

## **MURRAY STREET BRIDGE SEISMIC RETROFIT PROJECT**

### **Pedestrian-Bicycle Path Detour Plan**

#### **Project Description**

The existing Murray Street Bridge (Bridge # 36C-0108) crosses the Santa Cruz Small Craft Harbor in the City of Santa Cruz, California. Due to the structure's seismic vulnerability, the City in conjunction with Caltrans has embarked upon development of retrofit design plans. The City also received approval from Caltrans to rehabilitate the bridge, including replacement of the deficient bridge barriers under the Highway Bridge Program (HBP), formerly the Highway Bridge Replacement and Rehabilitation program. In order to bring the bridge up to current standards, the narrow shoulders will be widened as part of the project.

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 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 traffic movement, and detours.

Contractor staging activities for Phases 1 and 2 of the project will take place in an approximately 8,000 square-foot portion of an existing boat yard beneath the eastern edge of the bridge. At the end of Phase 2, the boat yard will be restored. Contractor staging activities for Phases 3, 4, and 5 of the project will take place in the northern portion (approximately 11,000 square feet) of a parking lot situated at the western edge of the bridge.

#### **Pedestrian / Bicycle Detours**

An existing pedestrian path is located adjacent to the project site on both the east and west sides of the harbor, which is used by pedestrians, bicyclists and kayakers. The path is located on lands owned by the Santa Cruz Port District, and use and management is under the Port District's jurisdiction.

The existing path would be temporarily blocked during some periods of construction. However, it is the intent to keep trails open during non-construction periods, i.e. evenings and weekends when possible. However, there will be periods when construction staging on either side of the harbor will require temporary path closure due to safety during construction equipment use and when the stairway on the west side is replaced.

During periods when the paths are closed, detour signs will direct path users to the other side of the path and harbor. The specific detours are as follows:

1. During Phases 1 and 2 while the east side Harbor path is closed, detour signs will direct pedestrians and bicyclists as shown on the attachment and described below:

- From the south (from East Cliff), pedestrians and bicyclists will be detoured along Lake Avenue across the Murray Street bridge to a stairway on the West Harbor that connects with the path to the Upper Harbor.
- From the north (from North Harbor), pedestrians and bicyclists will be detoured through the Upper Harbor to the west side. An alternate detour from the North Harbor would be at the North Harbor entrance at Brommer Street, south along existing sidewalks and bike paths on 7<sup>th</sup> Avenue to East Cliff and the southern portion of the East Harbor.

During these phases, bicyclists would have unobstructed access along City and County streets.

2. During Phases 3, 4, and 5 while the west side Harbor path is closed, detour signs will direct pedestrians and bicyclists as shown on the attachment and described below:

- From the south (from Atlantic Avenue), pedestrians and bicyclists will be detoured along Atlantic Avenue to Seabright Avenue to Murray Street to the reopened path on the east side of the Harbor that connects to the Upper Harbor.
- From the north (from North Harbor), pedestrians and bicyclists will be detoured through the Upper Harbor to the east side and through the neighborhood as described above.

During these phases, bicyclists would have unobstructed access along City and County streets.

### **Kayak Access**

A kayak rental business is located on the east side of the harbor south of the Murray Street Bridge. Some kayakers rent kayaks and walk on the path under the bridge and launch from the North Harbor area north of the bridge. During construction on this side, the City will install floaters or flexi-docks in a location south of the bridge in order to maintain kayak access to the water during construction.

The Harbor channel will remain open during construction, and thus, boats will not have access interrupted.

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

Work Tasks	Effects on Harbor and Road Operations
<b>Phase 1: Construction in East Zone</b>	
<b>2 months [1]</b>	
* 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
<b>Phase 2: Construction in Eastern Waterway</b>	
<b>5 months</b>	
* Construct new berths (8) at ends of docks A through F	* Temporary relocation of 2 boats from Dock T to AA or new dock N-Q
* 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	
<b>Phase 3: Construction in West Zone</b>	
<b>6 months</b>	
* 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]	
<b>Phase 4: Construction in Western Waterway</b>	
<b>5 months</b>	

