Structural Inspection & Structural Improvements
Photo Submitted by: Kashmira Patel of Wastewater Operating Services

GLWA
Great Lakes Water Authority

CIP

FY2025-2029

PROPOSED CAPITAL IMPROVEMENT PLAN

Updated January 12, 2024

Appendix C: Centralized Services Business Case Evaluation (BCE)

96-Inch Water Transmission Main Relocation and Isolation Valve Installations
Photo Submitted by: Corey Brecht of Water and Field Services

CIP Number: 380700

Project Title: As-Needed Geotechnical and Related Engineering Services

Project Status: Project Execution - Design

CIP Type: Program

Class Lvl 1: Centralized Services

Class Lvl 2: Programs

Class Lvl 3: Programs

- ☐ Project New to CIP
- ☐ Useful Life > 20 Yrs
- ☐ Multiple Phases

Project Score

0

- ☐ Innovation
- ☐ WW Master Plan
- ☐ Water Master Plan Right Sizing
- ☐ Wet Weather Resiliency
- ☐ Redundancy
- ☐ Predecessor Project(s)
- ☑ Linear Assets Outside of Facilities
- ☐ CSO
- ☐ Pumps
- ☐ Storage
- ☐ Treatment

Project Manager: Peter Fromm

Director: Tim Kuhns

Managing Dept.: Water Eng

Date Original Business Case Prepared: 9/30/2006

Year Project Added to CIP: 2006

CIP Budget: Water

Project Jurisdiction: Multiple Counties

Lookup Location: System-wide

Funds and Cost Center: Water - 5519-882411 (Field Engineering)

☐ **From Program?**

Program Number:

Delivery Method: DBB (Design-Bid-Build)

Delivery Method Details:

☐ **Is a Predecessor Project?**

Successor Projects:

Predecessor Projects:

Collaboration Opportunities: No

Partners:

Collaboration Entity:

CIP Number: 380700

Project Title: As-Needed Geotechnical and Related Engineering Services

Problem Statement:

GLWA engineering and operations needed a contract mechanism to obtain professional engineering services in a timely manner to investigate environmental, geotechnical and specialized engineering problems that occur on a regular basis throughout the system.

Scope of Work/Project Alternatives:

This engineering/technical services contract involves as-needed engineering and technical services related to geotechnical investigations, related geotechnical engineering, construction materials sampling and testing, environmental media sampling and testing, soils sampling and testing, land surveying, corrosion testing and inspection, computer-aided design, and construction inspection. This contract includes design, construction services, and resident project representation for the follow transmission main projects:

1. Park-Merriman 24-inch Water Main
2. Wick Road 48-inch Transmission Main
3. Schoolcraft Road 48-inch Transmission Main

Other Important Info:

N/A

Primary Driver: Varies

Driver Explanation:

Due to the nature, size and complexity of the GLWA water system, this CIP provides timely access to specialized engineering Services needed.

CIP Number: 380700

Project Title: As-Needed Geotechnical and Related Engineering Services

Scoring

Project Manager Weighted Score:	**0**		
Criteria Name	**Score**	**Score Criteria**	**Comment**
Condition	0		
Performance (Service Level/Reliability)	0		
Regulatory (Environmental/Legal)	0		
Operations and Maintenance	0		
Health and Safety	0		
Public Benefit	0		
Financial	0		
Efficiency and Innovation	0		

Review Committee Weighted Score:	**0**	
Criteria Name	**Score**	**Comment**
Condition	0	
Performance (Service Level/Reliability)	0	
Regulatory (Environmental/Legal)	0	
Operations and Maintenance	0	
Health and Safety	0	
Public Benefit	0	
Financial	0	
Efficiency and Innovation	0	

CIP Number: 380700

Project Title: As-Needed Geotechnical and Related Engineering Services

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget:

Phase Status:

Start Date: 1/1/2023

End Date: 6/15/2023

Phase Comments/Description:

Cost Est. Class:

Cost Est. Date:

Cost Est. Source:

Cost Est. Prepared By:

Phase Total Expenses By FY (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

	Total Costs	Actual Costs	Prior FYs	FY24	FY25	FY26	FY27	FY28	FY29	5 Year Total	FY30-34
GLWA Salaries	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary (Direct Labor)	1/1/2023	6/15/2023
Capital Delivery Salary (Fringes)	1/1/2023	6/15/2023
Other Capital Improvement Costs	1/1/2023	6/15/2023
Capitalized Interest	1/1/2023	6/15/2023

