COMMISSION
AGENDA MEMORANDUM Item No. 8d
ACTION ITEM Date of Meeting October 11, 2022

DATE: September 8, 2022
TO: Stephen P. Metruck, Executive Director
FROM: Kelly Purnell, Capital Project Manager IV
Melinda Miller, Director Real Estate Asset Management
Kenneth R. Lyles, Director, Maritime Operations and Security
SUBJECT: Maritime Industrial Center (MIC) Electrical Infrastructure Replacement Design Authorization (CIP # C801241)
Amount of this request: $800,000
Total estimated project cost: $6,440,000

ACTION REQUESTED
Request Commission authorization for the Executive Director to proceed with design of the Maritime Industrial Center Electrical Infrastructure Replacement Project using internal design engineering services in the amount of $800,000 and a total estimated project cost of $6,440,000.

EXECUTIVE SUMMARY
This project will replace the electrical infrastructure at the Maritime Industrial Center (MIC). The site, located just west of Fishermen's Terminal, currently has a tenant mix of storage, warehouse, maintenance and repair shops, boatyard and marine services, and fishing vessel support operations. A large majority of the electrical infrastructure that serves the tenants is approximately 25 years old. Though electrical systems generally last 20 to 30 years, their proximity to seawater has caused it to deteriorate at an expedited rate. An Arc Flash Study and condition assessment were performed on the property in 2020 and determined that several pieces of equipment need replacement for safety reasons as they are not compliant with National Electrical Code (NEC) standards and too dangerous to service properly.
It is critical to replace the infrastructure to maintain reliable and resilient electrical service to the MIC facilities, ensure that the Port meets its tenant obligations, and continues to leverage the economic opportunities that result in well managed and maintained assets.

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JUSTIFICATION
This project supports the following Century Agenda and Maritime Division strategic goals:
Century Agenda:
1. Responsibly Invest in the Economic Growth of the Region and all its' Communities
2. Be a Highly Effective Public Agency
Maritime Division:
1. Asset Management
2. Sustainability
The project will include necessary upgrades to the electrical system by replacing current equipment that is dangerous to work on and at risk of failure. This investment will increase the asset value of the MIC by ensuring that the site facilities are functioning well and efficiently, removing dangerous water intrusion into electrical areas, and increasing the reliability of power to the Port's tenants. The project also includes preparation for future sustainable EV charging capabilities and potential additional shore power by providing minimal make-ready infrastructure that will eliminate the need for operational disturbances in the future.
Diversity in Contracting
This project is at the conceptual phase and will be developed utilizing internal design engineering resources. Therefore, the details of WMBE aspirational goals have not yet been established. WMBE goals and inclusion plans will be determined at the construction phase of the project.
DETAILS
Maritime Industrial Center – 2700 Commodore Way, Seattle, WA 98199
Tenant Mix:
Building A-1:

• Mix of storage, warehouse, repair and maintenance shops, silk screen printing
Building A-2, yard and moorage:
• Boat yard and marine services (metal fabrication, woodwork, heating and cooling, electronics)
Building A-3, A-4, A-5, yard and moorage:
• Fishing vessel support operations
The project consists of demolishing existing switchboards, structural concrete pads, and decommissioning conduits and wire. The structural infrastructure, conduits, wires, switchboards, and associated equipment will also be replaced. The switchboards will be upsized from existing capacity between 400 and 600 amps to 1200 amps for the smaller switchboards and from 2500 Amps to 4000 Amps for the main switchboard for future capacity needs (EV chargers, shore power). This project will not increase the electrical load at the site at this time. Total project costs

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are estimated to be $6,440,000. Funding for this project was included in the 2023 capital budget and plan of finance.
Scope of Work
The following electrical equipment will be replaced:
1) Switchboard 4SP and 2SPN (service entry to site)
2) Switchboard 4W and 2W (wharf)
3) Switchboard 4P and 2P (NE Side of Building A-1)
4) Switchboard EY4 (East side of Building A-1)
5) Switchboard SEY4 (lighting connection for east lot)
6) Switchboards EY4 and SEY4 will be consolidated with 4P and 2P in one location that has better access. Additionally, this will eliminate a stormwater intrusion point at EY4.
7) New electrical conduits, wires, and vaults will be constructed to connect the Seattle City Light transformer that feeds the site and provide make-ready infrastructure at the switchboards for future EV charging and upgraded shore power.
Schedule
Activity
Commission design authorization 2022 Quarter 4
Design start 2022 Quarter 4
Commission authorization for major electrical 2023 Quarter 1
equipment procurement
Commission construction authorization 2023 Quarter 3
Construction start 2024 Quarter 1
In-use date 2024 Quarter 3
Cost Breakdown This Request Total Project
Design $800,000 $850,000
Construction 0 $5,590,000
Total $800,000 $6,440,000
ALTERNATIVES AND IMPLICATIONS CONSIDERED
Alternative 1 – Defer the project: maintain the current state and delay electrical upgrades and repairs.
Cost Implications:
Assuming a 6% escalation (current escalation is 13% but expected to lower) is applied to the project over the next four years delaying the project would cost an additional $250,000 for each

