

City of Santa Barbara Waterfront Department
Marina One Replacement Project
Project Description
September 2007

Project Purpose

The majority of Marina One was constructed in the 1970s and includes 16 fingers (A-P) providing berths for approximately 500 vessels. Marina One was expanded in 1998 adding approximately 100 slips on 3 fingers (Q-S). A recent engineering analysis and staff assessment of Marina One concluded that the concrete docking system on A – P fingers is nearing the end of its useful life. The assessment recommends replacing A – P fingers in 10 phases over the next 10 -12 years (Exhibit 1). Replacement of the restrooms is not included in the proposed project.

Project Description

Marina One is comprised of a concrete deck system with polystyrene foam floatation structure. Wood walers provide the structural component attaching one float to another. Fingers are connected to the main headwalk by a ½” threaded insert. Guide piles and mooring piles are 14” pre-stressed concrete. Utilities including power, telephone, domestic and fire water (combined) and sewer are routed underneath the wooden walers along the side of the concrete floats.

There are two restrooms and three pumpout stations that service Marina One. One restroom and two pumpout stations are located on the expansion docks (Q-S). The other restroom and remaining pumpout station are located along the main headwalk between fingers A and B. A porta-potty dumping station is also located along the main headwalk between fingers A and B. None of the restrooms, pumpout stations, or porta potty dump station will be replaced as part of the project.

Phase 1

Phase 1 includes the replacement of the main headwalk, landside utilities, and gangway.

The existing main headwalk is 1160’ long and is constructed with 10’ wide x 8’ long concrete floats held together by two 2” x 10” wooden walers. The concrete docking system covers 11,600 sq. ft. The main headwalk will be replaced with a similar concrete docking system that will have some of the utilities in the dock and some utilities routed along the sides of the dock. The main headwalk will remain 10’ wide but the length of each float may be more or less than 8’. The existing headwalk and utilities will likely be replaced several sections at a time between fingers while maintaining access to the fingers to the maximum extent feasible. A Construction Access Plan and Utility Relocation Plan will be prepared as part of the preliminary design to identify preferred methods of maintaining access and utility service to the sections of the marina that will not be reconstructed during this phase.

Utility service to Marina One includes telephone, electrical, sewer, domestic and fire water. Existing shoreside infrastructure that feeds Marina One, A – P fingers, for sewer, telephone, domestic and fire water are adequate to meet current code requirements.

Shoreside upgrades to provide electrical service to meet updated code requirements will be necessary.

Five alternatives were considered for shoreside improvements to provide adequate electrical service to Marina One. All alternatives require replacing an existing 6' x 8' transformer behind the 132 building with a 10' x 12' transformer. A 15' x 10' enclosure will be attached to the existing storage area west of the 132 building to house the electric meter and switchgear (Exhibit 2). The alternatives considered include; 1 - Installing new conduit from the new transformer through the SBYC to the existing walkway. Trench through existing walkway to the Marina One gangway (Exhibit 3). 2 - Install new conduit from new transformer through SBYC. Place new conduit in continuous concrete vault on the sand from SBYC entrance to gangway (Exhibit 3). 3 - Trench from new transformer around north side of 132 building to Travel Lift Pier. Install submarine electrical cable from Travel Lift Pier to Marina One gangway (Exhibit 4). 4 - Use existing conduit and construct service shed adjacent to Marina One gangway. Service shed would be built on concrete slab placed on piles over water. Service shed would be approximately 15' high (Exhibit 4). 5 - Install conduit from existing transformer located near the Sea Landing to the southern tip of the Rock Groin. Place submarine cable from the Rock Groin across the harbor to the Marina One East Restroom (Exhibit 5).

The preferred alternative for shoreside utility upgrades for electrical service is alternative 3. This alternative is economically feasible and will result in the least disruption to public access as well as being technically feasible.

