



TRANSMITTAL MEMORANDUM

TO: The Honorable Mayor and City Council

FROM: Karl R. Amylon, City Manager

DATE: February 3, 2021

RE: **Public Works Director's Project Status Report – February 2021**

Attached for City Council review is the project status report of the Public Works Director for the month of February 2021. Should the City Council have questions regarding the Public Works Director's report, staff can respond accordingly.

PUBLIC WORKS DIRECTOR'S REPORT FEBRUARY 2021

Project:	KETCHIKAN GENERAL HOSPITAL ADDITION & ALTERATION
Project Cost:	\$45,207,269
Completion Date:	2016

PROJECT SUMMARY & BACKGROUND

In October of 2013, Ketchikan voters passed a \$43M Bond Referendum to fund the first phase of the expansion and alteration project. Principal funding will consist of the \$43M in bonds, \$15M from a legislative grant, and \$8M from PeaceHealth. On September 4, 2014, Council action finalized the Phase I Guaranteed Maximum Price of \$45,935,018. NAC Architecture has been issued a contract amendment bringing the total A/E contract to an amount not to exceed \$1,221,616. The DOWL HKM Contract Amendment has been approved for Phase I project management, bringing the contract total to \$1,801,000.

UPDATE

Phase I construction was observed to be substantially complete on June 24, 2016. The contractor continues to work on a short list of lingering items. LDC and the City continue to meet bi-weekly to discuss and work through obstacles to wrapping the work up. Meanwhile, LDC and Marble Construction finished the locker room finishes and temporary door infill (near the ER entrance) on August 17, removing the last outstanding item on the Phase I final Certificate of Occupancy. An issue with an occasional exceedance of the OR relative humidity requirements has been raised by PeaceHealth. The project's mechanical engineer has been tasked with offering HVAC operational suggestions (within the context and cost of the existing professional services agreement). Peace Health has also engaged a mechanical engineer to review the matter at their cost. PeaceHealth's stated goal is to have this resolved for the summer of 2019.

Phase II - T- Phase II-T is substantially complete. The contractor has finished all punch list items. The City is withholding funds to ensure remedy of the final outstanding issues. Vinyl floor replacement is now complete. WJE has completed the design work on the seismic joint between the addition and the old hospital. At this point, the work to repair the joint will occur in this year, possibly as early as Spring. The parking garage intumescent repair is scheduled for spring according to Dawson.

Project:	FIRE STATION NO. 2 OVERHEAD DOORS REPLACEMENT
Project Cost:	\$320,000
Completion Date:	August 2019

PROJECT SUMMARY & BACKGROUND

In adopting the 2019 General Government Operating and Capital Budget, the City Council appropriated \$424,150 to repair and renovate various components of Fire Station No. 2. Following a building-wide survey for hazardous materials, the Overhead Doors Replacement project was designed by local architect Tim Whiteley. This project will replace the two failing overhead doors with three fast-acting four-fold doors. Sealed bids were opened on January 30, 2019 by the City Clerk in City Council Chambers. At its meeting of February 21, 2019, City Council accepted the bid of Island Contractors, Inc. in the amount of \$292,340 with a contingency of \$29,234. Notice to Proceed was issued on March 7, 2019. Doors are completely installed and in operation. There was some damage noted as a result of shipping, and money has been withheld from final payment. Staff continues to work through that issue, but in the meantime, the doors are a huge improvement. The City has withheld funds and is in discussions with the Contractor together with the City Attorney.

UPDATE

None

Project:	KETCHIKAN POLICE STATION RE-SIDING
Project Cost:	\$234,400
Completion Date:	October 2020

PROJECT SUMMARY & BACKGROUND

In adopting the 2020 General Government Operating and Capital Budget, the City Council appropriated \$234,400 to place siding over the existing brick penthouse to eliminate water intrusion. The project was bid in conjunction with the Police Station Exterior Gate Replacement on June 1. All bids received exceeded combined available funds for both projects and were therefore rejected by Public Works staff. The two projects will be split into two separate bid sets with the re-siding project bidding July 2020 and the gate replacement bidding in the spring of 2021.

UPDATE

Construction started the week of January 11 with Island Contractors Inc. and progressed rapidly. Currently, the project is substantially complete with all metal siding, flashing, and trim in place. Punch list items remaining include final coat of paint on the metal doors on the penthouse. Final completion is estimated to be February 26 dependent on the paint arriving in Ketchikan. There are two relatively minor change orders pending, one for additional siding quantity, and one for moving the electrical conduit that is on the outside of the building to the inside for a cleaner siding install. It is anticipated that existing project funding will be sufficient to cover both change orders.