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year it is delayed. Current maintenance has been minimal, and the equipment cannot be safely worked on by Port Electricians; therefore, costs to maintain are not included.
Pros:
(1) Lower initial capital cost.
Cons:
(1) The equipment cannot currently be serviced safely.
(2) The equipment is already in a state of advanced disrepair due to the proximity to

saltwater and areas of stormwater intrusion.
(3) If the equipment fails, a long-term diesel generator will be required to provide power to the tenants. This will impact air quality and cost significantly more over time, in large part due to high fuel costs.
This is not the recommended alternative.
Alternative 2 – Phased approach: Replace switchboards one at a time as separate projects.
Cost Implications: $6M to $8M
Pros:
(1) Phases upfront capital costs for major electrical equipment over several fiscal years.
(2) Advances Century Agenda goals of investing in maritime industries.
Cons:
(1) Over time, this alternative will cost more due to piecemeal design costs, construction escalation costs, piecemeal ordering of large electrical equipment, and mobilization of construction crews for each separate project.
(2) This alternative will take much longer to implement due to phasing and long-lead times for major electrical equipment (12-18 months). The individual projects would either need to be overlapped, or the risk accepted that large gaps in equipment replacement may result in existing equipment failure.
(3) This alternative would be difficult to implement due to the needed conduit and vault system replacement resulting in complex logistics and planning.
(4) This alternative will require multiple planned power outages to switch over the new equipment, rather than a single outage to switch over all the equipment at once.
This is not the recommended alternative.
Alternative 3 – Replace all electrical infrastructure as a single capital project to bring the equipment up to National Electrical Code (NEC) standards and provide for a safe working environment with reliable power to the MIC facilities.
Cost Implications: $6.4M (initial planning level estimate)
Pros:
(1) Advances Century Agenda goals and Maritime Division strategic goals.
(2) Upgrades and replaces degraded electrical infrastructure that is not safe to maintain and does not meet current National Electrical Code (NEC) standards.

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(3) Reduces potential construction escalation costs as it will replace the equipment sooner than the other alternatives.
(4) Removes stormwater intrusion points within the project.
(5) Allows earlier procurement of the major electrical equipment, reducing the potential for long-lead materials to impact the project schedule.
(6) Reduces the risk of equipment failure that increases the longer the project is delayed.
(7) Will provide for a stronger tenant experience by increasing power reliability and resiliency and removing potential safety hazards at the site.
(8) Will provide for additional electrical capacity for future EV charging and possible increased shore power.
Cons:
(1) There will be some operational impacts to the site during construction.
(2) This alternative will have an initial higher upfront cost.
This is the recommended alternative.
FINANCIAL IMPLICATIONS
Cost Estimate/Authorization Summary Capital Expense Total
COST ESTIMATE
Original estimate $1,500,000 $0 $1,500,000
Current change $4,940,000 0 $4,940,000
Revised estimate $6,440,000 0 $6,440,000
AUTHORIZATION
Previous authorizations $50,000 0 $50,000
Current request for authorization $800,000 0 $800,000
Total authorizations, including this request $850,000 0 $850,000
Remaining amount to be authorized $5,590,000 $0 $5,590,000
Annual Budget Status and Source of Funds
This project was included in the 2023 Capital Plan under CIP #801241 Maritime Industrial Center

Electrical Infrastructure Replacement at an estimated total project cost of $6,440,000.
This project will be funded by the General Fund.
Financial Analysis and Summary
Project cost for analysis $6,440,000
Business Unit (BU) Maritime Portfolio Management

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Effect on business performance The project will maintain annual gross revenue over (NOI after depreciation) $500K from MIC tenants. Depreciation will increase by $128,880 per year, thereby reducing the NOI by the same amount.
IRR/NPV (if relevant) No incremental revenue. The NPV is the present value of the project cost.
CPE Impact N/A
Future Revenues and Expenses (Total cost of ownership)
This project will provide for reliable and resilient electrical power to the MIC facilities for the next 25-30 years. This upgrade will provide protection of Port assets and extend their useful life, provide for additional future electrical capacity to support Port sustainability goals and increase economic development potential. Maintaining existing assets will preserve the economic vitality of our operations and serve the Port, tenants, and their customers well by providing a safe and sustainable working environment.
ADDITIONAL BACKGROUND
N/A
ATTACHMENTS TO THIS REQUEST
(1) Presentation slides
PREVIOUS COMMISSION ACTIONS OR BRIEFINGS
None.

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