Although the docking system in the Marina One Expansion, including "Q", "R", and "S" fingers, is not included in the replacement project, existing fire water service was reviewed to determine if it met National Fire Protection Act (NFPA) requirements. Recent flow tests documented a flow of 250 gpm at 35 psi at the furthest standpipe on "S" finger. The existing 3" fire water line serving "Q", "R", and "S" fingers will be replaced with a 4" fire water line increasing the flows to 250 gpm at 70 psi (exhibit 6).

Access to Marina One is current provide by a 45' long by 5'6" aluminum gangway. The gangway will be replaced in kind as part of Phase 1.

Phases 2 – 10

Phases 2 – 10 involve the replacement of "A" through "P" fingers. The headwalk on "A" through "G" fingers are 6' wide and 8' wide on "H" through "P" fingers. All of the finger docks are 3' 6" wide. All docks are concrete floats and are held together by 2 – 2" x 10" wooden walers. All berths are double slips whereby two vessels berth between two finger docks with a concrete mooring pile between the finger docks. The concrete floats and utilities will be replaced in the existing configuration. The existing piles will be used although any structurally deficient piles will be replaced.

Phase 2 – Replace "O" and "P" fingers. "O" finger is 301 feet long and has 18 – 40' slips on the west side of the headwalk and 14 – 60' slips on the east side. The endtie is 109' long. "P" finger is 267' long with 18 – 30' slips on the west side of the headwalk and 14 – 50' slips on the east side. The endtie is 89' long. The existing concrete docking system covers 11,524 sq. ft. Two 40' double berths providing four slips will be added to the existing endtie on "P" finger. This will extend the length of "P" finger by approximately 40'. The proposed additional concrete docking system covers 950 sq. ft. Two guide piles and two mooring piles will be installed to support the new docks.

Phase 3 – Replace “N” dock. “N” dock is 350’ long and has 48 – 30’ slips. The endtie is 69’ long. The concrete docking system covers 5,800 sq. ft.

Phase 4 – Replace “L” and “M” fingers. “L” dock is 310’ long and has 44 – 30’ slips. “M” dock is 301’ long and has 36 – 40’ slips. The endtie is 89’ long. The concrete docking system covers 10,784 sq. ft.

Phase 5 – Replace “J” and “K” fingers. “J” dock is 272’ long and has 20 – 25’ slips on the west side of the headwalk and 18 – 30’ slips on the east side. The endtie is 64’ long. “K” dock is 322’ long and has 20 – 35’ slips on the west side of the headwalk and 19 – 40’ slips on the east side. The endtie is 86’ long. The concrete docking system covers 10,092 sq. ft.

Phase 6 – Replace “H” and “I” Fingers. “H” finger is 322’ long and has 40 – 35’ slips. The endtie is 80’ long. “I” dock is 245’ long and has 36 – 25’ slips. The endtie is 59’ long. The concrete docking system covers 9,376 sq. ft.

Phase 7 – Replace “F” finger. “F” finger is 220’ long and has 28 – 35’ slips. The endtie is 76’ long. The existing concrete docking system covers 3,456 sq. ft. **Four 35’ double berths providing eight slips will be added to the existing endtie on “F” finger. This will extend the length of “F” finger by approximately 48’.** The proposed additional docking system covers 1,082 sq. ft. **Four guide piles and four mooring piles will be installed to support the new docks.** It is anticipated that when this phase is constructed, the operator of the dry dock may either leave the harbor or be regulated out of operation.

Phase 8 – Replace “E” and “G” fingers. “E” finger is 160’ long and has 24 – 25’ slips. The endtie is 57’ long. “G” finger is 210’ long and has 32 – 25’ slips. The endtie is 56’ long. The concrete docking system covers 5,292 sq. ft.

Phase 9 – Replace “C” and “D” fingers. “C” finger is 130’ long and has 20 – 25’ slips. The endtie is 57’ long. “D” finger is 220’ long and has 28 – 35’ slips. The endtie is 76’ long. The concrete docking system covers 5,378 sq. ft.

