



Exxon Valdez Oil Spill Trustee Council
General Restoration, Habitat Enhancement, Habitat Protection, and Facilities Projects
Quarterly Project Reporting Form

**Detailed instructions for each section below are given in Section II. Quarterly Project Reports in the Reporting Policy on the website, <https://evostc.state.ak.us/policies-procedures/reporting-procedures/>*

Project Number: 21210131 (Includes 21210131)

Project Title: Alaska SeaLife Center Facilities Project \$2,000,000/\$500,000

Principal Investigator(s): Chip Arnold, Ben Smith

Reporting Periods and Due Dates:

| <i>Reporting Period</i> | <i>Due Date</i> |
|-----------------------------|-----------------|
| February, March, April | June 1 |
| May, June, July | September 1 |
| August, September, October | December 1 |
| November, December, January | March 1 |

Submission Date: March 1, 2024

Project Website: N/A

Please check all the boxes that apply to the current reporting period.

- Project progress is on schedule.**
- Project progress is delayed**
- Budget reallocation request.**
- Personnel changes.**



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1. Summary of Work Performed:

Building Infrastructure:

The Lutron lighting control system continues to perform well with minor issues easily handled by ASLC staff. No expenses were associated with the lighting controls for this period, however, it is worth noting that the system continues to provide savings that were not present or difficult to achieve before installation. Specifically, the occupancy sensors that did not work before installation have saved a reported 73 MWh, and “Personal Control” or switches, that did not work prior, saved an additional 72MWh.

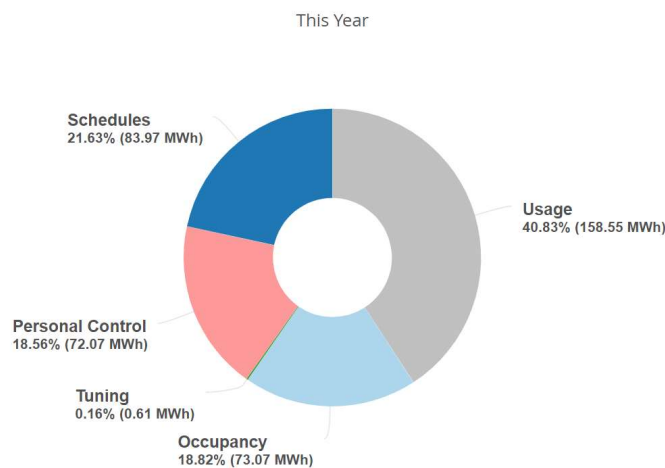


Figure 1. Lutron system energy savings based on control methods, shown for Jan to May 2024

Trane continues to perform preventative maintenance visits and monitoring services on the BAS system. The BAS system has been functional and reliable for this reporting period and thus incurred no additional expenses. The ASLC team has been able to use the system to optimize the use of heating systems which has resulted in very significant energy savings. As the system provides significantly more data several areas of concern including lab ventilation, slab heat controls, and failing older controllers have been detected. ASLC anticipates needing to revisit these areas of concern and is working on obtaining quotes and estimates for these services.



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Seawater Life Support System:

Intake well dredging was conducted by American Marine Inc from April 23 through April 25. Site prep was conducted on April 22 which included staging of dive equipment, running hydraulic and water hoses, positioning pumps, trailers, and sediment control bags. Hydraulic submersible pumps were used in the intake wells backed up by a diesel-powered pump outside the building. Dredged spoils were pumped into containment bags and the material remains onsite awaiting disposal. Several bolts were ingested into the pumps causing significant damage and slowdowns however AMI had backup pumps and enough personnel to handle these slowdowns without a major impact on dredge operations. A total of 3 containment bags were filled with one failing early in the process. One containment bag is technically capable of holding the entirety of the material dredged, however, due to the fine nature of the silt bags would clog frequently and need to be changed out. The first bag ruptured but only minimal sediment was lost and remained trapped on the geotextile fabric under and around the bag. It was estimated that 10-15 cubic yards of silt was removed after dewatering. In the intake well it was 5- 6 feet deep in some areas which mathematically indicated approximately 35 cubic yards of intake well space was occupied by the silt with water present. PMP-100 was buried in the well and LSS-2 and 3 had their screens mostly blocked. Pumps are performing much better now with notable water quality improvements in the habitats.

