WATER RECLAMATION PROJECTS

OCTOBER 15, 2018

CITY OF SIOUX FALLS
PUBLIC WORKS
Providing a Better Quality of Life for You!

WATER RECLAMATION

WHAT IS IT?

The collection system moves wastewater to the Water Reclamation Treatment Facility.

+

The Water Reclamation Treatment Facility cleans the water.

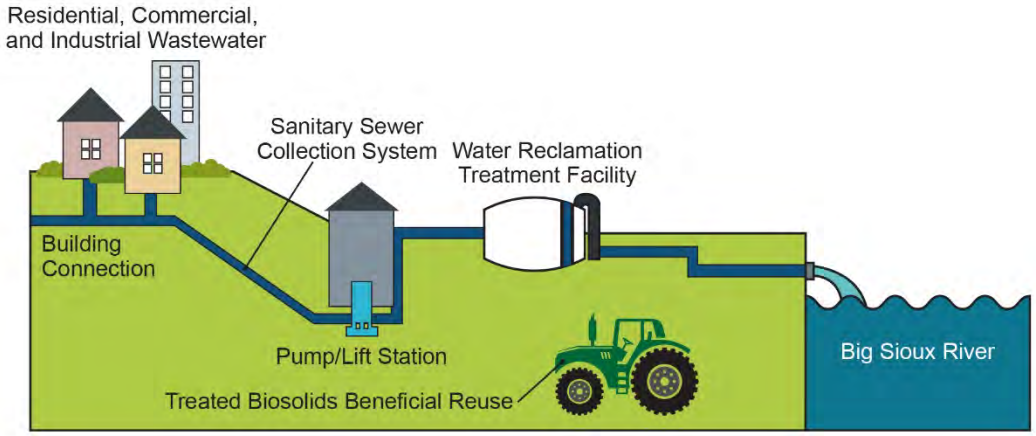
=

Clean water is discharged into the river.

WATER RECLAMATION

HOW DOES THE COLLECTION SYSTEM WORK?

- Wastewater from your sinks, tubs, and toilets moves from your house to the sanitary sewer collection system.
- The collection system moves your wastewater to a pump station.
- The pump station(s) lifts the wastewater and pushes it through a pressurized line (force main) to the Water Reclamation Treatment Facility.



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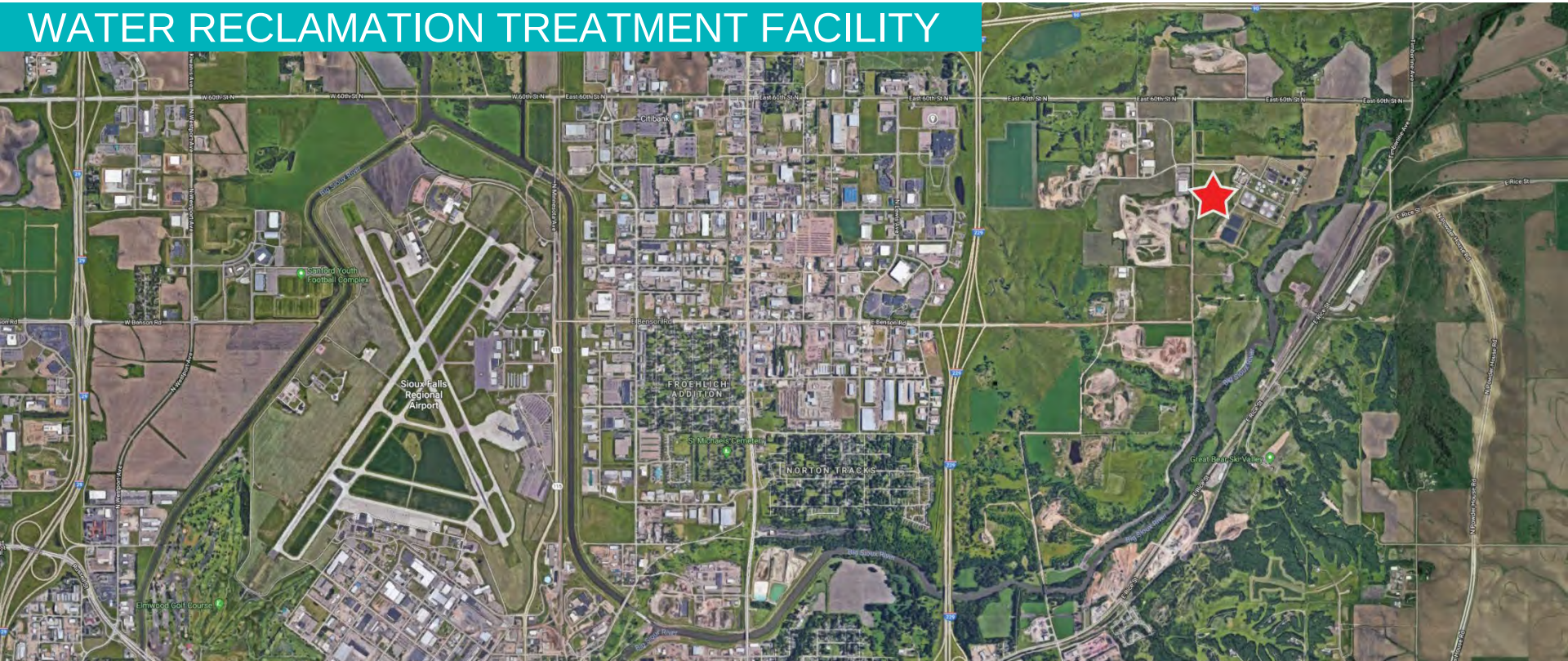
WATER RECLAMATION TREATMENT FACILITY



