



**COMMISSION
AGENDA MEMORANDUM**

Item No. 4e

ACTION ITEM

Date of Meeting May 9, 2017

DATE: May 2, 2017 *[Revised May 11, 2017]*
TO: Dave Soike, Interim Chief Executive Officer
FROM: Tracy McKendry, Director of Recreational Boating
Robert Hoyman, Project Manager, Marine Maintenance
SUBJECT: Shilshole Bay Marina Lighting Improvements & Controls

Amount of this request: \$375,000
Total estimated project cost: \$375,000

ACTION REQUESTED

Request Commission authorization for the Chief Executive Officer to order completion of the Shilshole Bay Marina (SBM) Lighting Improvements & Controls for a total estimated project cost of \$375,000.

EXECUTIVE SUMMARY

The Port Environmental group conducted a Lighting Energy Use Audit in March of 2014 and recommended a lighting upgrade for the Shilshole Bay Marina facility. This project replaces lighting at Shilshole Bay Marina (SBM) on the uplands and dock locations. The project upgrades energy inefficient area and dock pedestal lighting which require high levels of maintenance and contribute to glare affecting neighboring properties. Lighting upgrades include replacing the existing 250w High Pressure Sodium area lighting with 90w LED fixtures and the 17w compact fluorescent pedestal lights with 7w LED retrofit light kits. Additional reductions in energy use will be achieved through smart controls. Modular controls (*photocells with dimming capability between set hours*) will be installed at each light fixture. Energy saved has an equivalent effect of removing fourteen passenger vehicles driven every day for a year in our state.

In August of 2015, Maritime Division approved this project at an estimated cost of \$275, 000. In the past two years, as the project has been implemented, scope was increased to include ramp and bollard light improvements, totaling nearly 300 additional locations, and purchase of architecturally pleasing fixtures for the promenade walkway to enhance the appearance of the waterfront. In addition, there have been challenges with fixture replacement, as well as increases in costs for both labor and materials. These have combined to drive costs up to the current requested authorization of \$375,000. Procurement of materials is 100% complete, installation is 45% complete.

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Through this authorization, Marine Maintenance Electricians will complete 300 dock locations and 60 pole-top fixture replacements. Completion will result in improved illumination of walkways and parking areas thus supporting the goal to enhance security in the parking lot areas of SBM.

This request is to increase project by \$100,000, which is included in the 2017 Plan of Finance.

JUSTIFICATION

Maintenance costs to the lighting systems alone over the past six years have averaged nearly \$21,000 annually. This, coupled with scheduled Seattle City Light energy use cost increases over the next five years and a one time \$30,000 incentive from Seattle City Light, will result in a project investment payback in less than nine years.

In recent years, SBM has experienced an increased number of vehicle related thefts and incidents of vandalism. Studies indicate that improved lighting levels and controls that respond to motion deter criminal activity.

Operating costs alone can be reduced by nearly \$40,000 annually due to reduced maintenance, lower energy consumption and anticipated reduction in vandalism occurrences.

Destination Marina Strategy plans for the SBM property include improvements which will cause increases in energy demand. Reduced energy use for lighting will contribute to service availability for other uses.

DETAILS

Sustainability

The project will result in an equivalent carbon emissions reduction of 73 tons annually with a reduction of more than 95,000 kWh in energy use. This has an equivalent effect of removing fourteen passenger vehicles driven every day for a year in our state. The LED lighting purchased has an expected life of over ten years, requiring significantly less maintenance and using as much as 70% less energy overall for lighting.

Scope of Work

The total project scope involves replacing existing lighting with high efficiency LED fixtures and retrofit lamps.

- (1) Replace sixty-seven pole top fixtures now using 200W with new decorative LED fixtures using 105W.
- (2) Replace thirty-nine 300W parking lot fixtures with LED fixtures using 130W
- (3) Replace 650 17W dock pedestal lamps with 3W LED lamps.
- (4) Replace 150 20W access ramp lights with 9W LED lamps

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- (5) Replace 150 60W dock bollard lamps with 15W LED lamps.