Discussions on intake line repair operations with Jackson Waters from PND, while he was on site, were held. We evaluated the pig launcher for west intake side options. Due to the condition of the west intake line and the presumptive continual fouling of the east intake line ASLC staff directed PND engineering to pause work on the west intake line design and retrofit to collect further data. ASLC feels a pigging operation on the existing east intake is a very high risk and comes without a viable backup should the line be damaged or plugged during pigging. ASLC intends to use the remaining PND design time to further evaluate the situation and engage in critical path planning. While significant progress has been made in restoring the intake system and pumphouse thoughtful and careful planning on the next steps is essential



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Image 1. American Marine divers transport equipment through ASLC research corridor to ASLC intake well.



Image 2. American Marine foreman monitors equipment and diver in the intake well performing dredging operation.



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Image 3. PND Engineer (center, in high vis jacket) monitors runoff water from dredging operation ensuring compliance with USACE permit and the performance of the sediment collection bags. A plywood enclosure was constructed around a large diesel pump to reduce noise exposure for ice seal and common murre habitats.



Image 4. One of four sediment collection bags that were used to contain dredge materials and filter process water.



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Image 5. Dredging operation did cause slight increases in habitat turbidity which quickly cleared after operations were complete.

Seawater Pump Replacements:

All new LSS pumps have been installed and tested. The seawater intake system is not fully functioning and is adaptable to support various configurations needed for operating the system as designed. IPA installed and configured LSS-4 (previously purchased for LSS-2 position that was instead rebuilt), LSS6, and LSS-7. ASLC staff verified the installations and also upgraded or replaced several critical flow sensors on the system. ASLC staff continues to monitor pump performance both in terms of energy and flow. The new pumps in conjunction with dredging the intake well have improved energy efficiency between 5 and 10 percent, resulting in significant utility cost savings. The system as a whole has been determined to be functioning between 25% and 33% more efficiently. This represents a significant cost savings in energy.



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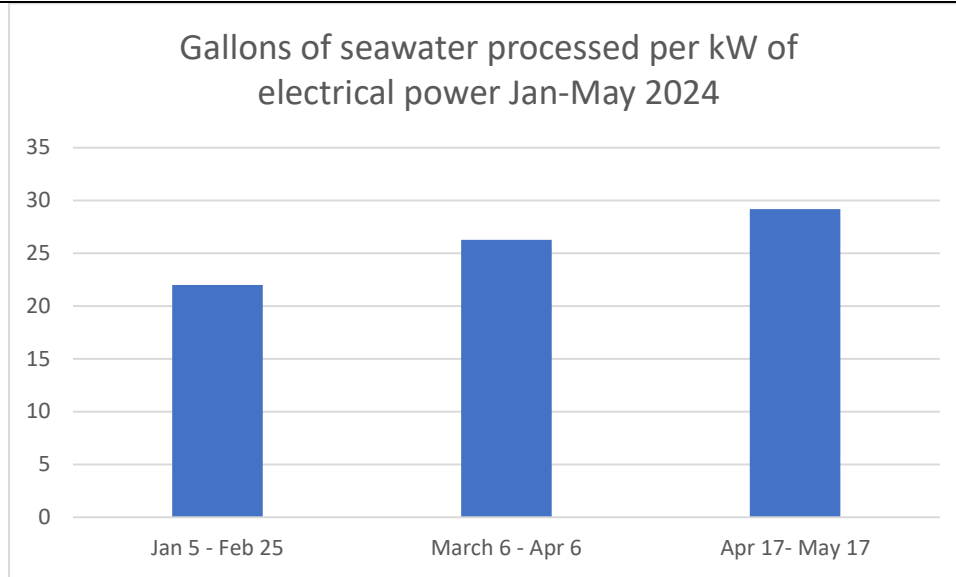


Figure 2. Average water supplied and processed in gallons per kilowatt for seawater “as found” left, after installation of turbine pump LSS-13 in waste well, center, and currently using new pumps from IPA and reducing the use of older existing pumps, right.



