



**Clean Water State Revolving Fund
FY 2023 Project Plans – Public Hearing**
May 25, 2022

FY 2023 Clean Water State Revolving Fund (CWSRF) Program

- ◆ Annually, GLWA seek to maximize use of CWSRF low-interest loans to fund qualifying capital improvement projects.
- ◆ The deadline to apply for FY 2023 funding is June 1, 2022.
- ◆ Applicants are required to hold a public hearing to solicit public comment prior to submission of final project plan applications to the State of Michigan Department of Environment, Great Lakes and Energy.
- ◆ GLWA seeks to submit six projects for consideration.

FY 2023 WRRF CWSRF Projects Capital Improvement Plan Crosswalk

These project budgets have been updated to reflect current market trends

CIP#	Project	Board Approved 2023-2027 Cost	Previous Spend	Total Project Costs	Updated Project Cost	Difference	% Change
211006	WRRF PS No. 1 Improvements	\$70,042,000	\$4,986,249	\$75,028,249	\$95,600,000	\$20,571,751	27.42
211007	WRRF PS #2 Bar Racks Replacements and Grit Collection System Improvements	\$88,771,000	\$5,307,129	\$94,078,129	\$98,000,000	\$3,921,871	4.17
212008	WRRF Aeration Improvements 1 and 2	\$73,884,000	\$750,000	\$74,634,000	\$74,100,000	(\$534,000)	-0.72
216008	Rehabilitation of Screened Final Effluent (SFE) Pump Station *	\$40,226,000	\$1,005,000	\$41,231,000	\$58,300,000	\$17,069,000	41.4
222001	Oakwood District Intercommunity Relief Sewer Modification at Oakwood District	\$53,466,000	\$1,608,733	\$55,074,733	\$75,000,000	\$19,925,267	36.18
232002	Freud Pump Station Improvements (PART OF 232002)	\$65,520,756	\$4,039,727	\$69,560,483	\$94,820,756	\$25,260,273	36.31
	Total	\$391,909,756	\$17,696,838	\$409,606,594	\$495,820,756	\$86,214,162	

* For 216008, the project costs for SRF application, has been further refined from \$80.1M to \$58.3M

FY 2023 WRRF CWSRF Projects Capital Improvement Plan Crosswalk

- continued

💧 CIP Opinion of Construction Cost Dates

- 💧 211006 (Developed 5/12/2021)
- 💧 211007 (Developed 3/25/2021)
- 💧 212008 (Developed 10/26/2021)
- 💧 216008 (Developed 6/11/2020)

💧 Examples

- 💧 Flowserve Pumps 90% to Final Design, increase in cost 40% or \$2.7m
- 💧 Ludlow-Rensselaer Valves 90% to Final Design, increase in cost 15% or \$500k
- 💧 Peerless Pumps Study to Alternatives Analyses (two months), increase in cost 8.4% or \$133k
- 💧 Flyght Pumps within two years, increase in cost 88% or \$553k

FY 2023 Clean Water State Revolving Fund (CWSRF) Program

💧 Project leads for each project will provide brief highlights followed by a public comment period on each.

CIP#	Project	Estimated Project Cost (in millions)	GLWA Contact	Engineering Firm/Project Lead
232002	Freud Pump Station Improvements	\$82.1	Todd King	Arcadis/Jeff Swartz
222001	Oakwood District Intercommunity Relief Sewer Modification	\$75.0	Todd King/Mini Panicker	FK Engineering/Fritz Klingler
211006	Rehabilitation of Pump Station 1 Improvements	\$95.6	Jason Williams	Wade Trim/David White
212008	Aeration Decks 1 & 2 Modifications	\$74.1	Chris Wilson	Wade Trim/David White
211007	Pump Station 2 Bar Rack Replacements and Grit Collection System Improvements	\$98.0	Jason Williams	Wade Trim/David White
216008	Rehabilitation of Screened Final Effluent (SFE) Pump Station	\$80.1	Chris Wilson	Wade Trim/David White

