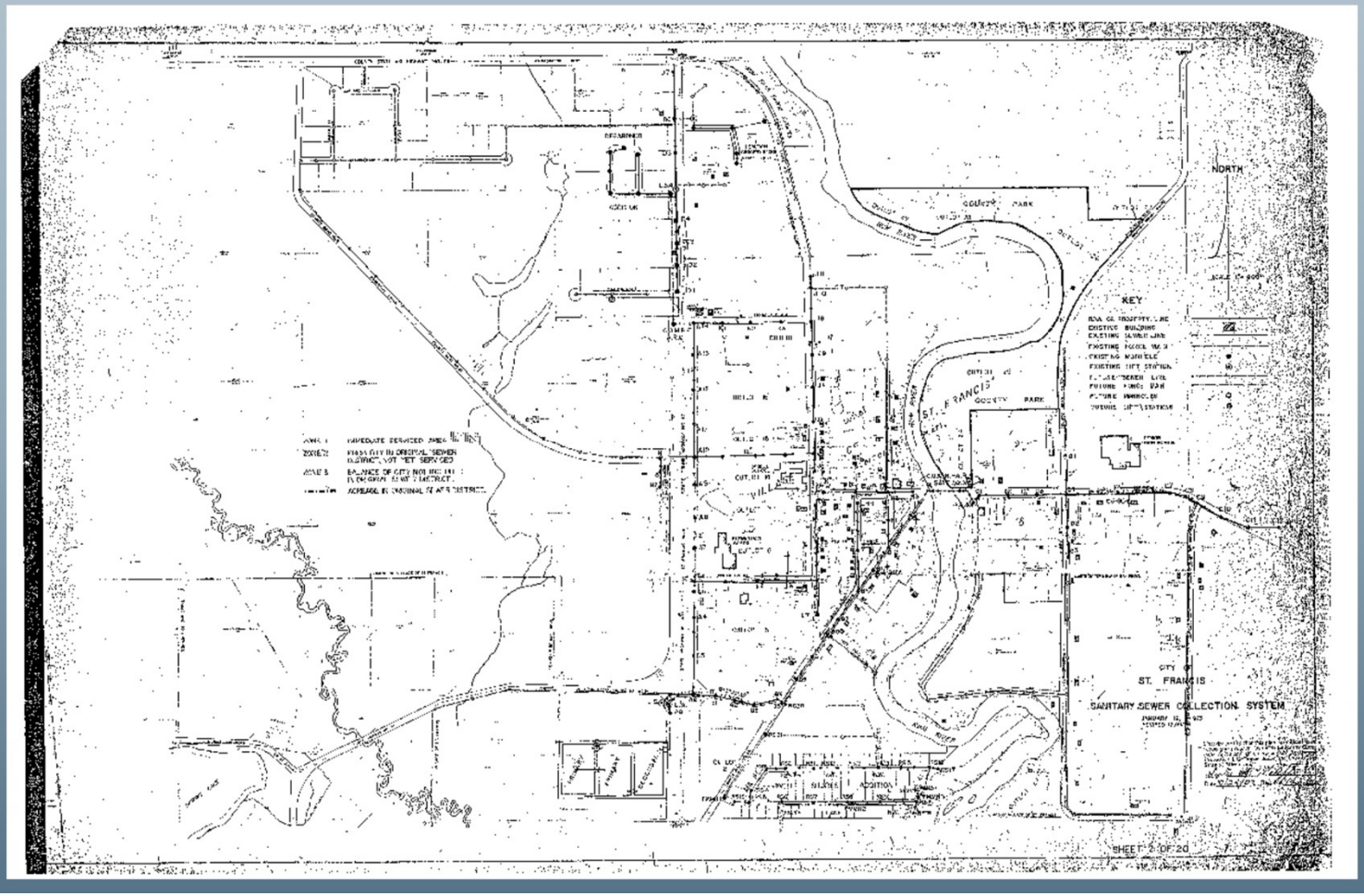
