

# Public Works Quarterly Report

## November 2023

Staff would like to thank the following organizations for their collaboration with the projects this last quarter:

- Hakansen Anderson
- Stanford Township
- Anoka Conservation District
- St. Francis Area Schools
- Upper Rum River Watershed Management Organization

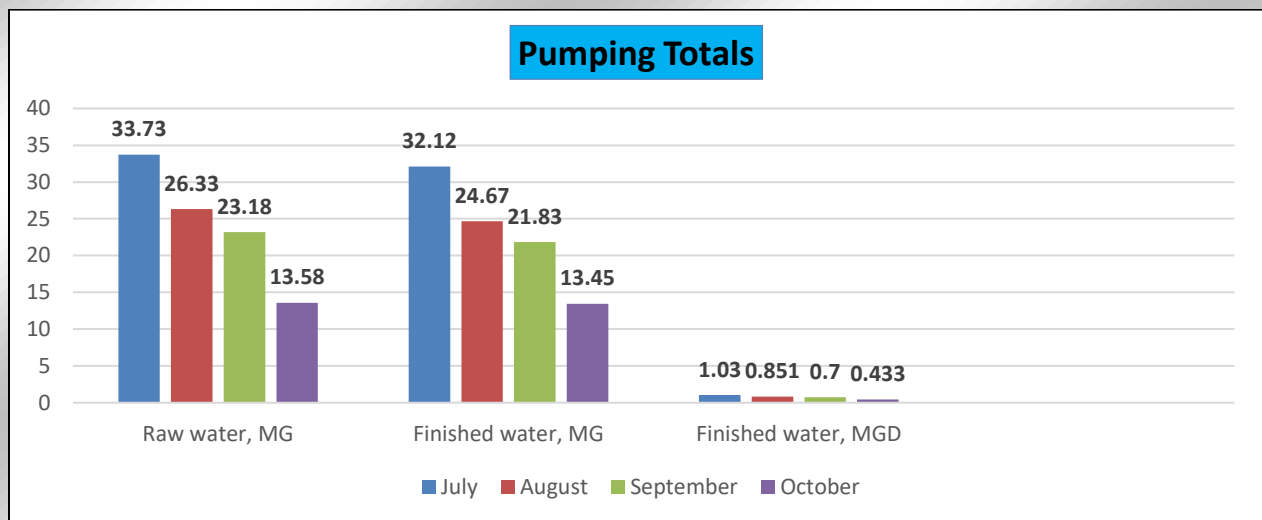


**Water and Wastewater 3<sup>rd</sup> Quarter Report**

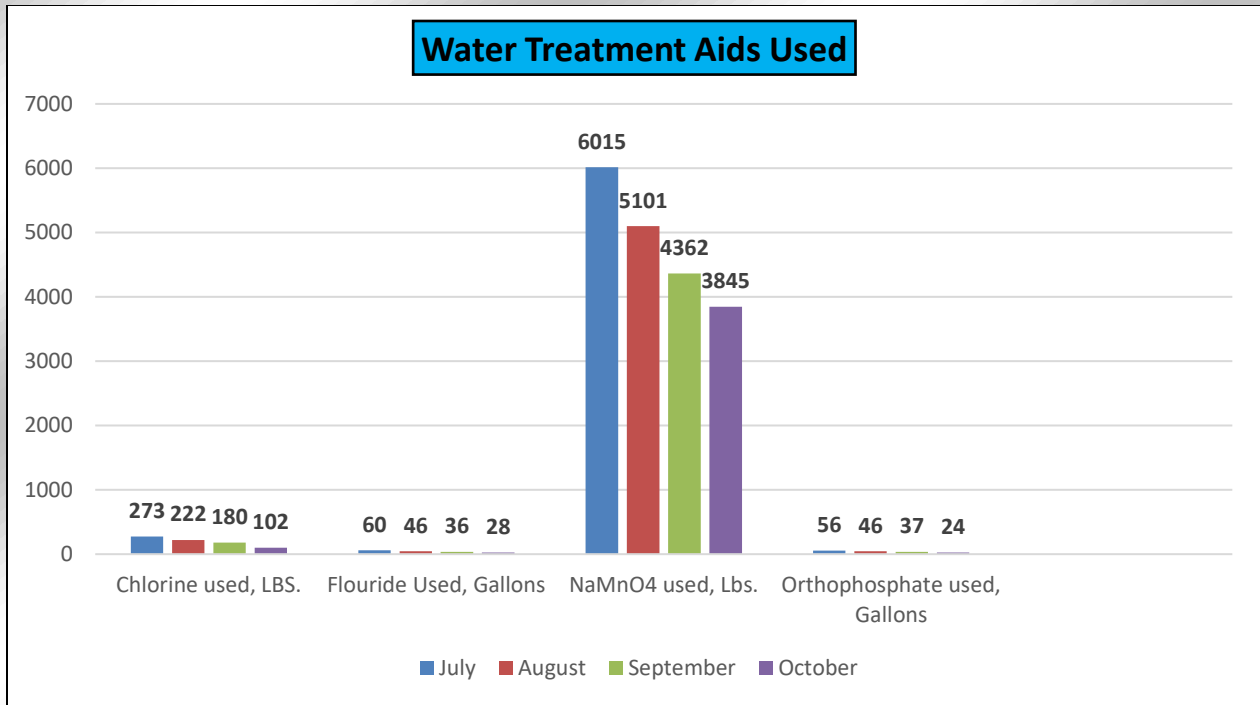
**2023**

**To: City Council**

**Water Treatment Facility**



TASK	DESCRIPTION	QUANTITY	UNITS
Inspect Facility Daily	Facility Inspection	63	Inspections
Operational Hours	Hours spent at facility.	126	Hours
Calculate Influent and Effluent	Calculate gallons pumped for both influent and effluent.	Daily	Calculation