Total \$504.9

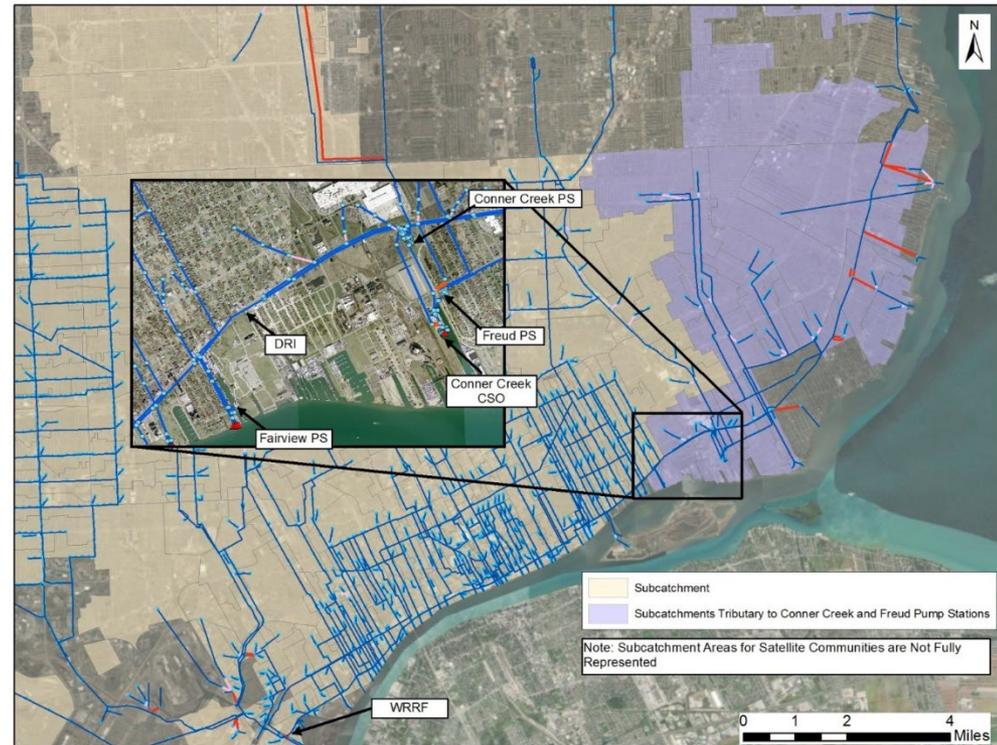
A dynamic splash of clear water against a light blue background, with a semi-transparent blue horizontal band across the middle. The water is captured in mid-air, showing intricate details of droplets and bubbles.

Project 1: Freud Pumping Station Improvements

Freud Pumping Station Improvements

Need For Project

- ◆ Operation of the facility is critical to prevent flooding of stakeholders' premises
- ◆ Key component in relaying wastewater and storm water generated in the eastern portion of Detroit
- ◆ Safe isolation of Freud Storm Pump Station wet well for inspection, repairs to ensure proper functionality
- ◆ Must maintain station's 2,030 MGD firm storm water pumping capacity



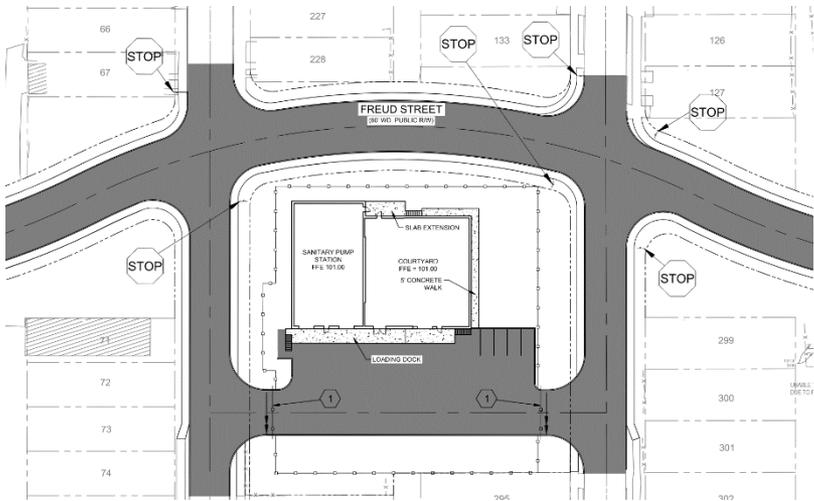
*2.8 Million residents in GLWA service area