Project:	WISH DOMESTIC VIOLENCE SHELTER - REMODEL
Project Cost:	\$1,500,000
Completion Date:	July 2021

PROJECT SUMMARY & BACKGROUND

In adopting the 2020 General Government Operating and Capital Budget, the City Council appropriated \$850,000 to be reimbursed through a Community Development Block Grant, and partnered with Women in Safe Homes, whose contribution to the project will be \$650,000, to renovate the former Ketchikan Regional Youth Facility into a shelter for battered spouses and children.

UPDATE

Demolition of interior walls began January 11 and is nearly complete. BAM Construction and their subcontractors began the construction phases of the project with construction of the additions beginning March 1. The project is estimated to be complete in July of 2021.



Project:	SPRUCE MILL PROMENADE
Project Cost:	\$3,000,000
Completion Date:	Spring 2022

PROJECT SUMMARY & BACKGROUND

In adopting the 2020 Capital Improvement Program Budget, City Council provided \$38,000 in Commercial Passenger Vehicle (CPV) funds for an initial investigation, surveying, and concept development for an extension to the Promenade. The conceptual phase rough order of magnitude design, permitting, and construction cost is approximated at \$3.0M. It should be noted that the remaining sheet pile wall in the vicinity of the NOAA building is still in a state of failure, and PND Engineers did conceptualize a potential repair that was roughly estimated at \$1.0M.

UPDATE

The conceptual phase of this project is complete. At the January 7, 2021 meeting, City Council accepted Public Works Staff recommendation to postpone the design and permitting of the project until at least 2022.

Project:	STEDMAN STREET RESTROOM FACILITY
Project Cost:	\$1,600,000
Completion Date:	Spring 2022

PROJECT SUMMARY & BACKGROUND

In adopting the 2020 Capital Improvement Program Budget, City Council funded \$62,200 for the design of the Stedman Street Restroom by local Architect, Welsh Whiteley Architects, LLC. The project is currently near completion of the Design Development phase.

UPDATE

Welsh Whiteley Architects is nearly complete with their previously authorized design work. The City Council deferred the project and directed Staff to explore alternate locations. In response staff gathered up the previous site analysis and forwarded that to City Council. At this point, absent acquiring a new site, the project is on hold pending further direction from City Council.

Project:	PARK AVENUE SAFE SHELTER
Project Cost:	\$119,000
Completion Date:	Winter 2020

PROJECT SUMMARY & BACKGROUND

At the Council meeting on October 21, 2020 City Council funded \$119,000 for the interior remodel of the former KYI building into a new overnight warming shelter for Ketchikan's homeless population. Minor interior demolition and construction work will begin the week of October 23, construction is anticipated to last 4 weeks.

UPDATE

As of December 7, the shelter has been occupied overnight and has been near or at capacity on a regular basis. Construction is complete and the shelter is functioning as intended. Design of a building addition is ongoing with anticipated construction in the Summer of 2021.

Project:	TONGASS AVENUE CROSSWALK IMPROVEMENTS
Project Cost:	\$110,000
Completion Date:	Summer 2021

PROJECT SUMMARY & BACKGROUND

At its meeting of January 18, 2018, City Council approved funding in the amount of \$110,000 to undertake improvements to crosswalk safety along the Tongass Ave corridor. The intersections of Deermount and Stedman, the Ketchikan Medical Center, Tongass and Heckman and Tongass at the Vigor shipyard were identified as priority projects to improve pedestrian safety. ADOT informed that they need more data and monitoring to add a crosswalk at Heckman.

Staff was informed that ADOT has received a Federal Highway Safety Grant for design of safety upgrades at the Deermount intersection. Included in the design are sidewalk bulb-outs, new markings and signage, and enhanced lighting. Construction was expected in 2020 but never materialized. Per City Council's direction, staff is working on a permit submittal to ADOT in order to install a rectangular rapid flashing beacon and remove the existing lighted pedestrian sign. This trial is planned for the Deermount intersection.

Staff become aware of some LED lighting upgrades that have potential to increase conspicuity of pedestrians in crosswalks. Staff is moving forward with the LED Lighting upgrades for the Ketchikan Medical Center and Tongass Ave crosswalk as a trial location for this upgrade.

ADOT is still gathering data at the Heckman Street intersection in order to determine if a traffic signal is warranted there.