Calculate Chemicals	Calculate treatment chemicals used daily.	Daily	Calculations
Chemical Adjustment	Adjust chemicals based on lab testing results.	As Needed	Chemical Adjustments
Daily Labs	Perform lab on chlorine, fluoride, orthophosphate, iron and manganese.	300	Labs
Well House	Inspect daily, take readings, drawdowns, and pump runtimes.	63	Inspections



NaMnO<sub>4</sub> or Sodium permanganate is used to remove manganese and radium in raw water. Chlorine, Flouride and Orthophosphate is added to the finished water when leaving the facility.

#### Water Treatment Facility, Lab results

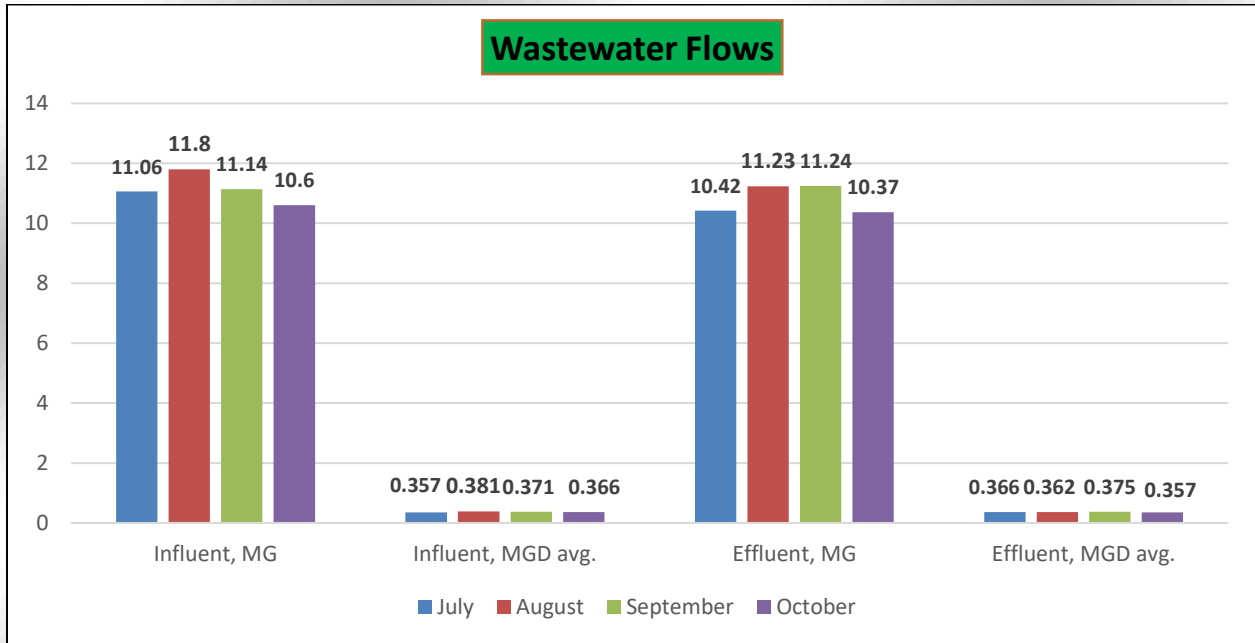
Average Chlorine	.68	Mg/l
Average Raw Iron	1.04	Mg/l
Average Raw Manganese	.078	Mg/l
Average Fluoride	.71	Mg/l
Iron Removal	98	%
Manganese Removal	87	%

