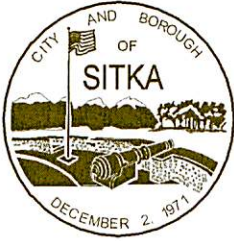


POSSIBLE MOTION

I MOVE TO approve Ordinance 2018-08 on
second and final reading.



City and Borough of Sitka

100 Lincoln Street • Sitka, Alaska 99835

MEMORANDUM

To: Mayor Hunter and Assembly Members
Keith Brady, Municipal Administrator

From: Shilo Williams, Environmental Superintendent
Michael Harmon, P.E., Public Works Director *SW* *MAH*

Cc: Melissa Haley, Controller

Date: March 21, 2018

Subject: Thomsen Harbor Pump Station Repairs Appropriation

Background

The Thomsen Harbor Pump Station was put into service in 1984. It operates 24 hours per day 7 days per week and pumps an average of 1 million gallons per day. The pump station receives wastewater from all homes and businesses on the Baranof Island side of Sitka. The sewage flows through a grinder and into a 25 foot deep wet well. The wastewater is then pumped into two force mains that run under the channel and over to the wastewater plant located on Japonski Island.

The pump station was designed with an underground drywell that houses all of the equipment that runs the station (pumps, motors, electrical equipment, valves, etc.).

See attached Non-Compliance Report dated February 9, 2018 for details on the February 2nd pump station failure.

Analysis

The cost of repairing the pump station exceeds existing appropriations. A capital appropriation of \$350,000 is needed to cover the costs, which includes all of the expenditures related to the repairs needed to get the lift station functioning and to ensure that it will continue to function until further rehabilitation will take place, likely in 2020. The full rehabilitation was originally anticipated in FY2022/FY2023. We anticipate that a minimum of an additional \$500,000 will be needed in FY2020 to complete the rehabilitation.

Fiscal Note

As the emergency repairs needed to get the Thomsen Harbor pump station functioning have significantly increased the anticipated cost of rehabilitating the pump station, there will be an increased burden on Wastewater Fund. However in analyzing the change, the

overall impact of this emergency repair is minimal and will not, in itself, result in additional user fee increases. However, while this failure was unexpected, it does demonstrate the financial risk we face when we opt to pushing back capital improvement projects. It is much more expensive to have infrastructure fail unexpectedly, than it is to proactively repair our infrastructure.

Recommendation

Approve Ordinance 2018-08 appropriating \$350,000 in capital expenditures from the undesignated working capital balance of the Wastewater Fund and authorize the expenditure of these funds.



City and Borough of Sitka

Public Works Department

Environmental

Division

100 Alice Loop • Sitka, Alaska

(907) 747-4060

February 9, 2018

Jeff KenKnight
Water and Wetlands Enforcement Unit
US EPA
1200 Sixth Avenue, Ste. 900
Seattle, WA 98101

RE: Sitka AK-0021474 5-Day Noncompliance Report-Catastrophic Pump Station Failure

Dear Mr. KenKnight:

This serves as the required 5-Day Noncompliance Report for the sewage discharge that occurred February 2-3, 2018.

At approximately 5:00 am on February 2, 2018 the on-call operator received a flood alarm at the Thomsen Harbor Pump Station. This pump station receives flows from all homes and businesses on Baranof Island. The wastewater is then pumped into force mains that run under the channel and over to the wastewater plant on Japonski Island.

The pump station has a drywell that is 25 feet underground. This drywell houses the three pumps and motors and all of the electrical equipment needed to run the station. The bottom of the volute (houses the impeller) on the operating pump gave way causing the dry well to rapidly fill with wastewater. This caused the pump station to go completely dead. A PSA was immediately posted requesting citizens to limit water usage in order to reduce flows.

The drywell was pumped out and our mechanic was able to climb down into the drywell and close a valve which stopped the drywell from flooding. A trailer mounted pump was used to pump the wastewater from the wet well into an adjacent storm drain which discharges into the harbor. This was our only option to avoid wastewater from backing up into homes, businesses and city streets. The lower water usage coupled with dry weather significantly reduced the incoming flows into the pump station.

