



Port of Juneau

155 S. Seward Street • Juneau, AK 99801
(907) 586-0292 Phone • (907) 586-0295 Fax

From: Port Director

To: City & Borough Assembly

Via: (1) Docks & Harbors Board
(2) City Manager

Date: August xxth, 2023

Re: CBJ DOCK ELECTRIFICATION - UPDATE

1. At the August 8th, 2022 Committee of the Whole meeting, a [memo](#) was provided to the Assembly outlining a process to bring shore power to the two CBJ owned docks through the results of the [2022 Juneau Cruise Ship Dock Electrification Report](#). The memo noted numerous positive events which are advancing the opportunities to bring clean hydroelectric shore power to visiting cruise ships. Some of these actions include the strong support from the cruise industry to pursue the AK/BC/WA Maritime Green Corridor; significant consultation with the local electrical utility company (AELP) along with other Juneau partners, stakeholders and community members; continued pursuit for federal grants; and, Assembly prioritization of local passenger fees for funding dock electrification.
2. The August 2022 plan enabled the ordering of a LTC (Load Tap Changer) transformer for the South Franklin Dock (SFD) substation, which is a precursor requirement in providing shore power at additional docks in Juneau. Refreshing this 22-year old equipment with current technology will significantly improve the flexibility of the SFD substation to meet the voltage levels required by the cruise ships and ultimately allow cruise ships which are currently connecting to be on shore power for a longer period of time. The \$2.26M procurement package for the LTC transformer is underway and AELP is reviewing the manufacturer's shop drawings. It is anticipated that the LTC transformer will be installed in the fall of 2024.
3. Docks & Harbors has been meeting with AELP nearly weekly since January to plan and evaluate options to bring shore power to the CBJ owned docks. These joint efforts have included exhaustive interviews with US port executives, manufacturers of electrical equipment, manufacturers of cable management systems and consultants with proprietary systems providing "power conditioning" to cruise ship port clients. With the potential electrification for three or four different dock owners within the Port of Juneau, it is abundantly clear that the preferred solution must be in concert with AELP's expertise and guidance. After speaking with global

consultants and equipment suppliers, it is not an overstatement that Juneau will be the most technologically challenging port worldwide to electrify. This is essentially due to stepping down 69kV transmission voltage to 11kV/6.6kV distribution voltage along a steep mountainside; then to submarine cables/small float with a 25-foot tidal range to a cable management system; and finally connecting to the ship's onboard system. I know of no other port in the world that has less useable uplands than Juneau for electrical infrastructure laydown.

4. The 2022 Dock Electrification report estimated the cost to electrify both the Alaska Steamship (AS) and Cruiseship Terminal (CT) Docks to be \$25M. However, this estimate is based on cost data, pre-pandemic. Extrapolating from our recent Aurora Harbor electrical bid tabs and from open-source news from other US ports adding shore power, anticipating a \$20M project per dock is not unreasonable. The financing plan which was presented to the August 2022 COW suggested that funding for the AS/CT Docks would be through dedicated revenues bonds with the cruise ship docks as fiscal collateral. It is now understood that new revenue bonds cannot encumber existing facilities with bonds. However, it may be possible to leverage revenue bonds which utilize future passenger fees as the funding source to service the bond debt. Additionally, CBJ Law has opined that "no general obligation indebtedness of the municipality may be incurred" unless authorized by voters. Another funding option available to CBJ could be through a loan offered by the USDA Rural Energy Savings Program (RESP) program and administered thorough JEDC. In summary, this means other means of financing must be considered including passenger fees, loans and federal grants.
5. In 2022, Docks & Harbors unsuccessfully applied for two US DOT federal grants:
 - \$25M FY22 RAISE (Rebuilding American Infrastructure with Sustainability & Equity); and,
 - \$25M FY22 PIDP (Port Infrastructure Development Program)

It is our intentions to apply for FY23 EPA DERA (Diesel Emissions Reduction Act) grant, due December 1st, which can provide a maximum of \$1.5M per application. As well as applying for an upcoming IRA (Inflation Reduction Act) EPA Clean Ports Program grant. Although the Clean Port Program - Notice of Funding Opportunity (NOFO) is not expected until the first quarter of calendar year 2024, it is anticipated that up to \$3B will be made available for ports.

6. With the FY24 commitment of \$5M from passenger fees, the Dock Electrification CIP has \$5.38M. It is Docks & Harbors intentions to continue to leverage these funds toward grant opportunities and build a balance which is sufficient to contract for electrifying the AS Dock. Working with AELP, we will develop a strategy to procure engineering services, electrical equipment and construction contracts necessary to advance the community goal of reducing cruise ship emissions in Juneau Harbor.

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