UPDATE

None

Project:	NEW AERIAL PHOTOS & TOPO MAPS
Project Cost:	\$240,000
Completion Date:	Summer 2022

PROJECT SUMMARY & BACKGROUND

The aerial orthophotos purchased jointly between the City, KPU, and Ketchikan Gateway Borough in 2008 are out of date. The aerial orthophotos purchased by FEMA in 2014 are also out of date and did not cover some vital facilities and areas, including Ketchikan Lakes, Whitman, Fawn Mountain, and Upper & Lower Silvis Lakes. The aerial maps and topographic maps are used for a variety of in-house purposes and public presentations. The cost of the project will be funded equally between the City and Ketchikan Public Utilities. An RFQ was prepared by Staff and publicly advertised. Numerous proposals were received, and evaluated by a selection committee. The City Council awarded the contract to Lidar America at the April 4, 2019 Council meeting. Prior to contract award, an increased photo resolution was negotiated without increasing the contract cost. This will result in state of the art picture clarity and increase the quality of data that can be obtained from the photo. Staff postponed the data acquisition flight in order to capture the Front, Mill, and Stedman improvements in the photos. Unfortunately, the ADOT project took longer than expected to finish and the weather window to complete the flight passed.

UPDATE

The project is on hold due to health and travel mandates for the Covid-19 pandemic. The aircraft cannot travel to Alaska until the Canadian border opens to allow the necessary fuel stop in Canada.

BRIDGES & TRESTLES

Project:	SAYLES/GORGE AND WATER STREET TRESTLE #1 REPLACEMENT
Project Cost:	\$4,800,000
Completion Date:	2021

PROJECT SUMMARY & BACKGROUND

The Public Works Department is working in support of the Alaska Department of Transportation and Public Facilities for design and complete replacement of these two structures. The two projects are included in the Statewide Transportation Improvement Plan with Water Street Trestle #1 planned for 2020 replacement and Sayles/Gorge Trestle planned for a 2021 replacement. ADOT permitting and design is ongoing. R&M Engineering from Anchorage was awarded the design by ADOT. Streets Division cleaned the underside of the structure to allow R&M to use scanning technology to survey the structure.

Public Works designed and installed an interim abutment to support the structure until the ADOT construction project begins.

Staff met with the ADOT bridge design team to evaluate design criteria and design concept options. For Water St #1 the design concept recommended is a retaining wall and fill section, eliminating the life-cycle costs of bridge ownership.

For Sayles/Gorge, two bridge design concepts were chosen for further vetting. Eliminating the bridge and constructing a fill section for Sayles Gorge was evaluated and ruled out. ADOT & PF's consultant completed a bridge selection report. The consultant evaluated a fill section along with steel and concrete structure. The steel and concrete structure was recommended.

ADOT design engineers are beginning final design for Water St. Trestle No. 1. The City has provided its local share necessary to enter this phase of the design.

UPDATE

None

STREETS DIVISION (Capital Improvement Projects)

Project:	TRANSPORTATION INFRASTRUCTURE (Annual CIP)
Capital Budget:	\$180,000
Completion Date:	2021

PROJECT SUMMARY & BACKGROUND

This budget item replaces the Safer Streets & Sidewalks, Staircase & Boardwalk Repair, Pavement Overlay-Surface Repair, Concrete Road Repair, Bridge Repair and Wall & Abutment Repair line items of previous budgets.

In 2021 a major component (approximately \$100K) of this CIP may be new pavement on Valley Court as mandated by a previous legal settlement Agreement.

UPDATE

Fair Street and Park Street bridge deck repairs – deck repairs are complete, and the final surface will be sealed to a more uniform appearance in the summer of 2021.

Deermount & Fair St - Quotes have been received to install new concrete pavement at the Deermount & Fair Street intersection, and at the Nordstrom Drive & Ketchikan Lakes Road intersection; this work will be completed in the spring of 2021 to allow a full season of concrete curing before being subjected winter conditions and de-icing chemicals.

Ketchikan Lakes Road – Quotes have been received to install recycled hot mix asphalt in approximately half the joints in the concrete portion of this road. This work will be completed in the spring. Staff will focus this effort on the bottom half of the road where the joint deterioration is the most severe.

Project:	STORMWATER INFRASTRUCTURE (Annual CIP)
Capital Budget:	\$100,000
Completion Date:	2021

UPDATE

None

Project:	SCHOENBAR CULVERT REHABILITATION
Project Cost:	\$2.5M
Completion Date:	2021

PROJECT SUMMARY & BACKGROUND

This project will rehabilitate and repair an existing 12-foot wide corrugated metal plate arch culvert located in Schoenbar Creek, adjacent to Schoenbar Road. The majority of the culvert is in good shape, but the bottom is rotted which makes it a good candidate for trenchless rehabilitation as opposed to a traditional dig and replace. Mill Creek Management Technologies, a trenchless rehabilitation specialty firm, performed a condition assessment report with recommendations. The report found that the culvert is salvageable and trenchless rehabilitation of the bottom is feasible. During Phase I of the project in 2019, it was discovered that there is a tremendous amount of groundwater flowing around, under and ultimately into the culvert through its rotted bottom. The groundwater was problematic in the 2019 project area; however, the amount of water intrusion in the remaining sections of culvert will make rehabilitation using concrete nearly impossible. As such, staff tried to determine the source of the groundwater in order to design an appropriate dewatering system. Staff completed exploratory potholes along the outside of the culvert to investigate possible sources for the water intrusion; a specific source could not be identified during this effort.