Image 6. Newly installed pumps LSS-6 and LSS-7 provide for greater efficiency and bring critical water systems back into design operating pressures,



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Ozone Water Treatment System:

ASLC staff continues to install replacement components ordered from Ozone Water Systems. A transformer in one of the generators was identified as faulty and is under replacement by ASLC staff with technical guidance from OWS.

Pump House Barrier:

The pump house barrier plans remain on hold until the Lowell Creek diversion tunnel project has been designed to at least the 35% level. Currently the latest revision from USACE no longer has an embankment encapsulating the freshwater pumphouse. This may result in a renewed need for construction of a formal barrier however any immediate efforts could further complicate USACE work.

Cast Iron Drain Pipe Assessment:

No additional work has been done on drainage systems, however, ASLC staff continues to monitor drain pipes and has discovered several areas of concern.

2. Abstract:

Significant progress in restoring the intake system to full operation occurred during this reporting period, however much work and planning is still required. American Marine Inc. successfully dredged intake wells, removing an estimated 10-15 cubic yards of silt and improving water quality, though some challenges arose. New LSS pumps have been installed, increasing system efficiency by 25-33% and achieving 5-10% energy savings. ASLC staff are installing replacement components for the ozone water treatment system, addressing a faulty transformer. Plans for the pump house barrier are on hold pending further progress on the Lowell Creek diversion tunnel project by USACE. The Lutron lighting control system has saved approximately 145 MWh through improved occupancy sensors and "Personal Control" switches, while Trane's preventative maintenance of the BAS system has optimized heating usage and revealed areas needing attention, such as lab ventilation and slab heat controls. Overall this work has improved building functionality, and energy efficiency, and has over the last two reporting periods in particular resulted in a quantitative improvement in critical water supply quality and reliability.



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3. Coordination and Collaboration:

N/A

4. Response to EVOSTC Review, Recommendations and Comments:

N/A

5. Budget:

Please see next page.



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| Budget Category: | Proposed FY 22 | Proposed FY 23 | Proposed FY 24 | Proposed FY 25 | Proposed FY 26 | 5-YR TOTAL PROPOSED | ACTUAL CUMULATIVE |
|---|--------------------|-------------------|-------------------|-------------------|-------------------|------------------------|----------------------|
| Personnel | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 |
| Travel | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$1,231 |
| Contractual | \$126,095 | \$0 | \$0 | \$0 | \$0 | \$126,095 | \$187,233 |
| Commodities | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$230,907 |
| Equipment | \$2,373,905 | \$0 | \$0 | \$0 | \$0 | \$2,373,905 | \$710,046 |
| Indirect Costs (10%) | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$112,942 |
| SUBTOTAL | \$2,500,000 | \$0 | \$0 | \$0 | \$0 | \$2,500,000 | \$1,242,359 |
| General Administration (9% of subtotal) | \$225,000 | \$0 | \$0 | \$0 | \$0 | \$225,000 | N/A |
| PROJECT TOTAL | \$2,725,000 | \$0 | \$0 | \$0 | \$0 | \$2,725,000 | |
| Other Resources (In-Kind Funds) | \$580,897 | \$0 | \$0 | \$0 | \$0 | \$580,897 | \$492,490 |

INSTRUCTIONS: This summary page provides a five-year overview (FY 22-26) of proposed funding and actual cumulative spending which includes the non-trustee agency and trustee agency worksheets. **This Summary Page should automatically populate as the formulas reference the cells in the non-trustee agency and trustee agency worksheets. Please make sure the totals given are correct.** The column titled 'Actual Cumulative' will be updated each fiscal year and included in the annual report (include information on the total amount actually spent for all completed years of the project). On the Project Annual Report Form, if any line item exceeds a 10% deviation from the originally-proposed amount; provide detail regarding the reason for the deviation.

COMMENTS: Expenses through April 2024.

| | | |
|----------------|--|----------------------|
| FY22-26 | Project Number: 21210131 Project Title: Alaska SeaLife Center Facilities Project \$2,000,000/\$500,000 PM(s): Arnold, Smith | SUMMARY TABLE |
|----------------|--|----------------------|