CIP Number: 380700

Project Title: As-Needed Geotechnical and Related Engineering Services

Phase: Professional Services

Phase Title: Professional Services

Phase Budget:

Phase Status:

Start Date: 1/1/2023

End Date: 6/15/2023

Phase Comments/Description:

Cost Est. Class:

Cost Est. Date:

Cost Est. Source:

Cost Est. Prepared By:

Phase Total Expenses By FY (All figures are in $1,000's)

"Total Costs" include costs outside of the 10 year planning window

***Design & Construction costs are inclusive of salaries where salaries are not defined**

	Total Costs	Actual Costs	Prior FYs	FY24	FY25	FY26	FY27	FY28	FY29	5 Year Total	FY30-34
Professional Services	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Phase Dates

Activity Name	Start Date	End Date
Contractual Professional Services	1/1/2023	6/15/2023

CIP Number: 380700

Project Title: As-Needed Geotechnical and Related Engineering Services

Phase: Construction (Build) # 1 (CS-259)

Phase Title: Construction (Build) # 1 (CS-259)

Phase Budget: Water

Phase Status: Future Planned Start

Start Date: 1/1/2023

End Date: 6/15/2023

Phase Comments/Description:

Engineering Services Contract CS-259, Somat Engineering (active)

Cost Est. Class: Class 1

Cost Est. Date: 10/1/2018

Cost Est. Source: Somat's-Executed Contract

Cost Est. Prepared By: Somat

Phase Total Expenses By FY (All figures are in $1,000's)

"Total Costs" include costs outside of the 10 year planning window

***Design & Construction costs are inclusive of salaries where salaries are not defined**

	Total Costs	Actual Costs	Prior FYs	FY24	FY25	FY26	FY27	FY28	FY29	5 Year Total	FY30-34
Construction (Build) # 1 (CS-259)	$11	$0	$0	$11	$0	$0	$0	$0	$0	$0	$0

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering	1/1/2023	6/15/2023
Construction (net-zero cost account to be archived)	1/1/2023	6/15/2023

CIP Number: 380700

Project Title: As-Needed Geotechnical and Related Engineering Services

Current Expenses (All figures are in $1,000's)

"Total Costs" include costs outside of the 10 year planning window

***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY24	FY25	FY26	FY27	FY28	FY29	5 Year Total	FY30-34
GLWA Salaries	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Professional Services	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Construction (Build) # 1 (CS-259)	$11	$0	$0	$11	$0	$0	$0	$0	$0	$0	$0
Totals	$10	$0	$0	$11	$0	$0	$0	$0	$0	$0	$0

Project Total Expenses by FY Compared to Prior CIPs (All figures are in $1,000's)

CIP	5 Year Total	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	Total
2018	$1,906	$650	$907	$333	$333	$333	$0	$0	$0	$0	$0	$0	$0	$0	$2,556
2019	$1,669	$230	$238	$477	$477	$477	$238	$0	$0	$0	$0	$0	$0	$0	$2,137
2020	$0	$0	$0	$620	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$620
2021	$715	$0	$0	$0	$1,415	$715	$0	$0	$0	$0	$0	$0	$0	$0	$2,130
2022	$456	$0	$0	$0	$771	$904	$456	$0	$0	$0	$0	$0	$0	$0	$2,131
2023	$0	$0	$0	$0	$0	$0	$602	$0	$0	$0	$0	$0	$0	$0	$602
2024	$0	$0	$0	$0	$0	$0	$0	$11	$0	$0	$0	$0	$0	$0	$11

Reporting Period 61: Ending FY24 M04 Oct

Total Costs	Prior FYs	FY24	FY25	FY26	FY27	FY28	FY29	5 Year Total	FY30-34
$10,820	$0	$10,820	$0	$0	$0	$0	$0	$0	$0

Description of CIP Changes:

Updated this CIP to reflect the work being conducted under its associated engineering contract, CS-259 (formerly CS-1488) PF 8/9/2019

CIP Number: 381000

Project Title: Power Quality: Electric Metering Improvement Program

Project Status: Active - Pre-Procurement - Design

CIP Type: Program

Class Lvl 1: Centralized Services

Class Lvl 2: Programs

Class Lvl 3: Programs

- [ ] Project New to CIP
- [x] Useful Life > 20 Yrs
- [ ] Multiple Phases

Project Score

0

- [ ] Innovation
- [ ] WW Master Plan
- [ ] Water Master Plan Right Sizing
- [ ] Wet Weather Resiliency
- [x] Redundancy
- [ ] Predecessor Project(s)
- [ ] Linear Assets Outside of Facilities
- [ ] CSO
- [ ] Pumps
- [ ] Storage
- [x] Treatment

Power Quality Meters

Project Manager: Eric Griffin

Director: John Norton

Managing Dept.: Energy Management

Date Original Business Case Prepared: 8/18/2016

Year Project Added to CIP: 2016

CIP Budget: Water

Project Jurisdiction: Multiple Counties

Lookup Location: System-wide

Funds and Cost Center: Water - 5519-882111 (Water Treatment Plants (WTP))

- [ ] From Program?