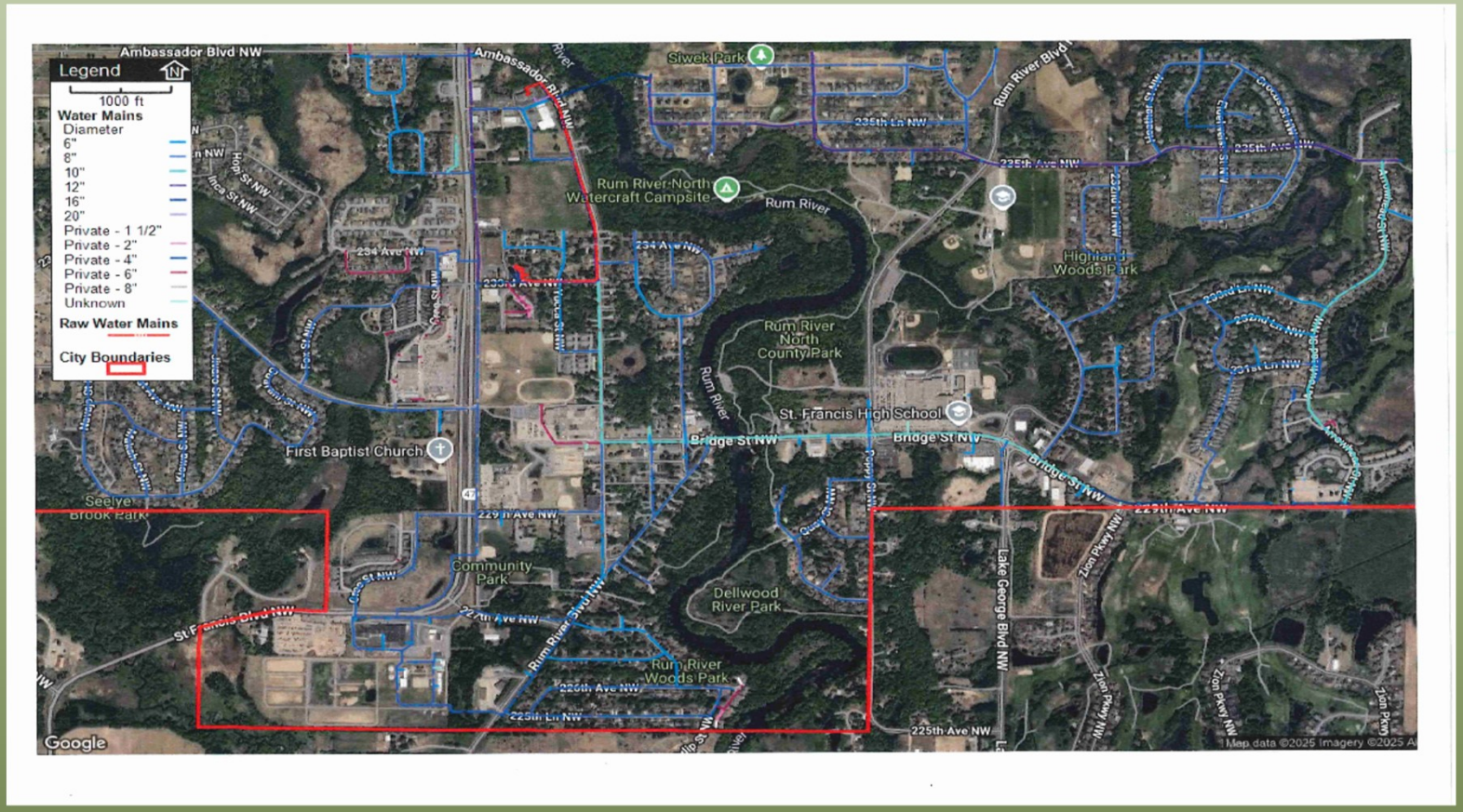
Water and Wastewater

