THE CITY OF
NORTHFIELD
MINNESOTA
ESTD 1855

Water Treatment Plant Update

October 8, 2024

Agenda

- Overview of Why at Water Treatment Plant is needed
- Update on Federal Funding and Water Rates
- Water Treatment Plant Projects
- Alternative Routing for WTP Sewer Discharge
- Project Timing and Next Steps
- Next Steps

Why do we need a water treatment plant?

- City has manganese in drinking water above a health-based guidance from the Minnesota Department of Health for infants under 1 year old
- Infants should not drink City of Northfield tap water

What else will the water treatment plant treat?

- Lower manganese below the Minnesota Department of Health, health-based guidance and also below Environmental Protection Agencies (EPA) secondary standard
- Lower hardness in drinking water below EPA's secondary standard
- Provides a high quality water to all residents
- Protects Northfield water from any future or unknown contaminants such as PFOS or forever chemicals. (Note: All 5 of Northfield's wells have small amount of PFBA in them which water treatment plant removes)

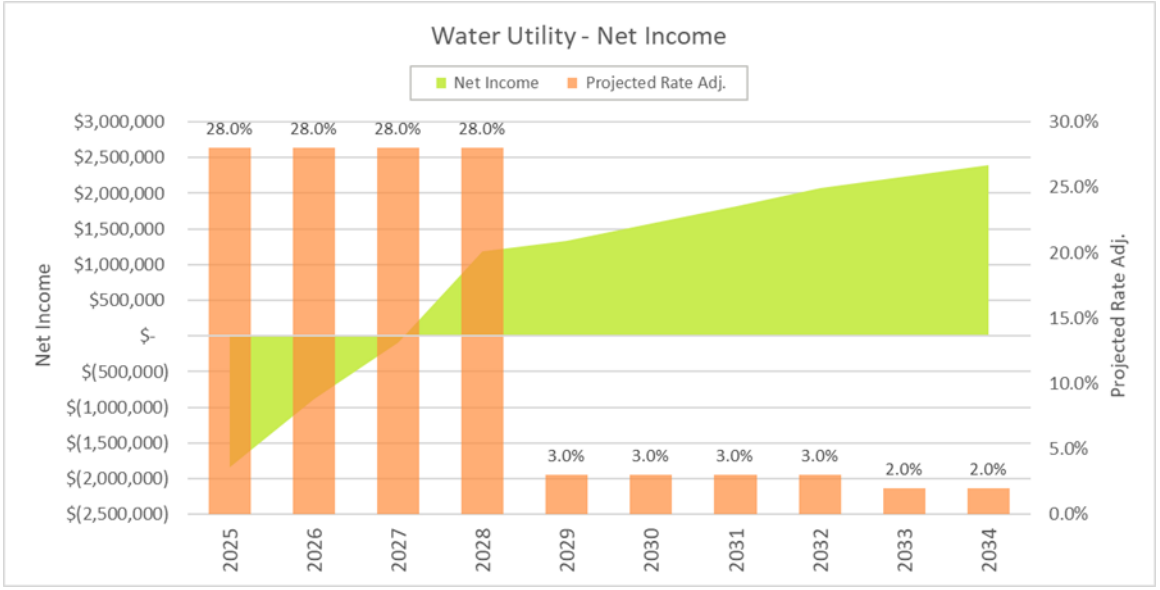
Update on Federal Funding

- City received $3,945,000 for water treatment plant project from Federal Funding for FY24
- City applied for additional $29,505,000 in Federal Funding for FY25 however was not successful in obtaining funding
- City has applied for low interest

Water Treatment Plant Cost

Construction Cost Estimate - Northfield WTP		
Item		Cost
General Conditions/Mobilization	$	1,600,000
Roads and Site Work	$	3,700,000
Raw Watermain	$	2,900,000
Garage	$	3,500,000
Solar - Rooftop	$	1,500,000
Water Treatment Facility including Gravity Filtration	$	22,500,000
Office/Conference Rooms	$	3,000,000
Reverse Osmosis Addition	$	11,000,000
Subtotal Estimated Construction Costs	**$**	**49,700,000**
Contingencies @ 10%	$	4,970,000
Total Estimated Construction Cost	**$**	**54,670,000**
Engineering	$	3,582,135
Land	$	572,000
Total Estimated Project Cost	**$**	**58,824,135**
FY24 Federal Funding	$	3,945,000
Estimate Project Cost minus FY24 Funding	**$**	**54,879,135**

