

PORT OF SEATTLE
MEMORANDUM

COMMISSION AGENDA

Item No. 6c

Date of Meeting August 24, 2010

DATE: July 26, 2010

TO: Tay Yoshitani, Chief Executive Officer

FROM: Darlene Robertson, Director, Harbor Services
Kenneth Lyles, General Manager, FT/Maritime Industrial Center
Tim Leonard, Capital Project Manager

SUBJECT: Request for construction funding for the Fishermen's Terminal Northwest Dock East Fender Pile Replacement Project
CIP #C800386

Amount of This Request: \$3,170,000

Source of Funds: Tax Levy

State and Local Taxes Paid: \$253,000

Est. Workers Employed: 27

Total Project Cost: \$3,750,000

ACTION REQUESTED:

Request authorization 1) to increase the project budget in the amount of \$3,170,000 for construction and construction management for the replacement of the fender piles and fender system on the east section of the Northwest (NW) Dock at Fishermen's Terminal (FT), bringing the total authorized amount of this project to \$3,750,000; 2) for the Chief Executive Officer to advertise for construction bids and execute a contract if there are no bid irregularities; and 3) for the Chief Executive Officer to execute a contract to pre-purchase steel piles in the amount of approximately \$790,000, which is included in the \$3,170,000 request.

SYNOPSIS:

The NW Dock at FT was constructed in 1987. While the dock itself has a remaining service life of about 50 years, the fendering system along the east portion of the dock is at the end of its service life.

In 2007 Harbor Consulting Engineers performed a condition survey of the docks at Fishermen's Terminal, including Northwest Dock. It was determined that the majority of the fender system timber piles along the east portion of the NW Dock (from Finger Dock

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No. 2 eastward; see attached site figure) have structurally deteriorated due to wood decay and being subsequently crushed by vessel impacts. Consequently, the consultant's report recommended replacement of the fender piles within one to two years. This deterioration has caused a substantial risk that the fender system could fail in the near term to an extent that limits large commercial fishing vessel berthing operations in this area and may result in loss of revenue from these vessels.

Along with the fender piles, much of the above-water fender system needs to be replaced. The fender system is part of the mooring system and protects the dock from the larger commercial fishing vessels that are typically berthed along this portion of the dock. The project involves replacement of existing timber fender piles and associated fender system components along approximately 1,380 linear feet of dock frontage.

The project's design utilizes approximately 152 new steel piles. During the engineering and design work that was previously authorized by the Commission, it was determined that much of the existing above-water fender system components (timber chocks and walers) could be reused, that is, removed and re-installed along with the new piles. Some new components will be required. This design approach will reduce the total project cost compared to using all new above-water components. The steel piles will have a 50-year service life, which will be consistent with the expected 50-year remaining service life of the dock itself. The above-water timber components are expected to require periodic repair or replacement during the next 50 years, which has been factored into the project life-cycle cost analysis.

Steel piles will need to be pre-purchased by the Port for the contractor, due to the long lead time for acquisition and delivery, in order to meet the construction schedule requirements and complete the in-water work portion of the construction by April 15, 2011. The cost of approximately \$790,000 to pre-purchase the piles is included in the funding request.

This project will be funded from the \$4,000,000 currently budgeted in the 2010 Plan of Finance under CIP C800386.

PROJECT JUSTIFICATION:

The proposed project involves replacement of the existing timber fender pile system along the section of NW Dock east of Finger Dock No. 2. The fender pile system has structurally deteriorated since it was originally constructed, and the majority of it has exceeded its service life. The dock itself is in good structural condition with an estimated remaining service life of 50 years.

It is anticipated there will continue to be an operational need for the NW Dock in its current configuration over the next 50 years based on the trend within the commercial fishing industry and the stability of the larger fleet that the NW Dock accommodates.

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Given this trend and the structural life left on the dock, the overall project planning horizon is 50 years. Replacing the fender system will significantly extend the service life of the asset by protecting the dock during vessel berthing operations. The new fender system will ensure that lineal moorage can continue to be provided to the North Pacific commercial fishing fleet.

The NW Dock, which was constructed in 1987, is currently listed within the Port's financial system as a single asset including all of its components (i.e. structural, surface deck, fender system, lighting, and utilities). Although the fender pile system along the main dock section consists entirely of timber piles originally installed at the same time, it has experienced a different rate of deterioration between its west and east sections. As a result, as documented in a 2007 pile survey performed by Harbor Consulting Engineers, approximately 70% of the 149 existing timber fender piles located along the main dock east of Finger Dock No. 2 were determined to be in need of replacement as opposed to approximately 5% of the 303 piles located west of and along Finger Dock No. 2. Additionally, the other fender system components (such as the timber chocks) along the east dock section have experienced a proportionately greater amount of damage than those along the west dock section. The lower service life of the fender pile system on the east section compared to the west section is attributable to berthing of large commercial fishing vessels with high impact loads, higher rate of vessel traffic, and more loading and unloading operations.