- Over 50 years ago, the original water and wastewater utilities only serviced an area between Hwy 47 and east towards the river to include Bridge St., terminating at the high school.



- Today, water and sewer extend 2.5 miles east and west and 1.5 miles north and south or roughly four-square miles.



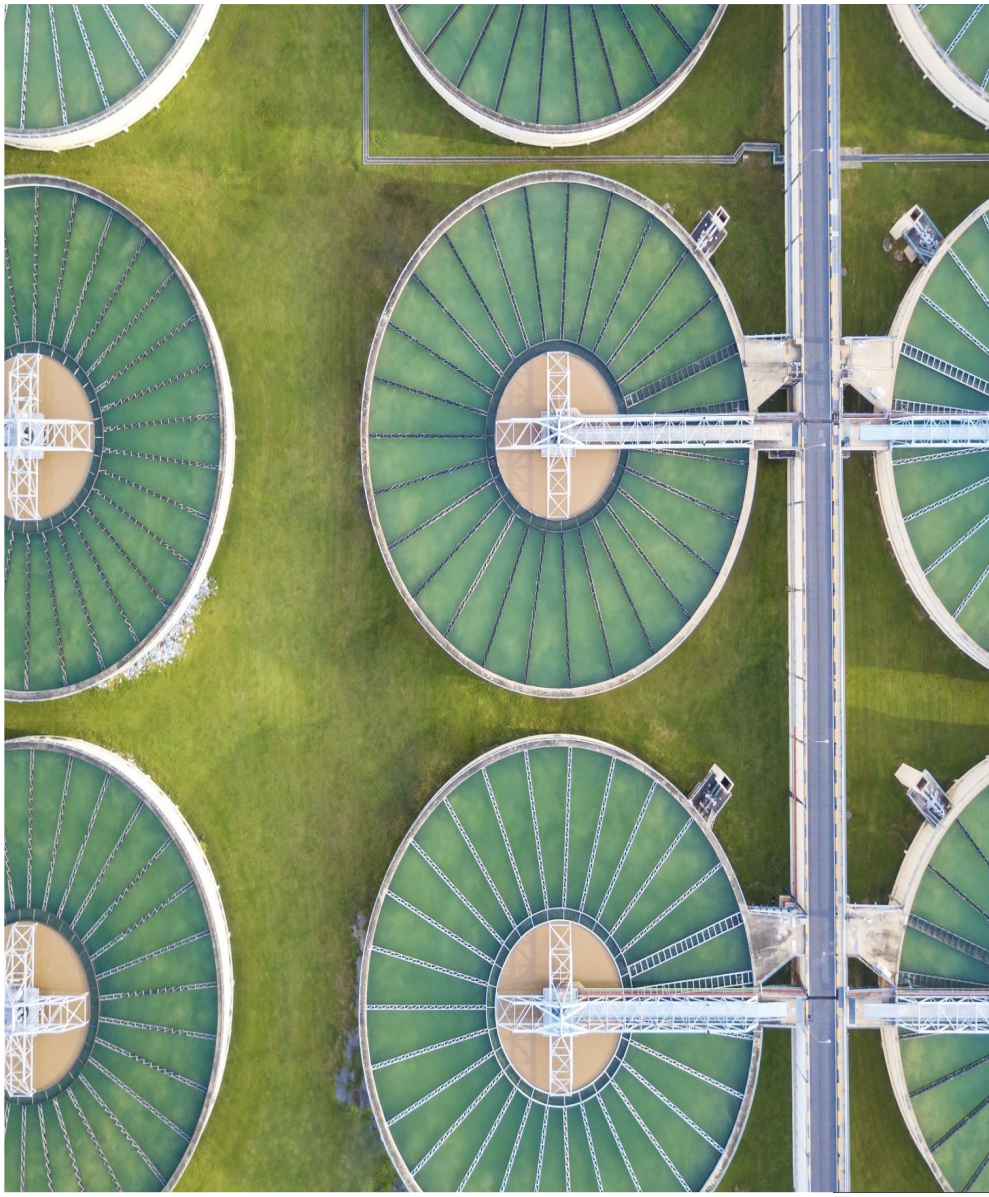
St. Francis Utility Infrastructure

Water treatment and distribution system facts

- 4.3 MGD water treatment facility-iron and manganese removal
- 750,000-gallon water tower.
- 1,2000,000-gallon Clearwell.
- Over 650 gate valves.
- 410 fire hydrants.
- 30 miles of water main. 6”-16”