Freud Pumping Station Improvements



Project Scope

- ◆ Replace storm water pump rotating assembly, line shafts, and steady bearings, and add redundant water supply for motor cooling
- ◆ New 30 MGD sanitary pump station with isolation gates for 16-ft dia. tunnels
- ◆ Rerouting of Freud St. around sanitary pump station
- ◆ Install 2,500 LF of 36-in dia. force main



Project Benefits

- ◆ Improve system resiliency, station reliability, operability, integrity, and maintainability over the life of the facilities

Freud Pumping Station Improvements Costs and Schedule

Estimated Project Cost	
Design	\$3,600,000
Construction Admin.	\$3,500,000
Construction	\$75,000,000
Total	\$82,100,000

Project Schedule	
Design Notice to Proceed	January 2020
50% Design	November 2021
90% Design	May 2022
100% Design	June 2022
Bid Opening	January 2023
Construction Notice to Proceed	April 2023
Construction Final Completion	December 2026

Project Team



User Cost	
Total User Cost (per household/month)	\$0.36

Project 1 – Public Comment

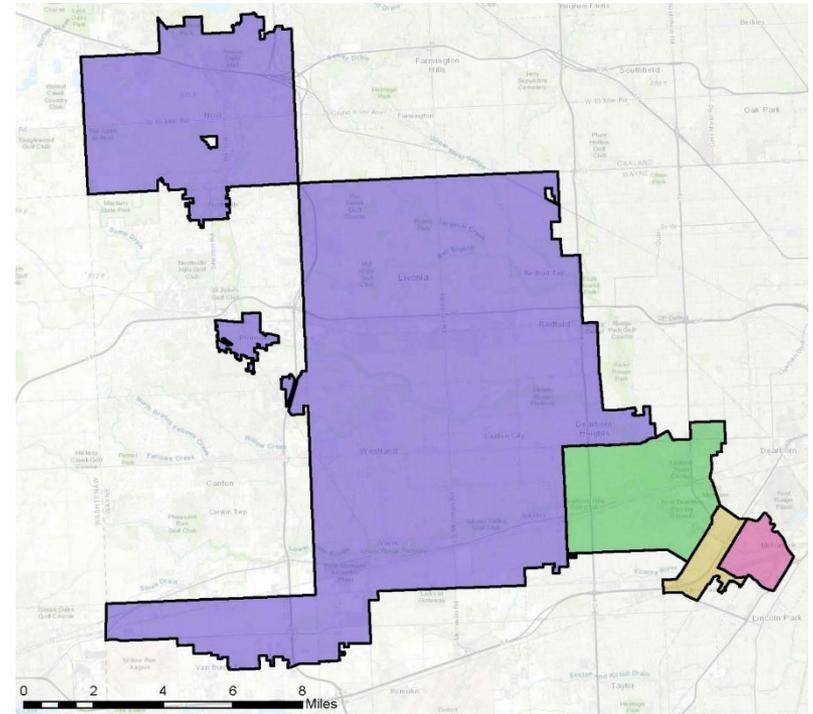
A dynamic background image showing a splash of water with bubbles and ripples, rendered in various shades of blue. The water appears to be moving from left to right, creating a sense of motion and freshness.

Project 2: Oakwood District Intercommunity Relief Sewer Modification

Oakwood District Intercommunity Relief Sewer (ODIRS) Modification

Need For Project

- 💧 Overloading of NWI and high wet-well levels at WRRF causes surcharging during wet weather
- 💧 Surcharging of the NWI downstream of Warren-Pierson control gate (VR-9) causes:
 - 💧 CSOs upstream of VR-9
 - 💧 SSOs at multiple locations
 - 💧 Southfield Freeway flooding
 - 💧 Reduced ability for GLWA customers to discharge contract flow-rates into NWI



Oakwood District Intercommunity Relief Sewer (ODIRS) Modification



Project Scope

- Construct 3,600ft-long 10ft-diameter tunnel between NWI and Oakwood CSO Facility
- Flow control structure to divert wet-weather flow to Oakwood CSO Facility