Phase 10 - Replace “A” and “B” fingers. “A” finger is 155’ long and has 20 – 35’ slips. The endtie is 77’ long. “B” finger is 110’ long and has 16- 25’ slips. The endtie is 56’ long. The concrete docking system covers 4,072 sq. ft.

The attached Slip Inventory identifies the number and lengths of all the slips in Santa Barbara Harbor (Exhibit 7).

All of the proposed work involves demolition and removal of the existing docking system, gangway, and utility conduits. A crane on a floating barge will be used to remove the docking system. The wood, concrete, steel, and utility conduits will be removed from site and taken to an appropriate facility for recycling (if feasible) or disposal. The majority of the piles will be left in place and be incorporated into the new docking system. Some existing piles may need to be extracted and eight new piles will be driven at the “F” and “P” finger extensions. 55’ long pre-stressed concrete piles will be used for all mooring and guide piles. Piles are driven to a depth of approximately -30’ msl with 25’ of embedment into the sea floor. Typically 2 – 3 piles can be driven in one day.

Once the existing docking system is removed, the new docking system will be installed. Sections of the new docking system will be fabricated off-site and transported to Santa Barbara. The sections will be assembled at the Launch Ramp or City Pier and floated into place at Marina One. Any piles that need to be installed will be driven and/or jettied to ensure accurate placement to line up with the existing docks. Utilities including water, electrical, and phone, will be installed last and provided for each slip. Construction is scheduled to last approximately 90 working days for each phase, beginning after Labor Day and completing before Memorial Day of the following year.

Four staging areas are proposed to help in the assembly of the new docking system: 1) the east end of the Harbor West Parking Lot, (2) the southern area of Marina 1 adjacent to "P" finger, (3) next to the utility shed behind the Chandlery Building, and (4) an area adjacent to the Federal Channel Dredge yard on West Beach.

Vessels currently berthed at the Marina One docks will be relocated within Santa Barbara Harbor during construction to the maximum extent feasible during each phase. There are approximately 35 transient slips in the harbor and most, if not all, will be used for the relocated vessels. A vessel relocation plan will be prepared prior to construction of each phase. Affected slipholders will be notified 30 days in advance of relocation. Some vessels may need to leave Santa Barbara Harbor during construction but every effort will be made to accommodate all displaced vessels within the harbor. Transient berthing during construction will be severely limited.

Construction of each Phase depends on available funding. Phases 1 – 3 (and possibly Phase 4) are expected to be funded by a loan from the California Department of Boating and Waterways. Phase 1 is expected to be constructed beginning September 2008 through January 2009. Phases 2 and 3 will be constructed every other year or every year depending on bids. All construction is tentatively scheduled to take place in the late fall/early winter of each year. Phases 4 – 10 will be funded by a combination of loans and Waterfront Capital funds with scheduling to be determined.

Access to individual slips and utility service may be restricted or unavailable during construction. For example, as the old docking system is removed and the new docking system put in place, access to adjacent slips may be limited. If pedestrian access to slips not under construction cannot be maintained, a short term ferry service may be provided. Limited access would likely be for several days for vessels located adjacent to docks being replaced.

In addition, utility service may also be limited during construction. Switching from the old utilities to the utilities installed with the newly replaced docking system, especially for Phase 1, may result in limited utility service for the entire marina. Depending on the preferred method of construction, there may be no available utility service to the entire marina for up to two weeks during any phase. Shutting off utility service to any or all of the marina will be avoided to the maximum extent feasible but will be unavoidable. Despite the probable inconvenience to many boaters, a short term loss of access or utility service is preferable to replacing the entire marina at once. Replacing the entire marina at one time would be economically infeasible and would displace approximately 500 vessels.

Construction Restrictions:

Noise: Generally, construction activities will occur between 7 am and 5 pm, Monday through Friday and work will not occur on Saturdays, Sundays nor on City of Santa Barbara observed holidays. (When a City holiday falls on a Saturday or Sunday, the preceding Friday or following Monday shall be observed as a legal holiday.) If construction must take place outside these hours, permission for after-hours construction work will be obtained from the City of Santa Barbara's Environmental Analyst and Building and Safety Department prior to proceeding.

