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TRANSMITTAL MEMORANDUM

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TO: The Honorable Mayor & City Council

FROM: Delilah A. Walsh, City Manager

Initials:

DATE: November 9, 2022

File #: MGR22-015

RE: **Water Division Manager's Report, October 2022**

Attached for the City Council review is the project status report from the KPU Water Division for the month of October 2022. Should the City Council have questions regarding the division managers' report, staff can respond accordingly.

**MANAGER'S REPORT
WATER DIVISION
October 2022**

FILTRATION AVOIDANCE

At their meeting of May 20, 2021 the City Council approved the draft Compliance Order by Consent (COBC) prepared by the Alaska Department of Environmental Conservation (ADEC). It contains provisions that KPU must demonstrate in order to qualify for a Limited Alternative to Filtration (LAF). They are:

- a. The system has “uninhabited, undeveloped watersheds in consolidated ownership.”
- b. The system has control over both “access to, and activities in, those watersheds.”
- c. The system’s source water quality and the alternative treatment requirements established by the state must ensure greater removal or inactivation efficiencies of pathogens than would otherwise result from the treatment requirements stipulated by regulations.

Each of the items listed in the COBC: Items A - Watershed Control Plan that was later combined with Item B – Consolidated Ownership Report, Item C – Source Water Quality Study, Item D – Water Treatment Report, and Item E – Provisions for Public Involvement, have all been prepared and thoroughly reviewed by ADEC personnel. Updates were prepared addressing each of their comments and then resubmitted for ADEC’s final review. Their review comments included “Overall, the report looks good and we have no issues with the technical aspects provided to support your arguments/justification.”

After thoroughly reviewing each of the COBC’s five Action Items, ADEC has now prepared their final decision document. It includes a formal response being reviewed by the Alaska Department of Law which addresses in detail whether or not Ketchikan has met the COBC’s multiple individual criteria. The indications made thus far have been that ADEC’s final decision document will be supportive and recommend that Ketchikan is warranted to continue seeking authorization of a LAF. The next step will be ADEC’s transmittal of each of the final reports listed in the COBC along with their accompanying documentation by late November to the EPA Region 10 Administrator for the EPA’s formal review.

The EPA will undoubtedly have further questions during their individual reviews or requests for supplementary information about these Action Item submittals. This will likely occur over an extended amount of time, perhaps another year or more. Additional funding is needed for this subsequent work and on March 17th, the City Council adopted a motion authorizing Amendment No. 4 in the not to exceed amount of \$130,000 to Contract 19-44, Professional Services Agreement for Negotiation of a Compliance Order by Consent for Water Filtration.

Final LAF approval still depends upon the EPA’s approval of ADEC’s acknowledgement that each of KPU’s five submitted Action Item studies have fully met the provisions listed in Ketchikan’s COBC, the EPA makes an affirmative decision that Ketchikan is to receive a LAF, and ADEC must adopt LAF provisions which do not exist today into the Alaska Drinking Water Regulations.

OPERATIONAL ISSUES

Contract 21-01 - Ketchikan Raw Water Transmission Main Replacement

Contract 21-01, awarded to BAM LLC for the replacement for the failing portion of the 36-inch raw water transmission main in Schoenbar Road, will be a single, permanent 42-inch HDPE pipeline being constructed between the southwesterly edge of Norman Walker Field (adjacent to Park Avenue parking area), and the Ketchikan Charter School. Beginning at the westerly edge of Norman Walker Field, it will cross above Schoenbar Creek adjacent to where Schoenbar Creek's 96-inch multi-plate culvert begins, and then remain buried under Schoenbar Middle School's driveway, passing beneath the School District's Maintenance Shop parking area and the Ketchikan Charter School's playground before reconnecting to the remainder of the existing raw water transmission main.

During September, the final segment of 1660 feet of 42-inch HDPE mainline was completed beneath Norman Walker Field and extended to a point adjacent to the Field's Park Avenue parking area. Here the easternmost connection point to the existing buried 36-inch ductile iron raw water transmission main had been already installed on May 23rd. During October the 42-inch HDPE mainline was joined to the easternmost's wye connection, pressure tested, and then placed into service.



To complete the project BAM LLC is backfilling approximately 1740-feet of abandoned 36 and 24-inch water mains with concrete grout to ensure the ductile iron pipes don't continue to corrode to the point of collapsing and causing unexpected substantial subsidence to either the repaved Schoenbar

Road or to Walker Field which is due to receive extensive future ballfield improvements including a new layer of synthetic plastic turf.

Also completed in October is the only section of this new transmission main that is installed above ground. Crossing over Schoenbar Creek, it was designed to ensure that the top of the now insulated ductile iron pipe doesn't obstruct a driver's view of any oncoming Schoenbar Road east-bound traffic while they safely turn left and leave the School's parking lot.



Final asphalt pavement restoration throughout the project boundaries was also completed including the Schoenbar Road crossing and the exit driveway from Schoenbar Middle School.



