foraging site for the observed otters, sea lions and harbor seals, temporary impacts to these species may result from construction activities, including noise disturbance from pile drivers. Harm or harassment of the these species that may be present in the vicinity of the Murray Street Bridge that is the result of construction activities would constitute a significant impact. Mitigation measures are identified to establish appropriate work buffers and to maintain biological monitoring during pile driving.

- *Project Modification:* The re-location of replacement boat berths to the west side of the harbor will not result in new significant impacts. The net increase in three additional boat berths over the original project would result in a minor increase in in-water construction duration. Construction of 3 additional berths would not substantially increase the severity of the impact to steelhead that may be present in harbor waters because Mitigation Measure 1 will continue to be implemented which requires pile driving activities to be conducted during specified times to avoid steelhead migration. Similarly, Mitigation Measure 3, 4, and 5 would be implemented which would protect marine mammals that may be present in the work area. Since adoption of the IS/MND, a "Marine Mammal and Bird Mitigation Plan" has been prepared that provides further details for these mitigation measures. Thus, the project would not result in an increase in severity of impacts to special status species – steelhead or marine mammals. The proposed replacement berth relocation would not involve construction under the bridge that may result in impacts to special status species.

Wetlands. The proposed project will not result in fill of wetlands as none were identified in the project area. However, the project will include temporary work within the waterway, which is considered a "waters of the U.S." The work in the waterway consists of pile driving which would be accomplished either from a barge or from trestle, and which will result in minor fill (approximately 430 square feet of surface area with a volume of approximately 360 cubic yards) to install the 24 new piles and minor pile cap extension.

- *Project Modification:* The re-location of replacement boat berths to the west side of the harbor will not result in new significant impacts. The net increase in three additional boat berths over the original project would result in a minor addition of new berth piles and fill in waters of the U.S. Although the net increase in berths and piles may slightly increase, it would be considered negligible compared to the remainder of the harbor and would not substantially increase the severity of the impact related to fill within waters of the U.S. due to the limited area involved with three additional boat berths.

Nesting Birds. Project construction could result in potential disturbance to nesting bird species either under the bridge or in nearby eucalyptus trees. This is considered a potentially *significant impact*, as nests were observed in nearby trees, as well as under the bridge itself. No direct impacts will occur to potential nesting areas as no trees will be removed in the adjacent areas. During project construction, noise disruption of nesting birds (herons, egrets, gulls and swallows) could occur if such nesting occurs within 100 feet of the construction zone. All migratory birds and their nests are federally protected under the Migratory Bird Treaty Act. Mitigation measure 6 requires pre-construction nesting surveys and implementation of a buffer if nesting is detected.

- *Project Modification:* The re-location of replacement boat berths to the west side of the harbor will not result in new significant impacts. The proposed replacement berth relocation would not involve construction in areas near potential bird nesting sites, and the requirements of Mitigation Measure 1 preclude in-water pile driving during the bird nesting season. Mitigation Measures 6 and 7 remain in effect for other components of project construction.

Tree Removal. The project will not result in removal of heritage trees. On the west side of the Harbor, there are existing pine and oak trees adjacent to a stairway that leads from Murray Street to the Harbor. This stairway will be replaced as part of the project, but the trees appear to be outside of any construction zone that would result in damage. To prevent inadvertent damage to existing oak trees on the edge of the west harbor, protective fencing should be installed during construction. Grading and soil compaction and inadvertent damage due to construction equipment could damage the root zones unless the trees and root zones are adequately protected during construction. This is considered a l*ess-than-significant impact*.

- *Project Modification:* The site of the proposed relocated boat berths is not adjacent to trees requiring protection during construction and will have no effect on trees.

CULTURAL RESOURCES

The results of an archaeological investigation conducted for the project indicate that there are two archaeological sites within one kilometer of the project site. The investigation concluded that there is no evidence of potentially significant historic archaeological resources on the project site, and significant impacts to cultural resources are not expected. However, because of the possibility of unidentified (e.g., buried) cultural resources being found during construction, the following condition of approval is recommended.

- *Project Modification:* Conditions have not changed since the adoption of the 2008 MND. The site of the proposed relocated replacement boat berths is located in the harbor, which was previously disturbed during its initial development and ongoing maintenance dredging. The recommended condition remains in effect.

