PORT OF SEATTLE
MEMORANDUM

COMMISSION AGENDA **Item No.** 6b

Date of Meeting August 3, 2010

DATE: July 7, 2010

TO: Tay Yoshitani, Chief Executive Officer

FROM: Mike McLaughlin, Director, Cruise and Industrial Properties
Marie Fritz, Cruise Services Manager
Mark Longridge, Capital Project Manager

SUBJECT: Fender System Improvements at Terminal 91
CIP# C-800183

Amount of This Request: $2,125,000 **Source of Funds:** General Fund

State and Local Taxes Paid: $130,000 **Est. Workers Employed:** 6

Total Project Cost: $5,700,000

ACTION REQUESTED:

Request Port Commission authorization for the Chief Executive Officer to: 1) Funding for design, project management and permitting of the upgraded fender system on Pier 91 at Terminal 91 in the amount of $625,000; 2) Construction of initial work to address current operational concerns at the end of this cruise season for up to $500,000; and 3) Pre-purchase of materials for initial construction and purchase of camel barges to be used starting with the 2011 cruise season at a cost not to exceed $1,000,000. The total amount of this request is $2,125,000, and the total estimated project cost is $5,700,000.

SYNOPSIS:

The business activity generated at Terminal 91 from the fishing and cruise industries is a significant source of maritime employment and state and local tax revenue. However, replacement of the current fender system at Pier 91 (P91) is necessary to continue operations in this area. This replacement/upgrade will allow the Port to meet obligations of current lease agreements, long term preferential berthing agreement with cruise lines, arrange annual preferential berthing agreements and increase utilization of this multi-use facility. It will also improve water quality by removing ACZA-treated timber piles from the marine environment and replacing them with non-reactive steel piles.

The current fender systems at P91 are a mix of steel and wood timber designs. Although this pier has served a variety of large commercial vessels for many years, the fender pile system on the outer face which protects the concrete dock structure was not originally designed for docking cruise ships. The current fender design on P91 is very similar to the fender system which formerly served cruise vessels at Terminal 30 (T-30). To complete the fender system set-up during cruise operations, floating steel breasting barges are positioned between the cruise ship and fender piles. These are necessary to hold the cruise ship off the dock, a safe workable distance, to allow access into the lower ship holds throughout tide cycles for luggage handling and ship provisioning.

During the five years of cruise terminal operations at T-30, several wooden timber piles were broken as a result of cruise vessel docking. Consistent with the performance of the T-30 timber fender pile, the east cruise berth at P91 which also has timber fenders has experienced several broken piles since opening the new facility in 2009. The timber fender piles on the east berth of P91 and the steel breasting barges which were relocated from T-30 are reaching the end of their usable life and need to be upgraded. The existing steel fender piles on the west berth of P91 appear to be working fine for cruise operations and are showing no signs of failure.

The Capital Development Division requests approval to design and permit a new fender system to replace the failing systems on Pier 91 which will be designed to serve all cruise, fishing and industrial vessel moorage into the future; and also to address immediate operational concerns for continued cruise vessel docking on the east berth in the first phase of construction to be complete before the 2010 cruise season.

ADDITIONAL BACKGROUND:

The former cruise berths located at the T-30 Cruise Facility were moved to Terminal 91 as part of the Terminal 30 Cargo Reactivation and Cruise Relocation to Pier 91 project. The new Smith Cove Cruise Terminal at Terminal 91 was opened in April 2009.

Engineering analysis done prior to opening the new cruise terminal indicated that the Port would need to upgrade the existing fender system serving the cruise berth at some point in the future. Prior to constructing the new cruise facility on P91, it was determined that the current fender systems would be adequate for opening the facility and berthing the cruise vessels scheduled for the new terminal in 2009 with the understanding that the Port would closely monitor the performance of fender piles on P91 and the used breasting barges throughout the initial cruise season.

Several failures of the timber piles occurred on the east berth last year causing the need for a critical work authorization in August 2009 to replace specific areas of fender piling. Continued close monitoring of the fender system this year has identified additional failure of the timber fender pile in other areas of the east berth.