Program Number:

Delivery Method: DBB (Design-Bid-Build)

Delivery Method Details:

- [ ] Is a Predecessor Project?

Successor Projects:

Predecessor Projects:

Collaboration Opportunities: No

Partners:

Collaboration Entity:

CIP Delivery Team

CIP Number: 381000

Project Title: Power Quality: Electric Metering Improvement Program

Problem Statement:

This includes advanced meters for measuring power usage in real-time to reduce the electrical demands and further optimize load management practices,
GLWA experienced a lot of power outages at facilities. The installation of the New Power Monitors provide real wave form data to determine the cause of the outages and the time period of sagging or swelling voltage which effects the integrity of the equipment. MFG 7/25/2019

Scope of Work/Project Alternatives:

This program will increase the number of electric meters at pumping stations and treatment facilities to facilitate active demand management to reduce electricity rates. The meters can be tied to the existing data management system for data archival and use. The installation of the New Power Monitors will provide real wave form data to determine the cause of outages and the time period of sagging or swelling voltage which effects the integrity of equipment. MFG 07/25/2019

Other Important Info:

Project History: Project will find high demand (kW) sites i.e all the water treatment plants (Phase 1)
We would like to change the project to design build and move up on the CIP. The outages are affecting the pressures resulting in water main breaks and boil water advisories, This will help to better communicate DTE problems that occur and lead to solutions to improve the process or equipment. MFG 7/25/2019

Primary Driver: 2 - Performance

Driver Explanation:

The outages were affecting our pressures resulting in water main breaks and boil water advisories, This will help communicate DTE problems that occur and lead to solutions to improve the process or equipment.

CIP Number: 381000

Project Title: Power Quality: Electric Metering Improvement Program

Scoring

Project Manager Weighted Score:	**0**		
Criteria Name	**Score**	**Score Criteria**	**Comment**
Condition	0		
Performance (Service Level/Reliability)	0		
Regulatory (Environmental/Legal)	0		
Operations and Maintenance	0		
Health and Safety	0		
Public Benefit	0		
Financial	0		
Efficiency and Innovation	0		

Review Committee Weighted Score:	**0**	
Criteria Name	**Score**	**Comment**
Condition	0	
Performance (Service Level/Reliability)	0	
Regulatory (Environmental/Legal)	0	
Operations and Maintenance	0	
Health and Safety	0	
Public Benefit	0	
Financial	0	
Efficiency and Innovation	0	

CIP Number: 381000

Project Title: Power Quality: Electric Metering Improvement Program

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Water

Phase Status: Future Planned Start

Start Date: 3/31/2025

End Date: 6/30/2031

Phase Comments/Description:

Cost Est. Class:

Cost Est. Date:

Cost Est. Source:

Cost Est. Prepared By:

Phase Total Expenses By FY (All figures are in $1,000's)

"Total Costs" include costs outside of the 10 year planning window

***Design & Construction costs are inclusive of salaries where salaries are not defined**

	Total Costs	Actual Costs	Prior FYs	FY24	FY25	FY26	FY27	FY28	FY29	5 Year Total	FY30-34
GLWA Salaries	$125	$0	$0	$0	$5	$20	$20	$20	$20	$85	$40

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary (Direct Labor)	3/31/2025	6/30/2031
Capital Delivery Salary (Fringes)	3/31/2025	6/30/2031

CIP Number: 381000

Project Title: Power Quality: Electric Metering Improvement Program

Phase: Design/Engineering

Phase Title: Design/Engineering

Phase Budget: Water

Phase Status: Future Planned Start

Start Date: 3/31/2025

End Date: 6/30/2031

Phase Comments/Description:

Cost Est. Class: Class 1

Cost Est. Date:

Cost Est. Source:

Cost Est. Prepared By:

Phase Total Expenses By FY (All figures are in $1,000's)