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HOW AM I BILLED FOR THIS SERVICE?

Basic Charge + Volume Charge = Utility bill amount

Current Usage Information

Service	Current Read Date	Current Reading	Previous Read Date	Previous Reading	Days	Usage
Meter	**53047142**	**Read Status:** Actual Read				
Water	10/05/18	363	09/05/18	358	30	5
Meter Multiplier		1				

Service	Current Read Date	Current Reading	Previous Read Date	Previous Reading	Days	Usage
Sewer	10/05/18		09/05/18		30	5
Meter Multiplier						

Current Charges

Fixed Charge 3/4" Meter		4.32
Volume Charge Tier 1	5.00 @ $3.68	18.40
	Total Water	**$22.72**

Fixed Charge		4.45
Volume Charge	5.00 @ $4.19	20.95
	Total Sewer	**$25.40**

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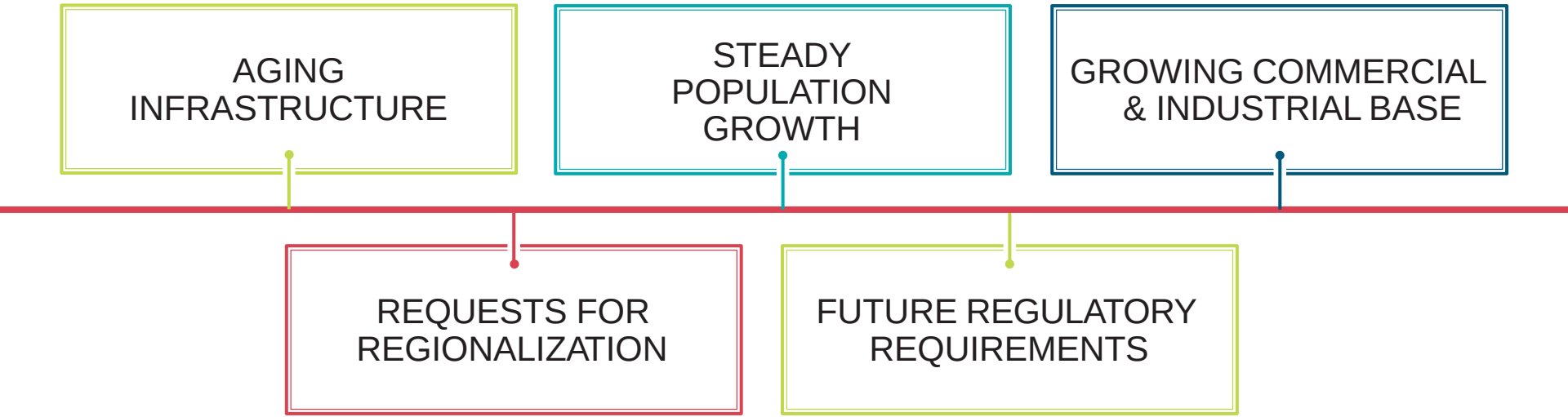
CURRENT STATE



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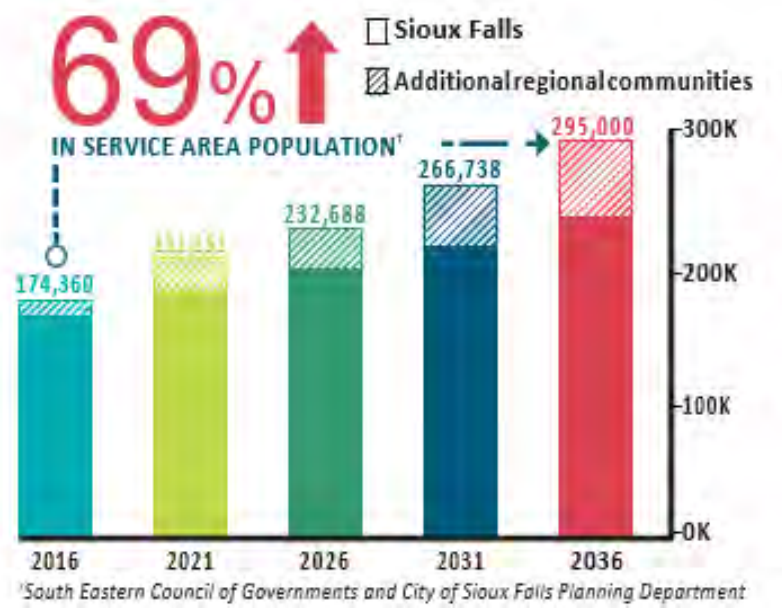
WHY A MASTER PLAN?