Projected Water Rates without Federal Funding



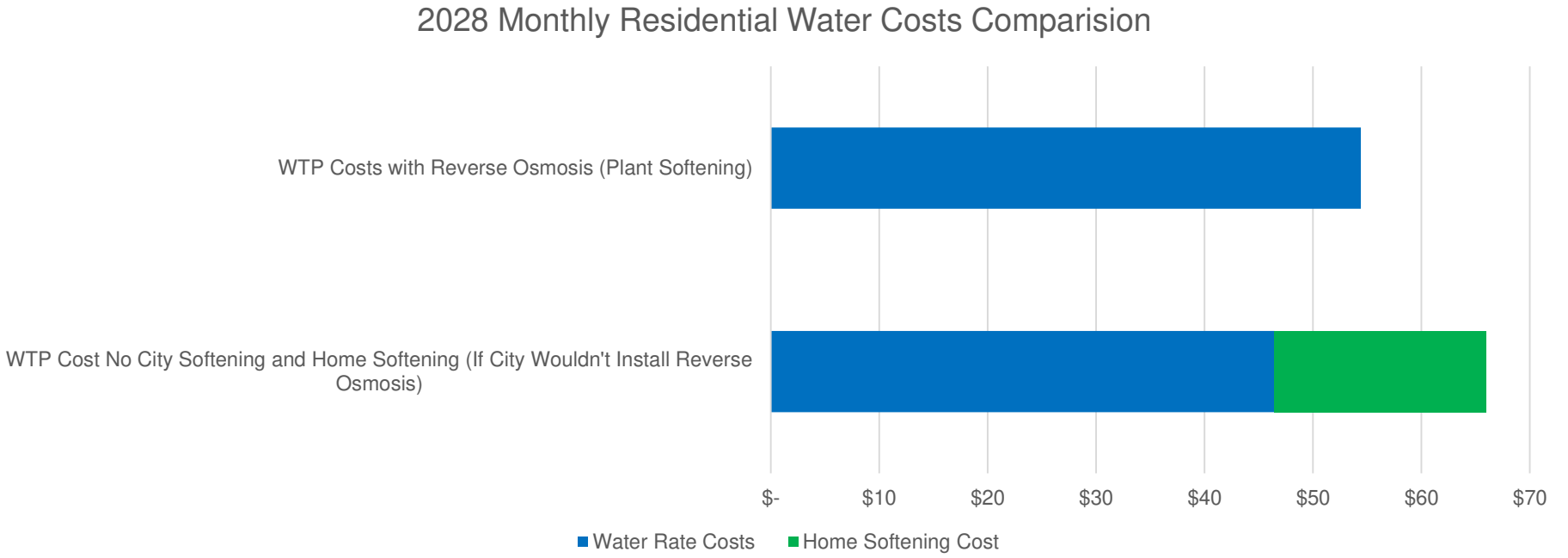
Sample Utility Bill

Sample Bills - Residential						
Average Residential						
589	cubic feet					
0.33	acre lot					
	2024	**2025**	**2026**	**2027**	**2028**
Water	$ 20.27	$ 25.95	$ 33.21	$ 42.51	$ 54.41
Sewer	$ 40.42	$ 42.24	$ 44.14	$ 46.13	$ 47.51
Garbage (35 gal)	$ 12.42	$ 12.54	$ 12.67	$ 12.80	$ 12.92
Storm Water	$ 9.92	$ 11.41	$ 13.12	$ 15.09	$ 17.35
	$ 83.03	$ 92.14	$ 103.14	$ 116.52	$ 132.20

