

PORT OF SEATTLE
MEMORANDUM

COMMISSION AGENDA – ACTION ITEM

Item No.	9a
Date of Meeting	January 13, 2009

DATE: December 12, 2008

TO: Tay Yoshitani, Chief Executive Officer

FROM: Darlene Robertson, Director, Harbor Services, Real Estate Division
Tim Leonard, Capital Project Manager, Capital Development Division

SUBJECT: Authorization for permitting, design, and project management of replacement of steel sheet pile bulkhead between the West and Central Piers at the Maritime Industrial Center

ACTION REQUESTED

Authorization for permitting, design, and project management to be performed for the replacement of the existing steel sheet pile bulkhead between the West and Central Piers at the Maritime Industrial Center (MIC) in the amount of \$360,000.

SYNOPSIS

The Real Estate Division requests approval for permitting and design funding in the amount of \$360,000 for the replacement of the existing steel sheet pile bulkhead between the West and Central Piers at the Maritime Industrial Center. The existing bulkhead section has exceeded its service life and is at risk of structural failure. The requested design and permitting costs will be paid out of the \$1,500,000 budgeted in the 2009 Draft Plan of Finance for this project under CIP C800175. The total cost of the project has currently been estimated to be a maximum of \$2,315,000 and is dependent on potential construction requirements to be determined in conjunction with the permitting and design. Commission authorization for construction funding will be sought upon completion of the engineering design and final construction estimate.

BACKGROUND

Since purchasing the Maritime Industrial Center (MIC) from the United States Coast Guard in 1992, the Port of Seattle has operated it as a commercial marine facility serving numerous tenants. In addition to its upland interior office/workshop/storage spaces and secured parking and work yard areas, the MIC currently contains 1,518 linear feet of dock space for marine loading and repair work and provides moorage for vessels up to 250 feet in length.

In February 2007, severe corrosion was detected along the waterline at the oldest steel sheet pile section of the bulkhead - installed in the 1930s and consisting of approximately 280 lineal feet in length between the West and Central Piers - during a dock pile condition survey being performed by Harbor Consulting Engineers. Upon further inspection by Port personnel, it was discovered that the corrosion has resulted in perforation of the sheet piling and significant loss of fill

COMMISSION AGENDA

Tay Yoshitani, Chief Executive Officer

December 12, 2008

Page 2 of 5

material under limited portions of the pavement immediately behind the bulkhead. Due to a potential structural safety concern, a decision was made by the Port to prevent any further parking of vehicles along this length of the bulkhead until the concern is resolved. Consequently, ecology block barriers were installed in this area and vessel loading/unloading directly to or from vehicles has since been unavailable along this section of the bulkhead. In addition to the aforementioned surface water inspections, an underwater investigation of the steel pile was performed by Echelon Engineering, Inc. in August 2007. The finding of this investigation was that this steel pile bulkhead section is in poor overall condition due to significant corrosion, and consequently, is in need of replacement.

PROJECT DESCRIPTION AND JUSTIFICATION

Project Description:

Replacement of approximately 280 lineal feet of steel sheet pile comprising the bulkhead between the West and Central Piers at the MIC. Removal and replacement of adjacent concrete pavement as needed to correct loss of subgrade fill material.

Project Justification:

This is a safety issue. The improvement is needed as the existing sheet pile bulkhead section is in poor condition due to corrosion and resultant perforations in the steel which have in turn led to fill material being lost from under the pavement immediately behind the bulkhead. Consequently, this bulkhead section and the affected adjacent pavement area are at risk of structural failure. Vehicle parking along this section of the bulkhead is currently closed off pending resolution of the structural failure risk.

PROJECT SCOPE OF WORK AND SCHEDULE

Project Scope:

The project scope will include the installation of new steel sheet piling and concrete pavement along with the excavation, removal, and replacement of fill material as necessary. Other improvements may include replacement of bullrails, cleats, and utilities as needed in the area of excavation.

Project Schedule:

Design and permitting to be completed by fall 2009. In-water construction to be completed by April 15, 2010 - the end of the freshwater fish window. All construction is anticipated to be completed by summer 2010.

STRATEGIC OBJECTIVES

COMMISSION AGENDA

Tay Yoshitani, Chief Executive Officer

December 12, 2008

Page 3 of 5

This work, if authorized, is aligned with the Industrial Moorage Initiative as it is intended to preserve and expand berth facilities to provide for a vibrant seaport that adequately serves the requirements of all essential sectors of the maritime community.

Best management practices will be deployed in selection of materials, work practices and ongoing total cost of ownership.