Contract 20-25 – Continuation of Water Meter Design / Build – Business & Commercial Customers

Ketchikan Mechanical Inc. (KMI) was awarded Contract 20-25, the installation of another 50 water meters using the same design-build contract method as before, by the City Council on February 4th. KMI's first task is to conduct individual audits of each of the businesses that were identified in the Bid Documents and from these audits, then prepares a simplified design for each individual meter installation for review and approval by KPU. After KPU's approval is issued, the contractor begins installation of the new meter. Since its inception in 2019, this step-by-step method of installing water meters has proven to be entirely satisfactory for everyone involved.

Like so many other manufactured items affected by the coronavirus pandemic, this inadvertent delay required an extension to KMI's Contract 20-25's completion date to October 9, 2021 and was approved by the City Council at their meeting of July 1, 2021. As before, this contract was completed on-time and under budget. With a total of 183 meters now installed, it is apparent that using the design/ build concept for meter installation has been both cost-efficient and successful, with minimal difficulties encountered. However, progress has been at a standstill during 2022 as the effects of the continuing coronavirus pandemic has severely affected material deliveries for both water meters as well as the radio-frequency nodes that allow them to electronically communicate and transmit information to KPU's electric meters.

KPU's present supply of Cooper Power nodes remaining in inventory is exhausted. Complicating the matter, the 80 additional nodes that were ordered back in October 2020, continues to experience further delays in their estimated delivery date. Cooper Power's March 22, 2022 email stated that 50 of our backordered batteries should be shipped the second week of June, another 80 nodes shipped by the end of June, and the last 160 backordered nodes will be shipped by the end of July. Although Cooper Power has assured KPU that it has priority to receive the nodes that are on order once the manufacturing production problems at their factory in Mexico are resolved, another recent email stated that our node deliveries will now not begin until December 2022.

Although the promised delivery dates of KPU's 2020 & 2021 orders for additional nodes have continued to slip drastically, this October, Cooper Power has finally delivered the first 80 of the 240 nodes ordered. KPU employees have already installed 8 of these nodes and are continuing to install the remainder until all of the 50 new water meters that KMI installed in Contract 20-25 have become fully functional and begin reporting. The reporting procedure itself consists of each node interrogating its associated water meter hourly and then reporting the results to one of KPU's nearby Cooper Power "smart" electric meters which in turn transmits the water flow measurements to the Electric Division. Ultimately, this water consumption information will be transmitted to Finance's New World Financial Management System for the purpose of preparing monthly billings to our ratepayers.

As it stands now, achieving the original goal of having all of the remaining unmetered businesses, commercial buildings, and large residential apartment complexes fully metered before the end of 2022 is simply no longer feasible and as a result, completion of this project is now very likely delayed into late 2023. Once the remainder of the 240 node order is received from Cooper Power, the next water meter installation contract is planned in early 2023 to install meters for the remainder of these approximately 225 unmetered businesses, commercial buildings, and large residential apartment complexes.

Despite the delay caused by lack of these critical nodes, KPU's draft 2023 Budget still proposes carryover of Drinking Water and Wastewater Loan Funds for the installation of the remainder of the water meters. After the City Council has deliberated and established policies for amending future utility rates, there will be a need to update the 2016 Water/ Wastewater Rate Study and adopt amendments to the Ketchikan Municipal Code.

Contract No. 21-10 – Programmable Logic Controller Upgrade – Phase II - UV Disinfection Facility

Although Jacobs Engineering has completed earlier Contracts which made the initial upgrades to our SCADA server and program software, there still remain a number of outstanding automation and cybersecurity risks existing within the disinfection system that also need to be addressed. The recently completed Contract 21-03 – Water Cyber Security Evaluation identified areas in urgent need of cybersecurity improvements including the planned multi-year project to replace all three of our present Allen-Bradley Programmable Logic Controllers (PLCs) which have reached the end of their useful service life. Collectively, KPU has three Allen-Bradley Programmable Logic Controllers (PLCs) installed at the UV Facility, the Chlorination Plant, and the Ammonia Addition Facility. They are each providing continuous supervisory control over specific critical components within KPU's complex, computer-controlled, disinfection process.

Although this project had been approved for construction in the division's 2020 CIP program, by that March everyone suddenly found themselves in the midst of the worldwide coronavirus pandemic and all that entailed. Accordingly, to minimize the Utilities' annual operating expenditures during 2020,

KPU elected to defer any planned PLC upgrading until 2021. Included in Water's 2021 CIP Budget, Contract 21-10 is the first phase of this project and approved by the City Council at their meeting of July 15, 2021. These PLC replacements will be the new Allen-Bradley ControlLogix PLCs which have long-term manufacturer and industry support. They use a modern control system infrastructure that offers several improvements for communications, stability, ease of maintenance, and reliability. This is the reason, when the Two-Point Chlorination Facility was being designed in 2015, the latest ControlLogix PLC's were chosen to operate the two new ClorTec sodium hypochlorite generators.

