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

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

**Item No.** 6e

**Date of Meeting** September 13, 2016

**DATE:** September 6, 2016

**TO:** Ted Fick, Chief Executive Officer

**FROM:** Kenneth R. Lyles, Director, Fishing & Commercial Operations
Rod Jackson, Capital Project Manager

**SUBJECT:** Fishermen's Terminal Net Sheds 3, 4, 5, and 6 Roof Replacement (CIP #C800526)

| | | | |
|---|---|---|---|
| **Amount of This Request:** | $195,000 | **Source of Funds:** | Tax Levy |
| **Est. Total Project Cost:** | $3,186,000 | | |

## ACTION REQUESTED

Request Commission authorization for the Chief Executive Officer to complete design documents for the Fishermen's Terminal Net Sheds 3, 4, 5, and 6 Roof Replacement Project including a solar panel demonstration study on one net shed for an estimated cost of $195,000, bringing the current authorization to $270,000 for an estimated total project cost of $3,186,000.

## SYNOPSIS

The Fishermen's Terminal Net Sheds 3, 4, 5, and 6 roofs are at the end of their service lives and are in need of new roofing systems. This memo requests authorization to proceed with the final design phase of the development process. This project team will also review the feasibility and installation of adding photovoltaic (PV) solar panels to one of the four net sheds as a demonstration study and add a downspout stormwater treatment system to each of the buildings including the evaluation and possibility of packaging construction work together with the T-91 Building C-173 Roof Overlay Project in a single bid package to increase small business opportunities.

The buildings are 100 percent occupied and primarily used as net shed storage spaces leased within the maritime industry. Fishermen's Terminal is the home port of the North Pacific fishing fleet and the long-term plan has assumed that net shed storage will continue to be a core function at Fishermen's Terminal. Net shed storage is one of the terminal's amenities that helps retain fishermen as tenants and is part of the infrastructure that will be required to double the economic value of the fishing and maritime sectors, as envisioned by the Century Agenda. Approval of this authorization will not affect the long-term development plan for the terminal. This project was included in the 2016 plan of finance.

## BACKGROUND

Construction of the Fishermen's Terminal net sheds Nos. 3, 4, 5, and 6 took place in 1944, 1953, and 1956. The existing four roofing systems cover approximately 50,234 square feet in total and range from approximately 58 to 70 years old. In 2012, the Port initiated condition assessments and preliminary design on these buildings. The assessment at the time determined the roof systems are at the end of their service lives.

Fishermen's Terminal, located on Salmon Bay, is a regional center for maritime activity and one of the few working terminals in the United States with public access net shed buildings.

| Net Shed Buildings | Construction Date | Approx. Sq. Footage |
|---|---|---|
| #3 | 1944 | 13,130 |
| #4 | 1944 | 10,530 |
| #5 | 1956 | 15,054 |
| #6 | 1954 | 11,520 |

## PROJECT JUSTIFICATION AND DETAILS

The proposed project would preserve important building assets and revenues associated with the leased storage space, extend the life of the building structures and minimize potential Port liability. Deferring or foregoing this work will result in continued deterioration of the roof system components. Proactive asset stewardship is the key to reducing the total cost of ownership to the Port over time. The lease agreement between the Port and the affected tenants has the maintenance and repair of the roof as an obligation of the Port. The Port is also assessing opportunities to increase small business participation in the construction contract. We will update the Commission on this analysis when we return to Commission for authority to advertise and execute a construction contract.

### *Project Objectives*

- Provide a new roofing system that will extend the useful life of Net Sheds Nos. 3, 4, 5, and 6 by 30 years.
- Complete the project safely on schedule and on budget.
- Minimize impacts on the environment.
- Minimize disruptions to Port tenants, operations, and the facility.
- Include environmentally sustainable components and construction methods as appropriate.
- Preserve future revenues from the building.
- Evaluate the possibility of combining construction with other nearby roofing projects to save project costs and increase small business opportunities.

### *Scope of Work*

The scope of work for the Fishermen's Terminal Net Sheds 3, 4, 5, and 6 roof replacements includes the evaluation and design for the following:

- New energy-efficient roofing systems.
- Bird deterrent systems.
- Installation of security access ladders.
- Fall protection and attachments.
- Determine the feasibility of a bio-filtration and stormwater treatment (Rain barrels) system for rooftop runoff.
- Install a crystalline solar panel (Photovoltaic production) system at one of the net sheds to serve as a demonstration project that will provide 100 percent of the current electrical usage for that specific net shed.
- Use environmentally sustainable components and methods as appropriate.

***Schedule***

The design and permitting phase is expected to be completed by December 2016 with the construction phase expected to begin in 2017 and be fully complete by November 2017.

