

2019–2024 Water Reclamation Capital Program Overview

Tuesday, October 23, 2018





Agenda

- Staff introductions
- Overview of “Large” Water Reclamation CIP Projects
 - Collection System
 - Water Reclamation Facility
 - Scopes
 - Schedules
 - Budgets
 - Delivery method



Water Reclamation Staff Introductions

- Trent Lubbers—Utility Coordination Director
- Mark Perry—Water Reclamation Facility (WRF) Superintendent
- Mark Hierholzer—WRF Operations Supervisor
- Jeff Warkenthien—WRF Maintenance Supervisor
- Paul Faris—Sewer Collection Supervisor
- Tony Schnetter—Sewer Collection Supervisor
- Phil Greenwood—Biosolids Coordinator
- Jesse Neyens—Pre-Treatment Coordinator
- Debra Gaikowski—WRF Improvements and Expansion Project PM
- Shannon VerHey—Project Team member
- Ryan Johnson—Sanitary Sewer Principal Engineer



Project Introduction, Schedule, and Budget

CITY OF SIOUX FALLS - WATER RECLAMATION PROJECTS 2019 - 2024

Approximate Design Schedule
 Transition from Design to Construction
 Approximate Construction Schedule



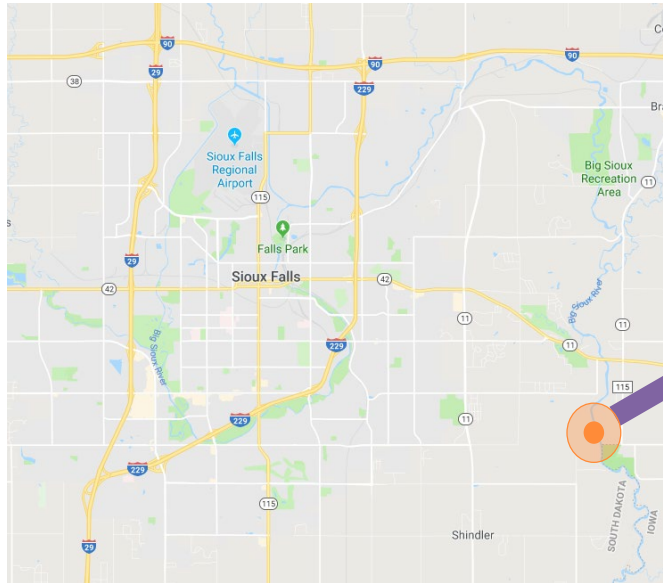
PROJECT	PROJECT DELIVERY METHOD	2019	2020	2021	2022	2023	2024
Cliff and Chambers Equalization Expansion (Design in 2018)	Design, Bid, Build						
Water Reclamation Final Clarifier Improvements (Design in 2018)	Design, Bid, Build	\$ 1,280,000					
Main Pump Station Replacement (Design in 2018)	Design, Bid, Build	\$ 22,400,000					
PS 240 Capacity Improvements	Design, Bid, Build	\$ 2,000,000	\$ 1,000,000	\$ 36,350,000			
Basin 15 Sanitary Sewer Extension	Design, Bid, Build			\$ 9,210,000			
Basin 18C Sanitary Sewer Extension (Arrowhead Pkwy)	Design, Bid, Build		\$ 2,813,000				
Pump Station Improvements							
Pump Station PS-203 (Renovations, wetwell modifications, roof, HVAC improvements)	Design, Bid, Build	\$ 1,980,000					
Pump Station PS-218 (Address flood issues, electrical, roof, HVAC improvements)	Design, Bid, Build		\$ 1,130,000				
Pump Station PS-204 (Upgrade electrical and provide Davit crane bases)	Design, Bid, Build			\$ 70,000			
Pump Station PS-205 (Maintenance lift, standby generator, misc. improvements)	Design, Bid, Build			\$ 270,000			
Pump Station PS-206 (Lift station re-build)	Design, Bid, Build			\$ 360,000			
Pump Station PS-224 (Replace existing pumps w/Dry-Pit Flygt N-pumps or recessed impeller pumps)	Design, Bid, Build			\$ 180,000			
Pump Station PS-201 (Stand-by generator)	Design, Bid, Build			\$ 100,000			
Pump Station PS-213 (Stand-by generator)	Design, Bid, Build			\$ 100,000			
Pump Station PS-221 (Stand-by generator)	Design, Bid, Build			\$ 100,000			
Pump Station PS-239 (Electrical, pump and equipment upgrades)	Design, Bid, Build			\$ 300,000			
Pump Station PS-220 (Upgrade to address age/condition, and flood issues)	Design, Bid, Build				\$ 1,250,000		
Basin 17 Sanitary Sewer Extension	Design, Bid, Build				\$ 165,000	\$ 1,479,000	
Water Reclamation Facility Improvements and Expansion	Construction Manager at Risk	\$ 4,000,000	\$ 37,625,000	\$ 18,500,000	\$ 87,500,000	\$ 11,375,000	
Immediate Improvements (Subject to change during design)							
Step Feed Improvement at Aeration Basins							
Grit Influent Piping							
Primary Clarifier Influent Diversion (Hydraulics)							
Filter Building High Priority Items							
Biosolids Dewatering/Handling Improvements							
Dewatering Building Rehab Items							
Additional Improvements (Subject to change during design)							
Headworks							
Primary Clarifiers							
Aeration Basin Upgrades							
Aeration Basin Splitter Box							
Aeration Basins							
Aeration Basin Blowers							
Replace RAS and WAS Pumps							
Final Clarifiers							
Chlorine Contact Expansion							
Effluent Flow Meter Improvements							
Convert Biosolids Lagoons to Equalization Basins							
New Generator							
Site Piping							
High Priority Age and Condition Reliability Improvements (see Master Plan Appendix 10.A)							
Medium Priority Age and Condition Reliability Improvements (see Master Plan Appendix 10.A)							