01

Review city and regional growth area population projections and land use planning.



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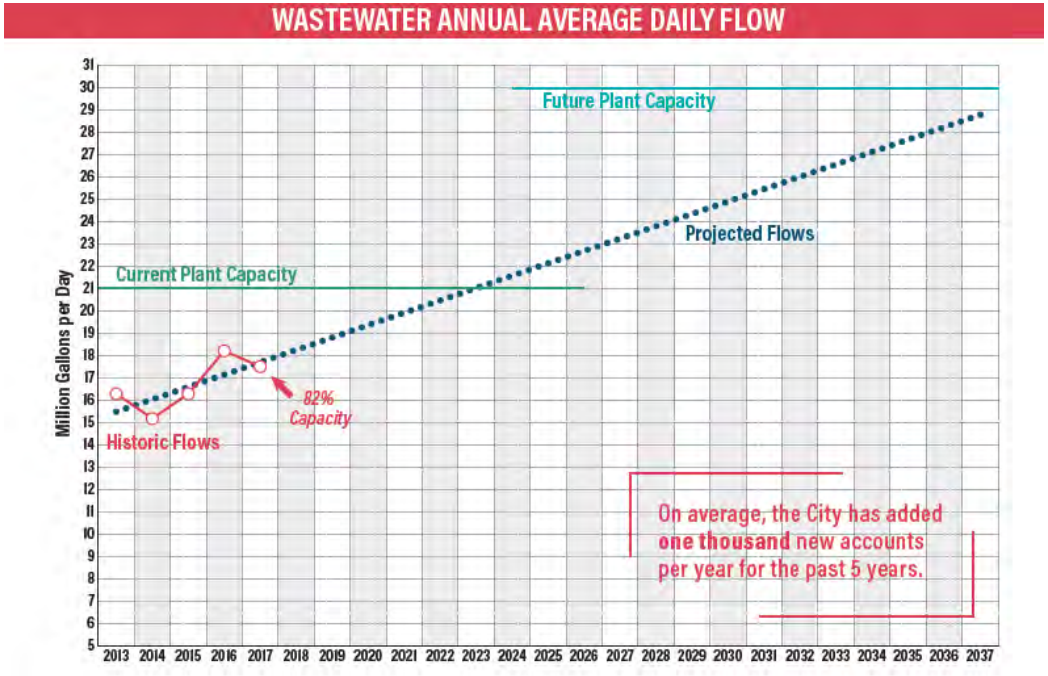
WHY A MASTER PLAN?

02

Project future wastewater flows and loads.



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WHY A MASTER PLAN?

03

Model existing collection system—recommend optimization and improvement alternatives.

04

Develop collection system plan for future growth areas.

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WHY A MASTER PLAN?

05

Review existing water reclamation facilities and treatment alternatives to meet future growth and regulations.

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WHY A MASTER PLAN?

06

Provide budgetary cost estimates and concept schedule to complete key improvements.

Approximate Design Schedule
Transition from Design to Construction
Approximate Construction Schedule

PROJECT	2019	2020	2021	2022	2023
Equalization Expansion					
Water Reclamation Final Clarifier	$ 1,280,000				
Main Pump Station Replacement	$ 22,400,000				
PS 240 Capacity Improvements	$ 2,000,000	$ 1,000,000	$ 36,390,000		
Basin 15 Sanitary Sewer Extension			$ 9,210,000		
Basin 18C Sanitary Sewer Extension		$ 2,813,000			
Pump Station Improvements					
Pump Station PS-203	$ 1,980,000				
Pump Station PS-218		$ 1,130,000			
Pump Station PS-204			$ 70,000		
Pump Station PS-205			$ 270,000		
Pump Station PS-206			$ 360,000		
Pump Station PS-224			$ 180,000		
Pump Station PS-201			$ 100,000		
Pump Station PS-213			$ 100,000		
Pump Station PS-221			$ 100,000		
Pump Station PS-239			$ 300,000		
Pump Station PS-220				$ 1,250,000	
Basin 17 Sanitary Sewer Extension				$ 165,000	$ 1,479,000
Water Reclamation Facility Improvements and Expansion	$ 4,000,000	$ 37,625,000	$ 18,500,000	$ 87,500,000.00	$ 11,375,000.00

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UPCOMING INVESTMENTS

- Equalization Expansion Project.
- Main Pump Station Replacement Project.
- Pump Station 240 Capacity Improvement Project.
- Collection System Improvement Projects.
- Water Reclamation Facility Improvements and Expansion Project.