Project Benefits

- Control surcharging and reduce CSOs, SSOs, and Southfield Fwy flooding
- More NWI capacity for expected flows and better control of HGLs
- More WWRF capacity for DRI and NIEA flows

Oakwood District Intercommunity Relief Sewer (ODIRS) Modification Costs and Schedule

Estimated Project Cost	
Study and Design	\$2,543,000
Construction Engineering	\$3,056,000
30% Construction Cost	\$69,401,000
Total Estimated Cost	\$75,000,000

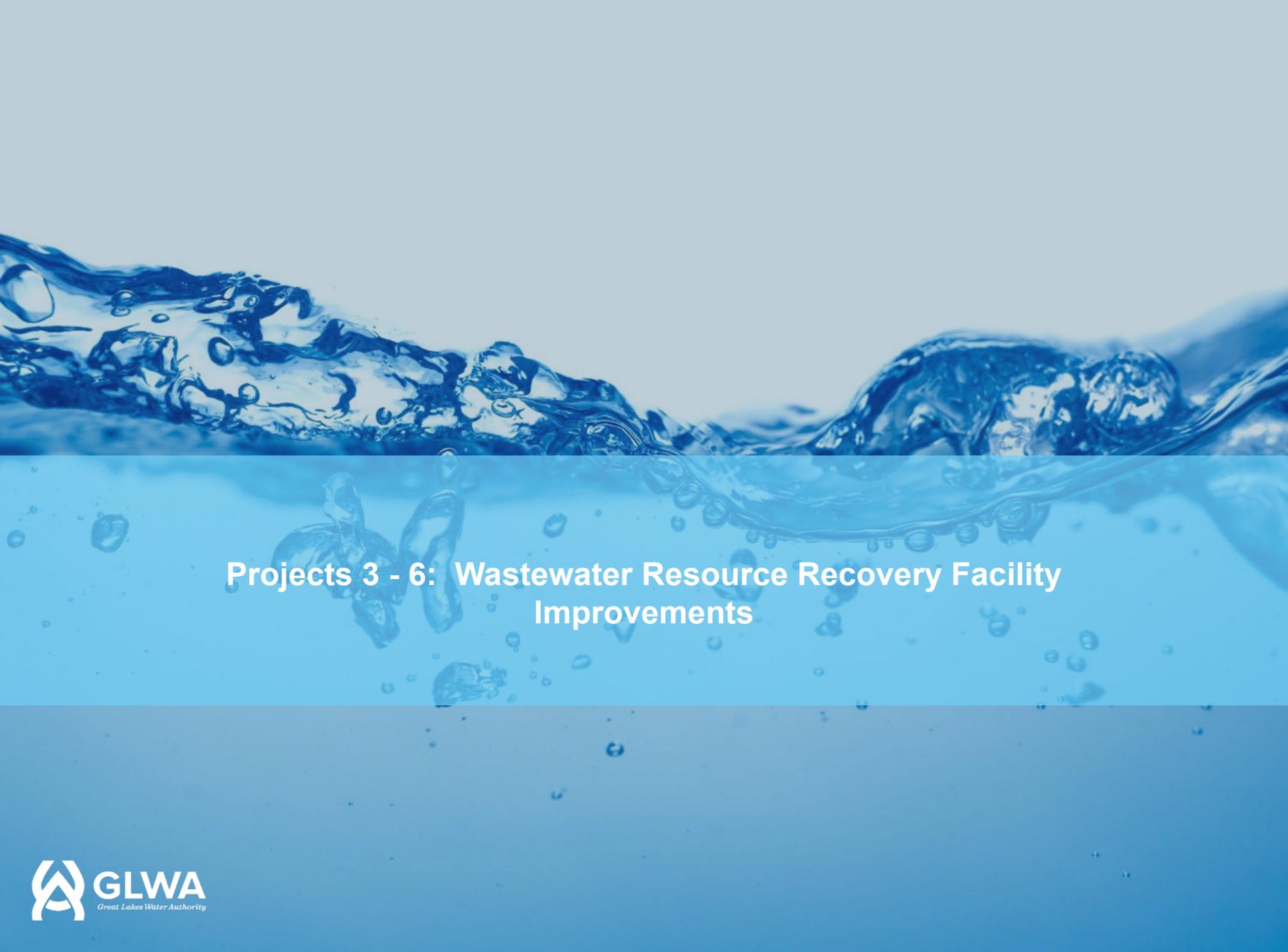
Project Schedule	
Design Notice to Proceed	November 2021
60% Design	July 2022
90% Design	September 2022
100% Design	November 2022
Bid Due	April 2023
Construction Notice to Proceed	May 2023
Construction Final Completion	May 2026