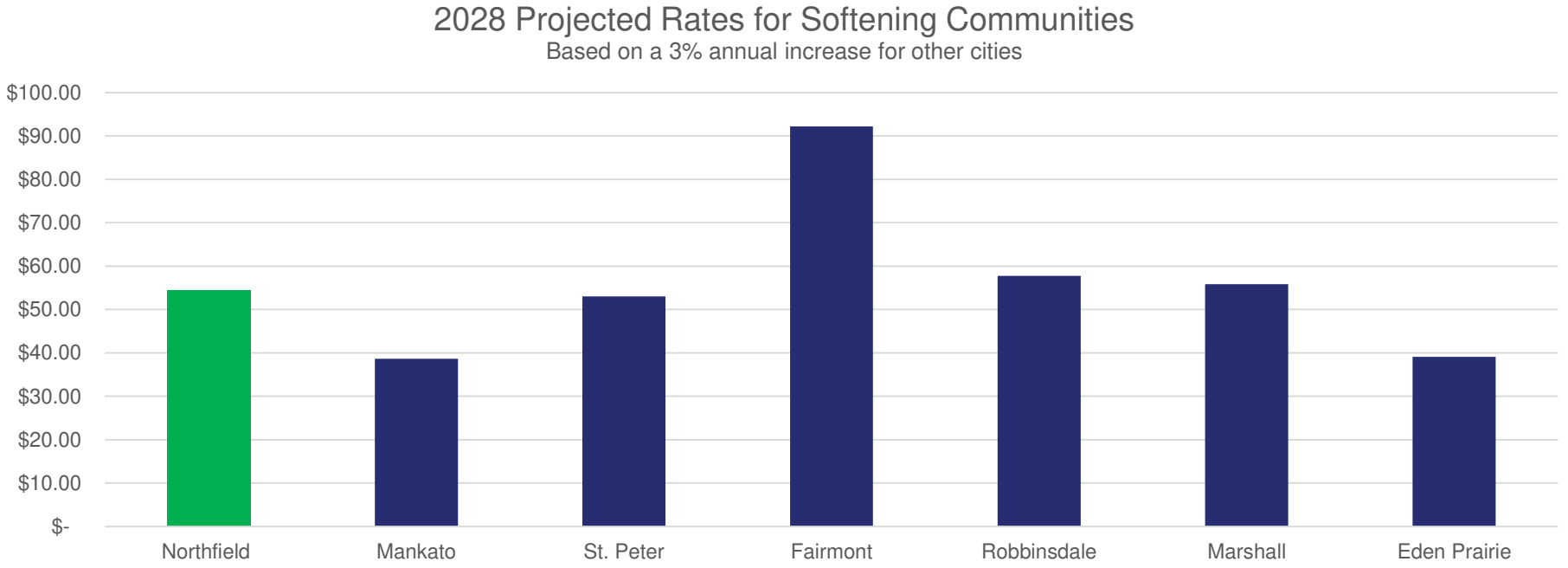
Reverse Osmosis & Why Water Softening?

- Soft water prevents build-up of minerals inside pipes, helps dry skin and hair, cleaner dishes, cleaner laundry, protects appliance, etc.
- Removes PFAS (forever chemical) and other future or unknown contaminants.
- Provides high quality of water to all residents
- Provides softened water to all Northfield water users who currently do not have access to softened water in their rental units
- Residents will be able to remove their in-home water softeners and no longer have to haul softener salt bags into home
- Less chlorides discharged to the Cannon River by removing home water softeners
- City can provide softened water at roughly $8 or slightly more than 1 bag of softener salt per month (typical amount used by residents)

