

**PORT OF SEATTLE**  
**MEMORANDUM**

**COMMISSION AGENDA**  
**ACTION ITEM**

**Item No.** 4b  
**Date of Meeting** May 6, 2014

**DATE:** April 29, 2014  
**TO:** Tay Yoshitani, Chief Executive Officer  
**FROM:** Darlene Robertson, Director, Harbor Services, Real Estate Division  
Tracy McKendry, Senior Manager, Recreational Boating Facilities  
Mark Longridge, Project Manager, Capital Development Division  
**SUBJECT:** Shilshole Bay Marina Central Seawall Replacement (CIP #C800088)

<b>Amount of This Request:</b>	\$713,000	<b>Source of Funds:</b>	Existing Revenue
<b>Est. Total Project Cost:</b>	\$915,000		Bond Proceeds

**ACTION REQUESTED**

Request authorization for the Chief Executive Officer to (1) approve construction funding for the rehabilitation of the central section of the Shilshole Bay Marina Seawall for an amount of \$713,000 for a total project cost of \$915,000 and (2) use Port crews in performance of the work.

**SYNOPSIS**

The central section of the seawall, approximately 100', at Shilshole Bay Marina (SBM) was built in 1962 as part of the original marina construction. It is at the end of its serviceable life. It is currently the only section of the seawall composed of timber piers and lagging (other sections of the seawall are concrete). This critical piece of timber infrastructure is over 50 years old and existing lagging is showing signs of distress. Not addressing the condition could lead to failures of the retaining structure and significant slope instability. Therefore, this section of the seawall needs to be rehabilitated in order to maintain a valuable asset and continue operating a safe facility for the public and our customers. With the Commission's previous approval of design funds, various alternatives have been analyzed and the recommended construction method is to rehabilitate the existing structure (further details follow). Port Construction Services will perform this project using a combination of small works contracts and Port crews.

Given the type of work to be done, and access to the work area, the construction schedule is critical due to tidal fluctuations in Puget Sound and the requirement that the work be performed while the tide is out. The summer tide windows are available in June, July, and August of this year. Therefore, we would like to get Commission approval this month in order to proceed with the work. While the work could be performed in the winter months, the needed negative tide windows happen during this period only late at night or in the very early morning hours, both complicating construction conditions, costs, and productivity due to weather and artificial lighting requirements, and potential disruption to tenants and neighbors.

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As this is a renewal/replacement project to rebuild existing, aged infrastructure, there are no incremental revenues associated with this particular project. The funds being requested were included in the 2014 Real Estate capital budget and Plan of Finance.

### **BACKGROUND**

SBM was built in the late 1950's with the first dock opening in 1960. (SBM celebrated its 50<sup>th</sup> anniversary in 2012.) This section of the seawall was built in 1962 and was originally under the central pier of the marina, which has since been removed as part of the redevelopment/replacement of the original docks completed in 2008. It is the only section of the seawall composed of timber piers and lagging. As mentioned, the existing lagging is showing signs of distress and needs to be replaced or supplemented. This section of the seawall supports the northern end of the central plaza and garden area of the marina and is heavily used by the public. It is also the primary access point to both the fuel float/store and guest moorage slips of the central docks, which are highly utilized by our tenants, the public, and other visitors to the marina. Not replacing this section of the seawall could lead to localized failures of this retaining structure and significant slope instability.

The selected construction method to rehabilitate this section of the seawall is to replace the existing timber lagging boards with either concrete panels or recycled plastic lumber boards and place steel collars over the existing piles to hold these new lagging sections in place.

Shilshole Bay Marina is the largest marina in Seattle providing more than 1,400 moorage slips, approximately 80% of which are utilized by sailboats (current occupancy is approximately 98%). The moorage provided is primarily for long-term recreational moorage with an additional 8,000 guest moorage visitors to the marina annually. The facility is used not only by recreational vessel owners, both pleasure and commercial, but by commercial fishing and Tribal vessel owners, along with the maritime businesses that support them. The vessel size ranges from small kayaks to mega-yachts.

The marina is an important job and revenue generator in Puget Sound's recreational boating sector. It plays an important role by supplying a large amount of recreational moorage to the Puget Sound region, by the economic impacts it generates, and by its annual positive cash flow to the Port (Income from Operations) of over \$5,600,000. From the Port of Seattle's 2009 Economic Impact Study (conducted by Martin Associates), the Port's recreational boating marinas generated almost 400 jobs (direct, indirect & induced), almost \$8,000,000 in local purchases, \$14,000,000 in business revenues and over \$2,000,000 in state and local taxes, the majority of which is from Shilshole Bay Marina.

Recreational boaters spend money in various maritime service sectors such as navigational equipment, sails & sail making, engine services, marine repair, fuel, marine clothing, and many more. The recreational boating industry in the State of Washington is an approximately \$4 billion industry that created 1,923 jobs and generated \$31,000,000 in state and local taxes (taken from the NW Marine Trade Association Economic Impact Study of Recreational Boating by Herbert Research dated April 2011).

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The overall value of Shilshole Bay Marina is estimated at \$62,000,000.

### **PROJECT JUSTIFICATION AND DETAILS**

#### ***Project Objectives***

- Replace failing or weakened sections of the existing timber seawall.
- Extend the useable life of the central seawall for 30 to 50 years to match the redeveloped harbor/docks.
- Minimize disruption to the marina customers and available moorage during and after construction.