PROJECT DESCRIPTION AND JUSTIFICATION:

Design, Project Management and Permitting

The current fender system at Pier 91 consists of steel and timber fender piles consistently spaced around the entire finger pier.

The current timber system on the east side of the pier was built in 1997, and although suited for large commercial vessels, the system was not designed for use by cruise vessels.

The current steel system on the west side of the pier was built in 2005, and while it was not explicitly designed for cruise vessels, it is not expected to need full replacement as part of this project. The design will include a full evaluation of the current system and any modifications required.

The east and west berths currently service fishing and industrial customers, and cruise vessels from April to October of each year. During cruise season, floating steel camel barges are secured to the pier which holds the cruise vessel a distance away from the dock necessary to provide space between the dock and the ship for loading and unloading luggage and ship provisioning.

Phase 1 Construction

While the existing steel fender system on the west side has been performing well; there have been a significant number of timber piles on the east that have broken. In August 2009, Port crews installed 16 temporary steel piles to supplement the existing system on the east berth necessary to complete the cruise season. While these temporary steel piles have been performing well, there have been additional timber piles that have broken this season.

To address this immediate concern, staff propose installing the first 10-20 steel piles to address these weakened areas in advance of the full replacement of the east side timber system. This would be accomplished using a small works contract to remove and drive the piles, and Port crews to tie the new piles into the existing structure similar to the method used for the previous critical work. However, these piles would be incorporated into the permanent fender system. In order to avoid continued breakdown of the system and to prevent interruption of the cruise operations, these upgrades are necessary.

Addressing the issue this way allows for a timely solution to the immediate concern, while allowing the full design and permitting to continue at the same time.

Pre-purchase of phase 1 materials and replacement camel barges

To support the initial phase of work the long lead items such as steel piles and HDPE facing will need to be pre-purchased. Also the project includes the replacement of the existing steel camel barges with upgraded camel barges. As these offer superior performance to the current barges and could be used with the existing systems, staff is requesting authorization to purchase the new camel barges to be placed in service starting with the 2011 cruise season.

PROJECT STATEMENT AND OBJECTIVES:

Project Statement:

Upgrade the existing fender systems at Pier 91 to provide a continuous steel fender system with adequate capacity to service industrial, fishing and cruise customers.

Project Objectives:

Adequately protect the pier structure during all types of vessel berthing and provide safe and secure moorage for all vessel operations.

PROJECT SCOPE OF WORK AND SCHEDULE:

Overall project scope would include fender upgrade of each 1,200 foot cruise berth including the replacement of the old and deteriorated fender pile system with a new steel fender system, replacement of the camel barge equipment, and evaluation of the existing steel fender system to ensure capacity for all users of the facility.

Design and permitting scope under this authorization is to include preparation of plans, specifications and estimates for completing this work, submission of all applicable permit applications required for in-water work to construct the new facilities, separate permit for construction of the first phase of work, and pre-purchase of long lead items and replacement camel barges. Staff will return to Commission to request approval to advertise remaining Phase 2 work once design is complete.

Tentative Project Schedule:

Initial design complete	August 2010
Permits submitted	September 2010
Phase 1 construction complete, replacement barges deployed	March 2011
100% design complete, Commission request to advertise	April 2011
Major works construction advertisement	May 2011
In-water construction begins	October 2011
Construction Complete	April 2012

FINANCIAL IMPLICATIONS:

Budget/Authorization Summary

Original Budget	$0
Previous Authorizations	$75,000
Current request for authorization	$2,050,000
Total Authorizations, including this request	$2,125,000
Remaining budget to be authorized (pending final design)	$3,575,000
Total Estimated Project Cost	$5,700,000

Project Estimate Breakdown

Design	$365,000
Permitting	$75,000
Contract Preparation	$75,000
Project Management	$110,000
Phase 1 Construction	$455,000
Material Pre-Purchases	$915,000
State & Local Taxes	$130,000
Total Authorization, including this request	**$2,125,000**
Phase 2 Construction (estimated)	$3,450,000
Construction Management	$125,000
Grand Total	**$5,700,000**

Source of Funds

This project was included in the 2010 Plan of Finance under Committed CIP# C800183, P91 Fender System Upgrade, in the amount of $5,500,000. The additional $200,000 which may be required to fund the balance of this project is available due to timing delays on other 2010 Plan of Finance Committed projects, such as the Terminal 18 Pile Cap Improvements project.