NOTES:
 The Water Reclamation Facility Improvements and Expansion project will use the CMAR delivery method. One designer and one CMAR will be utilized for the project. Schedule and budget are approximate only. The RFQ/RFI for designer and CMAR services is anticipated to be issued Q1 2019 and will provide more schedule and budget information. All dollars shown are "total project costs" and are not designated as design or construction dollars.

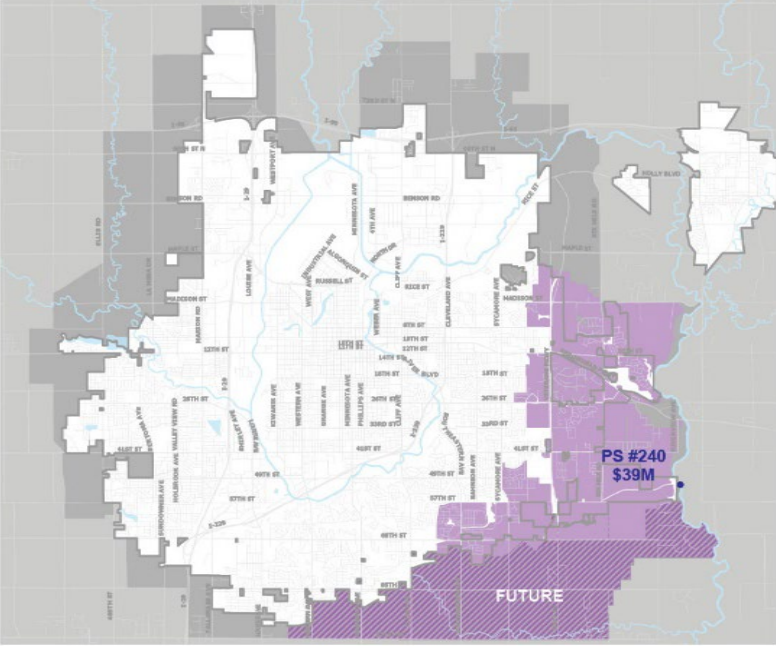
Projects Currently Under Design

- **Cliff and Chambers Equalization Expansion**
 - Rebid - TBD
 - Construction—2018-2019
- **Water Reclamation Final Clarifier Improvements**
 - Bid—2019
 - Construction—2019-2020
- **Main Lift Station Replacement**
 - Bid—2019
 - Construction – 2019-2020
- **Basin 18C**
 - Design—currently under contract

PS 240 Capacity Improvements Project



PS 240 Capacity Improvements Project



PS 240 Capacity Improvements Project

Current Facility



Constructed
in the early
2000s



3.5 MGD
rated
capacity



Planned WRF
on Site—Pump
Biosolids*



At capacity
during high
flow

*Original PS 240 plan was to construct a WRF at the PS 240 site and pump bio-solids to existing WRF. 2018 Master Plan recommends pumping all WW to WRF



