CITY AND BOROUGH OF SITKA

A COAST GUARD CITY

MEMORANDUM

To: Mayor Eisenbeisz and Assembly Members

Thru: John Leach, Municipal Administrator

From: Ron Vinson, Public Works Director

Date: January 12, 2024

Subject: Supplemental Appropriation for Thomsen Harbor Lift Station Replacement

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Background

The Thomsen Harbor Pump Station has been in operation since 1984, functioning around the clock to pump an average of 1 million gallons of sewage per day. It serves all residential and commercial sewage collection for the Baranof Island-side of Sitka, receiving sewage and distributing it through forced mains into the wastewater treatment plant on Japonski Island.

Having been in service for approximately 40 years, the Thomsen Harbor Lift Station is beyond its original design lifecycle. The facility currently experiences a number of deficiencies including an inability to accommodate large inflows of sewage during heavy rain events. Further the facility design is inefficient, ineffective, and unsafe.

In 2022, the Assembly granted approval for the City and Borough of Sitka to apply for a $1.3M loan from the Alaska Department of Environmental Conservation (DEC) to rebuild the Thomsen Harbor Lift Station. At the time of the approval, it was anticipated that the approved amount would be a sufficient amount to complete the project.

In 2023, the project's design and construction estimating process exposed areas of the project that would potentially result in cost increases beyond what was originally estimated for completion of the project. Through contractor estimates and independent-third-party estimates, a guaranteed maximum construction price of $2,805,783.94 has been derived. Based upon this updated project price, an additional $1,700,000 will be needed to complete the project.

Analysis

Risk Evaluation:

The following risk treatment assessment evaluates the various treatment options for reducing the risk of catastrophic failure of the Thomsen Harbor Lift Station. This analysis was performed to ensure that the option to replace the Thomsen

Harbor Lift Station will continue to bring the best value to the CBS; given the increase in project price:

Accept Risk – (Not Feasible) This method includes maintaining status quo.

- Employing this treatment would likely result in additional catastrophic failures.
- The last catastrophic failure occurred in 2018. Future failures are likely to result in Clean Water Act violations resulting in fines, community sanitation and safety risks, and adverse environmental effects on impacted waterways.
- Increased maintenance costs

Avoid Risk – (Not Feasible) This treatment method includes ceasing activities that could cause the anticipated failure

- This would include ceasing operations of the lift station – this is not a feasible option as the facility is critical in that it is the only lift station that conveys sewage from Baranof Island to Japonski Island (where treatment takes place)

Mitigate Risk – This treatment method includes taking actions to reduce the likelihood and consequence of failure

- *Modify Operations* – (Not Feasible) This risk treatment option would include modifying lift station operations to reduce the risk of catastrophic failure at the facility. Modifying operations at this facility will not mitigate the risk of failure.
- *Modify Maintenance* – (Not Feasible) This risk treatment option would include increasing maintenance frequency to reduce the risk of catastrophic failure at the facility. Modifying maintenance intervals or procedures for the Thomsen Harbor Lift Station is not likely to decrease the likelihood of failure. However, more frequent maintenance could improve the detectability of a catastrophic failure and minimize its impacts. It should be noted that increasing maintenance of the facility will increase labor costs at the facility and will take maintenance time away from other facilities, thus increasing likelihood of failure at other facilities.
- *Repair or Refurbish* – (Not Feasible) This would include rehabilitating the existing lift station back to its original condition. This option will reduce immediate maintenance needs and will extend the life of the lift station. However, rehabilitating the facility back to its originally designed condition will not reduce efficiency, capacity, or safety issues that currently exist. Further, based on the condition of the existing facility, many parts of the facility are not in a state where they can be refurbished and would likely end up costing as much as complete replacement.
- *Replace* – (Recommended) This treatment method would include replacing the entire lift station. This treatment option has the greatest ability to reduce risk because it allows for existing design flaws to be improved upon

Transfer Risk – (Not Feasible) This includes transferring the existing risk of lift station failure to another entity. This treatment method is not a viable solution due to the lack of entities available to transfer risk to.

Cost Increase Drivers:

1. Excavation Depth & Tidal Influence – This project will require deep excavation to facilitate connection of the proposed replacement lift station to the force mains that will transport the wastewater to the wastewater treatment plant on Japonski Island. The said excavation will likely exceed 20-feet in depth and will encroach on elevations that will be below common tide elevations. Though excavation costs are typically known to be expensive, the encroachment on tide-influenced elevations will constrain timelines for excavation. These constraints will result in increased costs due to work schedules being condensed into the constrained timeframes.
2. Inherent Risk of Unknown Variables - Under the contract methodology that is being utilized for this project, the contractors have provided a guaranteed maximum price, based upon best known information on forced main location, depth, and condition. Due to level of certainty surrounding the project variables, the inherent risk is high. The contracted team of designers and constructors have mitigated this risk by incorporating conservative estimates for the work they are to perform.
3. Facility Size, Capacity, & Connections - Initial project estimates were estimated by evaluating the recently completed Brady Lift Station Replacement Project costs. Replacement work at the analogous lift station was completed in 2022 for a total cost of $722,255. The Thomsen Lift Station is anticipated to be more costly due to its increased size, capacity, connections, and larger pumps. Additionally, the Thomsen Lift Station replacement will require more concrete and asphalt replacement, a standby emergency generator replacement, and will have lessons learned from the Brady Lift Station Project applied.
4. Inflation Volatility – Just as many other capital projects are currently experiencing, inflation-driven cost increases have negatively impacted material and labor costs for this project. The Producer Price Index (PPI) for non-residential construction has averaged a 15% increase year-over-year for the past two years. Whereas a year-over-year percentage increase of 5% is more in line with historical norms. Inflation has, in general, caused both material and service costs to drastically increase.

