

*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/policiesprocedures/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:

Reporting Period	Due Date
February, March, April	June 1
May, June, July	September 1
August, September, October	December 1
November, December, January	March 1

Submission Date: September 1, 2024, Accepted April 15, 2025

Project Website: N/A

Please check <u>all</u> the boxes that apply to the current reporting period.

⊠ Project progress is on schedule.

- □ Project progress is delayed.
- □ Budget reallocation request.
- \Box Personnel changes.



1. Summary of Work Performed:

Building Infrastructure:

The Trane BAS and Lutron lighting systems continue to perform well. No additional funding was required for this reporting period.

Seawater Life Support System:

PND Engineering continues to provide technical advice and bid drawings for still needed intake line inspections. Recently ASLC staff has been observing increasing differential pressures on the intake line likely due to fouling of the intake structure and pipes. Operations staff has at times needed to reduce seawater flows significantly during low tide events to maintain minimum intake well levels. PND Engineering and American Marine have been advised of these issues and are developing plans to inspect and clean the intake systems using remote operated vehicles. Due to the depth of the structures, it is anticipated that ROVs can perform more work more frequently than divers working at depths greater than two hundred feet. ASLC is currently waiting on a proposal from AMI for this work to be performed.



Figure 1. A plot of the difference in levels observed locally at NOAA Tide Station 9455090 Seward and as recorded from ASLC intake well reveals a steadily increasing upward trend. Differential levels indicate flow restrictions present in the seawater intake lines are becoming more significant.



PND Engineers completed design work on a replacement siphon and pig launching system for the west intake line. They began work solicitating cost estimates, however due to the deteriorating conditions with the east intake system ASLC directed PND to develop a less costly and easier to install replacement for the siphon only that could be accomplished within months at significantly less cost and disruption to the system. The requirement for this design was to allow for future modifications to accommodate a pig launcher when time and budget allows. AMI is developing a plan and cost estimate for the siphon repairs.

In addition to the flow restrictions from marine fouling a significant rain event around August 6-8 causes significant silting because of Lowell tunnel flows. At this time an undetermined amount of silt was ingested into the seawater intake wells. ASLC staff will use the next AMI visit to survey the well and determine precisely how much sediment accumulation can be expected from these events since the well was recently cleaned. For at least one day the public aquarium water quality was so poor that a 50% discount was given to guests as accommodation. Large amounts of silt were deposited in habitats requiring additional cleaning dives by ASLC staff. These impacts were noted and will weigh in on future design efforts with PND Engineering.





Figure 2. Complete siphon repair and pig launching system as originally proposed by PND 11/13/2023. This plan would be an ideal end product however significant work on the intake pipes for both lines is needed before this plan could be practical. ASLC is directing PND to assist with ocean side intake line work first.





Figure 3. Revised intake well siphon repair plan per ASLC request for timelier and budget conscious repair efforts.



Seawater Pump Replacements:

Two pumps installed on the south beach seal research lift stationed were discovered to have failed. The operations staff was able to combine the two failed pumps into one, however it was necessary to order two replacement submersibles from Industrial Pumps of Alaska. The replacements have arrived and are awaiting installation.

Ozone Water Treatment System:

Additional Ozone system components have been identified as requiring replacement. ASLC Operations staff is working on a corrective action plan.

Pump House Barrier:

ASLC continues to monitor USACE plans for the Lowell tunnel diversion. Recent flood events while also causing a serious silting event in the aquarium also serve to underscore the need for a pump house barrier if USACE plans do not progress forward. Currently a large debris and rubble mound created by the city serves as a defacto barrier for the pumphouse and according to the public works director there are no immediate plans to move the mound.



Image 1. City and contractor crews work to push sediment into the bay to prevent Lowell Creek waters from overtaking Lowell Point Rd bridge.





Image 2. An excavator removes sediment from the Lowell tunnel outfall directly adjacent to the ASLC fresh water pumphouse August 8, 2024. Photo credit James Unrein.

Cast Iron Drainpipe Assessment:

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

2. Abstract:

The ASLC's infrastructure systems, including the Trane BAS and Lutron lighting, are functioning well. However, the seawater intake has been experiencing increased differential pressures, likely due to fouling in the intake structure and pipes. PND Engineering and American Marine are developing plans to inspect and clean the intake systems using remote-operated vehicles (ROVs), which are expected to be more effective than divers at greater depths. Design work for a replacement siphon and pig launching system for the west intake line has been completed, with a focus now on a cost-effective and timely siphon repair for the east intake system. Two failed pumps on the south beach have been ordered from Industrial Pumps of Alaska. The Ozone Water Treatment System also requires additional component replacements, and corrective actions are being planned. ASLC is closely monitoring the USACE's Lowell tunnel diversion plans.



3. Coordination and Collaboration:

N/A

4. Response to EVOSTC Review, Recommendations and Comments:

N/A

5. Budget:

Budget Category:		Proposed	Proposed	Proposed	Proposed	Proposed	5-YR TOTAL	ACTUAL
		FY 22	FY 23	FY 24	FY 25	FY 26	PROPOSED	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	\$282,929
Commodities		\$0	\$0	\$0	\$0	\$0	\$0	\$114,974
Equipment		\$2,373,905	\$0	\$0	\$0	\$0	\$2,373,905	\$874,663
Indirect Costs (10%)		\$0	\$0	\$0	\$0	\$0	\$0	\$110,588
	SUBTOTAL	\$2,500,000	\$0	\$0	\$0	\$0	\$2,500,000	\$1,384,385
General Administration (9% of subtotal)	\$225,000	\$0	\$0	\$0	\$0	\$225,000	N/A
I	PROJECT TOTAL	\$2,725,000	\$0	\$0	\$0	\$0	\$2,725,000	
Other Resources (In-Ki	nd Funds)							
		\$580,897	\$0	\$0	\$0	\$0	\$580,897	\$704,204
non-trustee agency and t updated each fiscal year a project). On the Project A reason for the deviation.	trustee agency wor and included in the Annual Report Form	ksheets. Please n annual report (in , if any line item e	nake sure the f clude informat exceeds a 10%	totals given ar ion on the tota deviation from	re correct. The al amount actu n the originally	column titled ally spent for a proposed am	'Actual Cumulative all completed year ount; provide deta	e' will be is of the il regarding the
COMMENTS: Expenses th	nrough July 2024.							
FY22-26 Project Number: 21210131 Project Title: Alaska SeaLife Center Facilities Project \$2,000,000/\$500,000 PM(s): Arnold, Smith				cilities		SUMMARY TABLE		