**Drought Summary:** As expected, in August the Minnesota Department of Natural Resources issued a Drought warning for our watershed. We were required to implement water conservation measures that were more restrictive than our current alternating watering schedule. As you can see by the pumping totals graph above, we did have a downward trend in our pumping totals. Even with all the rain we received in September and October, the St. Francis area is still classified to be in a moderate drought.

#### Minnesota Department of Health-Related Items:

**Lead and Copper Samples:** As you may recall, in July staff had to collect twenty Lead and Copper samples for analysis. The results came back favorable, as we did not exceed the action level for either Lead or Copper.

## Wastewater Treatment Facility



Task	Description	Quantity	Units
Monthly Sampling	Perform required monthly sampling: 8 Influent (29 Constituents); 8 Effluent (50 Constituents); Monitoring Wells (25)	216	Constituents
Operational Hours	Hours spent at facility.	496	Hours
Inspect Operations Building	Daily inspection of building.	63	Inspections
Inspect Pre-treatment Building	Daily inspection of building.	63	Inspections
Inspect Tertiary Building	Daily inspection of building.	63	Inspections
D.O Readings	Take Required D.O Readings.	123	D.O Readings
pH Readings	Take Required pH Readings.	123	pH Readings
Inspections	Inspect 8 lift stations daily and calculate pump runtimes.	984	Lift Station Inspections
Daily Lab	Process Control Test	216	Tests



**Facility Report: Wastewater Treatment Facility, Lab Results.**

	Influent TSS	231	Mg/l
<b>Limit: (15 mg/l)</b>	Effluent TSS	2.4	Mg/l
<b>Limit: (85 %)</b>	<b>TSS % Removal</b>	<b>98</b>	<b>% Removal</b>
	Influent CBOD	221	Mg/l
<b>Limit: (15 mg/l)</b>	Effluent CBOD	1.2	Mg/l
<b>Limit: (85 %)</b>	<b>CBOD % Removal</b>	<b>99</b>	<b>% Removal</b>
	Influent Phosphorus	4.9	Mg/l
<b>Limit: (1 mg/l)</b>	Effluent Phosphorus	0	Mg/l
	<b>Phosphorus % Removal</b>	<b>100</b>	<b>% Removal</b>
	Influent Ammonia Nitrogen	29.1	Mg/l
<b>Limit: (Seasonal) 1.4 mg/l</b>	Effluent Ammonia Nitrogen	0	Mg/l
	<b>Ammonia Nitrogen % Removal</b>	<b>100</b>	<b>% Removal</b>

**Daily Tasks:**

Locates	Process Locate Requests	345	Utility Locate Requests
Water/Sewer Connections	Inspect Water and Sewer	5	Inspections
Water Miscellaneous	Work Orders: Meter Inspections	0	Work Orders

**Bethel Wastewater Operator Update:** Staff continues to work with and train the new operator in Bethel. He will be taking his wastewater exam In December and is working with Minnesota Rural Water Association (MRWA) with test prep. Public Works has notified the City of Bethel that as of February 1<sup>st</sup>, St. Francis will no longer provide contracted wastewater operator services. Notification was done now to provide enough time for Bethel to find alternative services, should the operator not pass his test. Should he fail, the operator has to wait ninety days until he can re-take his exam.