Wastewater treatment and collection system facts

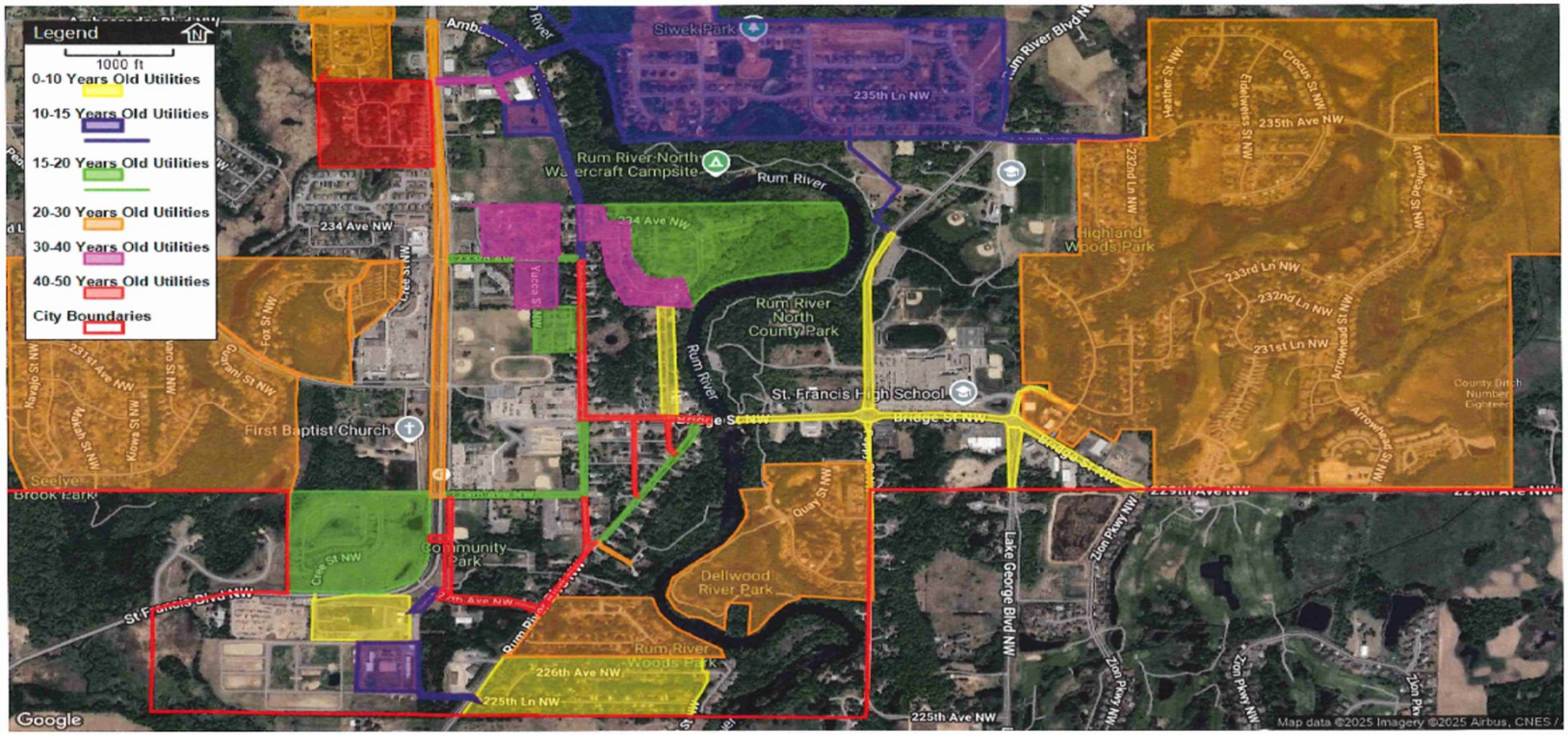
- Extended aeration –activated sludge
- .647 MGD flow capacity
- 8 lift stations
- 20 lift station pumps: 5hp-50hp
- 689 manholes
- 24 miles of sanitary main: 6”-18”