Schedule

Commission design authorization	N/A
Design completion	June 2016
Commission construction authorization	May 9, 2017
Construction start	Q2 2017
In-use date	Q3 2017

Cost Breakdown

	This Request	Total Project
Design	\$0	\$3,000
Equipment Purchases	\$0	\$198,000
Construction	\$100,000	\$174,000
Total	\$100,000	\$375,000

ALTERNATIVES AND IMPLICATIONS CONSIDERED

Alternative 1 – Postpone installation indefinitely and replace fixtures as existing lamps fail.

Cost Implications: \$21,000 maintenance costs for 2017, expected to increase in future years at a rate of 3.5% for a total cost of \$635,659 plus \$275,000 approved budget over 20 years (the expected life of new lights).

Pros:

- (1) Restricts project cost to current approved status: \$275,000

Cons:

- (1) Site security improvements will only be captured in the South parking lot where installations are complete.
- (2) Final cost for installation would be significantly higher due to mobilizations of necessary equipment and inefficiencies.
- (3) The duration of the installation will be excessively long and result in undesirable effects on the promenade walkway and continued ineffective lighting.
- (4) Purchased fixtures would have to be stored; potentially beyond their warranty period.
- (5) Seattle City Light (SCL) energy incentives would not be captured.

This is not the recommended alternative.

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Alternative 2 – Limit increase to \$55,000 to complete only the promenade lighting and controls.

Cost Implications: Project total of \$330,000 capital cost. Total maintenance costs of \$53,000 over 20 years.

Pros:

- (1) Improved aesthetics on the promenade.
- (2) Lighting responsiveness; lighting will dim after 10 p.m. and respond to motion in localized areas.
- (3) Limits the amount of the increase to the highest priority lighting. Would require an increase of \$55,000.

Cons:

- (1) Inconsistent lighting on the docks.
- (2) Dock lighting would be changed out as existing fixtures fail. This will take several years to complete.
- (3) Added cost over time.
- (4) SCL Incentives would be modified to reflect a reduced energy savings.

This is not the recommended alternative.

Alternative 3 – Approve full project increase of \$100,000

Cost Implications: Project total of \$375,000 capital cost. Total maintenance costs of \$8,000 over 20 years.

Pros:

- (1) The desired outcome of improved lighting throughout the marina would be achieved.
- (2) The Port will receive approximately \$30,000 in Seattle City Light incentives.
- (3) The aesthetics for the marina will be enhanced.
- (4) Site security will be improved by responsive lighting and improved lighting levels.
- (5) Higher levels of customer satisfaction will be achieved through improved security.
- (6) The most cost efficient project completion approach will be implemented.

Cons:

- (1) Project cost will increase by 36%.

This is the recommended alternative.

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FINANCIAL IMPLICATIONS

Cost Estimate/Authorization Summary

	Capital	Expense	Total
COST ESTIMATE			
Original estimate	\$275,000	\$0	\$275,000
Current change	\$100,000	\$0	\$100,000
Revised estimate	\$375,000	\$0	\$375,000
AUTHORIZATION			
Previous authorizations	\$275,000	\$0	\$275,000
Current request for authorization	\$100,000	\$0	\$100,000
Total authorizations, including this request	\$375,000	\$0	\$375,000
Remaining amount to be authorized	\$0	\$0	\$0

Annual Budget Status and Source of Funds

This project was included in the 2017 Plan of Finance in the amount of \$275,000 under CIP C800797 “CRM MM 2015 Small Projects.” The additional \$100,000 required to complete this project is available due to delays and lower than expected spending in other Small Projects. The source of funds will be the General Fund.

Financial Analysis and Summary

Project cost for analysis	\$ 375,000
Business Unit (BU)	Recreational Boating
Effect on business performance (NOI after depreciation)	This project will increase depreciation expense by \$18,750 per year for next 20 years.
IRR/NPV (if relevant)	The incremental 20 year NPV is \$120,000. This compares savings in Alternative 3 vs continuing with Alternative 1 when factoring annual maintenance costs as well as SCL incentive credits. There is an additional NPV of Electricity savings estimated at \$202,000 using the 2015 Seattle City Light worksheet for Retrofit Lighting.
CPE Impact	NA

Future Revenues and Expenses (Total cost of ownership)

No future revenues are anticipated as a result of the project. The expenses for maintenance on the new lights are estimated to be \$2,000 every 5 years for cleaning the lenses.

ATTACHMENTS TO THIS REQUEST

None

PREVIOUS COMMISSION ACTIONS OR BRIEFINGS

None