## Working on all kinds of different projects.

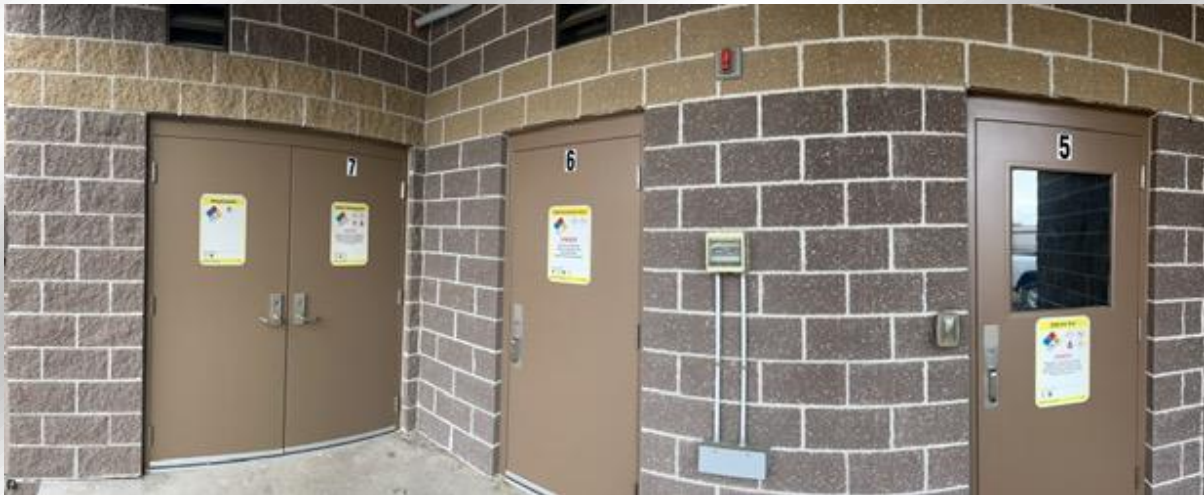
### Water Treatment Facility:

Staff completed some well-needed aesthetic maintenance at the Water Treatment Facility. The doors in the picture below are for the chemical rooms (treatment aids). They were starting to look unsightly. The paint was starting to peel and the decals were starting to fade and peel from the door. The decals are required and make emergency personal aware of the potential hazard and chemicals in each room.

Before



After



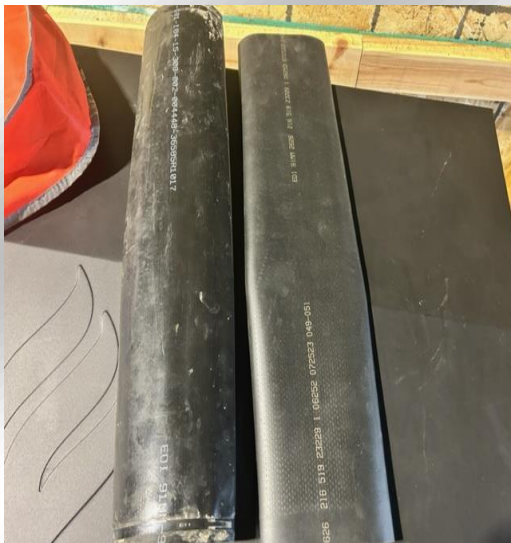
Staff did a really nice job! They also took care of some other Aesthetic issues that turned out great!



