

## **POSSIBLE MOTION**

**I MOVE TO** approve Resolution 2017-01 on  
first and final reading.

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**MEMORANDUM**

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**To:** Mayor Hunter and Members of the Assembly  
Mark Gorman, Municipal Administrator

**From:** Michael Harmon, P.E., Public Works Director *MH*  
David Longtin, P.E., Senior Engineer *DL*  
Jay Sweeney, Chief Finance and Administrative Officer

**Reviewed:** Shilo Williams, Deputy Environmental Superintendent *DL for SW*  
Dan Tadic, P.E., Municipal Engineer *DL for DT*  
Tori Fleming, Contract Coordinator *TF*

**Date:** January 17, 2017

**Subject:** Alaska Department of Environmental Conservation  
FY17 Municipal Loan Applications

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Background:

Each year, staff submits loan questionnaires to the Alaska Department of Environmental Conservation’s Municipal Grants and Loans (MGL) Program for priority water and sewer infrastructure projects. Questionnaires are competitively scored and ranked against other applicants statewide. For this year, five City and Borough of Sitka (CBS) projects scored well enough to be eligible for loan funding, if available. Public Works estimates that significantly less loan funding will be needed than what we are eligible to borrow for these critical projects, as indicated below. Staff requests Assembly approval to apply for the loans as indicated in the “Loan Request” column. No interest or other costs would accrue on loan proceeds not utilized for these projects.

Project	Eligible Loan Amount	Loan Request
Lake & Monastery Sewer	\$2,581,861	\$1,250,000
Lake & Monastery Water	\$2,887,722	\$1,500,000
Brady Lift Station	\$217,400	\$217,400
Lift Station Backup Generators	\$311,000	\$311,000
WWTP Building Envelope	\$1,825,000	\$1,825,000

For years, MGL has also offered grant funding for water and sewer projects. CBS has used MGL grant funding to subsidize many recent projects, including the Ultraviolet Water Treatment Facility and utility replacement projects on Monastery, Baranof, Hollywood Way, New Archangel and Jeff Davis. Due to the State of Alaska’s fiscal challenges, MGL has not offered new grant money for each of the last two annual grant cycles. Recent water main breaks highlight the need to continue replacing aging infrastructure whether grant funds are available or not. Each

break repair typically costs tens of thousands of dollars and serves as a Band-Aid until a complete replacement can be completed.

Analysis:

Justification for the projects recommended for loan applications follows.

**Lake & Monastery Street Water and Sewer Improvements (two separate loans):** These loans would help fund two separate projects, as shown on the attached figure. A project slated for construction in 2019 would replace water and sewer mains in Lake Street from DeGroff to Arrowhead, and in Hirst Street. A project in 2020 would replace utilities in Monastery from DeGroff to Arrowhead, and in Kinkead Street:

- Water and sewer lines located in the area funded by the requested loans were installed between 1967 and 1978, and are in need of replacement. There have been at least five water main breaks repaired by our Environmental Division within the project corridor. One result of the breaks is that Monastery Street between Hirst and DeGroff is served by a dead-end 2-inch line, diminishing the water quality and fire flow capabilities.
- One of the five breaks cited above was the January 2017 break of a fire hydrant leg near the corner of Lake Street and DeGroff. Excavation for replacement of the leg revealed a leaky, corroded cross-culvert and the location of the water main directly below the sewer main, a violation of ADEC regulations.
- Due to the relatively flat grade of the Lake Street sewer main and the muskeg underlying the pipes in this neighborhood, the sewer mains are prone to developing bellies due to settlement and clogging. Much of the Lake Street main is constantly half-full. An apartment building on Monastery has been flooded with sewage backups twice because of this. The manhole at the corner of Kinkead and Monastery has to be pumped out or flushed every Friday due to the poor condition of the manhole and the lack of sufficient gradient in the system. Public Works began preparing for lowering the Lake Street sewer main during the 2009 roundabout project, when we had the State install a deep manhole that would accept a lower sewer main. This project would provide much-improved sewer service to this neighborhood by providing a deeper Lake Street main, allowing for improved gradient.
- The drainage and ditching in the project area, especially adjacent to Monastery Street, is sub-standard. This results in the flooding of low areas and contributes to the deterioration of the pavement.
- The condition of the pavement in this neighborhood is poor. The most recent pavement assessment performed for Monastery Street estimates the Remaining Service Life of the pavement at 2 years to 6 years. Replacement of pavement disturbed by utility projects is eligible for loan reimbursement. MGL funds have effectively served as the CBS roads funding program without any other dedicated funding source.

