CITY OF

NEWPORT BEACH

City Council Staff Report

August 8, 2017
Agenda Item No. 19

TO:	HONORABLE MAYOR AND MEMBERS OF THE CITY COUNCIL
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TITLE:	Balboa Island Seawall Coping Extension – Update and Status Report, Contract No. 7066-1 (15H11)

ABSTRACT:

A project is proposed to add an approximate 9-inch concrete cap extension to the existing seawall on the north, south and west sides of Balboa Island. This report provides an update on the project and requests City Council authorization to move forward with advertising and the bidding of the project for construction.

RECOMMENDATION:

a) Find this project exempt from the California Environmental Quality Act (CEQA) pursuant to Section 15301 under Class 1 (Existing Facilities) of the CEQA Guidelines, because it has no potential to have a significant effect on the environment; and

b) Authorize staff to advertise and publicly bid the project for construction, which will add an approximate 9-inch high concrete cap to the existing seawall on the north, south and west sides of Balboa Island; or

c) Provide further direction to staff as to how to proceed.

FUNDING REQUIREMENTS:

The adopted budget includes $4,971,225 for this task. It will be expensed to the Capital Improvement Program budget (Account Number 10101-980000-15H11) once a contract is awarded in fall 2017. The engineer's estimate at this time is between $1.5 and $2 million dollars.

DISCUSSION:

The public seawalls around Balboa Island and Little Balboa Island protect the islands from flooding. The boardwalk adjacent to the walks is a popular walkway for residents and visitors. The seawalls, built between 1929 and 1939, receive periodic maintenance to fix cracks, patch broken concrete and seal joint leaks in the seawalls.

Beginning in 2011, the City's Tidelands Council Sub-Committee began discussions regarding plans for replacing/addressing the aging seawalls around Balboa Island and Little Balboa Island, as well as addressing current and future seawater overtopping concerns including taking measures for protecting the islands from flooding associated with overtopping and sea level rise. Staff made a series of presentations to the committee on (1) the condition of the seawalls, (2) potential sea level rise scenarios, and (3) different options for refurbishing or replacing the aging seawall to protect the island from current and future flooding. After much public discussion and review, a final presentation was provided to City Council on July 14, 2015, and may be viewed at http://www.newportbeachca.gov/home/showdocument?id=21040. Because seawall replacement costs are very high, and the Little Balboa Island had already received a cap extension many years ago, the committee decided to focus first on Balboa Island (Big) where the flooding hazard is greater as its walls are about one foot lower than Little Balboa Island. This staff report summarizes the condition of the Balboa Island seawall and outlines a proposed project to add an approximate 9-inch high cap on the Balboa Island seawall.

Seawall Condition Summary

The height of the existing seawall around Balboa Island provides limited freeboard to prevent waves from overtopping the walls during high tide events. Photos of the 2010 flooding event at Turquoise Street show storm surge waves overtopping the seawall on the south side of Balboa Island by about 2 to 5 inches.

A 2011 seawall Condition Assessment and Evaluation Report prepared by Everest International Consultants found the Balboa Island seawalls, built between 1929-1938 (and are therefore 79-88 years old), are still in fair condition. Seawall concrete is still in very good condition with little concrete spalling and little evidence of rusting of the reinforcement bars. There are some superficial cracks and spalls; however, the City has a regular maintenance program to fill joints and cracks. This reduces intrusion of bay water through cracks and reduces the loss of sand from behind the wall. We know that some (and perhaps most) of the seawall anchoring tiebacks have rusted out. That is a concern especially at the west end of Balboa Island which has the highest wall exposure to the bay.

Historically, the biggest concern has been for the wall segment at the West End where the sidewalks have needed more frequent repairs and exhibit signs of *floating* during high tides. The mudline along the seawall south of the Collins Island Bridge has experienced erosion by flood and ebb tides. Rock ballast was placed at the mudline in 1980s, and to date, appears to have successfully forestalled further erosion.

The most recent evaluation of the West End performed in 2016, continues to confirm the concrete seawall piles are in decent condition. The evaluation also discovered that the West End seawall north of the Collins Island Bridge is more deeply embedded than previously thought, a very welcome finding. Our engineering consultant concluded there is no immediate need to replace the West End segment of wall, though annual monitoring is recommended. Staff will continue its program to monitor the West End and perform routine repair of concrete cracks if they appear.

Proposed Seawall Cap Extension

With careful monitoring and continuing routine maintenance of the seawalls, it is expected that as much as 10-20 years of useful life may remain. Given this, the idea of adding a cap extension to the existing seawall cap is viable in lieu of replacing the wall now with a higher top of wall elevation. A seawall cap is much lower in cost than a new seawall, and over the short term, will protect against seawater related flooding. These factors provided the underlying rationale for the Tidelands Committee recommending moving forward with a seawall cap extension project at this time.

When considering a recommended height for the cap extension, the Tidelands Committee looked to balance the (1) need for a higher cap to provide flood protection from forecasted sea level rise as required by California State Law, while (2) keeping the cap extension as short as possible to minimize impacts to views and the walking experience along the boardwalk. As it is not clear at this time how fast the sea level is rising, an approximate nine-inch cap extension is proposed (Exhibit A) to provide flood protection over the next decade. The approximate 9-inch cap high would raise the top of the south side seawall (up to the Collins Avenue Bridge) to Elevation 9.0 feet NAVD88 datum (which is equal to 9.2 feet MLLW (mean lower low water)) and on the north side to Elevation 8.5 feet NAVD88.