## FINANCIAL IMPLICATIONS

| ***Budget/Authorization Summary*** | Capital | Expense | Total Project |
|---|---|---|---|
| Original Budget | $0 | $0 | $0 |
| Previous Authorizations | $75,000 | $0 | $75,000 |
| Current request for authorization | $195,000 | $0 | $195,000 |
| Total Authorizations, including this request | $270,000 | $0 | $270,000 |
| Remaining budget to be authorized | $2,916,000 | $0 | $2,916,000 |
| Total Estimated Project Cost | $3,186,000 | $0 | $3,186,000 |

| ***Project Cost Breakdown*** | This Request | Total Project |
|---|---|---|
| Construction | $0 | $2,452,000 |
| Construction Management | $40,000 | $225,000 |
| Design | $110,000 | $180,000 |
| Project Management | $34,000 | $74,000 |
| Permitting | $11,000 | $22,000 |
| State & Local Taxes (estimated) | $0 | $233,000 |
| Total | $195,000 | $3,186,000* |

* *The current Net Shed 3, 4, 5, and 6 Roof Replacement's total estimated project cost of **$3,186,000** is an increase from the $2,734,000 total estimated project costs shown in the 2016 plan of finance. The increase is because the four existing structures will have a minor increase in labor and material costs including the anticipated addition of rain barrels to each net shed including solar panels to one net shed as a demonstration project.*

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

This project was included in the 2016 plan of finance combined under CIP #C800526, Fishermen's Terminal Net Sheds 3, 4, 5, and 6 Roof Replacement, in the amount of $2,734,000. The additional $452,000 required to fund this project is available under CIP #C800002 Contingency Renewal & Replacement. This project will be funded by the tax levy.

***Financial Analysis and Summary***

<table>
<tr><td>CIP Category</td><td>Renewal/Enhancement</td></tr>
<tr><td>Project Type</td><td>Renewal & Replacement</td></tr>
<tr><td>Risk adjusted discount rate</td><td>Roof – NA<br>Solar – 7.5%</td></tr>
<tr><td>Key risk factors</td><td>• Actual costs could exceed the current estimates.<br>• Future revenues from the building could be less than currently expected.<br>• Energy production could be less than estimated.<br>• Solar panels could require additional annual maintenance.</td></tr>
<tr><td>Project cost for analysis</td><td>$3,186,000 (Roof $2,773,000 & Solar $413,000)</td></tr>
<tr><td>Business Unit (BU)</td><td>Fishing & Commercial Operations</td></tr>
<tr><td>Effect on business performance</td><td>Roof Replacement:<br>This project is a renewal & replacement project and preserves Net Operating Income (NOI). This project does not generate additional NOI.<br><br>Preserves Net Sheds 3, 4, 5, and 6 Net Operating Income of approximately $260,000 per year excluding major maintenance/compliance expenses.<br><br>Increases depreciation expense by approximately $110,920 per year based on a 25 year useful life for the roof.<br><br>Solar Panels:<br>Estimated impact on Net Operating Income (NOI) and Depreciation for years 2018 through 2022:
<table>
<tr><th>NOI (in $000's)</th><th>2018</th><th>2019</th><th>2020</th><th>2021</th><th>2022</th></tr>
<tr><td>NOI</td><td>($4)</td><td>($4)</td><td>($4)</td><td>($4)</td><td>($5)</td></tr>
<tr><td>Depreciation</td><td>($14)</td><td>($14)</td><td>($14)</td><td>($14)</td><td>($14)</td></tr>
<tr><td>NOI After Depreciation</td><td>($18)</td><td>($18)</td><td>($18)</td><td>($18)</td><td>($18)</td></tr>
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<tr><td>IRR/NPV</td><td>Roof Replacement:<br>The NPV is the present value of the project cost.<br><br>Solar Panels:
<table>
<tr><td>NPV (in $000's)</td><td>IRR</td><td>Payback (in years)</td></tr>
<tr><td>($457)</td><td>NA</td><td>NA</td></tr>
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***Lifecycle Cost and Savings***

Preliminary lifecycle cost analyses have been developed for the project to identify the lowest total cost of ownership and determine which of the roof design options will be appropriate for the new roofing system and the facility. Annual Operating and Maintenance costs for the roof system are forecasted to decrease for the net sheds because of the replacement and installation of these new roofing systems.

## STRATEGIES AND OBJECTIVES

This project supports the Port's Century Agenda strategy to "position the Puget Sound region as a premier international logistics hub", "doubling the economic value of fishing and maritime sectors" and be the greenest and most energy efficient port in North America by:

- Investing in and preserving a valuable Port asset.
- Continuing to provide fishermen with storage space, in close proximity to their vessels and business, for their gear/materials.
- Maintaining the long-term revenue generating capability of the Fishermen's Terminal net shed buildings.
- Fulfilling lease commitments and obligations to the Port's tenants.
- Proactively providing stormwater treatment of rooftop runoff.
- Investing in renewable energy sources such as solar panel (photovoltaic production) system demonstration project at one of the net sheds.

