

THE NORTHWEST SEAPORT ALLIANCE
MEMORANDUM

MANAGING MEMBERS
ACTION ITEM

Item No. 7D
Date of Meeting September 8, 2021

DATE: August 25, 2021
TO: Managing Members
FROM: John Wolfe, CEO

Sponsor: Jason Jordan, Director, Environmental and Planning Services

Project Managers: Steve Nicholas, Environmental Senior Project Manager,
and Joe Caldwell, Maintenance Project Manager

SUBJECT: Project Authorization Increase for Lighting Upgrade at NIM & EB1

A. ACTION REQUESTED

As referenced in NWSA Resolution No. 2020-02, Exhibit A, Delegation of Authority Master Policy, Paragraph 8.c.iii., project costs exceeding \$300,000 require approval from Managing Members.

1. A funding increase is requested in the amount of \$60,000.00 for work associated with the Lighting Upgrade at the **North Intermodal Yard (NIM)**, Master Identification No. 201127.01. This brings the total authorized amount to \$540,000.
2. A funding increase is requested in the amount of \$10,000.00 for work associated with the Lighting Upgrade at the **East Blair 1 (EB1)**, Master Identification No. 201122.01. This brings the total authorized amount to \$220,000.

B. SYNOPSIS

Both the NIM and EB1 LED lighting retrofit have additional labor costs that were not anticipated prior to the start of the project. The additional labor costs include assembly of the hoods/deflectors for each light fixture, adding electrical cord length and adding an additional person. The additional labor costs are the requested funding increase amount for each project.

The financial analysis estimates a payback period for both projects will remain the same with the NIM of seven years and EB1 of eight years. The payback period for both projects remains well below the estimated 15-year useful life of the assets. Accounting for the additional costs, the IRR for the EB1 project is 11.6% and the IRR for the NIM project is 14.1%.

C. BACKGROUND

The NIM and EB1 lighting upgrade projects will improve energy efficiency by greater than 60%, reducing operational costs and our carbon footprint. The EB1 project will replace 103 old, high pressure sodium light fixtures with high-efficiency light-emitting diode (LED) fixtures and the NIM project will replace 245 fixtures with LEDs. The payback period on these investments is projected to be significantly less than the life span of the assets and the reduction in carbon emissions is aligned with our goals under the Northwest Ports Clean Air Strategy. Additionally, the new LED fixtures will reduce light pollution and produce higher quality white light, which enhances safety.

D. PROJECT STATUS AND JUSTIFICATION FOR INCREASED AUTHORIZATIONS

EB1 – The project is 90% complete and is on hold, with 89 of the 103 new fixtures installed. The Port maintenance team will need an additional \$10,000 beyond what was previously authorized to complete this project.

Breakdown of approved costs and actuals:

	Budget		Actuals
Material + 10% Contingency	\$ 155,977.59	\$	142,428.25
Labor + 20% Contingency	\$ 54,259.20	\$	54,047.25
Total	\$ 210,236.79	\$	196,475.50

Reasons for cost overrun

1. Maintenance had to assemble the lights in the shop, which was not anticipated. The deflectors needed to be assembled. We did know there was going to be preassembly of the fixtures and assumed the fixtures were being delivered with the deflectors attached.
2. Electrical cords were short and had to be spliced to fit our existing connections on poles. In most situations the cords do not need to be spliced but the poles at EB1 hold multiple fixtures and longer cords were needed.
3. The fixtures were heavier than anticipated and the job took three electricians to install the light fixtures. We anticipated two electricians to install the fixtures.

NIM – This project has not started. The 245 LED fixtures were ordered upon authorization by Managing Members in March 2021 and the fixtures have been received and are awaiting installation. Based on the lessons learned from the EB1 lighting project, we are anticipating an additional \$60,000 in labor beyond the original authorization is needed to complete the project.

Breakdown of approved costs and actuals:

	Budget		Actuals
Material + 10% Contingency	\$ 348,244.56	\$	316,585.97
Labor + 20% Contingency	\$ 131,083.20		
Total	\$ 479,327.76	\$	316,585.97

Factors that will increase the labor requirements for the NIM Project:

1. Maintenance must assemble the deflectors on the fixtures.
2. Electrical cords need to be spliced to fit our existing connections on poles.
3. Additional person needed to install lights.
4. NIM lights will take longer to install since the lights cannot be lowered and a manlift will be used for each pole.

Based on the factors summarized above, the labor estimate has been revised from 3.41 hours per fixture to 4.04 hours per fixture. After also including a 20% contingency, the resulting labor cost is estimated to be \$60,000 more than originally estimated.

The “lessons learned” during implementation of these two projects will guide future lighting upgrades and allow for more accurate cost estimates.

E. FINANCIAL IMPLICATIONS

Based on the energy savings, maintenance savings, and incentive funding, staff projects that the NIM and EB1 projects will have IRRs of 11.6% and 14.1% respectively. This includes the additional \$10,000 requested for the EB1 project and the additional \$60,000 requested for the NIM project. The payoff periods for the EB1 and NIM projects remain 8 years and 7 years respectively, significantly less than the 15-year useful life of the assets.

Project Cost Details

Description	EB1	NIM
2021 CIP Project Budget	\$ 251,000	\$ 122,000
Total Est. Project Cost	\$ 220,000	\$ 540,000
TPU est. incentive	\$ 25,750	\$ 122,098
Est. Net Project Cost	\$ 194,250	\$ 417,902
% of Incentive/Project Cost	12%	23%
TPU Initial Annual Savings – Consumption	\$ 15,771	\$ 50,963
Initial Annual savings - Maint. Exp	\$ 8,117	\$ 8,256

Financial Results

	EB1	NIM
NPV	\$39,282	\$156,081
Debt Service Coverage	1.5	1.8
IRR	11.6%	14.1%
Payback (Yrs)	8	7

Assumptions

- Fixture life: 15 years life
- Write off \$30k of the 2014 lighting retrofit assets
- Annual CPI maintenance and power savings: 3%
- Cost of borrowing: 5%

F. PREVIOUS ACTIONS OR BRIEFINGS

March 3, 2021 – Project authorization in the amount \$210,237.00 for work associated with the Lighting Upgrade at the East Blair Breakbulk (EB1) Yard, Master Identification No. 201122.01

April 6, 2021 – Project authorization in the amount \$480,000 for work associated with the Lighting Upgrade at the North Intermodal Yard (NIM) Master Identification No. 201127.01.