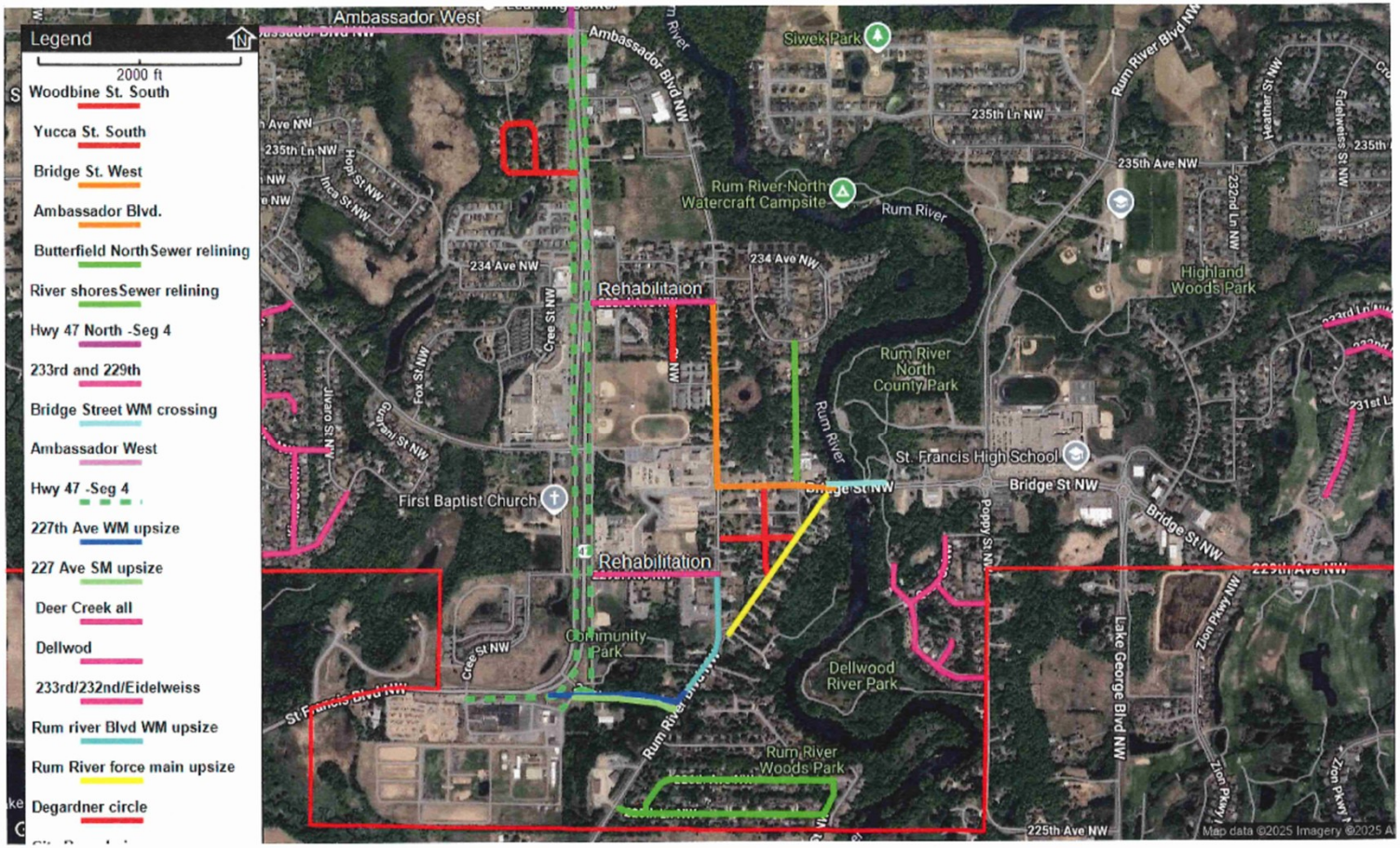
Enterprise Projects- Factors in determining water and sewer main projects