**Brady Lift Station Improvements:** The Brady Lift Station receives all the wastewater generated from Lakeview Drive on Halibut Point Road to the end of the HPR collection system, including the Edgecumbe Drive drainage basin. Along with other downstream lift stations, Brady pumps

the sewage to the wastewater treatment plant on Japonski Island. The Brady pumps cycle an average of 130 times per day. Over their 33 years of service, the three pumps in the lift station have each run over a half-million cycles. A failed plug valve in the lift station makes it impossible to isolate the pumps for servicing and replacement. This project will allow the Environmental Division to bypass pump around and isolate the Brady Street Lift Station, replace the check valves and individual isolation valves for each of the pumps, and provide variable frequency drives and new pumps, resulting in more efficient and reliable use of this critical lift station.

**Lift Station Backup Generator Replacement:** Thomsen Lift Station collects all the domestic wastewater generated on the Baranof Island portion of Sitka and pumps it across Sitka Channel to Japonski Island, where the WWTP is located. The Thompson backup generator, installed in 1982, is in need of replacement. In the event of a power outage during a storm, without backup power at the lift station, businesses located along Katlian Street will back up with sewage in approximately 20 minutes. Six other lift stations have generators that are nearing the end of their useful life, as well as the backup generator for the WWTP. This loan would fund a project to replace the Thomsen Lift Station backup generator along with two of the other generators determined to be most critical.

**Wastewater Treatment Plant Building Envelope Improvements:** The original structures (treatment and clarifier buildings) were built in 1984. Since then, they have been repainted twice, and the roof replaced in 2010. With a few minor exceptions, windows, doors and siding are part of the original construction. A 2013 investigation found excessive moisture and rot under the exterior siding. A January 2015 assessment report recommended framing repair and re-insulation, new sheathing and cladding, replacement of man doors, windows and louvers.

#### Fiscal Note:

Fiscal forecasts have been created and refined through the collaboration of the Public Works and Finance Departments. In these forecasts, the projected future financial position and financial performance of the water and wastewater funds has been combined with the long range municipal capital improvement plans in order to model the user fees necessary to finance the improvements and meet minimum financial ratios.

To finance the long-range water capital improvement plan, a residential rate increase of \$1.18 per month (from \$39.35 to \$40.53) will be needed for FY18. To finance the long-range wastewater capital improvement plan, a residential rate increase of \$2.41 per month (from \$53.60 to \$56.01) will be needed for FY18. The long-range capital plans would require additional increases for future fiscal years.