Due to heavy rains over the summer, staff's plans were delayed until September. Upon inspecting in September, it was apparent that the pace of the culvert deterioration has accelerated substantially. Staff designed a project to buy time by temporarily stabilizing the scour areas and providing better support on the perforated pipe haunch. This temporary stabilization project was designed in-house and will pump concrete into the voids around the pipe bottom and haunches. Groundwater in this area is a severe challenge to this effort. The contract was awarded to Log Jam Construction at the November 5 City Council meeting. The contractor has started by installing fish barriers and City staff has coordinated with the Alaska Department of Fish and Game to remove fish from the work area. The Contract has a completion deadline of January 15, 2021.

In terms of a long-term solution for this pipe, the best solution would be to dig up the metal plate arch and replace it with a precast concrete culvert. However, current economic constraints make this approach difficult to fund to the point it may very well jeopardize the timing of the project. Unfortunately, we are out of time with this culvert.

It will not be possible to move forward with the Schoenbar Road sewer and water utility replacement project absent a long-term culvert repair. The risk of collapsing the culvert due to the impacts from adjacent construction is simply too high. Staff has prepared preliminary cost estimates for the long-term solution for this nearly 500-foot long culvert, and the rough order of magnitude is between \$2.5M if the design of a pipe inside the existing pipe is successful, and \$5M if we have to dig it up and replace it. The estimate range is not based on a completed design nor on actual permits, therefore it is offered to convey a sense of the seriousness of the situation, and is not suitable for drawing comparisons to the final estimate after a design is complete.

As an alternative to the dig and replace option, staff has completed an evaluation of 13 long-term remedies for the culvert and have narrowed the field to a few rehabilitation options that will now move into the next stage of detailed evaluation before beginning the in-house design. An important component of moving the project forward is FEMA permitting, consisting of a flood analysis and associated flood map revisions. The FEMA permitting will be completed in parallel with the final

evaluations and design; City Council awarded a contract to R&M Engineering Ketchikan in December 2020.

UPDATE

R&M continues the necessary analysis and calculations for determining the impacts to the FEMA flood maps. As they continue to evaluate the impacts, Staff continues working with ADF&G to evaluate the rehabilitation options for passage of fish as the culvert conveys a fish bearing stream.

Logjam Construction has completed the temporary stabilization project placing pumped concrete in the culvert voids. The project was completed under budget and Contract close-out is in progress.



Schoenbar Culvert (Before)



Schoenbar Culvert after Temporary Concrete Placement

TOURISM & ECONOMIC DEVELOPMENT (Capital Improvement Projects)

Project:	Married Man's Trail Exit Improvements
Capital Budget:	\$250,000
Completion Date:	2021

PROJECT SUMMARY & BACKGROUND

With the adoption of the 2021 Capital Improvement Program Budget, City Council funded a continuation of a multi-year effort of improving pedestrian amenities in downtown Ketchikan. In February of 2020 Public Works Department developed a CIP to address some of the needs that were identified and one of those projects was the Married Mans' Trail Exit Improvements.

UPDATE

Staff has begun the in-house design.

WASTEWATER DIVISION (Capital Improvement Projects)

Project:	TONGASS AVE SEWER FORCE MAIN REHAB & GRAVITY SEWER REPLACEMENT PHASE II
Project Cost:	\$8,000,000
Completion Date:	2018