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EQUALIZATION EXPANSION PROJECT

- Construct a 20 million gallon equalization basin.
- The new basin will provide storage for high flow events.

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MAIN PUMP STATION REPLACEMENT PROJECT

- Replacement of the original pump station with a new pump station with a capacity of 65 Million Gallons per Day (MGD).
- Existing facility constructed in the early 1980's.
- Pumps approximately 90% of the city's wastewater.
- Estimated cost for design and construction—$24,400,000.

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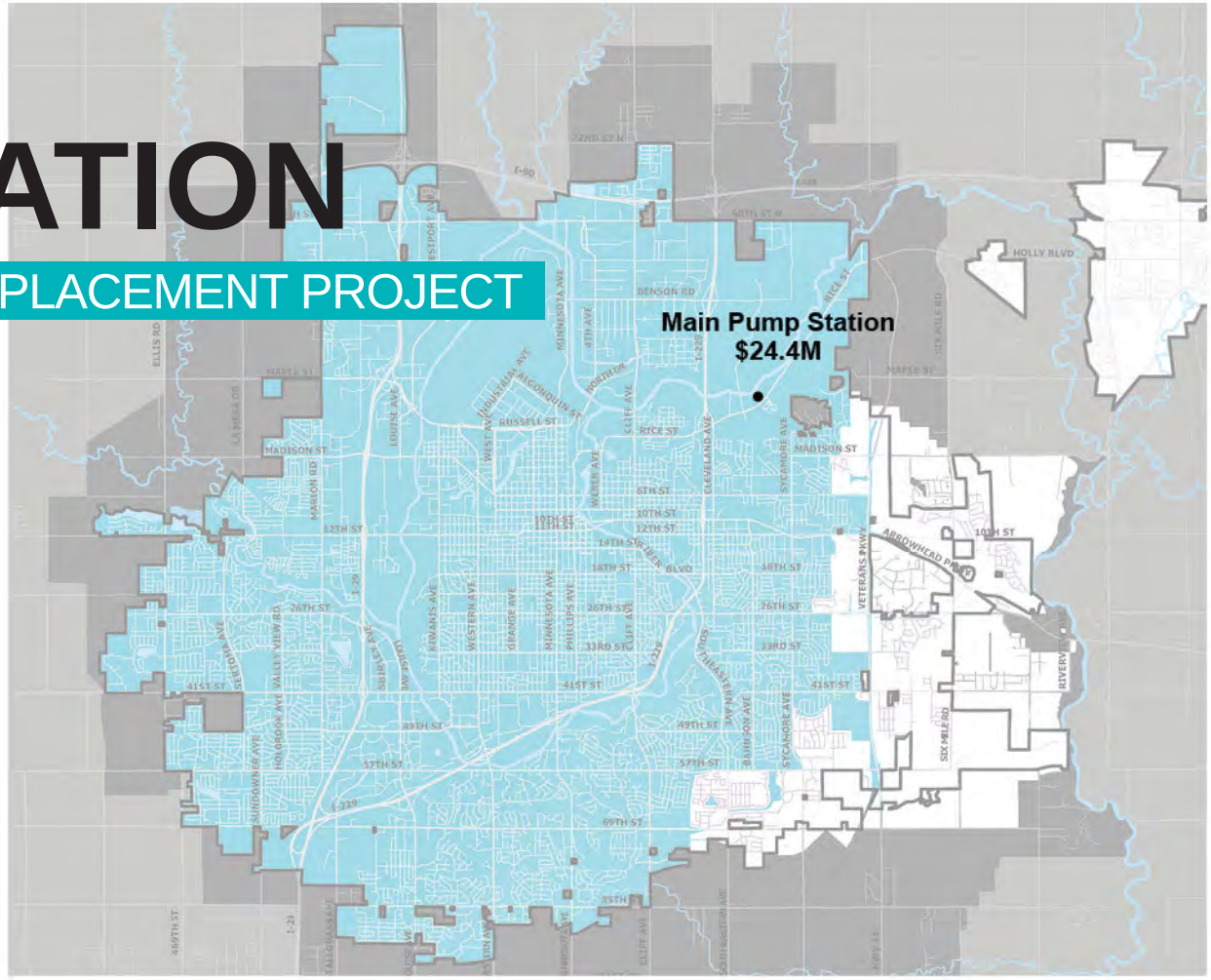
MAIN PUMP STATION REPLACEMENT PROJECT

- Decommission existing lift station.
- Add new pump station.