- **Age**- How old is the existing utility? Example would be Woodbine watermain that was 52 years old.
- **Size**- Does it meet adequate flow demand standards for today's users? River shores Development and Woodbine increased from 6" up to 8".
- **Timing**- Is another project happening concurrently? Is it possible that we can work in conjunction collectively with County or State on a specific project.
- **Pipe Material-** Does it meet todays standards in durability and thickness? Most of the 1973 PVC pipe is thin wall.
- The Public works Director, streets and parks supervisor and myself discuss upcoming projects. Does water and sewer need to be addressed? What is the scope?
- Public works meets with HAA on a quarterly basis to discuss current and upcoming projects.
- Can it last for another 15-20 years before rotation?
- If the water main is from 1973, then it will probably be a reconstruction project because of size and age. Example would be Woodbine St.
- If the water main is from the 1990's and newer, then it will probably be a rehabilitation project, that will potentially include valve and hydrant work. Example would be 233rd Avenue.
- Sanitary sewer mains can be rehabilitated through a process called Relining. No excavation is required in turn, saving the city money. The lining process typically comes with a 50-year life expectancy.
- **Growth-** When potential development dictates the need for extending existing water and sewer services.

City Developments & Water and Sewer Infrastructure Age



2026-2031 Proposed capital improvement road and utility projects. This five-year plan includes both rehabilitation and Reconstruction projects.



Water Treatment Facility & Distribution

Water Distribution & Water Treatment Facility Facts

Water Treatment Facility	4,300,000-gallon a/day capacity	Facility removes iron, manganese and radium	Does not remove hardness.	550,000-gallon daily average.
Summertime daily output can reach 1,800,000 gallons	Regulated by the Minnesota Department of Health	1,200,000-gallon, semi-underground storage	Three high service pumps, each capable of pumping 1300gpm water to the distribution system and tower. Each high service pump is pulled from service every 10 years for maintenance at a cost of $30,000 each .	Treatment aids cost approximately $30,000.
In 2028, The 20-year-old roof is schedule for replacement. It is a ballast-membrane roof and cost is estimated to be $180,000	Wells	Water is supplied by three wells ranging in depth from 217 feet, to 412 feet deep.	Per AWWA and MDH guidelines, each well is pulled from service every ten years for maintenance. The cost for this can vary depending on wear of the components, but last estimate was $48,000 for each well.	Tower

The water tower was constructed in 2001 and has a capacity of 750,000 gallons. St. Francis has a service contract that includes maintenance such as exterior and interior painting and annual tank cleaning and inspections. This ongoing asset management cost $47,000 a year.

Water Treatment Facility Filters

THE FACILITY HAS FOUR FILTERS. EACH FILTER IS 360 SQ FEET FOR A TOTAL OF 1440 SQ FT.

Water treatment facility filters continued…

- The filters are the main Treatment of our potable water.
- The filters are comprised of two primary media types. Anthracite and Greensand.
- Both media, have a service life of 15-20 years.
- After time media will lose surface size which decreases removal efficiencies.
- Greensand media will lose its charge (think magnet), which removes the iron and manganese.
- Media replacement will require each filter being out of service for 1-3 days, depending on conditions found. This work will be done primarily by vac equipment.
- The media is manufactured in Wisconsin and the cost of the media and shipping is approximately $206,000. This does not include labor or additional equipment to install.
- Staff is working with SEH on this project estimating what the total project cost would be. The total cost of $ 800,000 covers the media, removal, installation, disposal and corrective measures for unknowns, i.e., broken air lines etc.

Wastewater Collection & Wastewater Treatment

Wastewater Collection & Wastewater Treatment Facts

Collection System

- Roughly 24 miles in length that encompasses 5 asset districts.
- Maintenance is on a revolving 10-year plan. Years 1-5, jetting only. Years 6-10 jetting and televising.
- Collection system has 8 lift stations that are maintained bi-annually.
- Lift stations panels are showing their age and are too small to accommodate newer equipment. Staff is proposing a five-year plan to replace and upgrade each of them at a cost of $ 60,000 each. This cost includes electrician, the panel, new panel equipment, the vac truck if needed, and installation cost.
- Rivers edge pumps-$75,000

Wastewater Treatment facility

- Regulated by the Minnesota Pollution Control Agency (MPCA)
- We operate and maintain in accordance with our NPDES permit that is issued every five years.
- Class A minor facility.
- .647 MGD ADW capacity
- Over 40 pieces of equipment and VFD's ensure operational treatment.
- Operates 24/7- due to the plant's automation, staff is typically present for about 6-8 hours a day and on-call 24 hours/day.
- Designed as a 20-year facility.