## Wastewater Treatment Facility Projects...

### Wastewater Treatment Facility: Aeration Membrane Replacement

Due to the continuous usage and the environment they are in in, replacement of the rubber membranes is recommended at intervals of 5-6 years. There are 64 diffusers in this basin 1a and 64 in the basin 1b that were changed out this fall. Next year, the remaining 256 membranes will be replaced during tank alternation and cleaning. With staff doing this work on the three basins, and not the manufacturer, it is roughly a \$36,400 savings!



This is what the membranes look like before installation. Essentially, they are perforated rubber that diffuses the air supply allowing for a uniform treatment.



The picture to the right is the diffusers with the membranes installed and diffusers without.

## Bio Solids Processing:



Fergus power pump processed about 900,000 gallons of liquid to produce about 300 tons of dry solids. The solids are pressed for a couple reasons, but the biggest reason is transportation. If a tanker transported the liquid for land application, it would take about 140 truckloads. By pressing the liquid to a solid, it only takes about 20 dump truck loads and costs a lot less.



The picture above is the pressed bio solids. Either this fall or next spring, the solids will be hauled away and land applied.



## Other Wastewater Treatment Related Items:

- **Pre-treatment equipment maintenance:** This work included oil changes on two fine screens, one grit mixer. We did have an electric motor fail on the mixer. It was repaired and is back in service.
- **Aeration tank mixers:** Routine maintenance on two mixers.
- **Chlorides:** Staff has been meeting with our Wastewater engineer to discuss chlorides. In 2025, St. Francis will be imposed a 354 mg/l limit monthly average. Our current average is roughly 290 mg/l. Staff and our wastewater engineer are discussing different options on how we can remain below that limit.

## The Definition of a Cross Connection!

Thank you to our Building Official for finding this cross connection. The picture below is a driven well, that has a pump used for irrigation. The supply line from that pump is connected to the potable water line coming from the house. Even with the backflow device and valves, this is not allowed and is a potential contamination source to our potable water supply. If the valves were left on, and the backflow device failed, back-siphonage or backflow could occur.





After contacting the homeowner, the necessary repair was made to correct the issue.

### The New Addition to the Fleet



Our new crane truck arrived and by all accounts, has not disappointed! The picture above is a staff training session and putting it to the test, pulling our largest pump. And it passed with flying colors!



## Staff Recognition Time...

### We have a new Class B driver.

Wyatt recently passed his class B drivers test, which now allows him to drive the big trucks. If he was only happier about it 😊! Since being hired, not only did he pass his commercial driver test, he has also passed his Class D wastewater license. Both were conditions of employment and he completed each of them. Great Job, Wyatt!



## Truck or Treat....

Staff had a tremendous time hosting the Public Works Open House! It was great to see local

families bring the kiddos dressed up in all different kinds of costumes and have a good time! The loader was a big hit with the kids and even some of the adults being able to climb into the cab and look around.

Hats off to John for suggesting the idea and having some fun in the process!

Hopefully, next year's event can be even bigger!



Thank you!