GEOLOGY AND SOILS

The Harbor area and Murray Street Bridge are located within an area subject to very intense seismic shaking during an earthquake, and there is a high potential for liquefaction. A foundation investigation was prepared for the project, and the design recommendations set forth in the investigation are included in the project. These recommendations address identified site conditions and ensure that the project would not expose persons or structures to seismic or geological hazards. Furthermore, the proposed project is a seismic retrofit of an existing bridge, which will result in substantially improved safety and reduced seismic and geologic hazards risk.

The proposed project does not include significant subsurface excavation, but construction activities and staging areas will occur within and adjacent to harbor waters. Some minor excavation will be required to widen the east abutment. Thus, the project would not result in significant soil erosion impacts, but could result in advertent water quality impacts if construction activities and materials are not properly managed and contained. This is addressed further below under section 8-Hydrology and Water Quality.

- *Project Modification:* There have been no changes to geologic or soils conditions in the project area. The re-location of replacement boat berths to the west side of the harbor will not result in new significant impacts. The project impacts related to seismic hazards (liquefaction) would not change, and the project would continue to be subject to mitigation measures regarding preparation of a geotechnical study.

HAZARDS AND HAZARDOUS MATERIALS

Project construction could result in short-term, localized disturbance to or exposure to hazardous materials found in the soils. Although the project does not involve extensive grading or excavation, there will be some excavation at the boat yard to create level grades to accommodate construction equipment. In this area, there may be some motor oil, paint or PCBs in the soil on the east side due to historical and existing uses (boat yard and transformer). These conditions are the only ones considered by the Phase 1 Assessment to potentially affect the Murray Street Bridge project. Based on these findings, additional soils

testing is recommended, and if contaminants are found they shall be disposed of in conformance with all applicable regulations.

- *Project Modification:* The re-location of replacement boat berths to the west side of the harbor will not result in new significant impacts. The site of the proposed relocated replacement boat berths is not adjacent to the east side of the harbor. Implementation of Mitigation Measure 8 remains in effect for other components of project construction.

HYDROLOGY

Construction activities within the Harbor waterway could result in inadvertent erosion or discharge of materials in harbor waters if construction activities and dock replacement are not property contained and managed, resulting in potential water quality impairment and potential indirect effects to aquatic species. This is considered a potentially significant impact due to presence of special status species within the Harbor. Implementation of BMPs during construction, as set forth in the project construction specifications, would prevent any temporary, localized erosion or water quality effects.

- *Project Modification:* The re-location of replacement boat berths to the west side of the harbor will not result in new significant impacts. The net increase in three additional boat berths over the original project would slightly increase the in-water construction duration. This would not substantially increase the severity of water quality impacts during construction because Mitigation Measure 9 will continue to be implemented which requires implementation of Best Management Practices to prevent water quality degradation.

NOISE

Pile installation and construction will result in temporary increases in ambient noise levels over an approximate 18 month period. Because higher noise levels associated with the project will vary throughout the construction period, and noise levels associated with use of heavy equipment would be intermittent throughout a given day and entire construction phasing, this is considered a *less-than-significant* impact. Construction-related noise levels would vary throughout the day, depending on the type of equipment in use at any one time and the distance to the receptors.

Pile installation and construction will result in temporary vibration to residences closest to the construction activities, but vibration levels will significantly decrease with increasing distance from the construction site. This is considered a *potentially significant* impact for a few houses within 150 feet of pile driving operations. The estimated maximum project vibration levels would be experienced by a few residences that are within 100 to 150 feet of the pile driving operations, and there could be some instances of annoyance and plaster loosening from the pile driving periods for these residences.

- *Project Modification:* The net increase in three additional boat berths over the original project would slightly increase the in-water construction duration. The berth relocation on the west side would be a similar, although slightly closer, distance to existing residences as on the east side. This would not substantially increase of temporary noise impacts due to the limited area and

duration of construction. The recommended conditions and Mitigation Measure 10 would be in effect for all project construction activities.