PS 240 Capacity Improvements Project

Future Facility



Construct
2021–2022



18.6 MGD
rated
capacity



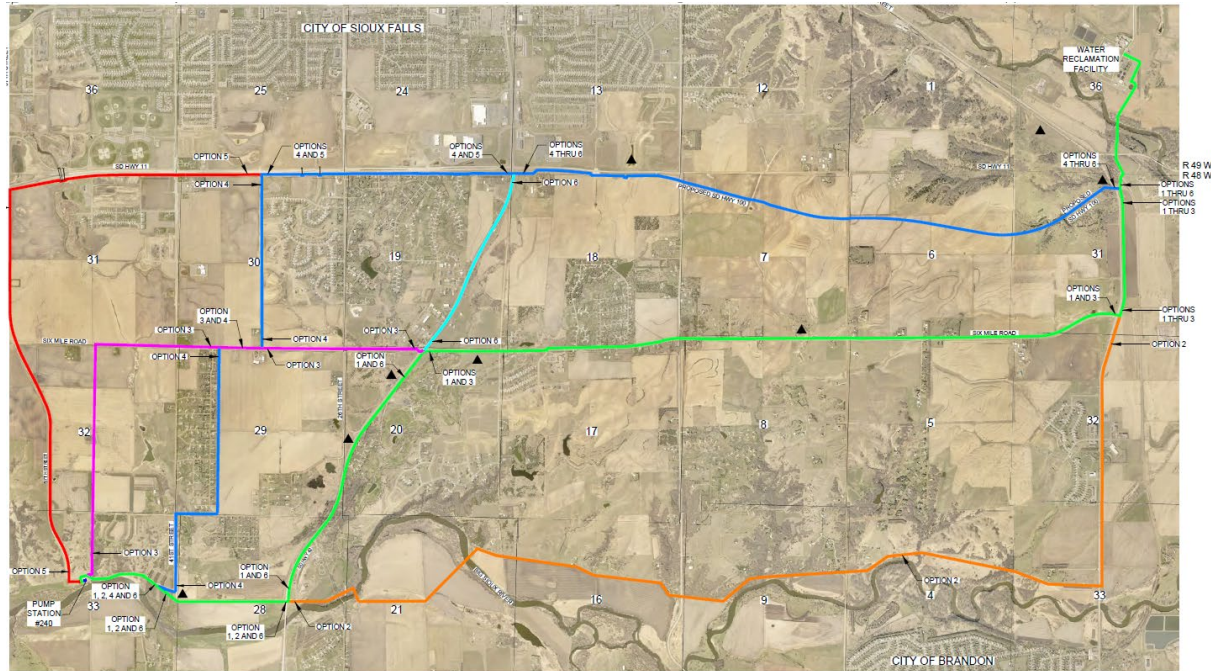
3+ MG
Equalization
(maximize site)