Project Team



User Cost	
Total User Cost (per household/month)	\$0.33

Project 2 – Public Comment

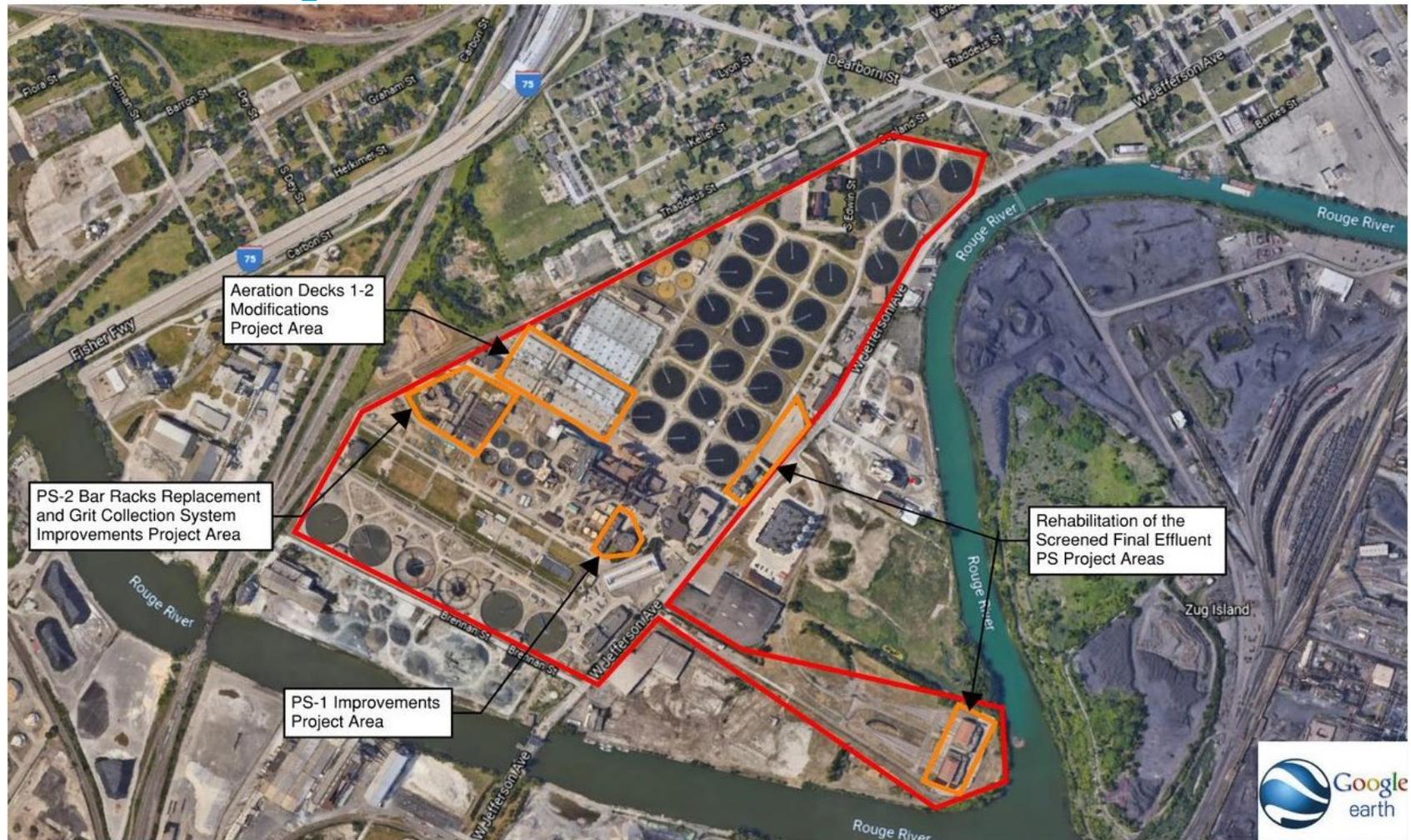
A dynamic background image showing a splash of water with bubbles and ripples, rendered in various shades of blue. The water appears to be moving from left to right, creating a sense of motion and freshness.