## ALTERNATIVES AND IMPLICATIONS CONSIDERED

**Alternative 1 –** Maintain the current state and delay replacement of the net shed roofs. Maintenance costs of $21,050 annually (averaged over 12 months) will continue.

Cost Implications: $2,773,000 of project funding will not be needed.

**Pros:**

- No additional major capital funding would be required.
- Allows port to reallocate capital investment dollars.

**Cons:**

- Increases the chances that the interior of the facility will be damaged due to water infiltration.
- Increase of probable construction costs in the future while emergency repair costs continue to increase.
- The cost of a future roofing project in the event of roof failure would be the full cost of replacement ($2.77 million) plus escalation and the cumulative on going expense costs. Risk cost of lost tenant space due to emergency repairs is unknown but likely would be high.
- Safety of the tenant could be compromised due to the slip hazard to tenant and employees.
- Indefinite deferral could also lead to the risk of catastrophic failure.
- Maintenance cost will continue.

This is not the recommended alternative.

**Alternative 2** – Replace the entire existing roofing system with a modified bitumen 3-ply roof that has a 30 year life and install a new security ladder, gutters, and fall protection system.

Cost Implications: A cost of $2,773,000 of project funding is needed to implement the project.

**Pros:**

- Install entirely new Modified Bitumen 3-ply Roofing and gutter system that will protect our assets and have a 30 year life span and serve the Port and the tenants well.
- Replacing the roof, security ladders, gutters, and fall protection systems will provide the lowest lifecycle cost.
- Helps to assure a stronger positive tenant experience and avoids potential safety hazards.
- Provides protection of Port assets.
- Increase safety with the installation of fall protection.
- This project would provide for a warranted roof that will minimize the cost of repairs going forward for the foreseeable life of the roof.

**Cons:**

- This alternative uses $2.77 million of capital that might otherwise be made available for other uses on other projects.
- Foregoes the opportunity to install solar panels on these roofs.

This is not the recommended alternative.

**Alternative 3 –** Replace entire existing roofing system and gutters with a 20-year PVC membrane roofing system, security ladders, gutter, and fall protection system replacements**.**

Cost Implications: $2,876,000 in project funding will be needed. Total project costs would be more than the anticipated budget with the installation of the PVC membrane and 20-year roof. This cost differential is for material and a less-than-desirable warranty duration.

**Pros:**

- A new 20-year roofing and gutter system investment will protect our assets.

**Cons:**

- Additional cost for the PVC membrane is higher than the modified bitumen 2-ply roofing system due to the added material and cost handling.
- Foregoes the opportunity to install solar panels on these roofs.
- This alternative uses $2.87 million of capital that might otherwise be made available for other uses on other projects.

This is not the recommended alternative.

**Alternative 4 –** Replace the entire existing roofing system with a modified bitumen 3-ply roof that has a 30-year life, with new security ladders, gutters, and fall protection system as in Alternative 2 and install a solar panel system on one net shed building to serve as a demonstration project to generate power with cabling, meters, and structural upgrades that will produce approximately 11,000 kWh of power per year.

Cost Implications: An additional $413,000 is required to include solar panels. This cost is above and beyond the base cost of $2.77 million for Alternative 2's investment.

**Pros:**

- This solar panel installation could potentially provide and generate approximately 11,000 kWh of power per year (the current usage is approximately 9,934 kWh per year for the selected net shed).
- This installation could potentially save approximately $840 per year in electrical energy costs (at current rates), reducing yearly operating costs.
- This installation could be eligible for grant reimbursement and incentives.
- Replacing grid-produced electrical energy with renewable energy reduces greenhouse gas emissions by about 279 lbs. of $CO_2$/year.
- Providing renewable power systems meet three Century Agenda goals: reduces greenhouse gas emissions, increases renewable energy use, and conserves energy use to meet overall energy demand. Plays a role in building clean infrastructure and demonstrates the Port's leadership in competing globally to produce clean energy using Washington-based industries.
- To be eligible for grants, solar panels are manufactured in Washington State and provide support for a growing industry.
- Replacing the roof, security ladders, gutters, and fall protection systems during construction will provide the lowest lifecycle cost.

- This project would provide for a warranted roof that will minimize the cost of roof repairs going forward.
- This option provides the opportunity to add on for future crystalline solar panel expansion by increasing the number of solar panels at each additional net shed.

**Cons:**

- This alternative uses an additional $413,000 to include a solar and structural upgrade cost for one building or $3.18 million of capital in aggregate that might otherwise be made available for other uses on other projects.
- The cost of the solar-panel system installation does not meet normally accepted project financial criteria for new capital projects.

**This is the recommended alternative.**

## ATTACHMENTS TO THIS REQUEST

- Slide presentation.

## PREVIOUS COMMISSION ACTIONS OR BRIEFINGS

- May 17, 2016 - Briefing on Fishermen's Terminal Long Term Strategic Plan.