



**COMMISSION
AGENDA MEMORANDUM**

Item No. 4d

ACTION ITEM

Date of Meeting October 10, 2017

DATE: August 18, 2017

TO: Dave Soike, Interim Executive Director

FROM: Kenneth R. Lyles, Director, Fishing & Commercial Operations
Curtis Stahlecker, Capital Project Manager, Seaport Project Management

SUBJECT: Fishermen’s Terminal Docks 3, 4, and 5 Fixed Pier Improvements (CIP #C800531)

Amount of this request: \$720,000

Total estimated project cost: \$6,400,000

ACTION REQUESTED

Request Commission authorization for the Executive Director to: (1) complete design and prepare construction documents for the Fishermen’s Terminal Docks 3, 4, and 5 Fixed Pier Improvements; and (2) prepare and apply for permits for an amount not to exceed \$720,000 out of a total estimated project cost of \$6,400,000.

EXECUTIVE SUMMARY

Fishermen’s Terminal is the home of the North Pacific fishing fleet. This project maintains the region’s vital connection to the fleet by strengthening and preventing future corrosion of the structural steel piling supporting Fishermen’s Terminal Docks 3 and 4 and provides corrosion protection for the structural pile at Dock 5. The timber fender system surrounding the dock will be investigated and a replacement strategy will be developed based on the findings. Implementation of the fender system strategy is intended for a subsequent project.

JUSTIFICATION

The structural steel piles supporting Docks 3 and 4 were installed in the early 1980s. The structural pile consists of a thin steel jacket filled with unreinforced concrete. The pile system provided reliable service over the past 35 years, but corrosion is starting to manifest in the splash zones and near the mud line on the piles, compromising the integrity of the system and requiring both strengthening and the prevention of future corrosion. The timber fender system on Docks 3 and 4 is functioning, but there are signs of distress warranting additional investigation and planning for replacement as required.

The structural piles on Dock 5 were installed in 2005 and are beginning to show mild corrosion. Preservation measures are recommended.

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DETAILS

The structural piling on Docks 3 and 4 has moderate-to-major corrosion on the majority of its piling. This corrosion has resulted in material loss ranging from 12 to 36 percent of the steel pile that is needed for the structural integrity of the pile. Dock 5 is showing corrosion at the water line with a material loss ranging from 3 to 4 percent.

The material loss on Docks 3 and 4 piling will require structural strengthening. The structural pile at Docks 3 and 4 will be repaired by installing a fiber reinforced polymer (FRP) jacket. The benefits of this system include minimum disruption to the terminal operations and maintaining economic vitality of the terminal as the FRP system is installed over the existing piles. The piles will be accessed by divers who will attach the FRP system in sections. This system is far less disruptive and more cost effective than a conventional pile replacement operation, which would generate a significant amount of construction demolition waste and emissions.

Since pile strengthening is not required at Dock 5, only pile preservation methods are needed. The preservation method to be utilized consists of wrapping the pile with a protective barrier to isolate the steel from the element causing the corrosion and the installation of a passive cathodic protection system. Cathodic protection is an electrochemical means of corrosion control. The amount of corrosion that has occurred on the Dock 5 structural piling is not significant enough to demand immediate attention. However, by combining the preservation work with Docks 3 and 4 pile strengthening work, it is anticipated that economies of scale and reduced mobilization costs will be realized by performing the work now as opposed to performing the work as a stand-alone project in the future.

Scope of Work

The scope would include strengthening and preventing future corrosion of the structural steel piling supporting Docks 3 and 4 and providing corrosion protection for the structural pile at Dock 5 as well as investigating the fender pile system. The work would include the following:

- (1) Installing FRP jackets on the 234 structural piles at Docks 3 and 4 for the full length to two feet below the mud line.
- (2) Install 60 pile wraps in the splash zone and cathodic protection at Dock 5.
- (3) Timber fender system investigation recommendation.