Projects 3 - 6: Wastewater Resource Recovery Facility Improvements

Wastewater Resource Recovery Facility (WRRF) Improvements

- ◆ Four projects are specific to the WRRF.
- ◆ These are part of the same project plan and are discussed collectively in this section:
 - ◆ Rehabilitation of Pump Station 1 Improvements
 - ◆ Aeration Decks 1 & 2 Modifications
 - ◆ Pump Station 2 Bar Rack Replacements and Grit Collection System Improvements
 - ◆ Rehabilitation of Screened Final Effluent (SFE) Pump Station

2023 SRF Projects Plan Project Locations at the WRRF



Aeration Decks 1-2
Modifications
Project Area

PS-2 Bar Racks Replacement
and Grit Collection System
Improvements Project Area

PS-1 Improvements
Project Area

Rehabilitation of the
Screened Final Effluent
PS Project Areas

Project Boundary

WRRF Boundary

Pump Station 1 Improvements Priority 1A

Recommended Alternative

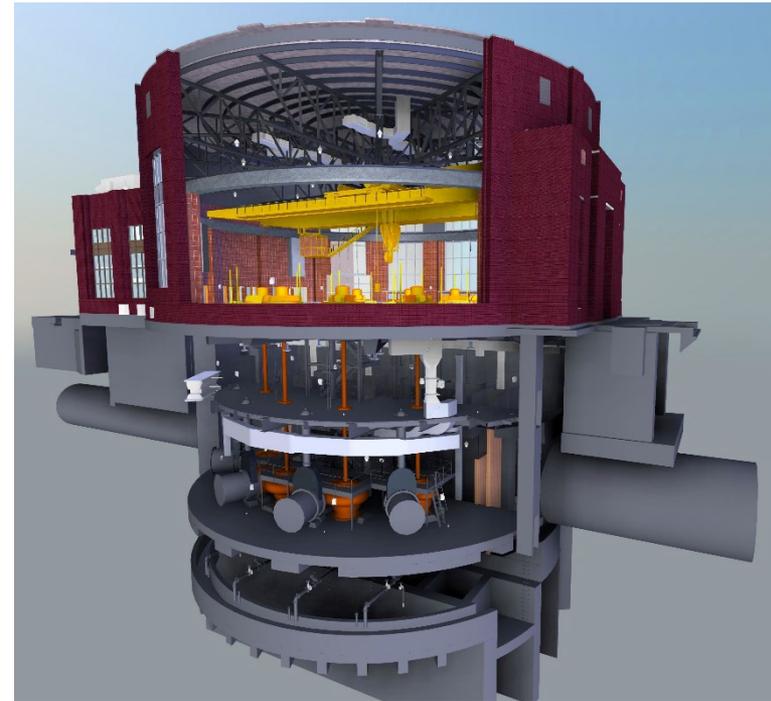
- ◆ Rehabilitation of the existing pumps and motors
- ◆ Complete renovation of the site, structural, architectural, mechanical and electrical systems

Project Benefits

- ◆ Extends the facilities useful life for another 20 years
- ◆ Provides improved reliability during dry and wet weather events