"Total Costs" include costs outside of the 10 year planning window

***Design & Construction costs are inclusive of salaries where salaries are not defined**

	Total Costs	Actual Costs	Prior FYs	FY24	FY25	FY26	FY27	FY28	FY29	5 Year Total	FY30-34
Design/Engineering	$5,000	$0	$0	$0	$0	$0	$999	$1,002	$999	$3,001	$1,999

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering	12/1/2025	6/30/2026
Construction (DB)	3/31/2025	6/30/2031

CIP Number: 381000

Project Title: Power Quality: Electric Metering Improvement Program

Current Expenses (All figures are in $1,000's)

"Total Costs" include costs outside of the 10 year planning window

***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY24	FY25	FY26	FY27	FY28	FY29	5 Year Total	FY30-34
GLWA Salaries	$125	$0	$0	$0	$5	$20	$20	$20	$20	$85	$40
Design/Engineering	$5,000	$0	$0	$0	$0	$0	$999	$1,002	$999	$3,001	$1,999
Totals	$5,125	$0	$0	$0	$5	$20	$1,020	$1,022	$1,020	$3,086	$2,039

Project Total Expenses by FY Compared to Prior CIPs (All figures are in $1,000's)

CIP	5 Year Total	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	Total
2018	$5,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$0	$0	$0	$0	$0	$0	$0	$6,000
2019	$1,628	$0	$0	$0	$120	$120	$510	$878	$4,372	$0	$0	$0	$0	$0	$6,000
2020	$0	$0	$0	$0	$0	$0	$0	$0	$0	$5,000	$0	$0	$0	$0	$5,000
2021	$3,880	$0	$0	$0	$86	$446	$1,540	$1,337	$112	$445	$2,904	$0	$0	$0	$6,870
2022	$1,379	$0	$0	$0	$0	$0	$0	$0	$27	$223	$1,129	$1,153	$92	$0	$2,624
2023	$2,623	$0	$0	$0	$0	$0	$0	$567	$1,298	$759	$0	$0	$0	$0	$2,623
2024	$2,468	$0	$0	$0	$0	$0	$0	$155	$680	$1,022	$768	$0	$0	$0	$2,623

Reporting Period 61: Ending FY24 M04 Oct

Total Costs	Prior FYs	FY24	FY25	FY26	FY27	FY28	FY29	5 Year Total	FY30-34
$5,125,444	$0	$0	$5,055	$20,056	$1,019,508	$1,022,302	$1,019,508	$3,086,428	$2,039,016

Description of CIP Changes:

Other initiatives are presenting themselves. Wastewater and water deferred this project to 2025. Standard installation of electric meters in WW CIP programs. Better understanding of Snyder electrical monitoring system and Aquasight projects. The need for this projecct has changed due to DTE power outages. The outages we are having are affecting our preassuers that are causing water main breaks and boil water advisories, We need this to better communicate DTE problems that we are faced with and come up with solutions to improve the process or equipment. MFG 7/25/2019

The program will be utilized for water powering electric metering only. The change will remove Wastewater from scope of program unless determined in the future the need. EG 8/25/2020.

CIP Number: 383300

Project Title: Masonry Replacement and Rehabilitation Program

Project Status: Future Planned - Within Five Year Plan

CIP Type: Program

Class Lvl 1: Centralized Services

Class Lvl 2: General Purpose

Class Lvl 3: General Purpose

- [ ] Project New to CIP
- [x] Useful Life > 20 Yrs
- [x] Multiple Phases

Project Score

0

- [ ] Innovation
- [ ] WW Master Plan
- [ ] Water Master Plan Right Sizing
- [ ] Wet Weather Resiliency
- [ ] Redundancy
- [ ] Predecessor Project(s)
- [ ] Linear Assets Outside of Facilities
- [ ] CSO
- [ ] Pumps
- [ ] Storage
- [x] Treatment

Project Manager: Douglas Atkinson

Director: Paula Anderson

Managing Dept.: Fleet and Facilities

Date Original Business Case Prepared: 9/30/2020

Year Project Added to CIP: 2020

CIP Budget: Water

Project Jurisdiction: Multiple Counties

Lookup Location: Multiple Counties

Funds and Cost Center: Water - 5519-882111 (Water Treatment Plants (WTP))

- [ ] From Program?

Program Number:

Delivery Method: DBB (Design-Bid-Build)

Delivery Method Details:

- [ ] Is a Predecessor Project?