The proposed project is one element of overall asset management and renewal and replacement of critical infrastructure at the Terminal with the objective of providing effective operational facilities to tenants with low life-cycle costs to the Port. Future renewal and replacement work which is part of the asset management plan for the Terminal includes the South Wall Reconstruction Phase 4 project in 2011 (to date 3 phases have been completed), the C-15 Building HVAC upgrade project in 2012, and the planned complete replacement of the fender system on the west section of the NW Dock with steel piling in approximately 10 to 15 years per Harbor Consulting Engineers' 2007 pile condition survey.

PROJECT STATEMENT AND OBJECTIVES:

Project Statement:

Install a new fender system, including new steel piles, along approximately 1,380 linear feet of dock frontage at the east section of NW Dock at FT, with project completion by the end of June 2011.

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Project Objectives:

- Provide a new dock fendering system that meets the operational needs of the vessel tenants and that protects the structural condition of NW Dock itself during its remaining projected service life of 50 years.
- Provide environmental water quality benefits by removing the approximately 149 predominantly creosote-treated existing timber fender piles at the project site.

PROJECT SCOPE OF WORK AND SCHEDULE:

Scope of Work:

The project involves the replacement of the fender system along approximately 1,380 linear feet of dock frontage at the east section of NW Dock at FT, including replacement of approximately 149 existing timber piles with approximately 152 steel piles, and replacement or re-installation of the above-water components (chocks and walers).

Schedule:

	<u>Start</u>	<u>Finish</u>
Design	June 2010	August 2010
Permit Acquisition	March 2010	August 2010
Contractor Acquisition	September 2010	December 2010
Construction	January 2011	June 2011

FINANCIAL IMPLICATIONS:

Budget/Authorization Summary

Original Budget	\$0
Previous Authorizations (including prior RE Managing Director authorization of \$30,000)	\$580,000
Current request for authorization	\$3,170,000
Total Authorizations, including this request	\$3,750,000
Remaining budget to be authorized	\$0
Total Estimated Project Cost	\$3,750,000

Project Cost Breakdown

Construction	\$2,663,000
Construction Management & Other Soft Costs	\$834,000
State & Local Taxes (estimated)	\$253,000
Total	\$3,750,000

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Source of Funds

This project is included in the 2010 Plan of Finance as a committed project under CIP # C800386, FT NW Dock East Fender System Replacement, in the amount of \$4,000,000. Since this is a Real Estate Division project, the source of funds will be the tax levy.

Financial Analysis Summary:

CIP Category	Renewal/Enhancement																																		
Project Type	Renewal & Replacement																																		
Risk adjusted Discount rate	7.5%																																		
Key risk factors	<ul style="list-style-type: none"> Key risk factors include potential cost overruns due to project complexity/timeframe. The financial analysis includes estimated revenues <u>preserved</u> from operations of the East end of the NW Dock over the next 50 years. Financial performance will be lower, if usage demand or market rates are lower than anticipated in the analysis. The financial analysis assumes the new fendering system will have a service life of at least 50 years. If the actual service life is shorter than 50 years, the financial performance will be lower. 																																		
Project cost for analysis	\$3,750,000																																		
Business Unit (BU)	Fishermen's Terminal, Harbor Services Group																																		
Effect on business performance	<p>This is a renewal and replacement project and, accordingly, preserves Net Operating Income, (NOI) rather than creating new NOI. The estimated Net Operating Income (NOI) and NOI after Depreciation for Years 1 through 5 are shown below.</p> <table border="1"> <thead> <tr> <th>NOI (\$000's)</th> <th>2012</th> <th>2013</th> <th>2014</th> <th>2015</th> <th>2016</th> </tr> </thead> <tbody> <tr> <td>NOI</td> <td>\$106</td> <td>\$107</td> <td>\$108</td> <td>\$109</td> <td>\$110</td> </tr> <tr> <td>Depr. Fender Piles</td> <td>(\$75)</td> <td>(\$75)</td> <td>(\$75)</td> <td>(\$75)</td> <td>(\$75)</td> </tr> <tr> <td>Depr. Current Assets</td> <td>(\$42)</td> <td>(\$42)</td> <td>(\$42)</td> <td>(\$42)</td> <td>(\$42)</td> </tr> <tr> <td>NOI After Depreciation</td> <td>(\$11)</td> <td>(\$10)</td> <td>(\$9)</td> <td>(\$8)</td> <td>(\$7)</td> </tr> </tbody> </table>					NOI (\$000's)	2012	2013	2014	2015	2016	NOI	\$106	\$107	\$108	\$109	\$110	Depr. Fender Piles	(\$75)	(\$75)	(\$75)	(\$75)	(\$75)	Depr. Current Assets	(\$42)	(\$42)	(\$42)	(\$42)	(\$42)	NOI After Depreciation	(\$11)	(\$10)	(\$9)	(\$8)	(\$7)
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IRR/NPV	<p>No incremental revenue is forecasted as a result of this project. The results presented below are based on preserving existing revenue and NOI from the dock.</p> <table border="1"> <thead> <tr> <th>NPV</th> <th>IRR</th> <th>Payback</th> </tr> <tr> <th>\$000's</th> <th></th> <th>(in Years)</th> </tr> </thead> <tbody> <tr> <td>(\$2,035)</td> <td>2.31%</td> <td>32</td> </tr> </tbody> </table>					NPV	IRR	Payback	\$000's		(in Years)	(\$2,035)	2.31%	32																					
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ECONOMIC IMPACTS AND BUSINESS PLAN OBJECTIVES:

The NW Dock is a critical piece of infrastructure at FT. Replacement of the dock protective system as described will allow continued long-term operation of the dock at a level of service that meets the needs of large commercial fishing vessels. The proposed work is part of the overall asset management and renewal and replacement program at Fishermen's Terminal, as well as our strategy of continuing to provide moorage to the North Pacific Fishing Fleet that contributes to the economic vitality of the region.

STRATEGIC OBJECTIVES:

This project supports the Port's strategies to "Ensure Airport and Seaport Vitality" and "Exhibit Environmental Stewardship through our Actions" by:

- Investing in, and renewal of, Port assets;
- Maintaining the long-term revenue generating capability of the NW Dock;
- Providing protection to the dock during fishing vessel berthing operations and significantly extending the service life of the asset;
- Improving water quality by removing creosote treated timber piles from the marine environment.

Meet Environmental Obligations

In addition to removing predominantly creosote treated timber piles from the marine environment, the project will:

- Acquire all necessary and required permits from appropriate agencies prior to start of construction; and
- Comply with all conditions stipulated by permit authorizations.

Develop and Maintain Community Support

This project will develop and maintain community support by showing the Port's commitment to long-term asset renewal and replacement of the infrastructure at FT, and its continued support for the commercial fishing industry and its positive economic impacts to the region.

In addition, the permit process requires notification of neighboring communities, agencies of interest and appropriate environmental groups. Comment from these groups is expected and welcome.

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ENVIRONMENTAL SUSTAINABILITY AND COMMUNITY BENEFITS:

Replacement of the existing timber fender system with a steel pile system will follow Policy EX-15, Sustainable Asset Management. Factors such as life-cycle costs, structural performance, maintenance frequency, constructability, construction impacts on tenants, and environmental objectives, and overall business objectives were considered.

What plans have been made to reduce maintenance costs? If not, why?

This project replaces the existing fender system that is an essential part of the protective system on the NW Dock. The project will reduce maintenance and repair costs by preventing damage from large fishing vessels impacting the dock structure.

What is the design life span of this project?

Steel piles are commonly designed for a 30-year life span. However, for this project it is proposed to increase the pile wall thickness to provide a 50-year service life against corrosion in order to match the 50-year remaining service life left on the main dock structure. The difference in wall thickness is expected to have only a small impact on the total project budget.

What plans have been made to reduce chemical and pollutant source control (low volatile organic compounds) in the construction of this project to improve air quality? If not, why?

This project will remove 149 existing predominantly creosote-treated timber piles and replace them with steel piles.

TRIPLE BOTTOM LINE:

The project supports the Port's Triple Bottom Line:

- Economic Development – The project will provide a long-term enhancement to a revenue-generating Port asset that supports the North Pacific commercial fishing fleet.
- Environmental Sustainability – Water quality benefits will be provided by removing creosote-treated timber piles that will be replaced with steel piles. The existing above-water timber components will be re-used as much as practicable.
- Social Equity – Project construction will be scheduled, phased, and coordinated to minimize impacts on vessels' use of the dock, thus minimizing associated financial impacts on customers and to the Port.

ALTERNATIVES CONSIDERED AND THEIR IMPLICATIONS:

Alternative 1 – Authorize budget for construction and construction management for the replacement of the fender piles and fender system on the east section of the NW Dock at Fishermen's Terminal, and authorize the Chief Executive Officer to

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advertise for construction bids and to pre-purchase piles. This is the recommended alternative.

Alternative 2 – Do nothing. Doing nothing at this time would mean the project would not be advertised for bid or subsequently awarded and constructed. This would result in continuing deterioration of the existing fender system resulting in a level of service not suitable for vessels, and a condition that makes the dock itself more susceptible to damage from docking operations. This alternative is not recommended.

PREVIOUS COMMISSION ACTIONS OR BRIEFINGS:

On March 23, 2010, the Commission authorized the Chief Executive Officer to proceed with engineering analysis and design, preparation of construction plans and specifications, permit acquisition, and project management, and authorized \$550,000 for these project work tasks.