Project Costs

- ◆ Total Project Cost: \$95,600,000



Aeration Decks 1-2 Modifications Priority 1B

Recommended Alternative

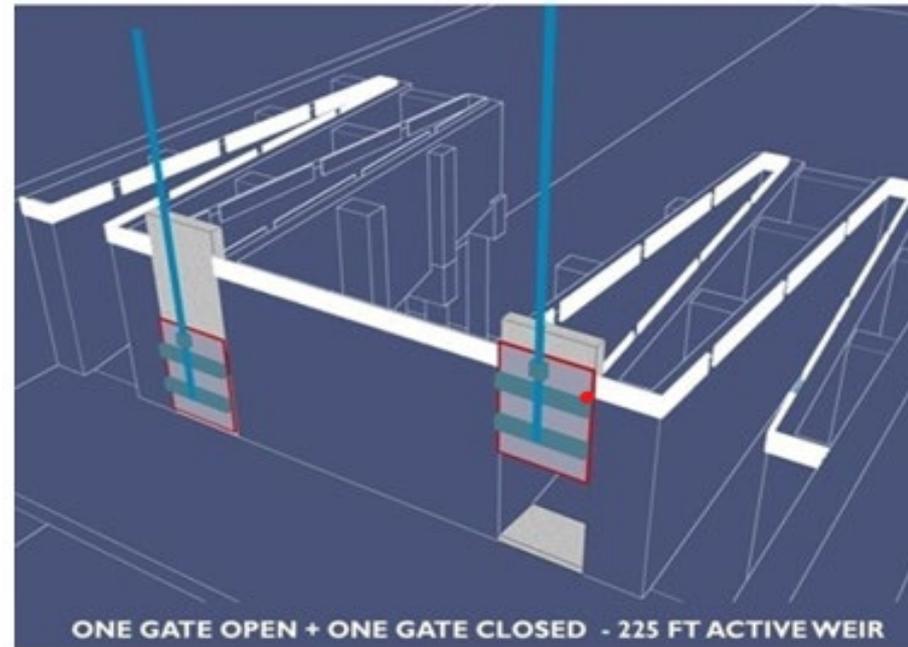
- Existing Aeration Decks will be upgraded with weir modifications, step feed improvements, and intermediate lift pump replacement

Project Benefits

- Provides Biological Phosphorous removal to meet new NPDES standards
- Increases overall efficiency and wet weather treatment capacity of secondary treatment
- Improves the system's energy efficiency

Project Costs

- Total Project Cost: \$74,100,000



Pump Station 2 (Rack and Grit) Improvements Priority 1C

Recommended Alternative

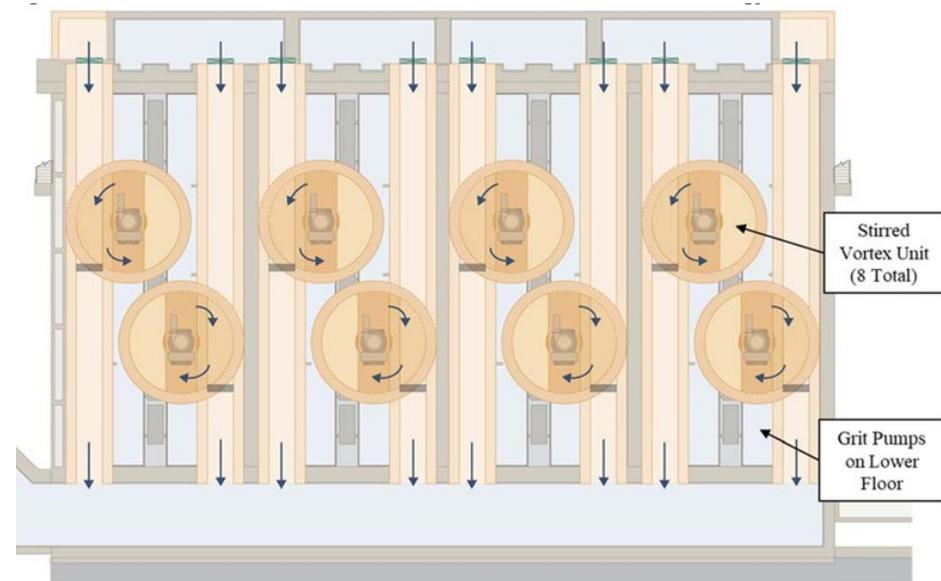
- ◆ Replacement of the existing screens with single-stage multi-rake bar screens, addition of stirred vortex removal units and cyclone-classifiers for grit handling
- ◆ Building, structural, mechanical, electrical and other miscellaneous improvements