#### ***Scope of Work***

This project would complete the reconstruction of the remaining timber step wall section (approximately 100 feet) of the Shilshole Bay Marina central seawall. The design calls for the removal of the existing lagging and exposing of the existing timber piles, needed repair and protection of the piles and placement of steel collars over the piling. Panelized concrete or recycled plastic lumber lagging would then be placed between the piles to complete the installation.

Access to this work area, particularly the bottom step of the wall is extremely limited as it is at an approximate tide elevation of zero mean higher high water. This allows for only certain shifts to access and required the upmost flexibility in workforce to achieve the work. PCS will perform this work with some work performed by small works contractors.

By utilizing Port crews for this work we can not only take full advantage of the tide windows available, but also allow for the uncertainty of site conditions behind the wall sections. While soil sampling has been performed in this area the amount and extent of soil movement and sloughing once excavated will be unknown until exposed. This approach provides the utmost flexibility and control to adjust for not only tidal access but also customer, event and operational needs onsite.

#### ***Schedule***

This work has been delayed from its originally proposed schedule to take maximum advantage of the summer tide windows available in June, July, and August 2014. While the work could be performed in the winter months these negative tide windows happen during late night or very early morning hours, both complicating construction conditions, costs and productivity due to weather and artificial lighting requirements, and potential disruption to tenants and neighbors.

While the traditional window for in-water work would not open in this area until later in the summer, the Port has requested an extension in this case to be allowed to perform the work while the tide is out during these windows.

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### **FINANCIAL IMPLICATIONS**

<b><i>Budget/Authorization Summary</i></b>	<b>Capital</b>	<b>Expense</b>	<b>Total Project</b>
Original Budget	\$915,000	\$0	\$915,000
Previous Authorizations	\$202,000	\$0	\$202,000
Current request for authorization	\$713,000	\$0	\$713,000
Total Authorizations, including this request	\$915,000	\$0	\$915,000
Remaining budget to be authorized	\$0	\$0	\$0
Total Estimated Project Cost	\$915,000	\$0	\$915,000

<b><i>Project Cost Breakdown</i></b>	<b>This Request</b>	<b>Total Project</b>
Construction	\$625,000	\$625,000
Construction Management	\$32,000	\$50,000
Design	\$0,000	\$95,000
Project Management	\$0	\$71,000
Permitting	\$0	\$18,000
State & Local Taxes (estimated)	\$56,000	\$56,000
Total	\$713,000	\$915,000

### ***Budget Status and Source of Funds***

This project was included in the 2014 Real Estate capital budget and related Plan of Finance under CIP #C800088 SBM Central Seawall Replacement in the amount of \$915,000. The source of funds will be existing 2007 revenue bond proceeds.

### ***Financial Analysis and Summary***

<b>CIP Category</b>	Renewal/Enhancement
<b>Project Type</b>	Renewal & Replacement
<b>Risk adjusted discount rate</b>	NA
<b>Key risk factors</b>	Delay in start of project could impact the ability to complete the work during the summer tide windows which could increase project cost.
<b>Project cost for analysis</b>	\$915,000
<b>Business Unit (BU)</b>	Harbor Services – Shilshole Bay Marina
<b>Effect on business performance</b>	There is no incremental revenue associated with this project as it is a renewal of needed infrastructure.  This project will increase depreciation by \$23K per year based on a 40 year depreciable life, currently estimated by engineering, and will reduce Net Operating Income by a corresponding amount.
<b>IRR/NPV</b>	The NPV is the present value of the project cost.

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## **STRATEGIES AND OBJECTIVES**

This project provides for the continuation of a functioning facility to Port tenants in support of business plan strategies and objectives that call for maintaining real estate assets and improving the environment, not deferring maintenance, maintaining safe facilities and meeting our customers' expectations. These strategies help to bolster the Port's Century Agenda strategies to advance the region as a leading tourism destination and business gateway, and to support enhancing the economic value of the maritime and fishing cluster.

## **ALTERNATIVES AND IMPLICATIONS CONSIDERED**

**Alternative 1)** – Do Nothing. Continue to monitor the current condition of the seawall piling and lagging and repair as failures occur. These repairs would likely be significantly more expensive approached individually, and may not be achievable based on tidal and permitting restrictions which could lead to temporary closures of the plaza public areas and potential failure of a larger section of the wall. This is not the recommended alternative.

**Alternative 2)** – Replace the existing stepped timber seawall with a steel sheet pile wall. While this option provides a long life, it is considerably more expensive and would present significant access issues for placement of the pile under cantilevered sections of the pier and tying into each end of the existing seawall. This is not the recommended alternative.

**Alternative 3)** – Encase the existing seawall under a layer of riprap and gravel. While this alternative provides a long life at lower cost, the current slope of the seawall would not allow for this installation at an acceptable slope without impacting the existing floats. The required slopes for this alternative would make the floats ground at extreme low tides without modification of the existing float layout. This is not the recommended alternative.

**Alternative 4)** – Rebuild the existing seawall using long-life materials. Remove the existing lagging and expose the existing timber piles, repair and protection of the piles and placement of steel collars over the piling. Use concrete or recycled plastic lumber lagging placed between the piles to complete the installation. This option offers a balance of cost effectiveness and long life, along with easy site accessibility. It allows the wall to maintain its existing geometry while strengthening it and extending its life. **This is the recommended alternative.**

## **ATTACHMENTS TO THIS REQUEST**

- Existing condition and aerial view site photographs.

## **PREVIOUS COMMISSION ACTIONS OR BRIEFINGS**

- July 9, 2013 – The Commission authorized design for the rehabilitation of 100' of the Shilshole Bay Marina Central Seawall for \$202,000.