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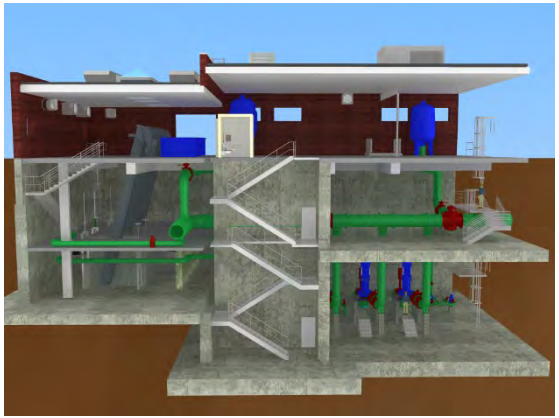
MAIN PUMP STATION REPLACEMENT PROJECT



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PUMP STATION 240 CAPACITY IMPROVEMENTS PROJECT

- Install parallel force main from Pump Station 240 to the Water Reclamation Treatment Facility.
- Required to address expected capacity issues. Future capacity at 18.6 MGD.
- Estimated cost for design and construction—$39,000,000.

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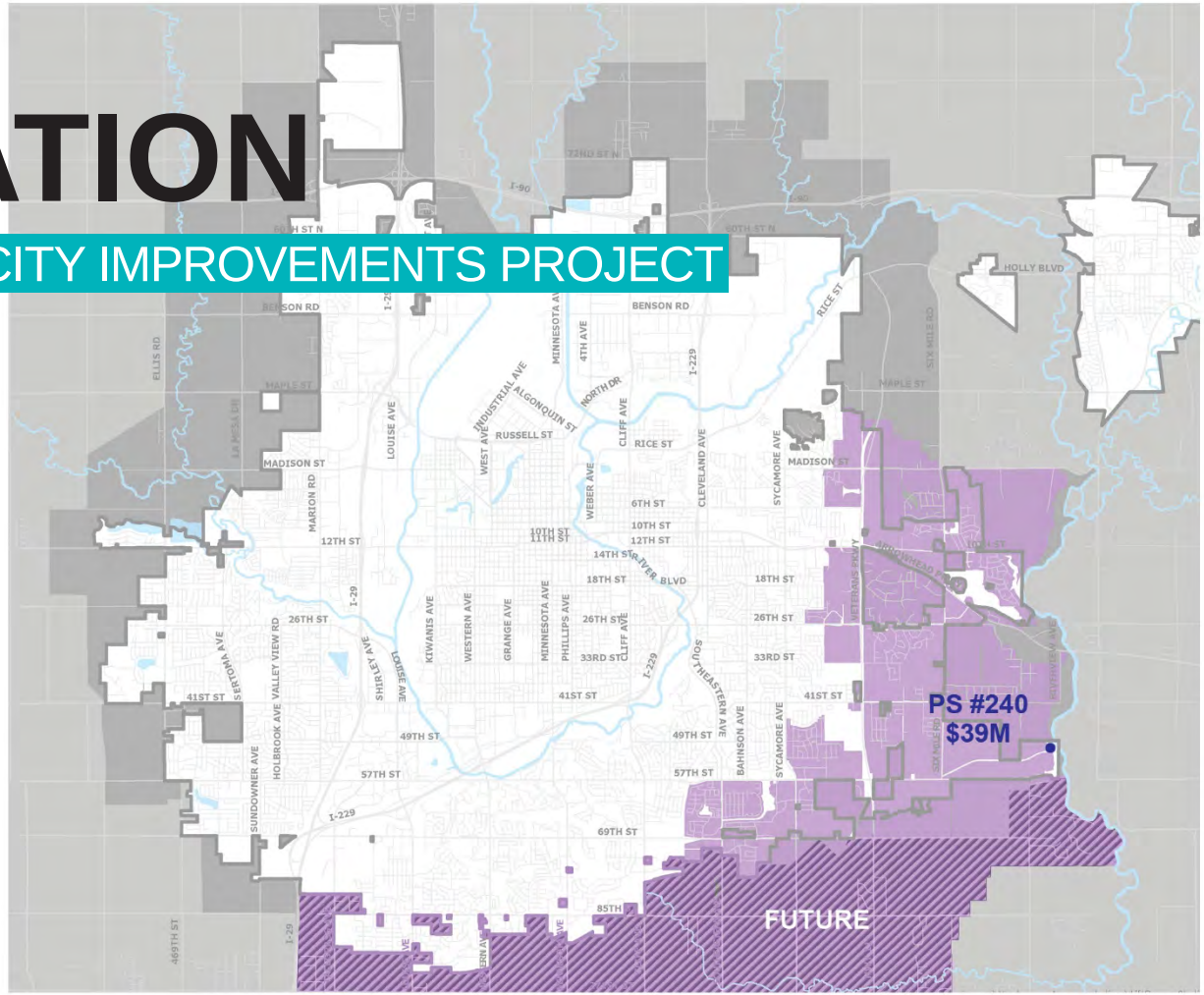
PUMP STATION 240 CAPACITY IMPROVEMENTS PROJECT

- Extend force main to WRF.
- Improve/add new pumps, motors, VFD's, etc.
- Layout future equalization.