BUSINESS PLAN OBJECTIVES

This project is aligned with the business plan objectives to maintain safe facilities and assets and provide customers with compelling value. It is a renewal and replacement project to rebuild the infrastructure (seawall) which is needed to continue to provide moorage & loading/unloading capacity to commercial fishing vessels, commercial workboats and vessel repair businesses at the MIC.

FINANCIAL ANALYSIS

Previous Authorizations (Planning CIP)	\$50,000
Current request for authorization	\$360,000
Total Authorizations, including this request	\$410,000
Remaining estimated budget to be authorized	\$1,905,000

Estimated Project Cost Breakdown

Permitting, Design, and Project Management	\$410,000
Construction	\$1,905,000
Total Estimated Project Cost	\$2,315,000

Source of Funds:

The MIC Seawall Replacement project was included in the 2009 Draft Plan of Finance as a committed project in the amount of \$1,500,000 under CIP C800175. This budget amount was based on the construction estimate prepared by Port Engineering as part of the asset condition study completed for the MIC in 2007. A more detailed construction estimate recently completed by Port Engineering has identified potential additional scope elements - including the replacement of an additional bulkhead section under the Central Pier, the removal and replacement of additional pavement adjacent to the bulkhead, and the excavation and disposal of contaminated soils. The additional funding estimated to be potentially required in the amount of \$815,000 will be made available through the delay or deferral of other projects included in the 2009 Draft Plan of Finance. The project will be funded from the tax levy. The estimated total project cost may be revised once the project design has been completed.

Financial Analysis Summary

COMMISSION AGENDA

Tay Yoshitani, Chief Executive Officer

December 12, 2008

Page 4 of 5

CIP Category	Renewal/Enhancement						
Project Type	Renewal and Replacement						
Risk adjusted Discount rate	7.50%						
Key risk factors	<p>Permitting delays could result in a delayed construction schedule The timing of in-water work is limited to the period allowed by the fisheries services to limit impact to endangered species - currently October 1 through April 15.</p> <p>Construction costs may increase if required work is more extensive than currently known.</p>						
Project cost for analysis	\$2,315,000 (preliminary estimate)						
Business Unit (BU)	Harbor Services Group, Fishing and Commercial Vessels						
Effect on business performance	<p>This is a renewal and replacement project and, accordingly, this project preserves Net Operating Income (NOI) rather than creates new NOI.</p> <p>Net Operating Income generated by the waterside operations of the Maritime Industrial Center is currently about \$70,000 per year excluding major maintenance expenses.</p> <p>As a result of this project, depreciation expense will increase annually by \$49,400 resulting in a corresponding reduction in Net Operating Income After Depreciation.</p>						
IRR/NPV	<p>Preliminary financial analysis - based on preserving Net Operating Income (proxy for cashflow):</p> <table border="1"><thead><tr><th>NPV (in \$000's)</th><th>IRR</th><th>Payback (in years)</th></tr></thead><tbody><tr><td>(\$962)</td><td>4.3%</td><td>24</td></tr></tbody></table>	NPV (in \$000's)	IRR	Payback (in years)	(\$962)	4.3%	24
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SUSTAINABILITY AND LIFE CYCLE COSTS:

This request is for authorization to design and permit, in preparation for authorization(s) to advertise for construction bids and subsequently award for construction. As such, total costs and life-cycle costs will be determined upon completion of the final improvement design.

Sustainability issues will also be considered further as part of the design process. The existing bulkhead section to be replaced is at the end of its service life.

ALTERNATIVES CONSIDERED AND THEIR IMPLICATIONS:

COMMISSION AGENDA

Tay Yoshitani, Chief Executive Officer

December 12, 2008

Page 5 of 5

Alternative 1: Do nothing. Without remediation, the existing steel sheet pile bulkhead section and adjacent pavement subgrade will continue to deteriorate and the likelihood of structural failure of both will continue to increase. Vehicle parking along the bulkhead will need to continue to be prohibited, thus reducing the use and efficiency of the facility. For these reasons, Alternative 1 is not recommended.

Alternative 2: Repair, not replace, the existing sheet pile and adjacent pavement subgrade. Due to the overall age of the existing steel sheet piling and the degree of the corrosion that it has experienced, this option is considered to be an inefficient and short-term, at best, solution to alleviating the risk of structural failure in the bulkhead. For this reason, Alternative 2 is not recommended.

Alternative 3: Replace the existing steel sheet pile bulkhead and affected adjacent pavement in kind. Reopen the pavement area along the bulkhead to vehicle parking and vessel loading/unloading operations. Staff is recommending this alternative as it will alleviate the existing structural safety concern, correct the current degrading condition, and restore this asset to its full beneficial use.

PREVIOUS COMMISSION ACTIONS OR BRIEFINGS:

None