TRANSPORTATION & TRAFFIC

Project construction will result in temporary increase of approximately 5 peak hour trips distributed throughout the road system and will result in temporary closure of one or both lanes of Murray Street Bridge for intermittent periods over the 18-month construction period. Because the temporary increase in construction-related traffic is minor, lane closures will vary throughout the construction period, and road closure would not occur for more than two weeks at any one given time, this is considered a less-than-significant impact. Project construction will temporarily reduce the water channel under the Murray Street Bridge for intermittent periods over the 18-month construction period, a less-than-significant impact.

- *Project Modification:* The re-location of replacement boat berths to the west side of the harbor will not result in new significant impacts. The relocation and slight increase in boat berths will have no effect on traffic controls on Murray Street or local roads or on boat passage under the bridge. Recommended construction specifications will remain in effect for other project components.

REFERENCES

Santa Cruz Port District. July 11, 2008. Letter to Susan Craig, California Coastal Commission regarding “Augmented Berthing on Santa Cruz Harbor’s West Side End Ties.”

ATTACHMENT A

MITIGATION MEASURES
and
RECOMMENDED CONDITIONS OF APPROVAL

REQUIRED MITIGATION MEASURES

MITIGATION MEASURE 1: Conduct pile driving activities in Harbor waters from July 1 to mid-November, unless otherwise permitted by the National Marine Fisheries Service (NFS).

MITIGATION MEASURE 2: Conduct focused pre-construction surveys of the Murray Street bridge by a qualified biologist to determine if bats are roosting in the bridge's expansion joint crevices if bridge construction activities are scheduled during the breeding season of native bat species (April 1 through August 31). Bat roosting habitat in crevices will be sealed prior to the onset of bat reproductive season (April 1). If roosting habitat is not sealed prior to bat reproductive season, bat exclusion devices will be installed. If these actions do not result in exclusion, a qualified biologist in possession of an applicable Department of Fish and Game Memorandum of Understanding should remove and relocate the roosting bats to an appropriate alternate habitat (a roost with comparable spatial and thermal characteristics).

MITIGATION MEASURE 3: Remove known or potential marine mammal resting sites prior to construction based on the outcome of preconstruction survey to assess if and how marine mammals utilize the construction area of potential impact. This preconstruction monitoring will take place at least five days prior to the start of in-water construction. All potential resting sites that occur in the construction work area shall be removed beyond area of activity, either under the bridge or above. These sites could include floating docks (i.e. Dock FF) or boats, such as those used by UCSC.

MITIGATION MEASURE 4: Require a qualified biological monitor be present during in water construction activities to search for target marine mammal species and halt project activities that could result in injury or mortality to these species. Prior to in-water construction, the approved monitor will conduct a workers training to instruct construction crews regarding actions to be taken to avoid or minimize impacts in the event of a target species entering the in-water work area.

MITIGATION MEASURE 5: Prohibit pile driving activities within a 500-foot radius if marine mammals are present. This radius will be visibly flagged on the banks of the harbor during these activities. Each day prior to the commencement of pile-driving, the approved monitor will survey the buffer zone for marine mammals. If a marine mammal is detected, delay pile driving until the marine mammal(s) has moved beyond the buffer zone, verified by visual confirmation or lack of visual sighting within the next 15 minutes of the last sighting. If the animal should move back into the buffer zone after the commencement of pile-driving, no further work stoppage will be necessary. The buffer radius may be reduced based on a measurement of the distance the 160 db pressure travels in the underwater harbor waters. This would be determined using an approved acoustic monitoring device. The City of Santa Cruz would notify NMFS in writing of the proposed change in buffer zone area. No disturbance or noise will be used to encourage the movement of the target species from the work area. The City will contact the appropriate authorities to determine the best approach for exclusion of the target species from the in-water work area.

MITIGATION MEASURE 6: Require that a pre-construction survey for special-status nesting avian species (and other species protected under the Migratory Bird Act) be conducted at least 30 days prior to the beginning of construction activities that occur during the nesting/breeding season (typically February through July) to assure that this area is not actively being used. If active nesting is not occurring, project construction activities may begin. If a nesting special-

status bird is found during the survey, construction within 100 feet of the nest site should be postponed until after the bird has fledged or consultation with the California Department of Fish and Game be conducted to determine alternative measures or appropriate buffers.