Pile driving has the potential to cause hearing damage to anyone coming close to the pile driving equipment. It takes approximately 10 minutes to drive each pile with 2-3 piles capable of being driven in a day. All pile driving will take place over the water in Marina One with limited exposure to slipholders. Waterfront staff and/or construction personnel will inform anyone on the adjacent docks immediately prior to any pile driving. Noise contours will be generated for areas where pile driving will occur and anyone on the docks will be asked to leave the area where hearing damage could occur as predicted by the noise contours for the duration of each pile drive. The Waterfront Department will notify all Harbor tenants and slipholders of the construction schedule no less than five (5) days prior to commencing work.

Air Quality: All project activities are subject to applicable laws, regulations and permitting requirements of the Air Pollution Control District and State Air Resources Board. All heavy equipment will be well-maintained in accordance with Santa Barbara County Air pollution Control District Best Management Practices, and they are subject to the following measures, which will help reduce emissions from construction equipment:

1. Heavy-duty diesel-powered construction equipment manufactured after 1996 (with federally mandated "clean" diesel engines) should be utilized wherever feasible.
2. The engine size of construction equipment should be the minimum practical size.
3. The number of construction equipment operating simultaneously should be minimized through efficient management practices to ensure that the smallest practical number is operating at any one time.
4. Construction equipment should be maintained in tune per the manufacturer's specifications.
5. Construction equipment operating onsite should be equipped with two to four degree engine timing retard or pre-combustion chamber engines.
6. Catalytic converters should be installed on gasoline-powered equipment, if feasible.
7. Diesel catalytic converters, diesel oxidation catalysts and diesel particulate filters as certified and/or verified by EPA or California could be installed, if available.
8. Diesel powered equipment should be replaced by electric equipment whenever feasible.
9. Construction worker trips should be minimized by requiring carpooling and by providing for lunch onsite.

Access: Docks under construction will be closed to all slipholders. The phased approach to reconstructing the entire Marina One should result in only one finger being closed at a time. As previously mentioned, displaced vessels will be relocated within Santa Barbara Harbor to the maximum extent feasible during construction. There may be some limited access to the City Pier and/or portions of the Launch Ramp during delivery of portions of the docking system. A barricade and sign informing public that access is temporarily closed will be placed in appropriate locations depending on project

location and construction methods. If necessary, an onsite monitor will be required to ensure public safety, and Harbor Patrol will advise pedestrians who disregard any barricades, closures, or onsite monitors, to leave the area.

Biological/Archaeological Resources and Water Quality: A Biological Resources Assessment was prepared to identify potential impacts to biological resources and water quality. There are no known sensitive biological or archaeological resources in Marina One.

Impacts to water quality are considered to be insignificant, consisting of temporary and localized increases in suspended sediments and turbidity. Construction work will, however, be required to follow the applicable best management practices for construction as outlined in public works pamphlet "Procedures for the Control of Runoff into Storm Drains and Watercourses." The Biological Resources Analysis recommends that the contract shall implement the following measures during construction to reduce potential impacts to water quality:

1. *Spill Containment and Cleanup Materials*

Containment booms, absorbent pads, and nets will be onsite to contain and remove spills.

2. *Ensure that all work crews are trained in the use of spill containment and cleanup materials.*

Prior to the beginning of construction, all contractors must demonstrate the ability to use containment and cleanup materials.

3. *Provide a plan for spill containment and cleanup that includes methods for disposal of any spilled hazardous materials.*

Prior to the beginning of construction, contractors must prepare and submit a plan for spill containment to Waterfront staff. The plan will describe the following containment materials used during construction.

The contractor shall dispose of all debris generated by the specified work in the appropriated containers provided by the Waterfront Department.

Should a spill occur that impacts construction, a notification list will be available to notify appropriate personnel. This list will include the project PEC.