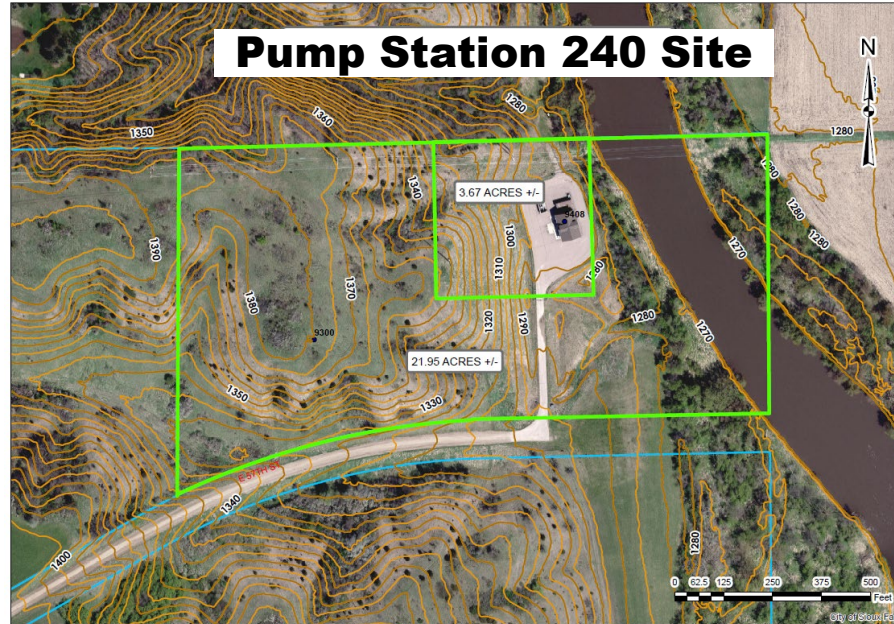
30" FM from
PS 240 to
WRF



PS 240 Capacity Improvements Project



PS 240 Capacity Improvements Project



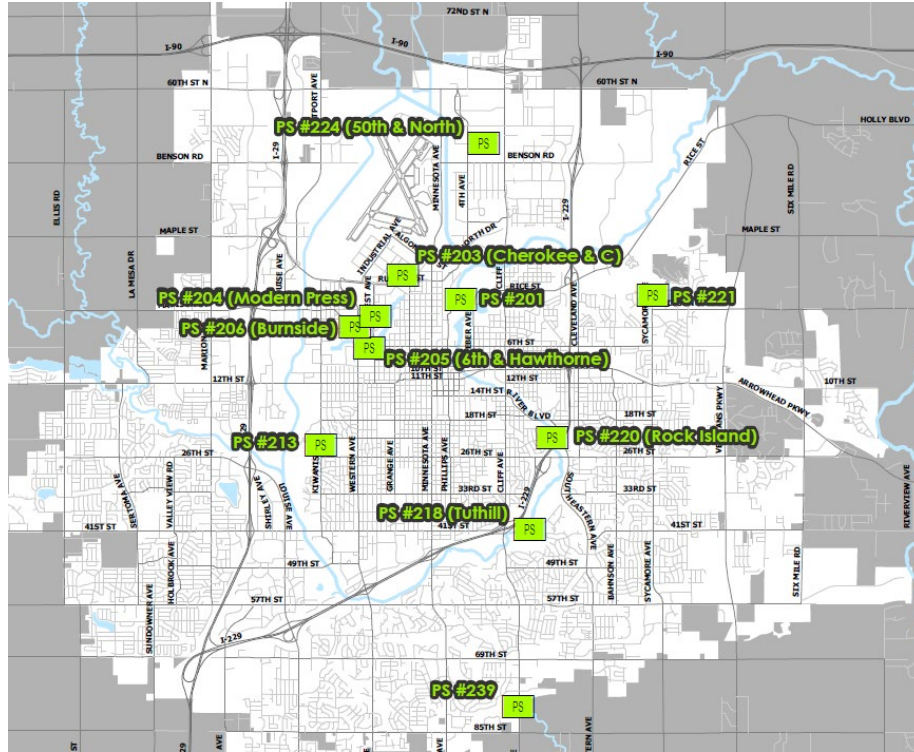
Tan: 5' Contours
Green: Property of City of Sioux Falls

Basin 15 Sanitary Sewer Extension Project

- Scope
 - Extend Phase 1 sewer
- Schedule
 - Design 2021
 - Construction 2021/22
- Budget
 - \$9,210,000
 - SRF Funded



Pump Station Improvements





Lift Station Improvements Project

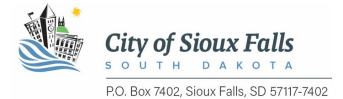
SCOPE, SCHEDULE, BUDGET

CITY OF SIOUX FALLS - WATER RECLAMATION PROJECTS 2019 - 2024

Approximate Design Schedule

Transition from Design to Construction

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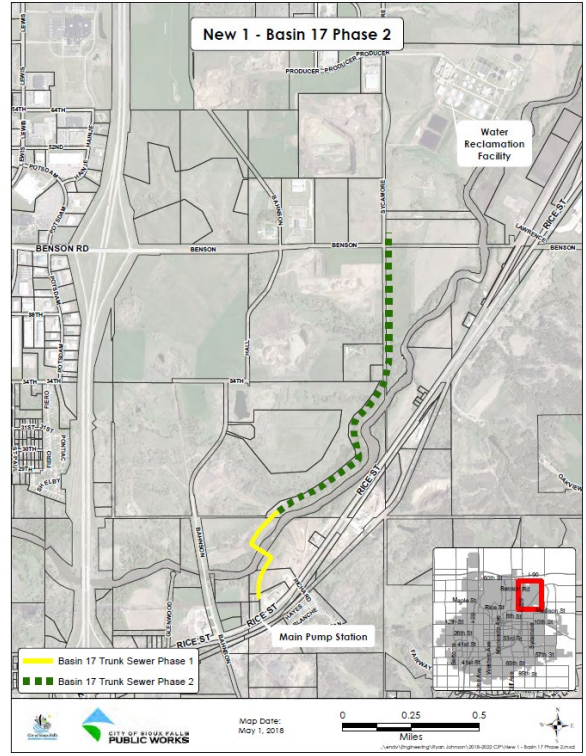
Lift Station Improvements Project