# Streets and Parks 3rd Quarter Report

## Report Highlights



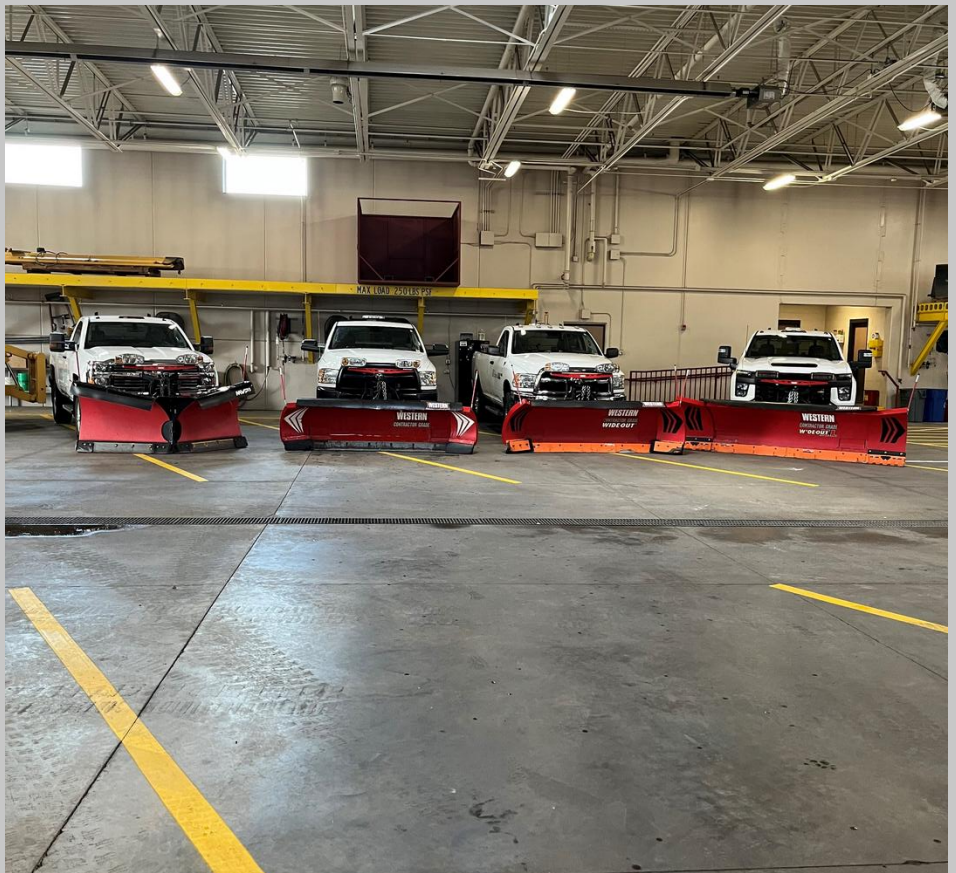
**Public Works Open House**



**245th Culverts**



**Dellwood Trail Shoreline Restoration**



We are pleased to present the streets and parks 3rd quarter report. As we reflect on the past quarters achievements, challenges, and milestone, its evident that our collective dedication and hard work continue to drive our organization foward.



# Public Works Open House



## MAILBOX AND GARBAGE CAN DISPLAY



This image shows how far the plow truck has to swing out when the garbage cans are left out in the street. This causes a lot of unplowed snow in the street.



Fun Fact: The garbage truck arm is able to reach 9 feet.

**PUBLIC WORKS OPEN HOUSE TRUCK OR TREAT EVENT!**

- ADULT & KID DRAWINGS TO WIN - \$250 PRIZE!
- TRIP KIT/BOOK/COLOR PAGES!
- BOY DOGS, CHIMP BEHAVIOR!
- HILLS/WATER CREDITS!
- WASTEWATER FACILITY TOUR AT 4:00PM!

HELP US NAME ONE OF OUR CITY SNOW PLOWS!  
WIN \$100 CREDIT TOWARDS YOUR WATER BILL!  
WIN A RIDE TO SCHOOL ON A SNOW PLOW! (WE WILL PICK YOU UP AND BRING YOU TO SCHOOL!)

WEAR YOUR COSTUME!

OCTOBER 14TH  
5:00 PM - 7:00 PM

4000 ST. FRANCIS BLVD NW  
CITY OF ST. FRANCIS

Thank you John and Nate for showing off your costumes!



We had about 90 kids and 150+ Adults!



## Name The Snow Plow

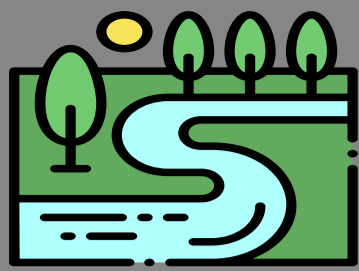
Help the City of St. Francis name our Snow Plow!

We will take the most popular names (up to 5) mentioned below. We will have a table set up to at our upcoming Public Works Open House "Truck or Treat" Event to cast YOUR VOTE for your favorite Snow Plow Name! Let's get creative and pick an AWESOME name for our hardworking 65,000 lbs. City of St. Francis Snow Plow!