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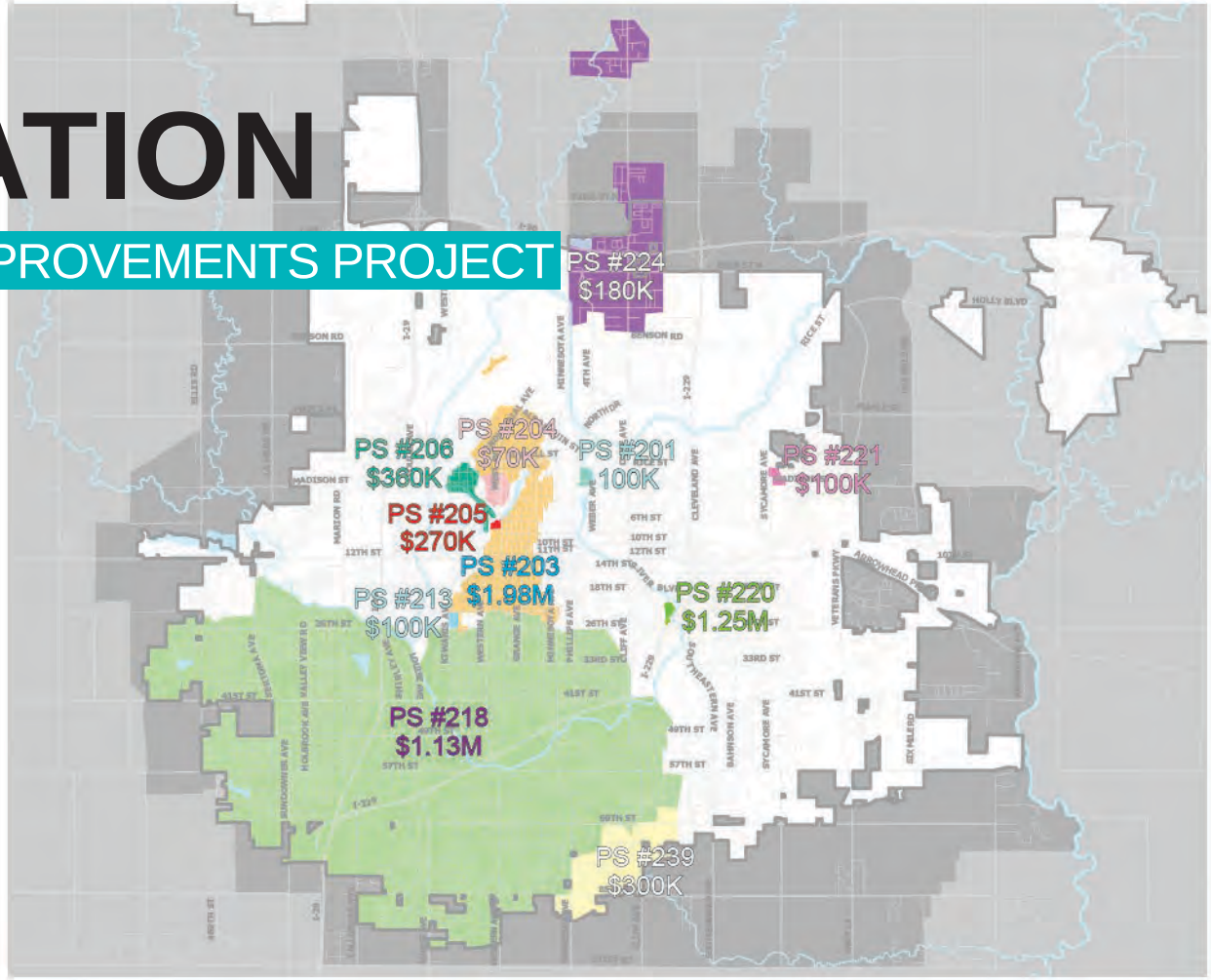
COLLECTION SYSTEM IMPROVEMENTS PROJECT

- Address age and condition items.
- Improve safety and performance.
- Reduce electrical failure and flood control risks.



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WATER RECLAMATION FACILITY IMPROVEMENTS & EXPANSION PROJECT

- Facility expansion improvements to address aging infrastructure, meet population growth, and position facility for future regulations.
- Construct improvements to improve efficiency and increase the facility capacity.
- Proposed project delivery method—Construction Manager at Risk.
- Estimated cost for design and construction—$159,000,000.