Project Benefits

- ◆ Improves the removal efficiencies of screenings and grit
- ◆ Provides improved long-term system reliability
- ◆ Simplifies operation and maintenance

Project Costs

- ◆ Total Project Cost: \$98,000,000



SFE Pump Station Priority 1D

Recommended Alternative

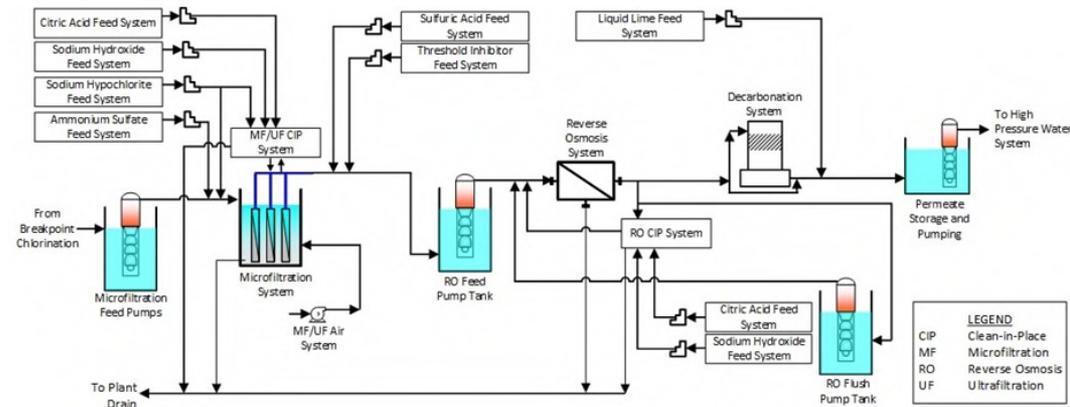
- ◆ New SFE Pump Station and treatment facility to provide secondary final effluent water to all systems currently running on potable water

Project Benefits

- ◆ Provides a redundant source of water for the WRRF as required by EGLE
- ◆ Provides reliability in the event of a power outage or feed line break
- ◆ Improves the electrical efficiency of the WRRF

Project Costs

- ◆ Total Project Cost: \$80,100,000



2023 WRRF CWSRF Projects

Costs and Schedule

Estimated Project Costs	
1A - PS-1 Project	\$95,600,000
1B - Aeration Decks Project	\$74,100,000
1C - PS-2 Project	\$98,000,000
1D - SFE Project	\$80,100,000
Total Cost	\$347,800,000

User Cost	
Total User Cost (per household/month)	\$2.16

Schedule of Construction	
Start Date	Q1 2023
End Date	Q1 2028
Start Date	Q2 2025
End Date	Q2 2031
Start Date	Q2 2023
End Date	Q3 2029
Start Date	Q1 2023
End Date	Q3 2026

Project Teams



2023 WRRF CWSRF Projects

Environmental and Social Impacts

Environmental Impacts

- ◆ A Michigan Natural Features Inventory Review was completed
- ◆ There are no species of concern within any of the project's areas
- ◆ If a threatened or endangered species is encountered, work will be halted, and the proper authorities will be contacted on how to proceed

Social Impacts

- ◆ Letters have been sent to the Tribal Historic Preservation Offices that may have areas of interest within the project areas. No responses have been received to date
- ◆ All projects will be reviewed by the State Historic Preservation Office. Findings will be included in the Final Project Plan
- ◆ A draft Project Plan has been submitted to the State for review

Projects 3 thru 6 – Public Comment

Next Steps

- ◆ Following the close of this public hearing and later in this meeting, GLWA staff will present to the GLWA Board of Directors a request to approve summary project plans for the six projects presented.
- ◆ Upon approval of the summary project plans, GLWA staff will compile the remaining documentation required to submit these projects for consideration of funding in the FY 2023 State of Michigan Clean Water Revolving Fund Program.
- ◆ This documentation (referred to as the ‘intent to apply’) is due June 1, 2022.
- ◆ Final determination of award is typically posted by the Michigan Department of Environment, Great Lakes & Energy (EGLE) in mid-September.