Seawall Heights Summary: (Rounded)

	LOCATION	**Current**	**New**	**Difference**
•	Balboa Island N.	7.8’	*8.5’*	*+9 inches*
•	Balboa Island S.	8.3’	*9.0’*	*+9 inches*
•	Grand Canal	8.5’		
•	Little Island E.	8.7’		
•	Little Island S.	9.0’		

It should be noted that in the late 1980s, the City raised the bulkhead coping on Little Balboa Island 10-inches around the entire island to provide additional flood protection. This proposed project on the Big Island is similar in design and top of wall elevation, and brings the flood protection for the Big Island more in line with the seawater flood protection the Little Island currently enjoys.

Access to Docks and Beach

To maintain access to the public beaches, the project would leave twenty-nine gaps in the new seawall cap, with one gap located at every street end. There would also be gaps in the new seawall cap at the four public docks. During high tide and storm surge events, temporary barriers would be inserted into the gaps. The barriers would be installed approximately 48 hours in advance of a potential flooding event and removed within 48 hours after the event. Tidal and storm events would be monitored by the Municipal Operations and Public Works Departments. The installation and removal of the temporary barriers, as well as the maintenance of the gap openings will require additional annual funding for staffing, equipment, materials, labor, repairs and evaluations.

There are 79 private docks, four with gangways, within the project area. The approximately 9-inch high cap extension would be constructed across the entrances to these docks and gangways. To facilitate entry onto these private facilities, a short concrete step would be constructed on the lower portion of the existing seawall cap as shown in Exhibits B and C which is similar to what has been done on the Little Island seawall. The private dock owner can then step up onto his dock as shown in Exhibit C.

Construction Considerations

Since the project is linear, sixteen staging areas and seventeen work areas have been identified. Each work area would be approximately 450 feet in length. Construction would occur at no more than three non-consecutive work areas at any given time. Construction in each work area is expected to take between 10 to 15 working days.

Work areas would occupy half of the boardwalk adjacent to the seawall (5 feet) while the other half will be available for public access and use. Closure of the entire boardwalk will occur for short periods of time when necessary to move equipment and material across the boardwalk or complete specific tasks. Detour signage would be employed to indicate pedestrian routes around boardwalk closures.

Grand Canal

Adding a cap extension to the seawall along the Grand Canal is not a part of this proposed project as the existing wall height provides adequate flood protection for now. The Grand Canal seawall is one of the oldest wall segments around the island. While the seawall concrete is still in fair condition, the seawall piles are not embedded deeply. To protect these walls, the City, under another contract, periodically dredges sand from the center of the Grand Canal and stockpiles sand against the seawalls on both sides of the canal to keep them in place. As this stockpiled sand sloughs toward the center of the Canal, this work needs to be performed every 1 to 3 years.

Future Seawall Replacement

The Tidelands Committee and staff recognize that adding a cap extension to the existing older seawall is an interim measure for flood protection and that new seawalls will need to be designed, funded and implemented to replace the aging walls within possibly the next ten to twenty or so years. The top elevation of the new seawalls could be about 10 feet MLLW. The new seawall would be designed (e.g. wall structure, thickness, reinforcement, embedment depth and materials) such that extensions could be added if indeed sea levels do rise.

Coastal Development Permit

Twenty informational signs regarding the Coastal Development Permit (CDP) application were posted around Balboa Island and 3,800 letters were mailed to all properties (owners and tenants) within 300 feet of the proposed project. On July 27, 2017, the City's Zoning Administrator considered and approved the Public Works Department's application for a CDP. Approximately 25 residents attended the Hearing and 15 provided public comments.

Requested City Council Approval

Staff received City Council direction to move forward with the project at the July 14, 2015 City Council Study Session. Staff is now requesting final authorization to bid the construction of the project. With City Council approval, staff anticipates the project can be awarded in September with construction commencing in October/November 2017. Work would be temporarily halted the last three weeks in December for the boat parade and holiday season, and recommence after the New Year. Should Council have any further direction regarding the design or construction of the proposed seawall cap, staff would request that discussion at this time so that it could be incorporated into the construction documents and bid package.

ENVIRONMENTAL REVIEW:

This project is exempt from the California Environmental Quality Act ("CEQA") pursuant to Section 15301 (Existing Facilities) of the CEQA Guidelines, California Code of Regulations, Title 14, Chapter 3, because it has no potential to have a significant effect on the environment. The Notice of Determination was filed with the County Clerk on May 12, 2016. (See Attachment B.)

NOTICING:

This item has been extensively discussed over the years at numerous public meetings with detailed presentations, discussions, and comments. The agenda item has been noticed according to the Brown Act (72 hours in advance of the meeting at which the City Council considers the item).

ATTACHMENTS:

Attachment A – Location Map
Attachment B – Notice of Determination
Exhibit A – Proposed Approximate 9-inch High Cap Extension
Exhibits B and C – Access onto Private Docks: Section and Plan Views