MITIGATION MEASURE 7: If project activities are to be initiated outside of the breeding season, remove existing nests and/or install exclusion netting under the bridge to prevent nesting for the season. Swallow nests should be removed from the bridge structure before the breeding season including the courtship period, usually January through July. Exclusion netting should be subsequently installed to prevent reestablishment of nest structures on the bridge infrastructure during construction.

MITIGATION MEASURE 8: In conformance with the recommendations of the Phase 1 Environmental Assessment, fill soils excavated from the west end of the bridge shall be tested for motor oil (with silica gel clean-up). Fill soils excavated from the east end of the bridge shall be tested for diesel, arsenic, motor oil (with silica gel clean-up), and lead (used in old paints). If motor oil is detected, soils shall be further tested for polychlorinated biphenyls (PCBs), due to the presence of a nearby transformer. Any contaminants found shall be treated and/or disposed of in conformance with all applicable regulations.

MITIGATION MEASURE 9: Incorporate BMPS into construction specifications, including, but not limited to:

- Require all excavated soils, fill and construction materials be stored and contained in a designated area away from Harbor waters, and cover stockpiled soils to prevent release of sediments.
- Prohibit fueling, cleaning, or maintenance of equipment except in designated areas located as far from Harbor waters as possible. As a precaution, require contractor to maintain adequate materials onsite for containment and clean-up of any spills.
- Install temporary erosion and sedimentation control devices. Locate equipment and spoils in designated staging areas.
- Control of dewatering process to limit turbidity.
- Prepare and implement a Stormwater Pollution Prevention Plan that further details measures for erosion, sediment and water quality control.
- All fill material would be clean material that would meet applicable water quality standards.

MITIGATION MEASURE 10: Require that property owners and residents located within 150 feet of the pile installation locations be notified at least one week prior to construction.

RECOMMENDED CONDITIONS OF APPROVAL AND CONSTRUCTION SPECIFICATIONS

- **Recommended Condition of Approval:** Require all bridge lighting to be hooded and directed downward.

- **Recommended Construction Specification:** Require that all stockpiles of debris, soil and other materials which can become windblown be covered.

- **Recommended Construction Specification:** Implement measures to protect existing retained heritage trees in order to minimize damage to protected trees and their root zones during construction, including, but not limited to the following:

- Install construction fencing around the heritage trees to be retained to establish a zone sufficient for protection during construction to prevent inadvertent grading or disturbance/compaction by construction equipment; and
- Prohibit storage of materials, dumping of debris or construction equipment within tree protection zones.

- **Recommended Condition of Approval:** If archaeological resources or human remains are discovered during construction, the City of Santa Planning and Community Development Department and Caltrans District 5 Environmental Planning Branch shall immediately be notified, work shall be halted within 50 meters (150 feet) of the find, and a qualified archaeologist shall assess its significance. If the find is determined to be significant, appropriate mitigation measures shall be formulated and implemented.

- **Recommended Condition of Approval:**
  - Require all stockpiling and vehicle staging areas and stationary noise-generating construction equipment to be located as far as possible from nearby residential areas as practicable.
  - As part of construction specifications, require all equipment to be kept in good repair and fitted with superior quality mufflers. All equipment shall be properly maintained to assure that no additional noise, due to worn or improperly maintained parts, would be generated.
  - Require the contractor to assure that mobile noise-generating equipment and machinery are shut off when not in use.

- **Recommended Construction Specification:** Prepare and implement a traffic control plan that includes: installation of signals on each side of the Murray Street bridge to allow controlled access for each direction; changing existing signal phasing as recommended in the traffic analysis; and implementation detours and advance warning signs to address delays.

- **Recommended Construction Specification:** To the extent possible, restrict any temporary lane closures on Murray Street to times outside peak traffic periods, which are generally 7-9 AM and 4-6 PM, and require implementation of traffic controls during times of lane closures consistent with provisions of a traffic control plan that includes a signal to control eastbound and westbound traffic during times of lane closures.

- **Recommended Construction Specification:** Provide advance notice to emergency providers of the construction schedule, lane/road closures on Murray Street, and potential traffic disruption.

- **Recommended Condition of Approval:** Require water traffic controls, i.e. patrol/flagger, during periods when the boat channel must be reduced to one-way traffic, consistent with USCG bridge permit requirements.