Successor Projects:

Predecessor Projects:

Collaboration Opportunities: No

Partners:

Collaboration Entity:

CIP Number: 383300

Project Title: Masonry Replacement and Rehabilitation Program

Problem Statement:

Cracks and deterioration have been identified in masonry walls, exterior concrete, retaining walls, concrete decks and floor repair or replacement causing safety concerns. Repair or replacement is needed to address this deterioration

Scope of Work/Project Alternatives:

For NE WTP: Analyze the movement and moisture penetration problem, rebuild portions of masonry and concrete walls, floors, roof parapets and deck elements.
For SW WTP: Assess the panels and support structure, replace panels, repair or restore rusted steel members.
For Imlay City: Remove or rebuild retaining walls to withstand soils pressure.

Other Important Info:

Three sites have been identified for this project all have some failing concrete.
1)Northeast WTP
2)Southwest WTP
3) Imlay City Pumping Station

Primary Driver: 1 - Condition

Driver Explanation:

Poor condition.

CIP Number: 383300

Project Title: Masonry Replacement and Rehabilitation Program

Scoring

Project Manager Weighted Score:	**0**		
Criteria Name	**Score**	**Score Criteria**	**Comment**
Condition	0		
Performance (Service Level/Reliability)	0		
Regulatory (Environmental/Legal)	0		
Operations and Maintenance	0		
Health and Safety	0		
Public Benefit	0		
Financial	0		
Efficiency and Innovation	0		

Review Committee Weighted Score:	**0**	
Criteria Name	**Score**	**Comment**
Condition	0	
Performance (Service Level/Reliability)	0	
Regulatory (Environmental/Legal)	0	
Operations and Maintenance	0	
Health and Safety	0	
Public Benefit	0	
Financial	0	
Efficiency and Innovation	0	

CIP Number: 383300

Project Title: Masonry Replacement and Rehabilitation Program

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Water

Phase Status: Future Planned Start

Start Date: 7/1/2033

End Date: 6/30/2037

Phase Comments/Description:

Cost Est. Class:

Cost Est. Date:

Cost Est. Source:

Cost Est. Prepared By:

Phase Total Expenses By FY (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

	Total Costs	Actual Costs	Prior FYs	FY24	FY25	FY26	FY27	FY28	FY29	5 Year Total	FY30-34
GLWA Salaries	$230	$0	$0	$0	$0	$0	$0	$0	$0	$0	$57

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary (Direct Labor)	7/1/2033	6/30/2037

CIP Number: 383300

Project Title: Masonry Replacement and Rehabilitation Program

Phase: TBD/Unallocated

Phase Title: TBD/Unallocated

Phase Budget: Water

Phase Status: Future Planned Start

Start Date: 7/1/2027

End Date: 6/30/2037

Phase Comments/Description:

Cost Est. Class:

Cost Est. Date:

Cost Est. Source:

Cost Est. Prepared By:

Phase Total Expenses By FY (All figures are in $1,000's)

"Total Costs" include costs outside of the 10 year planning window

***Design & Construction costs are inclusive of salaries where salaries are not defined**

	Total Costs	Actual Costs	Prior FYs	FY24	FY25	FY26	FY27	FY28	FY29	5 Year Total	FY30-34
TBD/Unallocated	$24,770	$0	$0	$0	$0	$0	$0	$0	$0	$0	$6,188

Phase Dates

Activity Name	Start Date	End Date
TBD/Unallocated	7/1/2027	6/30/2037

CIP Number: 383300

Project Title: Masonry Replacement and Rehabilitation Program

Current Expenses (All figures are in $1,000's)

"Total Costs" include costs outside of the 10 year planning window

***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY24	FY25	FY26	FY27	FY28	FY29	5 Year Total	FY30-34
GLWA Salaries	$230	$0	$0	$0	$0	$0	$0	$0	$0	$0	$57
TBD/Unallocated	$24,770	$0	$0	$0	$0	$0	$0	$0	$0	$0	$6,188
Totals	$25,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$6,246

Project Total Expenses by FY Compared to Prior CIPs (All figures are in $1,000's)

CIP	5 Year Total	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	Total
2023	$0	$0	$0	$0	$0	$0	$0	$4,997	$5,011	$25,000
2024	$0	$0	$0	$0	$0	$0	$0	$0	$0	$25,000

Reporting Period 61: Ending FY24 M04 Oct

Total Costs	Prior FYs	FY24	FY25	FY26	FY27	FY28	FY29	5 Year Total	FY30-34
$25,000,001	$0	$0	$0	$0	$0	$0	$0	$0	$6,245,723

Description of CIP Changes:

This program is new to the CIP. DA 9/1/20.