The winning name for the snow plow is **SNOW FORCE ONE**







## 245th Ave Culverts

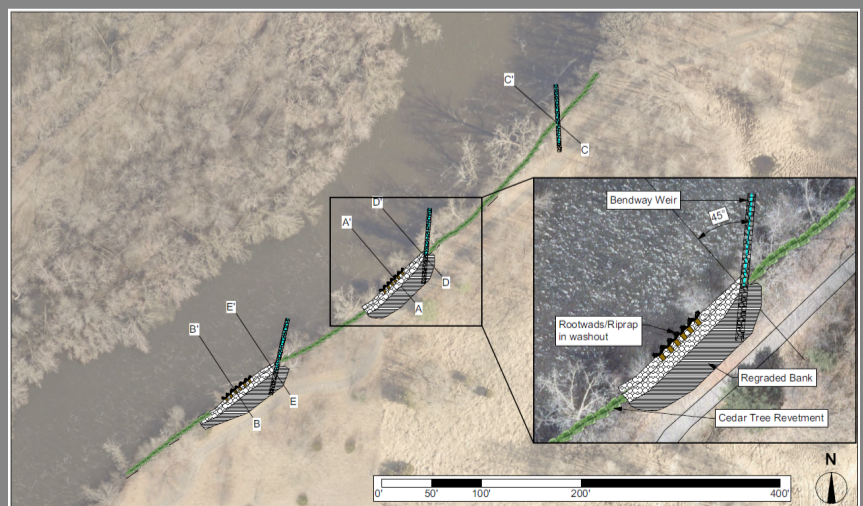
This past summer, the City of St. Francis and Stanford Township signed a shared road agreement. This allows the two entities to work on projects together. The first order of business was to tackle a much overdue project of three rotting culverts in the Seeyle Brook. These culverts over the years have slowly deteriorated causing failure of the road.





# Dellwood Trail

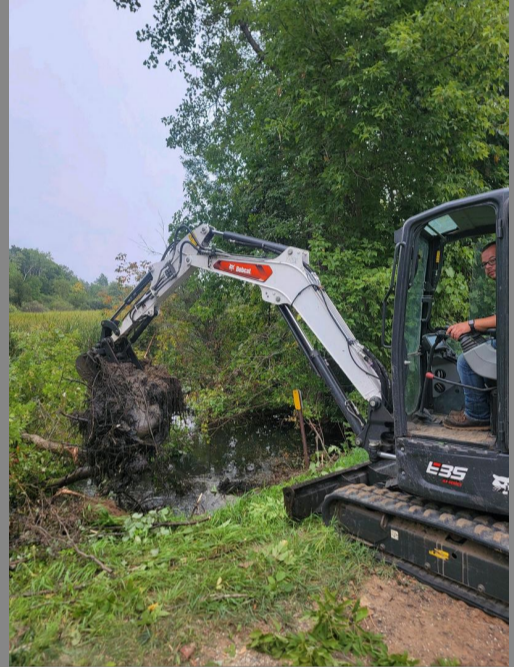
For a few years now the Rum River has been slowly eroding away the bank on portions of the Dellwood Trail. During a Storm water collaboration meeting it was brought to our attention that the Anoka County Conservation District (ACD) was looking for potential projects along the Rum River. In 2020, the ACD met with the city out on site, and it was determined that the site met all the qualifications. In 2022, the city partnered with the Anoka Conservation District to come up with a solution to stabilize the eroding bank along the Dellwood Trail. 85 percent of the cost of this project was grant funded and the city paid for the other 15 percent.







Photos to the left are a drain tile project at the waste water plant to improve drainage and make it easier for mowing. The photos to the left are culverts being dugout. These culverts were plugged with debris and trees.





# Stormwater

Storm Water Training - Staff have completed their Annual Smart Salt Training through the MPCA on September 28th.



- Staff completed 10 site inspections and approvals of erosion control plans.
- Staff is now handling inspections for the New City Hall Fire Station Site.

## **Rum River Boulevard Swale Stabilization Project**



Staff worked with the St. Francis Area Schools, the Anoka Conservation District, and Anoka County to correct the long-standing storm water erosion problem on Rum River Blvd in the ditch next to the high school football field.