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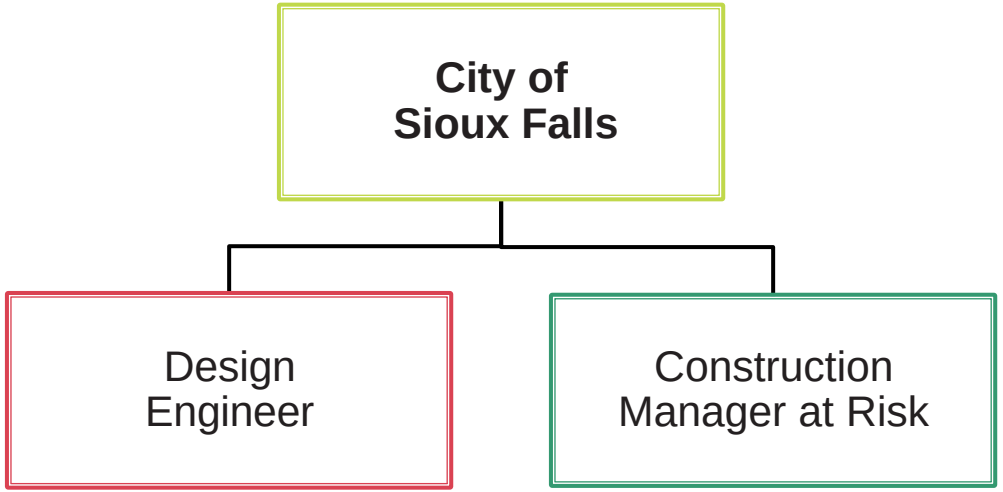
WATER RECLAMATION FACILITY IMPROVEMENTS & EXPANSION PROJECT



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WATER RECLAMATION FACILITY IMPROVEMENTS & EXPANSION PROJECT

Construction Manager at Risk (CMAR)

- Selection process–Request for Proposals (RFP).
- Delivery method allows for design and construction pricing to happen concurrently.
- Selected contractor commits to delivering the project within a Guaranteed Maximum Price (GMP).

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WATER RECLAMATION FACILITY IMPROVEMENTS & EXPANSION PROJECT

Construction Manager at Risk Delivery Method Benefits

Collaborative delivery method that provides the City more control.

Contractor provides their experience and expertise to the design process.

Contractor provides early construction cost input leading to cost certainty.

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FUNDING

	User Fees	SD DENR Revolving Loan Fund Repaid with User Fees
Equalization Expansion Project	X	
Main Pump Station Replacement Project		X
Pump Station 240 Capacity Improvement Project		X
Collection System Improvements Project	X	
Water Reclamation Facility Improvements & Expansion Project		X

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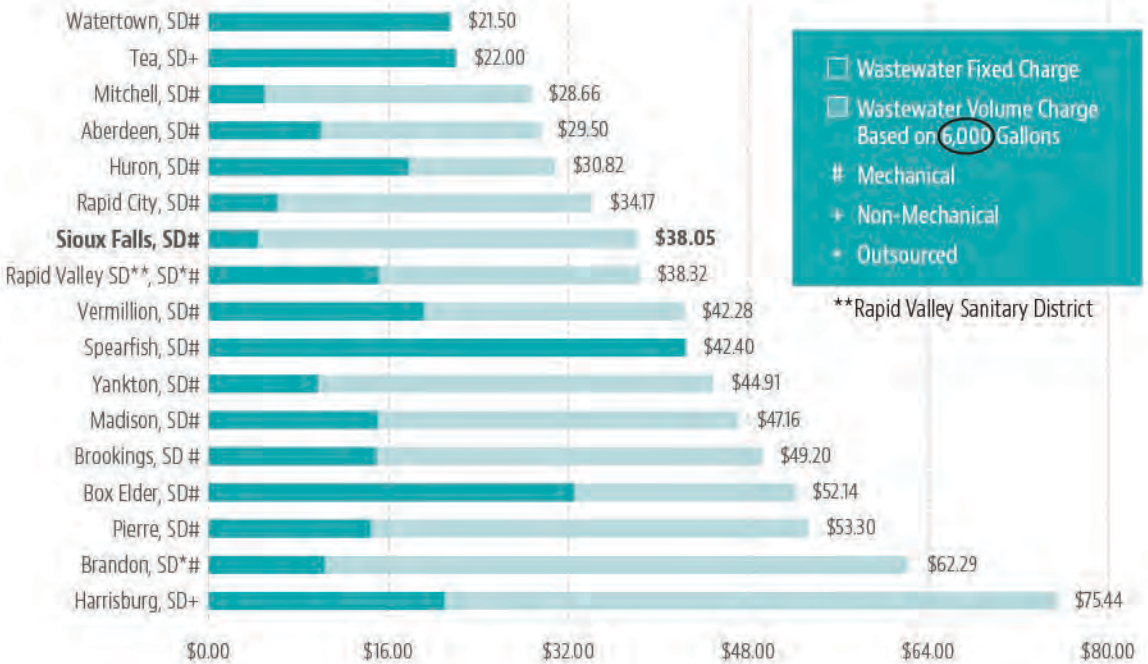
UTILITY RATES