Cost Comparison of Home vs. Municipal Softening



Comparable Cities

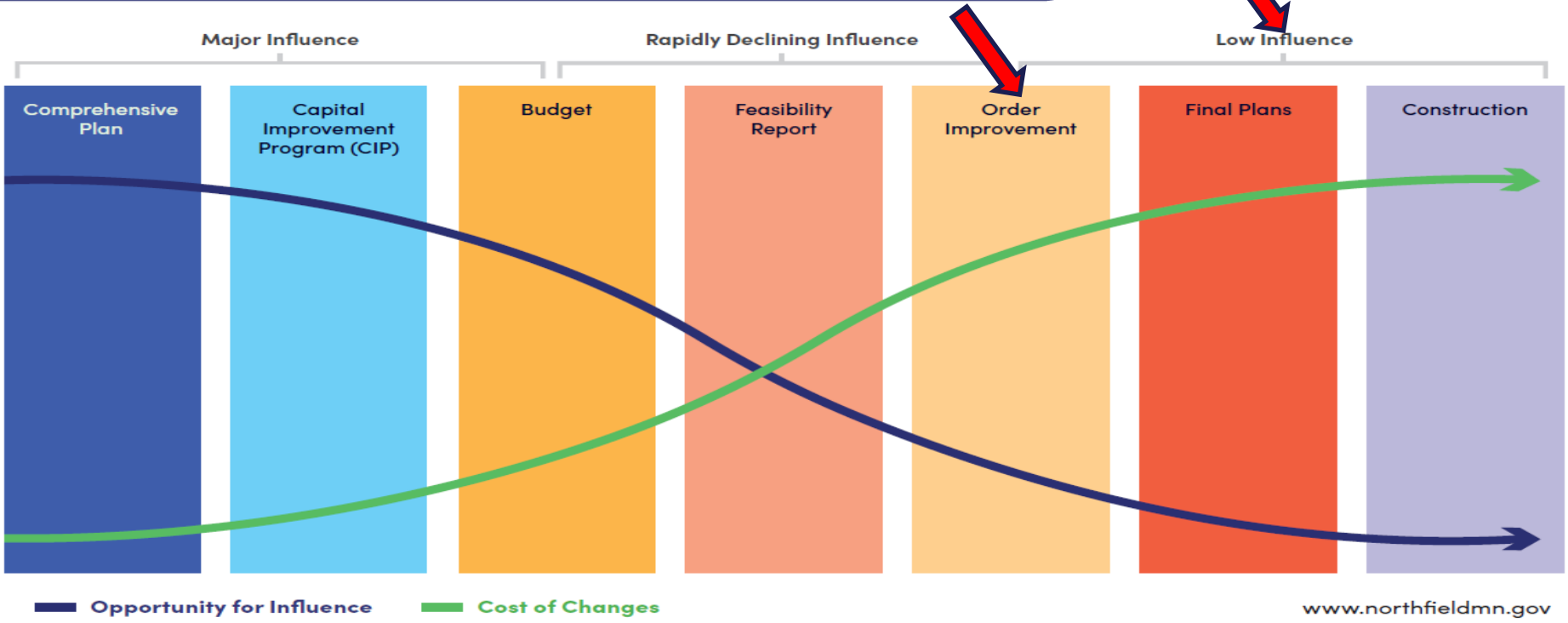


Note: These are some examples and with 22 cities with PFAS exceeding limits there will be many more new similar plants being built to remove those forever chemicals.

Project Influence

Decision to do project Complete

We are here



Water Treatment Plant Projects

- Water Treatment Plant being broken into three separate projects
  - (1) Water Treatment Plant
  - (2) Reverse Osmosis/Federal Funding
  - (3) Extension of Jefferson Park and new roadways and raw watermains

(1) Water Treatment Plant

- Construction of water treatment plant
  - Water Treatment Plant Building, equipment and site
- Project Timeline
  - Approve Plans and Specs & Advertisement for Bid – November 12, 2024
  - Award Project – January 7, 2025
  - Construction – 2025 - 2027

(2) Reverse Osmosis/Federal Funding

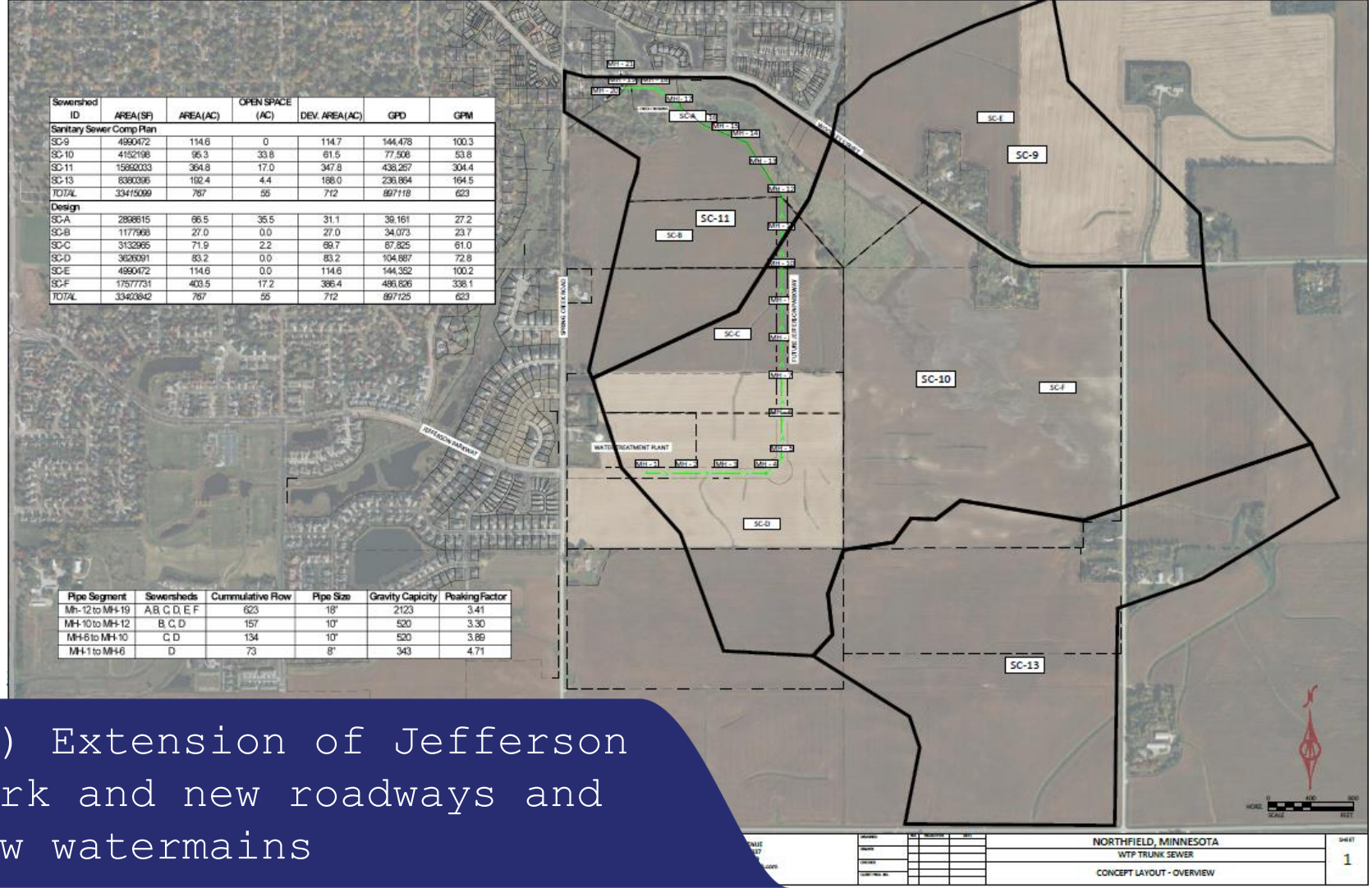
- Procurement of Reverse Osmosis Skids and Installation
  - Project bid by Army Corps of Engineers
- Project Timeline
  - Winter 2024/2025 Approvals of Project Partnership Agreement
  - Ad for Bid and Procurement of Equipment 2025 – 2026
  - Installation of Equipment – 2026 – 2027