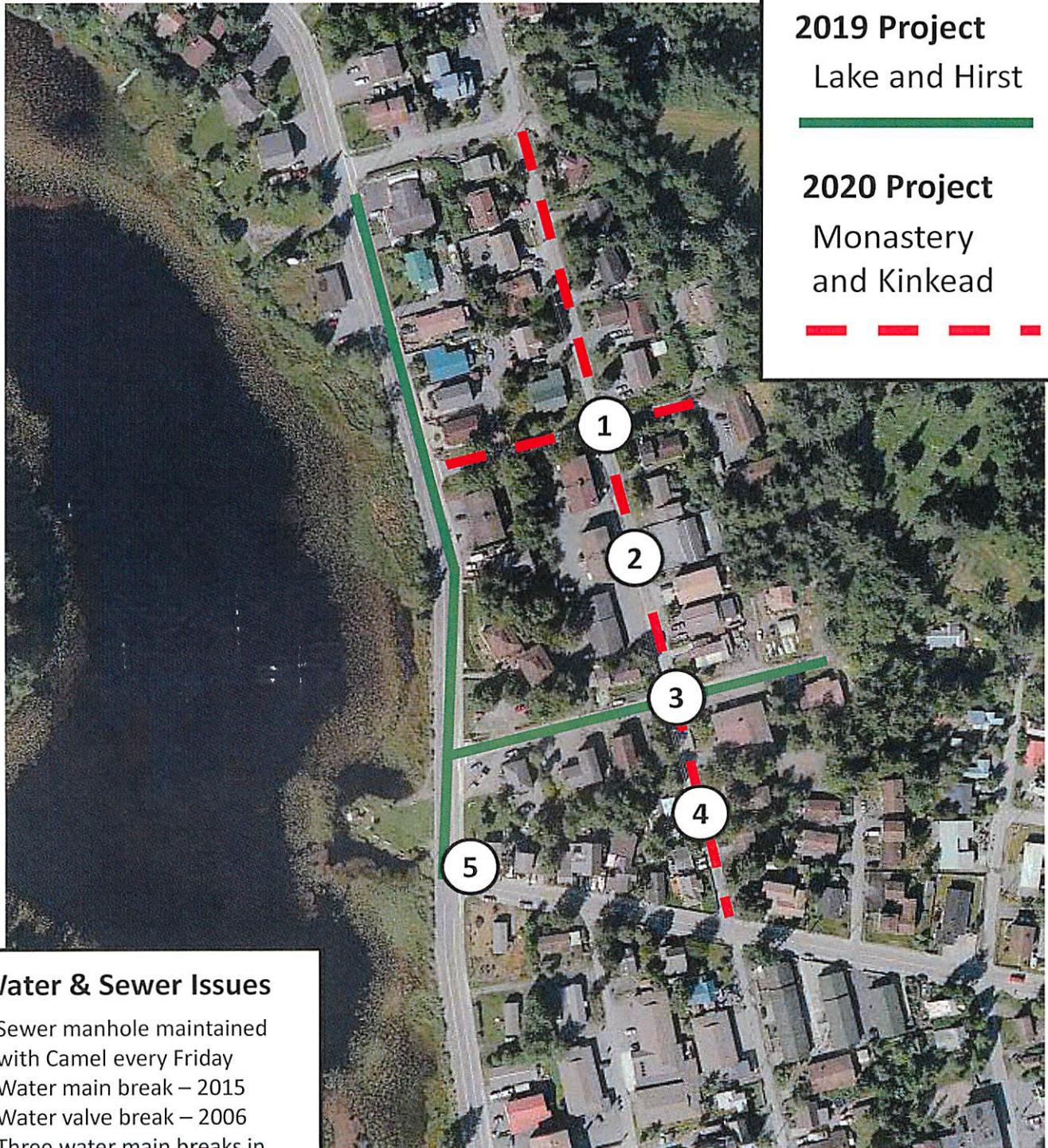
It is critical to note that if the accompanying DEC low interest loan requests are approved but necessary rate increases are not increased as needed, the Municipality will not be able to complete future projects in the capital improvement plans, as it will potentially not be able to borrow additional funds due to weak financial condition of the water and wastewater funds. Minimally, cash flow from operations should be 125% of annual debt service to ensure adequate

working capital. With a nominal 1% increase in user fees instead of the modeled rates, both the water and wastewater funds would need to curtail their capital improvement plans in FY19, exacerbating the degradation of infrastructure, which will result in increased failures and maintenance costs.

**Recommendation:**

**Approve Resolution 2017-01 authorizing CBS to apply for and execute five loans to the Alaska Department of Environmental Conservation's MG&L Program as indicated in the Loan Request column above. The loans are for Lake & Monastery Street Sewer Improvements, Lake & Monastery Street Water Improvements, Brady Lift Station Improvements, Lift Station Backup Generator Replacement and Wastewater Treatment Plant Building Envelope Improvements.**

# Lake & Monastery Water and Sewer Improvements



**2019 Project**  
Lake and Hirst



**2020 Project**  
Monastery  
and Kinkead



## Water & Sewer Issues

1. Sewer manhole maintained with Camel every Friday
2. Water main break – 2015
3. Water valve break – 2006
4. Three water main breaks in the mid-1990s
5. Fire hydrant leg break – 2017

## Attachment 2

This slide shows the inside of the sewer main running down Kincaid Street, from its intersection with Monastery to its intersection with Lake Street. Sludge buildup on the roof of the pipe in the first photo indicates that the pipe is sometimes full at this location. Sewer pipes should not have any standing water in them, as is visible in these photos. Backups in this pipe have led to sewage twice flooding an apartment on Monastery Street.