Continued delays of critical material deliveries that will likely continue through the summer months are affecting completion of this project at the UV Facility (CP-100). Several project meetings have been held with Jacobs Engineering's staff, most recently on April 7, 2022, to discuss the preparatory work progress that is necessary before the equipment installation phase can begin. The final testing of the control system, the PLC and HMI programming, and the implementation planning must all be completed before shipping the components to Ketchikan and physically beginning the installation.

Rather than having any potential impact on 2022's fish processing season, the installation, commissioning, and cutover of the new CP-100 equipment in the UV Facility was planned to occur this fall. However, due to the world-wide effect of the coronavirus pandemic on material deliveries, the upgrade to the Water Treatment UV Facility's (CP-100) PLC has been further delayed and may not be completed before mid-2023. In addition, there have also been significant material cost increases during 2022 which are now reflected in the increased estimated costs to upgrade the two remaining PLCs; the one located in the Old Chlorination Building (CP-300) in 2023, and upgrade to the third and final PLC in the Ammonia Building (CP-400) in 2024. This will allow all of these critical PLC's to migrate to the modern Allen-Bradley ControlLogix PLC platform.

WATER UTILIZATION STUDY REPORT

OCTOBER 2022 CONSUMPTION TOTAL GALLONS

Single Family Residential

METER - SIZE	Week 1	Week 2	Week 3	Week 4	Wk 5	TOTAL			2022 - 2021
						2022		2021	% Change
Total Residential Usage						69,000		89,000	-22%

Multi-Family Residential

METER - SIZE	Week 1	Week 2	Week 3	Week 4	Wk 5	TOTAL			2022 - 2021
						2022		2021	% Change
Total Multi-Family Usage						117,000		238,000	-51%

Piers, Dock and Waterfront Facilities

METER - SIZE	Week 1	Week 2	Week 3	Week 4	Wk 5	TOTAL			2022 - 2021
						2022		2021	% Change
Bar Harbor Ramp 3						57,000		139,000	-59%
Port & Harbors Admin.						8,000		17,000	-53%
Bar Harbor Ramp 2	All of these meters are now being read automatically through the new metering system.					210,000		181,000	16%
Bar Harbor Ramp 1						3,692,000	*	8,000	46050%
Berth 4 Ramp - 4"						0		0	
Berth 4 Bathrooms						7,000		0	
City Float - 1½"	The monthly water total consumption is shown in the Total 2022 column to the right.					811,000		260,000	212%
Berth 3						20,000		0	
Berth 1 South - 6"						0		0	
Berth 2 North - 4"						0		0	
Thomas Basin Ramp 1						93,000		128,000	-27%
Thomas Basin Ramp 2						364,000		222,000	64%
Other Waterfront Facilities						1,683,000		2,796,000	-40%
Total Waterfront Facilities						6,945,000		3,751,000	85%

Seafood Processing Plants

METER - SIZE	Week 1	Week 2	Week 3	Week 4	Wk 5	TOTAL			2022 - 2021
						2022		2021	% Change
Total Seafood Processing						10,630,000		3,545,000	200%

WATER UTILIZATION STUDY REPORT

OCTOBER 2022 CONSUMPTION TOTAL GALLONS

Commercial

METER - SIZE	Week 1	Week 2	Week 3	Week 4	Wk 5	TOTAL			2022 - 2021
						2022		2021	% Change
Recreation Center	All of these meters are now being					38,000		33,000	15%
Recreation Swimming Pool		read automatically through the				0	**	158,000	-100%
Schoenbar Jr. High School		new metering system.				29,000		25,000	16%
Library (Copper Ridge)						8,000		7,000	14%
Airport - 10"	The monthly water total consumption					1,104,000		169,000	553%
Wastewater (Dilution Water)	is shown in the Total 2022					7,563,000		8,397,000	-10%
Hospital - 6"		column to the right.				221,000		248,000	-11%
Borough Offices 2"						9,000		9,000	0%
Other Commercial Facilities						368,000		385,000	-4%
Total Commercial						9,340,000		9,431,000	-1%

Water Fill Station

METER - SIZE	Week 1	Week 2	Week 3	Week 4	Wk 5	TOTAL			2022 - 2021
						2022		2021	% Change
City						111,100		21,300	422%
Sewer						400		1,300	-69%
DOT						1,500		0	
Borough						0		0	
Other Fill Station Users						289,400		474,900	-39%
Total Water Fill Station						402,400		497,500	-19%
METER GRAND TOTAL						27,503,400		17,551,500	57%
MONTHLY TOTAL AT UV PLANT						92,567,351		85,427,600	8%
PERCENTAGE OF WATER METERED THIS MONTH						30%		21%	45%
UV PLANT DAILY AVERAGE						2,986,044		2,755,729	8%

*Bar Harbor Ramp 1 back in service, use is for Aug, Sept, Oct. **Swimming Pool is out of service