PROJECT SUMMARY & BACKGROUND

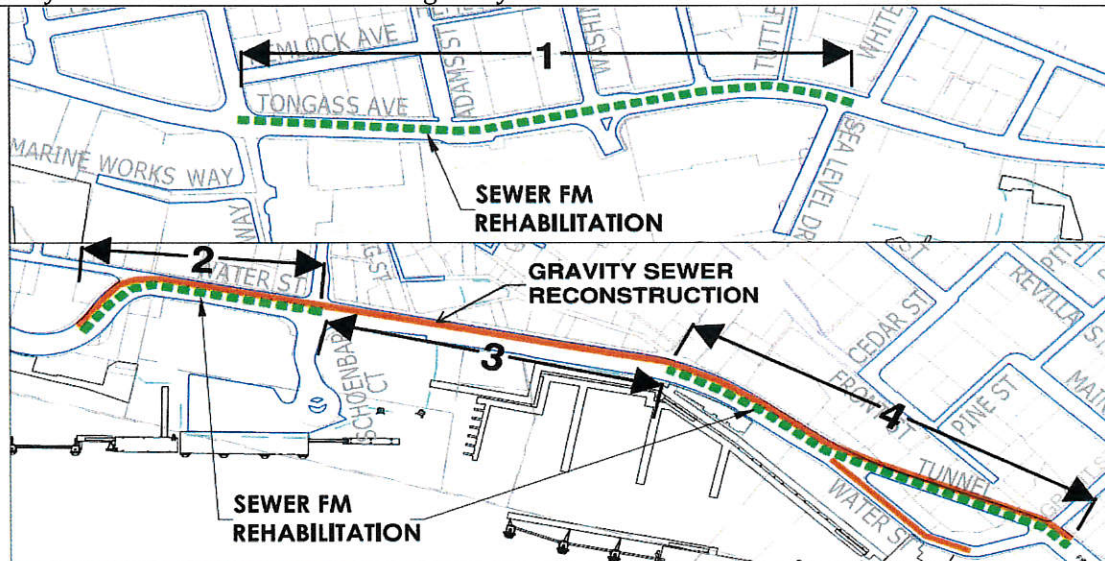
Phase II involves rehabilitating the City's remaining 2,700-linear feet of sewer force main and 1,700-linear feet of sewer gravity mains. This section of gravity sewer is known to be a major contributor to the sewer system's inflow and infiltration. On June 15, 2017 the City Council

approved this project's nomination for the National Infrastructure Program. At the same meeting, the City Council approved an amendment adding funds to a contract with Stephl Engineering to fast track design of this project. The project has been broken into four distinct segments that will each be separate construction projects. These projects are critical in order to reduce the amount of infiltration and inflow coming to the wastewater treatment plant. High peak flows in August and October, during heavy rain events that also corresponded to high tides, resulted in bypassing at pump stations. Based on historical infiltration and inflow studies, it is envisioned that these projects will take a significant step towards muting those peak flows. Value engineering is complete. As such, the project design will incorporate portions of trenchless technology to help mitigate high cost, elevated risk and potential impacts to residents and businesses along the project corridor.

Design Status:

- Segment 1 is complete
- Segment 2 is 65%
- Segment 3 is 80%
- Segment 4 is 90%

Staff has been in contact with the design firm and review of designs for each phase are ongoing. Staff is continuing efforts into pursuing a flow metering program in this area in an attempt to quantify inflow and infiltration in the gravity sewer.