General Observation at 011.3 feet, 11 o'clock | Sludge Buildup on roof of pipe



General Observation at 015.9 feet, 5-7 o'clock, 25% | Standing Water



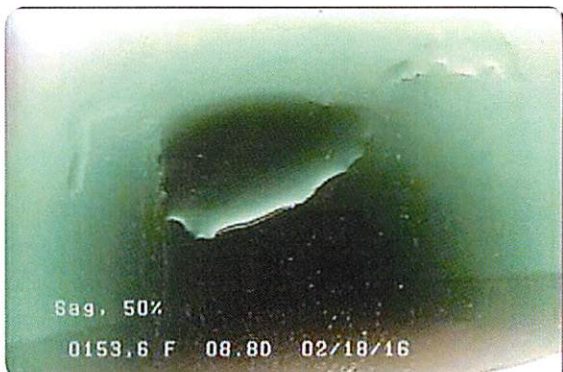
Sag at 067.3 feet, continuous for 34.2 ft, 100%



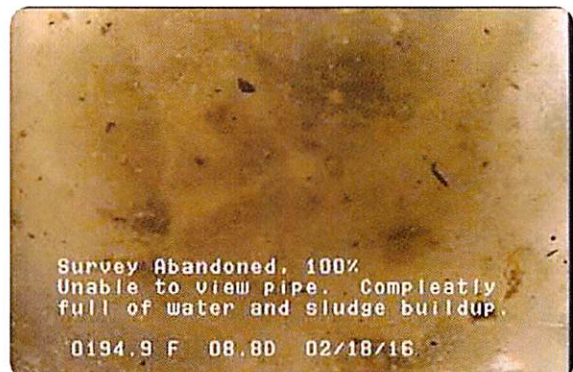
General Observation at 104.2 feet | Joint



General Observation at 124.0 feet | Joint



Sag at 131.5 feet, 3-9 o'clock, continuous for 22.4 ft, 50%



Survey Abandoned at 194.9 feet, 100% | Unable to view pipe. Completely full of water and sludge buildup.

CITY AND BOROUGH OF SITKA

RESOLUTION NO. 2017-01

**A RESOLUTION OF THE CITY AND BOROUGH OF SITKA, ALASKA,  
AUTHORIZING THE APPLICATION FOR LOANS TO THE ALASKA  
DEPARTMENT OF ENVIRONMENTAL CONSERVATION UNDER THE  
ALASKA DRINKING WATER FUND FOR LAKE & MONASTERY  
STREET WATER IMPROVEMENTS, AND UNDER THE ALASKA  
CLEAN WATER FUND FOR LAKE & MONASTERY STREET SEWER  
IMPROVEMENTS, BRADY LIFT STATION IMPROVEMENTS, LIFT  
STATION BACKUP GENERATOR REPLACEMENT AND  
WASTEWATER TREATMENT PLANT BUILDING ENVELOPE  
IMPROVEMENTS**

**WHEREAS**, the City and Borough of Sitka (CBS) seeks to obtain the necessary financial assistance to construct water and wastewater improvements; and

**WHEREAS**, the State of Alaska Department of Environmental Conservation is able to offer funding through the Alaska Drinking Water Fund and Alaska Clean Water Fund; and

**WHEREAS**, the Municipality wishes to apply for loans for these important capital projects.

**NOW, THEREFORE, BE IT RESOLVED** by the Assembly of the City and Borough of Sitka that the Municipal Administrator is authorized to apply to the Alaska Department of Environmental Conservation for loans from the Alaska Drinking Water Fund and Alaska Clean Water Fund for planning, design, and construction of the above referenced water and sewer projects and to execute the loan agreements if the projects are funded.

**PASSED, APPROVED, AND ADOPTED** by the Assembly of the City and Borough of Sitka, Alaska on this 24<sup>th</sup> day of January, 2017.

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Mayor Matthew Hunter

ATTEST:

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Sara Peterson, CMC  
Municipal Clerk

1<sup>st</sup> and final reading 1/24/17