Wastewater treatment equipment not including HVAC.

Influent & Pre-treatment Room	2 fine screens	1 grit separator	1 mixer	4 lift pumps
Operations Building	3 intermediate pumps and VFD's	2 sludge transfer pumps	3 Ras/Was pumps and VFD's	Tertiary Building
3 aeration blower	3 biosolids blowers	1 backwash blower	2 backwash pumps	2 reuse pumps
1 UV system	1 re-air blower			

Anticipated Five-year Asset Replacement and Chemical Cost

- Aeration diffuser replacement every 5 years-$45,000
- 120 UV bulbs-$67,000 (every 5 years)
- 60 Ballasts-$76,000 (every 5 years)
- Backwash pumps, ten-year rehabilitation maintenance -$60,000
- 4-HVAC boiler rehab- $ 35,000 (per unit)
- Central Processing Units (CPU)- $65,000
- Biosolids course diffuser replacement- $65,000
- Biosolids processing-$120,000/year O&M

Chemical addition

- Ferric chloride-$ 90,000/year O&M

Chloride Discussion

The chloride issue that we face is mostly from water softeners. City staff is aware of this issue and the challenge it brings. What do we do about it?

Option 1

In 2025, city staff proposed, and council approved a water softener rebate program that would go in effect in 2026. This program would be used to offer a rebate for a new water softener for businesses and residents on city water. Certain requirements would apply, but the city would offer rebates that would be used to remove the older, time-based softeners for more efficient on-demand softeners. Hopefully, that would maintain or lower the chloride level to acceptable levels.

The program does have a drawback. A water softener only has peak efficiency for about ten years.

Option 2

A less expensive approach would be for the residents to optimize their softener by lowering the hardness set point to 10 grains per gallon, which would not remove all hardness and is typically acceptable with little to no difference to the user.

The benefit of this option is that you would potentially use less salt, and some hardness is actually a good thing as it provides a protective coating on plumbing, i.e., copper, galvanized.

Chloride Discussion Continued…

Option 3

The city has proactively started to plan for a permanent solution if chloride levels rise and we exceed limits. There are a few treatment option available one being lime softening and the other being reverse osmosis. Staff has met with SEH engineers on a corrective action to this issue and it was determined that a Reverse osmosis facility would solve this issue.

How would this help with Chlorides? A reverse osmosis facility would remove the hardness compounds calcium and magnesium, thus eliminating the need for a water softener. Eliminating the water softener would eliminate the chloride being discharged into the wastewater.

This is the most expensive option. Cost estimates are projected to be between $10-20 million for adding this treatment at the current water treatment facility site. There would also be additional yearly cost for reverse osmosis cartridges that remove the hardness.

Rising Costs -

Keeping up with Rising Infrastructure Costs –

The dilemma that city staff face are the rising costs of materials, goods, and labor.

In 2017, the cost to replace the water treatment plant and the water treatment plant flat roofs were estimated at $664,000. Today, those same roofs cost 1.1 million dollars. That is an increase of over $500,000.

Utility Equipment – In 2015 a fire hydrant cost $3,000. In 2026, they are over $6,000.

In 2019, a water meter cost was $300. In 2026, a water meter cost is $465, which is a 36% increase.