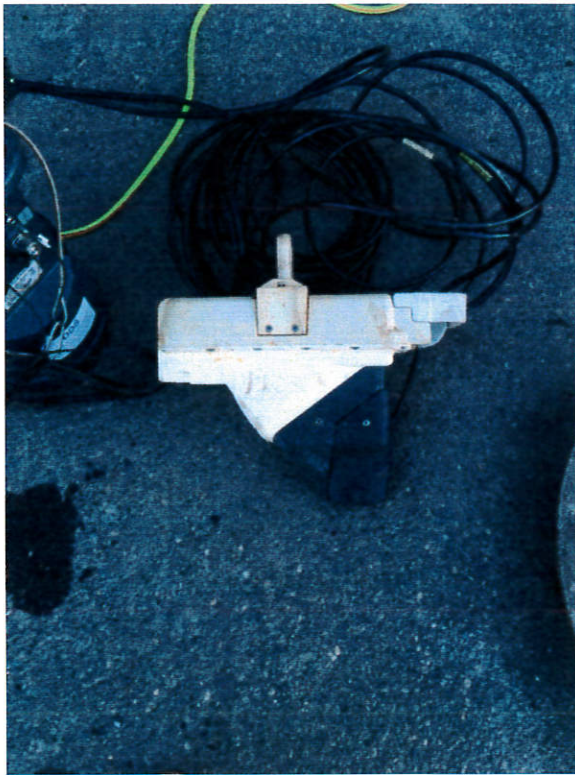


UPDATE

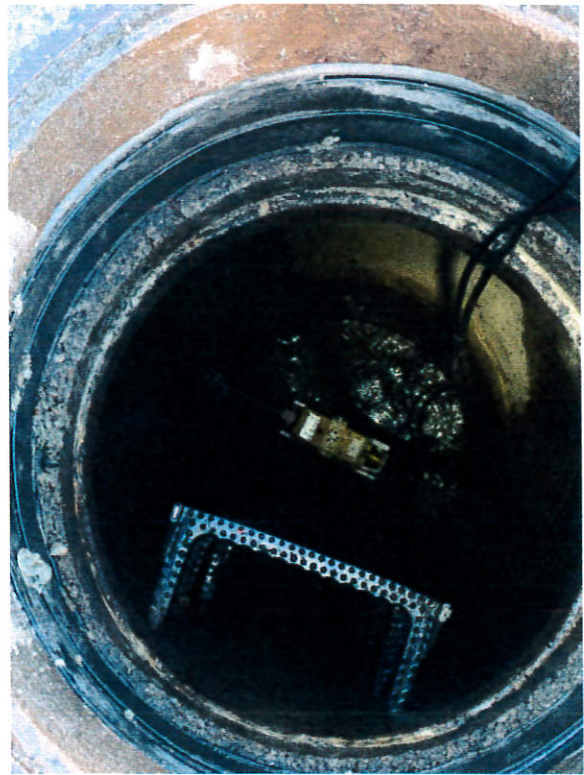
Staff, along with a hired consultant (Stephl Engineering), recently completed the install of 5 flow monitoring devices along the Water Street corridor. This installation completes the initial setup that will allow us to measure how much infiltration and inflow is in the sewer lines. The study will last about four months. Staff intends to reduce sewer reconstruction project costs by using the results of this study to tailor the scope and refine the design of projects.



Install of Flow Monitors along Water Street



Flow Monitor (Prior to Install)



Flow Monitors Installed

Project:	SCHOENBAR UTILITIES RECONSTRUCTION
Project Cost:	\$11M
Completion Date:	Fall 2021

PROJECT SUMMARY & BACKGROUND

In 2012, Dowl was contracted to design water and wastewater utility replacements within Schoenbar Road from Park Avenue to Valley Forge. The design reached 95% completion and then was shelved due to lack of funding and permitting issues. In 2019, the promise of ADEC loan funding reinvigorated the project. To re-start the project, staff located the original design team with Dowl and agreed on a proposal to complete the design and contract documents. Staff is conducting State and Federal permitting in-house and several permits have been received. Permitting and design work were postponed in mid-2019 due to concerns about the deteriorating 36-inch raw water main, which suffered several recent breaks.

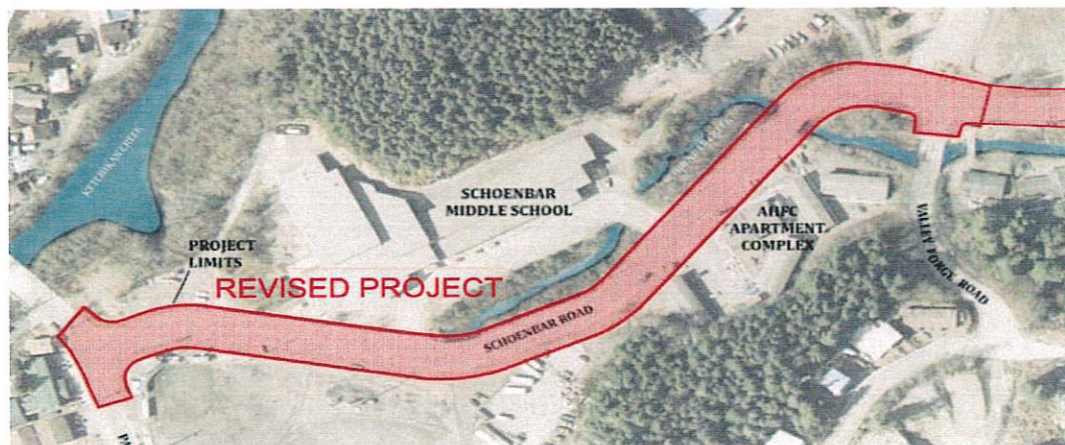
KPU Water Division is working with Dowl to design and construct the raw water main replacement. The urgent nature of the raw water main has meant that it has taken precedence over the design of the water and sewer reconstruction project.

Staff is also working with ADEC to re-structure the municipal loans and make associated allowances for the additional \$5M bond to fund the additional raw water replacement. New loan questionnaires were submitted to ADEC requesting funding for the increased project scope due to the addition of the raw water main.

Staff reviewed the design and estimate and comments were submitted for incorporation in a 95% design. The cost estimate is showing that the wastewater portion of the project is costing less than was budgeted. It is important to the wastewater budget that any possible surplus in this budget item be preserved for replacement of dilapidated corrugated metal sewer main and leaking force main.

UPDATE

With the raw water main design nearly complete, Staff has worked with Dowl to re-start the water and sewer reconstruction design, 95% design drawings and estimates will be resubmitted in the next few months for final review.