2018 AE2S Annual Utility Rate Survey



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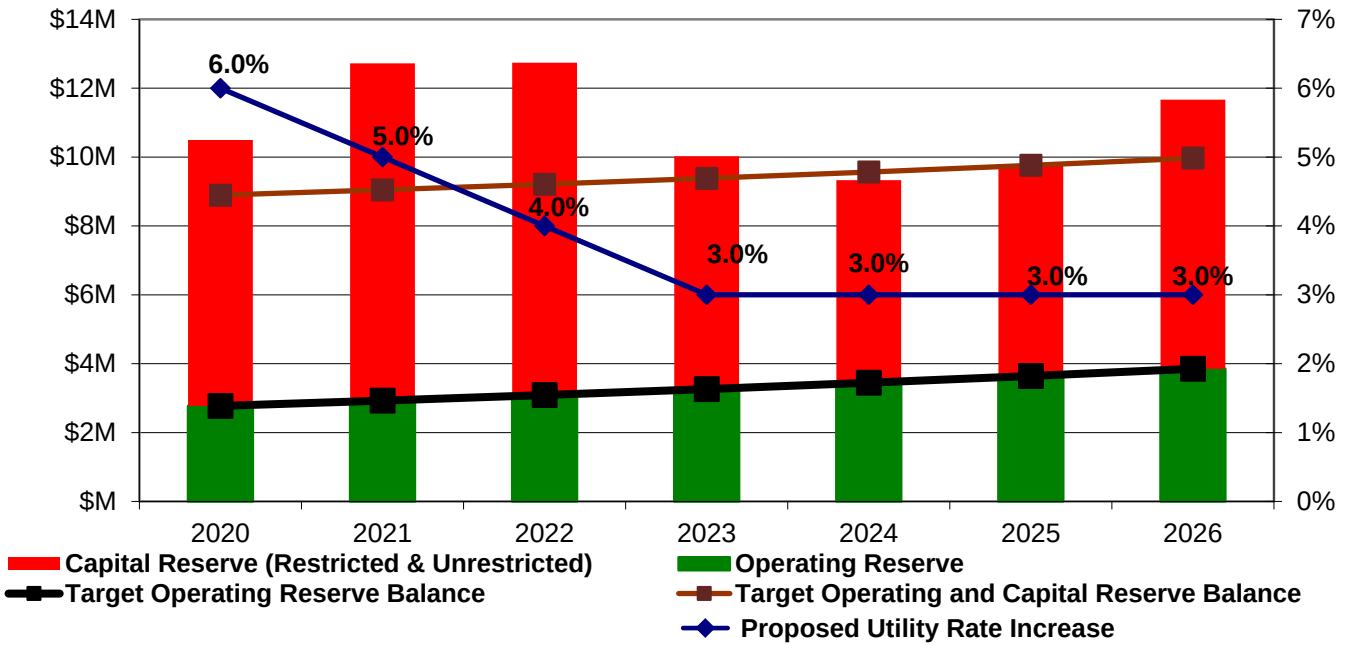
RATE ANALYSIS FOR 2020–2023 RATE SETTING



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AVERAGE MONTHLY CONSUMPTION

2017 FULL-YEAR AVERAGE

Number of residential customer bills 590,982

Total 2017 ccf billed to residential customers. . . . . 3,648,126 ccf*

Average residential customer consumption. . . . . 6.2 ccf* (4,638 gallons)

*ccf = hundred cubic feet

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TYPICAL MONTHLY SEWER BILL

PROPOSED RESIDENTIAL SEWER RATE INCREASE

Year	Rate Adjustment	Monthly Consumption in Gallons*	Monthly Consumption in CCF	Previous Year Monthly Charge	Monthly Increase Rate Adjustment	Current Year Monthly Charge
2020	6%	4,638	6.2	$32.25	$1.89	$34.14
2021	5%	4,638	6.2	$34.14	$1.74	$35.88
2022	4%	4,638	6.2	$35.88	$1.45	$37.33
2023	3%	4,638	6.2	$37.33	$1.09	$38.42

*Average Residential Customer Consumption

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TYPICAL MONTHLY SEWER BILL

SINGLE FAMILY RESIDENTIAL ACCOUNTS
WINTER AVERAGE (DECEMBER 2017—MARCH 2018)

CCF*	Gallons	Total Customers	Percent of Total	Percent Accumulated Total
1	748	2,379	5.38%	5.38%
2	1,496	5,530	12.51%	17.89%
3	2,244	7,430	16.80%	34.69%
4	2,992	7,694	17.40%	52.09%
5	3,740	6,275	14.19%	66.28%
6	4,488	2,596	5.87%	72.15%
7	5,236	6,358	14.38%	86.52%

*Hundred Cubic Feet

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ACTION ITEMS

- 2019 – 2023 Capital Plan approved: September 2018.
- 2020 – 2023 proposed utility rate increases: November–December 2018.
- Design and CMAR contracts–Water Reclamation Facility Improvements and Expansion project: Spring–Summer 2019.

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THANK YOU!