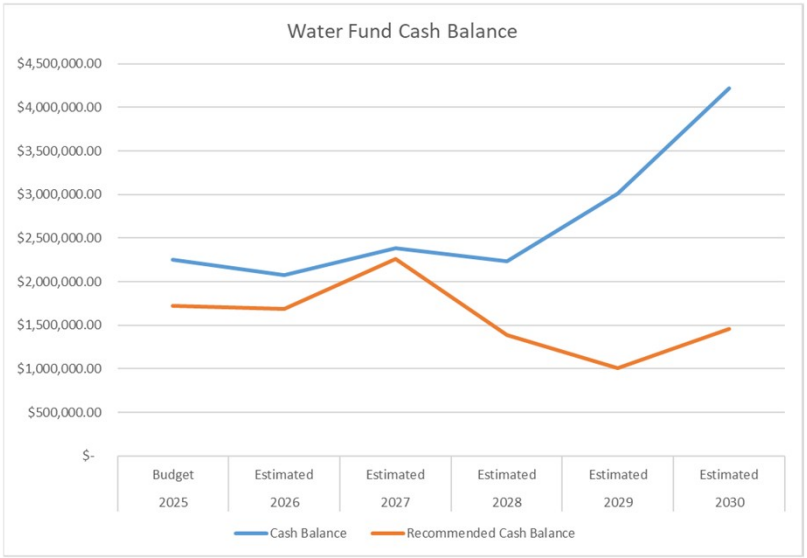
Water and Sewer Rates

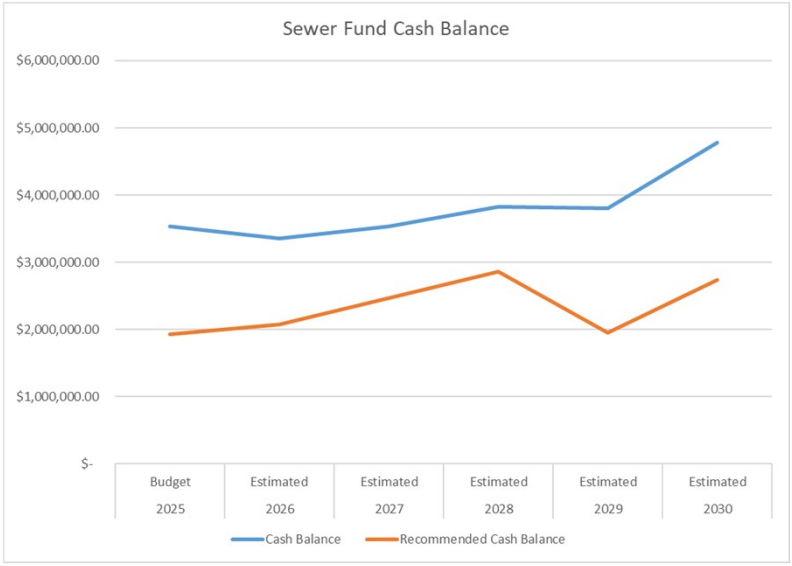
Rate Increases 2026-2027

				Water Rates-2026			**Water Rates-2027**	
				Water Base Change	25%		Water Base Change	15%
				Water Usage Change	25%		Water Usage Change	15%
				Sewer Base Change	5%		Sewer Base Change	20%
				Sewer Usage Change	5%		Sewer Usage Change	20%
				WAC Change	0%		WAC Change	0%
				SAC Change	0%		SAC Change	0%
		Current Rates			2026 Rates			2027 Rates
Water Base		$	16.04		$	20.05		$ 23.06
Usage Fee								
0-14,999		$	4.97	0-4999	$	6.21	0-14,999	$ 7.14
15,000-29,999		$	5.21	5000-14,999	$	6.51	15,000-29,999	$ 7.49
30,000-44,999		$	6.10	15000-29999	$	7.63	30,000-44,999	$ 8.77
45,000 +		$	7.18	30000 +	$	8.98	45,000 +	$ 10.33
Sewer								
Base		$	21.66		$	22.74		$ 27.29
Usage		$	8.49		$	8.91		$ 10.69
Oak Grove Base	1/2 of base	$	8.02		$	10.03		$ 11.53
Usage	100.00%	$	5.07		$	6.21		$ 7.14
WAC		$	3,060.00		$	3,060.00		$ 3,060.00
SAC		$	4,284.00		$	4,284.00		$ 4,284.00

Monthly billing

Bill Summary		Monthly Billing					
	Current		2026 Proposed			2027 Proposed	
1000	$ 51.97	1000	$ 58.72	13%		$ 68.99	17%
2000	$ 65.43	2000	$ 73.84	13%		$ 86.82	18%
3000	$ 78.89	3000	$ 88.96	13%		$ 104.65	18%
4000	$ 92.35	4000	$ 104.08	13%		$ 122.48	18%
5000	$ 105.81	5000	$ 119.20	13%		$ 140.31	18%
6000	$ 119.27	6000	$ 134.32	13%		$ 158.14	18%





Cash Balances-Recommended VS Estimated


Questions?