Project:	PUMP STATIONS GENERATOR REPLACEMENT
Project Cost:	\$130,000 per year
Completion Date:	March 2023

PROJECT SUMMARY & BACKGROUND

In adopting the 2018 General Government Operating and Capital Budget, the City Council appropriated money to large and small pump station upgrades for replacement of the aged generators and components at each of the seven pump stations. Electrical engineering company Haight & Associates was hired to design a year by year phased set of construction documents that will go out to bid beginning in 2019.

On September 17, the City Council approved a contract to procure the 150kW Generator Set. Staff is moving forward with that purchase and arranging for the installation.

UPDATE

The 150KW Cummins/Onan Generator set has been ordered and is expected within the next 6 months.

Project:	Tunnel Sewer Main Replacement
Capital Budget:	\$25,000
Completion Date:	January 2021

PROJECT SUMMARY & BACKGROUND

This project replaces an exposed corrugated metal sewer main that ran down the rock face near the north end of the tunnel. The pipe was at the end of life and has been problematic in recent years. Staff designed the replacement project and worked with adjacent property owners to ensure the new pipe would be in the preferred location for all parties. Quotes were received and Notice To Proceed was issued in December 2020. The contractor's portion of the project is substantially complete.

UPDATE

The pipe will be painted to protect from UV degradation and to make it blend in better once the weather improves to allow for painting.



Before



After

WASTEWATER DIVISION (Operations)

In addition to the routine work performed on a regular basis, the Wastewater Division performed the following work during the past month:

- Wastewater crews assisted engineering staff and the contractor to install flow meters along Water St.
- Crews removed and replaced a pump frame and troublesome pump in Treatment Plant B.
- Local contractors have essentially completed the enclosure at Pump Station 4, which will house a disinfection system used to battle fecal coliforms in our waste stream.



Wastewater Crews assisting with the install of flow meters.

STREETS DIVISION (Operations)

In addition to the routine work performed on a regular basis, the Streets Division performed the following work during the past month:

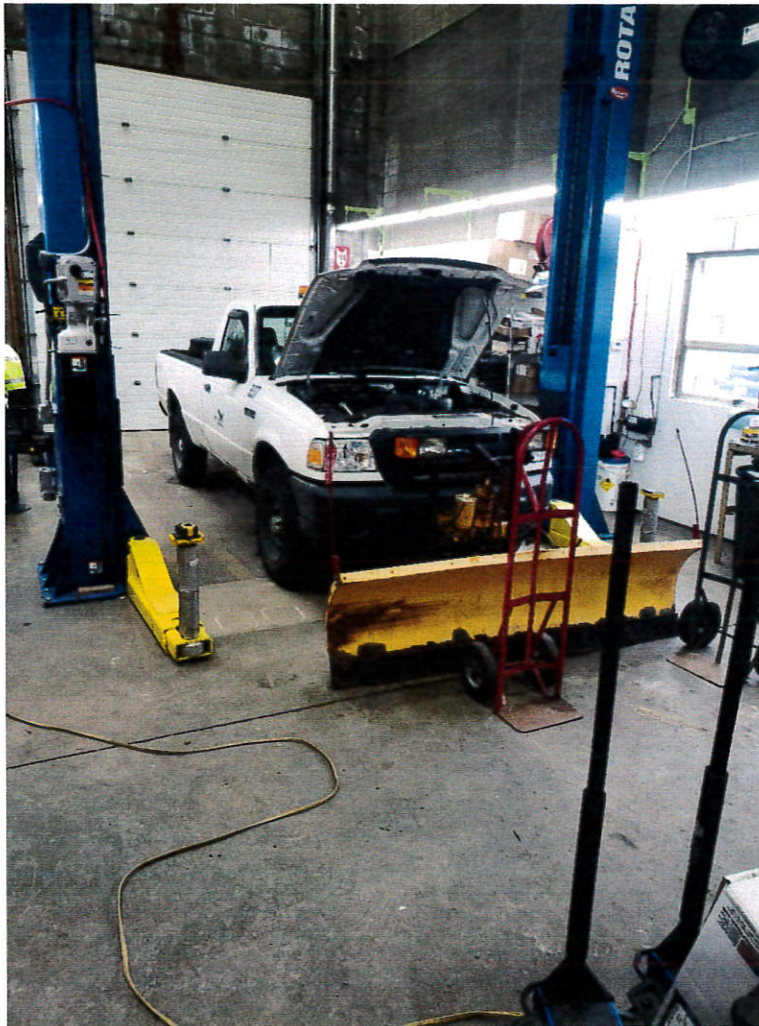
- There have been a number of snow/ice events over the past month, keeping the crew busy clearing streets, sidewalks, and stairways. Many of the crew have worked well into the night, or have come to work 3-5 hours early to make sure roads, etc. were safe for the traveling public.
- A crew has started construction of a mezzanine in the Garage. At this point, all posts, stringers, and stairs for the first floor have been completed. The next step is installing the decking and handrail to the first floor, then continuing on to the second floor.
- We assisted the Building Maintenance Division by tearing down the outdoor Covid testing site at the airport.
- The Washburn Staircase rebuild is still under construction and the crew has finished all landings, stair jacks, and stair treads. Due to the recent weather, crews have been pulled off this project, but will continue when the weather warms up by installing new guardrail and handrail. This project is approximately 70% complete.
- Crews have repaired a damaged catch basin in the Streets lot, and also cleared out a large piece of concrete that was in the road on lower Jefferson Street.