Additional Information:

- It should be noted that independent, third-part estimates were commissioned by CBS to ensure that the best value was being achieved through the contracted designer and constructor team. Third party estimates came in 7% OR approximately $200,000 higher than the contractor's guaranteed maximum price.
- Though the current guaranteed maximum construction price is fixed at $2,805,784, it should be noted that the design and construction team continue to explore value engineering and cost saving opportunities for the project.
- The design/construction team will be onsite performing preparing the site from construction from February through March. Construction is anticipated to

begin in March and anticipated to be substantially complete by September.

Fiscal Note

With the updated GMP, the total cost of this project is estimated to be $4,500,000. Current appropriations (as detailed below) are short by approximately $1,700,000 and it is proposed that the difference be made up with an additional loan from DEC. The estimated annual cost of debt service on the DEC loan would be about $52,000 a year.

- Funds Appropriated to Date = $2,824,143
  - $1,300,000 million in ADEC loans
  - $1,524,143 million in CBS Working Capital
- Third-party estimator, JMB Consulting Group LLC (JMB), was utilized to perform an independent cost analysis for the work developing a separate GMP for cost comparison. K&E and JMB GMPs were reviewed and analyzed for consistency and accuracy over two meetings. After reconciling and negotiating, the two GMPs were within seven percent (7%) of each other with JMB's coming in approximately $200,000 more than K&Es.

Recommendation

It is recommended that the Assembly approve supplemental appropriation of funds for the Thomsen Harbor Lift Station, in the amount of $1,700,000 and grant the City and Borough of Sitka authority to seek funding through DEC loans.

Sponsor: Administrator

C I T Y A N D B O R O U G H O F S I T K A

ORDINANCE NO. 2024-04
AN ORDINANCE OF THE CITY AND BOROUGH OF SITKA MAKING SUPPLEMENTAL APPROPRIATIONS FOR FISCAL YEAR 2024
(Thomsen Harbor Lift Station Replacement)

BE IT ENACTED by the Assembly of the City and Borough of Sitka, Alaska as follows:

1. **CLASSIFICATION.** This ordinance is not of a permanent nature and is not intended to be a part of the Sitka General Code of the City and Borough of Sitka, Alaska.

2. **SEVERABILITY.** If any provision of this ordinance or any application thereof to any person or circumstance is held invalid, the remainder of this ordinance and application thereof to any person and circumstances shall not be affected thereby.

3. **PURPOSE.** The purpose of this ordinance is to make a supplemental Capital appropriation for FY2024.

4. **ENACTMENT.** In accordance with Section 11.10 (a) of the Charter of the City and Borough of Sitka, Alaska, the Assembly hereby makes the following supplemental appropriation for the budget period beginning July 1, 2023 and ending June 30, 2024.

FISCAL YEAR 2024 EXPENDITURE BUDGETS
CAPITAL PROJECTS
Fund 730 – Thomsen Harbor Lift Station Replacement: Increase appropriations in the amount of $1,700,000 for additional contingent loan funding from the State of Alaska Department of Environmental Conservation State Revolving Fund Program.
DEBT AUTHORIZATION
Authorization to apply for and Execute ADEC loan funding in the amount of $1,700,000 to fund the Thomsen Harbor Lift Station Replacement project.

EXPLANATION

This project needs $1,700,000 in additional funding. Approval to apply for and expend additional loan funding from the State of Alaska Department of Environmental Conservation State Revolving Fund Program in the amount of $1,700,000 is being requested to fully fund the replacement of the Thomsen Harbor Lift Station. Existing appropriations of $1,300,000 in loan funding and $1,524,143 in working capital from the Wastewater Fund have previously been secured.

5. EFFECTIVE DATE. This ordinance shall become effective on the day after the date of its passage.

PASSED, APPROVED, AND ADOPTED by the Assembly of the City and Borough of Sitka, Alaska this 13th day of February 2024.

ATTEST: **Steven Eisenbeisz, Mayor**

Sara Peterson, MMC
Municipal Clerk

1st reading: 1/23/24
2nd and final reading: 2/13/24

Sponsor: Administrator