Once the drywell was cleaned, the motors on two pumps were opened up and hot air was forced into the drywell. While the drywell was drying out, quick work was made gathering necessary equipment including items that were sent Gold Streak on Alaska Airlines.

We took advantage of the situation and moved the electrical equipment (panels, switches, VFD) aboveground.

By Saturday February 3, 2018 the motors had dried out nicely and work was able to continue to rewire everything in. The pump station was up and running by 5:00 pm on Saturday February 3, 2018.

In the days leading up to the failure, we had been experiencing very low flows to the wastewater plant. Based on the low flows coupled with the community limiting their water usage I estimate approximately 800,000 gallons of sewage was discharged to the harbor. There were no solids or debris visible at the discharge point. Most of the solids accumulated in the wet well and the strainer on the pump was catching most wipes and such.

On Monday February 5, 2018 we were finally able to pull apart the motor and pump that had failed. It was then that we saw the bottom of the volute was completely worn away. The shaft and suction elbow were broken. It is my belief that rocks had gotten into the pump and as the impeller spun the rocks wore away the volute.

Like most of our wastewater infrastructure, this pump station was built in the early 80s. The wet well was not designed in a way that allows for cleaning and removal of accumulated debris and solids. Work is progressing on a plan to remedy this issue. A new pump and motor has been ordered to replace the failed pump and motor. We are working with vendors to find replacement pumps and motors for the other two that are currently in operation.

The City and Borough of Sitka realizes the severity of this issue and is not taking this matter lightly. Please contact me should you have questions regarding this matter.

Sincerely,

A handwritten signature in cursive script that reads "Shilo Williams".

Shilo Williams
Environmental Superintendent
City and Borough of Sitka

Attachment: Photo log



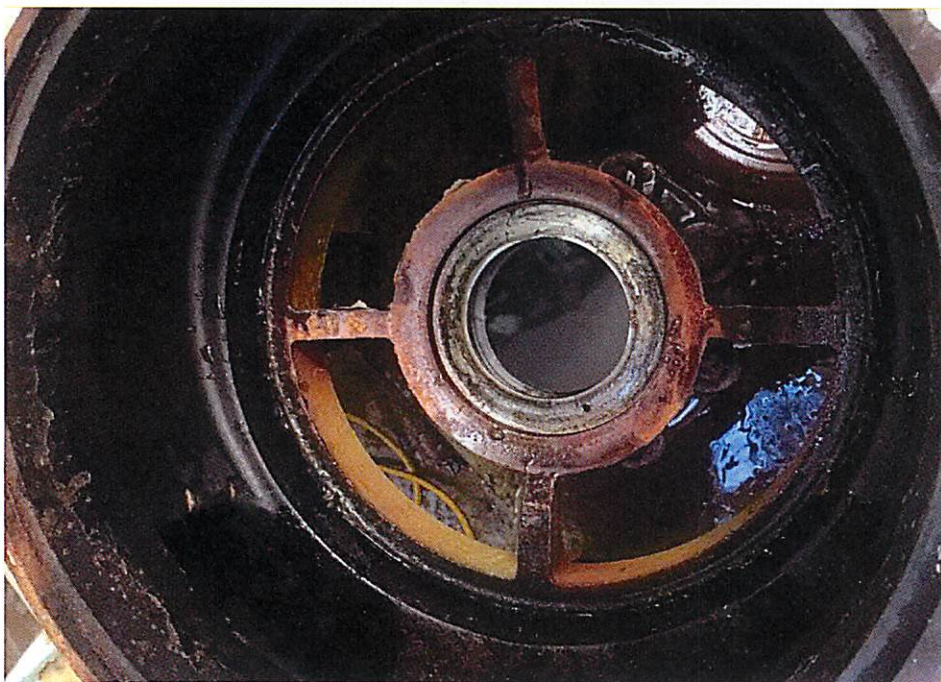
This is the discharge into the harbor



Removing wipes and such that have accumulated on the strainer of the bypass pump



Impeller and piece of volute



Volute- Bottom completely gone