(3) Extension of Jefferson Park and new roadways and raw watermains

- Construction of Jefferson Parkway along south property line and new north/south road on east side of property
  - Required within the purchase agreement from previous landowner within 5 years of purchase
- Raw Watermain Installation
  - Bringing watermains from all wellhouses to water treatment plant

(3) Extension of Jefferson Park and new roadways and raw watermains

- Current plan for sanitary sewer
  - Discharge would go west on Jefferson Parkway (opposite of road grad) and would require additional road construction on Jefferson Parkway
  - Engineer Estimate - $800,000
- Alternate Option
  - New trunk sanitary sewer line from north that will serve both the water treatment plant and future development around the water treatment plant
  - Option follows Comprehensive Sewer Plan, however, no development has taken place to the north of the water treatment plant that would have provided the trunk sanitary sewer
  - New design - $211,000
  - Engineers Estimate - $2,248,072.60



Sewershed ID	AREA (SF)	AREA (AC)	OPEN SPACE (AC)	DEV. AREA (AC)	GPD	GPM
Sanitary Sewer Comp Plan						
SC-9	4990472	114.6	0	114.7	144,478	100.3
SC-10	4152198	95.3	33.8	61.5	77,508	53.8
SC-11	15892033	364.8	17.0	347.8	438,257	304.4
SC-13	8360396	192.4	4.4	188.0	236,864	164.5
TOTAL	33415099	767	55	712	897118	623
Design						
SC-A	2898615	66.5	35.5	31.1	39,161	27.2
SC-B	1177968	27.0	0.0	27.0	34,073	23.7
SC-C	3132965	71.9	2.2	69.7	87,825	61.0
SC-D	3626091	83.2	0.0	83.2	104,887	72.8
SC-E	4990472	114.6	0.0	114.6	144,352	100.2
SC-F	17577731	403.5	17.2	386.4	486,826	338.1
TOTAL	33403842	767	55	712	897125	623

Pipe Segment	Sewersheds	Cummulative Flow	Pipe Size	Gravity Capicity	Peaking Factor
Mh-12 to MH-19	A,B, C, D, E, F	623	18"	2123	3.41
MH-10 to MH-12	B, C, D	157	10"	520	3.30
MH-6 to MH-10	C, D	134	10"	520	3.89
MH-1 to MH-6	D	73	8"	343	4.71

(3) Extension of Jefferson Park and new roadways and raw watermains

(3) Extension of Jefferson Park and new roadways and raw watermains

- Project Timeline
  - October 15 – Approve Water Treatment Plant Sanitary Sewer Discharge Design Amendment (if no objection, on consent agenda)
  - April/May 2025 – Approve Plans and Specs & Order Advertisement for bid
  - May/June 2025 - Award Project
  - Construction – 2025 – 2026 (Raw Watermains required in 2025 due to Jefferson Parkway mill and overlay in 2026)

(3) Extension of Jefferson Park and new roadways and raw watermains

- Policy Question
  - Do you support staff moving forward with alternate route for sewer discharge?

Next Steps

- Public Meeting on October 29, 2025 at 6:00 p.m. to inform residents on the water treatment plant project, need for water treatment plant, costs and timeline

Questions?

Thank you