SCOPE, SCHEDULE, BUDGET

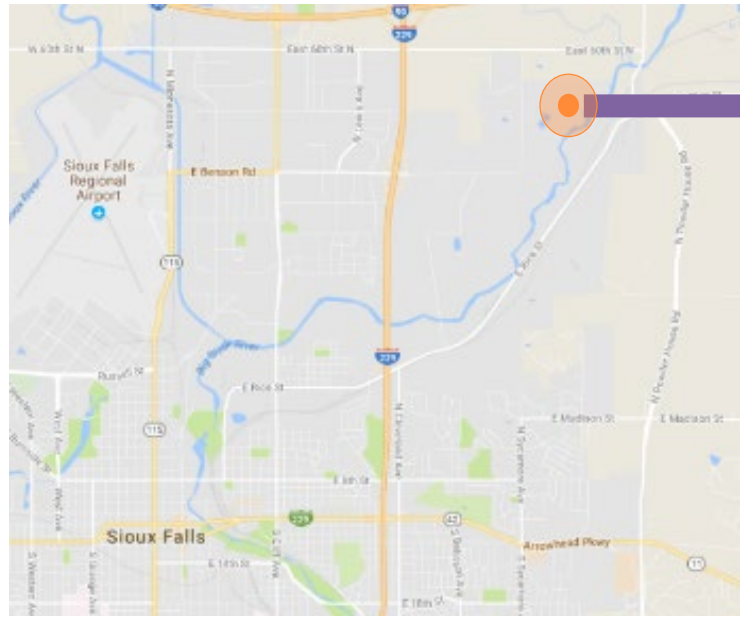
- Consultant selection after PS 240 consultant selection
 - Tentative May/June 2019
- New contract each year 2019, 2020, 2021, etc...
- New appropriation each year
- User fee funded

Basin 17 Phase 2 - Sanitary Sewer Extension Project

- Scope
 - Extend Basin 17 sewer
- Schedule
 - Design 2022
 - Construction 2023
- Budget
 - \$1,644,000
 - User fee funded



WRF Improvements and Expansion Project



WRF Improvements and Expansion Project



Current Facility



Constructed
in the early
1980s*



21 MGD
rated
capacity



Treats
17.2 MGD



Currently at
82% capacity

WRF Improvements and Expansion Project



Current Facility



21 MGD

Annual average max




35 MGD


Peak max

WRF Improvements and Expansion Project



Future Facility


30.1 MGD
Annual average max


57 MGD
Peak max

WRF Improvements and Expansion Project



- Immediate Improvements (Phase 1A)
 - Step feed improvements at aeration basins
 - Grit influent piping
 - Primary clarifier influent diversion
- Filter Building High Priority Items
- Biosolids Dewatering/Handling Improvements
- Dewatering Building Rehab
- Convert Biosolids Lagoons to Equalization Basins

WRF Improvements and Expansion Project



- Additional Improvements (Phase 1)
 - Headworks (Bar Screen Improvements)
 - Primary Clarifiers (Upgrades)
 - Aeration Basin Upgrades
- Aeration Basin Splitter Box
- Aeration Basins
- Aeration Basin Blowers

WRF Improvements and Expansion Project



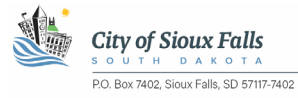
- Additional Improvements (Phase 1— Cont.)
 - Replace RAS and WAS Pumps
 - Final Clarifiers (New)
 - Chlorine Contact Chamber (New)
- Effluent Flow Meter Improvements
- New Generator
- Site Piping



WRF Improvements and Expansion Project

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Consultant Selection

- WRF Improvements and Expansion Project—Consultant selection
 - Post RFP on Website—November/December
 - Consultant selection—January 2019
- WRF Improvements and Expansion Project—CMAR selection
 - Post RFP on Website—February 2019
 - CMAR selection—Spring 2019
- Pump Station 240—Consultant selection
 - Post RFP—February 2019
 - Select consultant—Summer 2019
- Pump Station Improvements Project (2019 Project Only)
 - Select consultant—Summer 2019
- Basin 15—TBD
- Basin 17—TBD



General Information

- Questions? Contact
 - Ryan Johnson
 - rjohnson@siouxfalls.org
 - 605-367-8641
- Project information is available online
 - <http://siouxfalls.org/wr-projects>
- RFPs posted online
 - <http://www.siouxfalls.org/business/rfq>