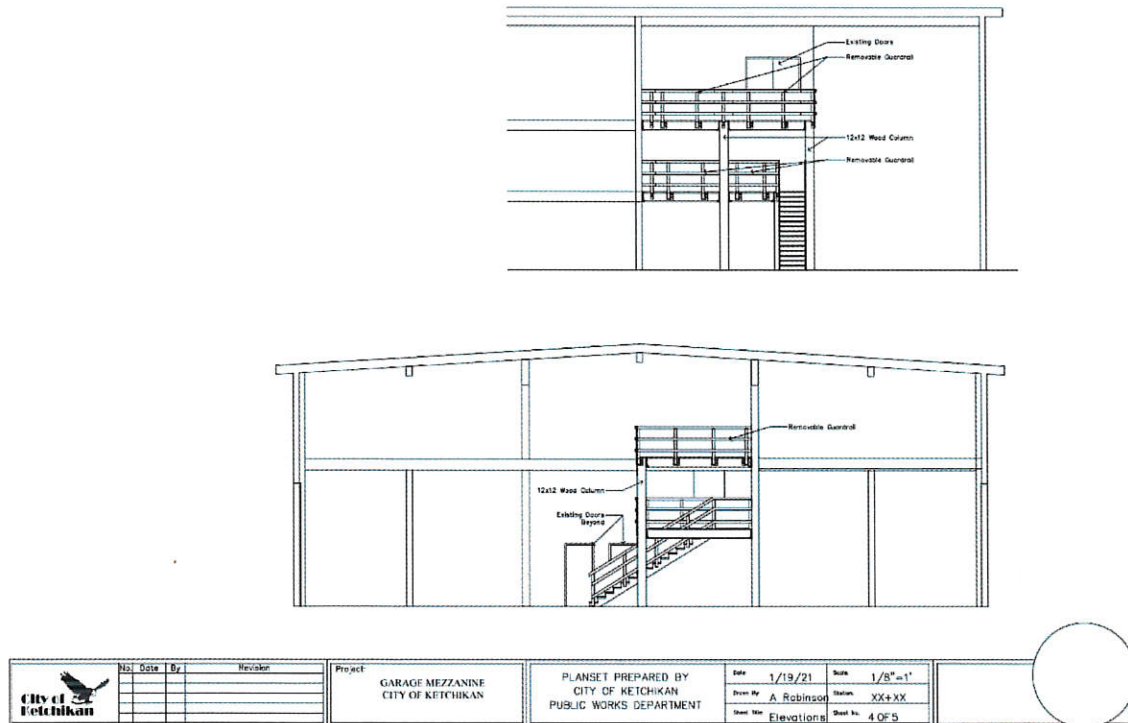
GARAGE DIVISION (Operations)

In addition to the routine work performed on a regular basis, the Garage Division performed the following work during the past month:

- The Garage has been making sure all snow removal equipment remains in service by repairing minor issues as they arise.
- We have been working on repairs to the Port & Harbors crane, and installed a new belt on the Streets Division sweeper.
- The crew resolved a leaking cab issue with a Fire Department truck.
- We are working with Streets on the mezzanine project.







BUILDING MAINTENANCE DIVISION (Operations)

In addition to the routine work performed on a regular basis, the Building Maintenance Division performed the following work during the past month:

- At the Totem Heritage Center, the crew installed new interior lighting.
- We cleaned and painted the boiler room at City Hall.
- With assistance from Streets, we removed the exterior Covid testing shelter at the airport.
- We replaced the incinerator vent stack cap at the Solid Waste and Recycling facility.
- During the recent cold weather, we made various heating system repairs and adjustments to City buildings.
- Citywide, we performed routine maintenance and repairs, as well as snow and ice removal.



BUILDING INSPECTION DEPARTMENT

PERMITS

PERMITS ISSUED	SINCE LAST REPORTING PERIOD	YEAR-TO-DATE
Traffic Control Permits:	2	4
Permits to Excavate:	3	12
Side Sewer Permits:	2	2
Site Development Permits:	4	5
Building Permits:	6	11
UPDATED: 01/20/21		