Work Tasks	Effects on Harbor and Road Operations
<ul style="list-style-type: none"> <li>* Construct modifications to Dock FF; move 7 boats to new Dock FF</li> <li>* Construct work platform(s) (trestle or barge) for Stage 4 work</li> <li>* Retrofit Bents 5 &amp; 6 (including installation of anchor piles)</li> <li>* Erect Girder Spans 4, 5, &amp; 6 [and construct Deck Spans 4, 5, &amp; 6]</li> <li>* Construct north and south rails [3]</li> <li>* Remove work platform(s)</li> </ul>	<ul style="list-style-type: none"> <li>* Closure of West Path, western concrete stairway and access ramp to Dock FF</li> <li>* Temporary relocation of affected facilities (offices, storage, restrooms, etc.)</li> <li>* Temporary relocation of 8 boats from Dock FF</li> <li>* Availability of only one boat channel under the bridge for 6 non-consecutive half-days</li> </ul>

#### Phase 5: Construction of Superstructure and Barrier Rails

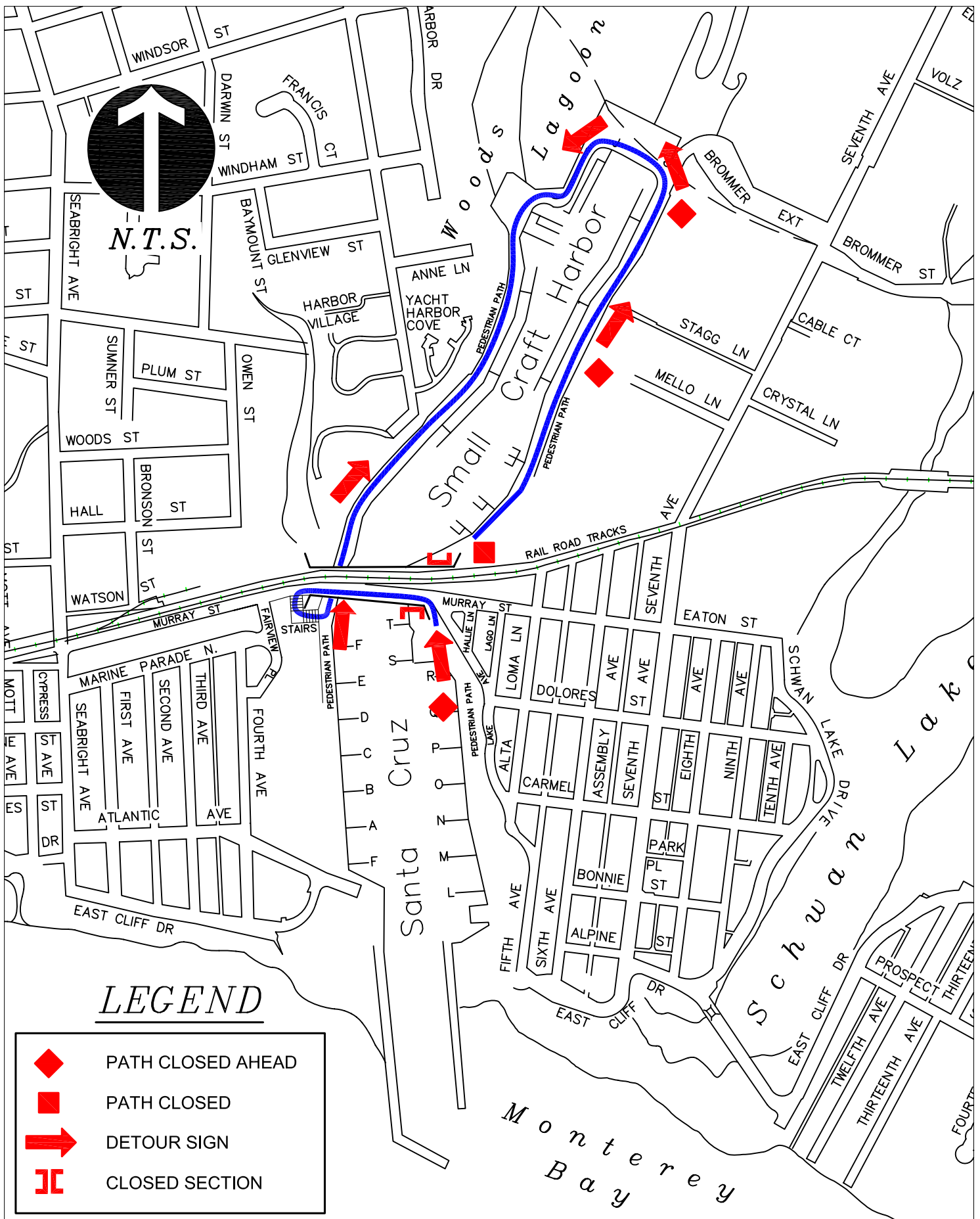
[no timing provided]

- \* 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.



## PHASE 1 & 2 , EAST SIDE PATH CLOSED