The project will be funded from the General Fund.

Financial Analysis Summary:

CIP Category	Renewal/Enhancement
Project Type	Renewal & Replacement
Risk adjusted Discount rate	7.0%

Key risk factors	• Key risk factors include permitting delays and potential cost overruns due to project complexity/timeframe. • Project schedule could be delayed due to project complexity, permitting delays, in-water work constraints, and the need to minimize disruptions to terminal operations and existing tenant/customers. This risk is partially mitigated by a phased construction approach. • Procurement of steel piles and other construction materials are long lead items. Delays in material delivery may adversely impact planned construction timing.
Project cost for analysis	$5,700,000 (preliminary cost estimate)
Business Unit (BU)	Cruise Operations
Effect on business performance	• Fender system replacement will preserve existing revenue from Terminal 91 cruise operations. • At completion, incremental depreciation expense from the steel fender system replacement project is estimated at $285,000/year, based on a 20 year asset life.
IRR/NPV	No incremental revenue. NPV is present value of project cost. **NPV** (in $000's) **($5,203)**

ECONOMIC IMPACTS AND BUSINESS PLAN OBJECTIVES:

Replacement of this essential protective system will allow continued operation of industrial, fishing and cruise industry activity in this area. This replacement will allow the Port to meet obligations of current lease agreements, long term preferential berthing agreement with cruise lines, arrange annual preferential berthing agreements with fish trawler fleet and achieve our objective to increase utilization of this multi-use facility.

Based on business activity data collected in 2007 and 2008 at Terminal 91, Fisherman's Terminal and the Maritime Industrial Center, it was estimated that commercial fishing activity generated $814,400,000 in business revenue; 5,607 direct jobs; 8,028 induced jobs; 1,337 indirect jobs; and $167,600,000 in state and local taxes.

In 2010 the cruise industry will bring an estimated $425,000,000 in annual business revenue; 4,447 jobs and $18,900,000 in state and local taxes to our region.

STRATEGIC OBJECTIVES

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

- Replacing the fender system at the subject Terminal so that the Terminal can continue servicing cruise, fishing and industrial customers.
- Improving water quality by removing ACZA treated timber piles from the marine environment.
- Replacement of the fender system in this area is a renewal and replacement project for the Seaport. It will help protect revenue the Port currently receives and meet its lease and contractual obligations.

Meet Environmental Obligations

The project will meet environmental obligations by removing treated timber fenders. In addition the project will:

- Acquire all necessary and required permits from appropriate agencies prior to start of construction;
- Comply with all conditions stipulated by permit authorizations;
- Use best management practices to reduce water quality impacts during construction, and;
- Use vibratory pile driving techniques to reduce noise impacts to endanger species.

Develop and Maintain Community Support

This project will develop and maintain industry support by retaining longstanding tenant/customers in our harbor, with their related employment and the necessary purchase of goods and services to service, maintain, repair and upgrade the vessels while at port. In addition, the permit process requires notification of neighboring communities, agencies of interest and appropriate environmental groups. Comment is expected and welcome.

ALTERNATIVES CONSIDERED AND THEIR IMPLICATIONS:

Alternative 1: Wait for full design and permitting before starting any work. This alternative carries a high risk of further failures and loss of berthing capability. This alternative is not recommended.

Alternative 2: Install further temporary piles to address the short term risk. Piles would need to be removed prior to permanent solution. This alternative is not recommended.

Alternative 3: Install the entire system immediately. This alternative presents significant challenges in design and permitting schedule, including need to place piles outside of the accepted environmental permit window, which may not be approved by permitting agencies. This alternative is not recommended.

Alternative 4: Proceed with an initial phase of construction, complete the full design and apply for permits. This provides protection for the short term, and allows this fix to be incorporated in the final system. This is the recommended alternative.

PREVIOUS COMMISSION ACTIONS OR BRIEFINGS:

- Ratification of critical work memorandum Aug 11, 2009
- West berth steel fender replacement Berth H, I & J July 26, 2005