Small Business

Based upon the work elements within the scope of work, project staff have partnered with the small business group to conduct outreach and will inform those small and historically underutilized businesses of Fishermen's Terminal dock project opportunities.

Schedule

Design effort will initiate in the fourth quarter of 2017 with construction anticipated to occur during the 2018/2019 fish window, the period during which the in-water work may be conducted without disrupting native fish populations.

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Commission design authorization	Q4 2017
Design start	Q4 2017
Commission construction authorization	Q2 2018
Construction start	Q4 2018
In-use date	Q1 2019

Cost Breakdown	This Request	Total Project
Design	\$720,000	\$880,000
Construction	\$0	\$5,520,000
Total	\$720,000	\$6,400,000

ALTERNATIVES AND IMPLICATIONS CONSIDERED

Alternative 1 – Do not execute the fixed pier improvements, but instead perform annual above-water inspections and periodic below-water inspections.

Cost Implications: \$10,000 to \$45,000 monitoring cost for annual above-water inspections and periodic below-water inspections.

Pros:

- (1) Allows capital funds to be available for other projects.

Cons:

- (1) Current conditions will continue to deteriorate, in particular Docks 3 and 4.
- (2) Delayed action will increase costs due to deterioration of piles and construction cost escalation.

This is not the recommended alternative.

Alternative 2 – Strengthen the structural pile on Docks 3 and 4 and monitor condition of piles at Dock 5.

Cost Implications: \$6,000,000

Pros:

- (1) Addresses the immediate need to repair the piles that have corroded and extends the asset life.
- (2) Less capital expenditure.

Cons:

- (1) The Dock 5 preservation work would be at a higher cost in the future.
- (2) Additional mobilization and terminal operations disruption will be required.

This is not the recommended alternative.

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Alternative 3 – Strengthen the structural pile on Docks 3 and 4 and provide corrosion protection on piles at Dock 5.

Cost Implications: \$6,400,000

Pros:

- (1) Repairs and provides corrosion protection for the structural pile supporting Docks 3, 4, and 5.
- (2) Performs the work under one contract taking advantage of economies of scale, reducing mobilization costs, and terminal operation disruptions.

Cons:

- (1) Higher capital outlay.

This is the recommended alternative.

FINANCIAL IMPLICATIONS

<i>Cost Estimate/Authorization Summary</i>	Capital	Expense	Total
COST ESTIMATE			
Original estimate	\$6,400,000	\$0	\$6,400,000
AUTHORIZATION			
Previous authorizations	\$80,000	0	\$80,000
Current request for authorization	\$720,000	0	\$720,000
Total authorizations, including this request	\$800,000	0	\$800,000
Remaining amount to be authorized	\$5,600,000	\$0	\$5,600,000

Annual Budget Status and Source of Funds

The Fishermen’s Terminal Docks 3, 4, and 5 Fixed Pier Improvement project was included in the 2017 Plan of Finance under CIP #C800531 FT Dock 3 Fixed Pier Improvement and #C800532 FT Dock 4 Fixed Pier Corrosion Protection, for a total amount of \$6,500,000.

This project will be funded by the tax levy.

Financial Analysis and Summary

Project cost for analysis	\$6,400,000
Business Unit (BU)	Fishing & Commercial Operations
Effect on business performance (NOI after depreciation)	This project will maintain current revenue from Fishermen’s Terminal Docks 3, 4, and 5. Depreciation will increase by \$214,400 per year.
IRR/NPV (if relevant)	No incremental revenue. The NPV is the present value of the project cost.
CPE Impact	N/A

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Future Revenues and Expenses (Total cost of ownership)

Extending the useful service life of our existing assets defers eventual replacement costs for a longer period, supporting the economic vitality of our operations. Other economic benefits include cost effectiveness and minimum disruption to the terminal operations.

ATTACHMENTS TO THIS REQUEST

- (1) Presentation slides

PREVIOUS COMMISSION ACTIONS OR BRIEFINGS

None