GLWA
Great Lakes Water Authority

Pump Station 1 Ferric Chloride Storage Tank #3
Photo submitted by: Khoder Daher of Wastewater Operating Services

CIP
2024-2028

CAPITAL IMPROVEMENT PLAN

Updated January 19, 2023

Appendix C: Centralized Services Business Case Evaluation (BCE)

Water Works Park Water Treatment Plant Yard Piping, Valves, and Venturi Meters Replacement
Photo submitted by: Jacob Magnum of Water and Field Services

CIP Number: 341001

Project Title: Security Infrastructure Improvements on Water Facilities

Project Status: Closed

CIP Type: Project

Class Lvl 1: Centralized Services

Class Lvl 2: Security

Class Lvl 3: General Purpose

- [ ] 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
- [ ] Redundancy
- [ ] NE WTP Repurposing
- [ ] Predecessor Project(s)
- [ ] Linear Assets Outside of Facilities
- [ ] CSO
- [ ] Pumps
- [ ] Storage
- [x] Treatment

Project Photo

Project Manager: Charnele Sanders

Director: W. Barnett Jones

Managing Dept.: Security and Integrity

Date Original Business Case Prepared: 8/28/2019

Year Project Added to CIP: 2019

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 Number: 341001

Project Title: Security Infrastructure Improvements on Water Facilities

Problem Statement:

GLWA facilities have been designated as "Critical Infrastructure" by the United States Department of Homeland Security (OHS). Critical Infrastructure is considered as exposed to constant threat. GLWA is engaged in a continual process of threat and vulnerability assessment to our facilities, operations, and staff. Using several assessment tools including, OHS Site Assessments, incorporating
AWWA security recommendations, and utilizing GLWA's historical assessment data provides the basis for initiating a strategic plan for security infrastructure improvements. The resulting data from these assessments helps formulate recommendations for mitigating vulnerabilities. The implementation of these recommendations requires an efficient and effective design, procurement, and construction process.

Scope of Work/Project Alternatives:

Water Works Park: Additional coverage where boats dock and by the screening house. Video assessment wherever there are alarm points. Primary Building needs to be secured. Need video coverage. Switchgear room needs to be secured. Exterior video coverage of oxygen tanks and entrance lo chlorine room. Secure transformer enclosures at the Raw water Booster Station. Interior intrusion detection devices need to be installed at high lift building- glass break, motion sensors, etc. Install Card readers to interior of the new plant where critical assets are located. Enhanced perimeter fencing and gates. Enhanced perimeter detection system Replacement of analog cameras

Northeast Water Plant: Chemical building needs access control intrusion devices. Video assessment wherever there are alarm points. Flocculate building needs intrusion devices. Interior intrusion devices for uncovered areas. Enhanced perimeter fencing and gates Replacement of analog cameras. Enhanced perimeter detection system.

Springwells Water Plant: Enhanced access control system Chemical Building, basins and tunnel not secured. Video assessment wherever there are alarm points Enhanced perimeter detection system. Enhanced perimeter fencing and gates Replacement of analog cameras

Lake Huron Water Treatment Plant: Cameras at the Clear Well, Main Transformer Station and the Emergency Generators. Enhanced perimeter fencing and gates. Replacement of analog cameras. Enhanced perimeter detection system.

Southwest Water Plant: Video assessment wherever there are alarm points. Replace door closures to chlorine room so the doors swing shut and lock automatically. Install card readers to chlorine room and chlorine evaporation room. Enhanced perimeter

Other Important Info:

GLWA has a responsibility in what is a layered approach to critical infrastructure security; partnering with Federal, State, and Local law enforcement entities to minimize and respond to threats. This partnership required GLWA to maintain a minimum security posture equating to the Critical Infrastructure designation. Implementation of the security protocols where none existent, and improving the GLWA security foot print can reduce our vulnerabilities and enhance our response to known threats.

Primary Driver: 5 - Public Health and Safety

Driver Explanation:

NA

fencing and gates. Replacement of analog cameras. Enhanced perimeter detection system.

Southwest Water Treatment Intake: Provide security for the intake platform. Enhanced perimeter fencing and gates. Replacement of analog cameras

Belle Isle Intake: Enhanced Access Control. Perimeter fencing and gates. Intrusion detection. Video assessment and surveillance.

Chlorine Storage Areas at all Plants: Enhanced Access Control. Intrusion detection. Video assessment and surveillance.

CIP Number: 341001

Project Title: Security Infrastructure Improvements on Water Facilities

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: 341001

Project Title: Security Infrastructure Improvements on Water Facilities

Phase: GLWA Salaries

Phase Title: Salaries-Wtr

Phase Budget: Water

Phase Status: Active

Start Date: 2/26/2018

End Date: 9/27/2021

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	FY23	FY24	FY25	FY26	FY27	FY28	5 Year Total	FY29-33
GLWA Salaries	$220	$220	$220	$0	$0	$0	$0	$0	$0	$0	$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary (Water)	2/26/2018	9/27/2021
Capital Delivery Salary (Sewer)	2/26/2018	9/27/2021
Capital Delivery Salary (Water)	2/26/2018	9/27/2021
Capital Delivery Salary (Sewer)	2/26/2018	9/27/2021

CIP Number: 341001

Project Title: Security Infrastructure Improvements on Water Facilities

Phase: Professional Services

Phase Title: Professional Services

Phase Budget: Water

Phase Status:

Start Date: 8/23/2019

End Date: 7/1/2022

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	FY23
Professional Services	$739	$739	$739	$0

Phase Dates

Activity Name	Start Date	End Date
Professional Services (CS-272 - 71004A.01 / 71004B.01 / 71004C.01)	8/23/2019	7/1/2022

CIP Number: 341001

Project Title: Security Infrastructure Improvements on Water Facilities

Phase: Design-Build # 1 (SOQ-135A)

Phase Title: DB-Wtr

Phase Budget: Water

Phase Status: Active

Start Date: 2/26/2018

End Date: 4/23/2022

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	FY23	FY24	FY25	FY26	FY27	FY28	5 Year Total	FY29-33
Design-Build # 1 (SOQ-135A)	$12,758	$12,758	$12,758	$0	$0	$0	$0	$0	$0	$0	$0

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering	2/26/2018	4/12/2019
Construction (Water) (SOQ-135A)	4/15/2019	9/27/2021
Construction (Sewer) (RECLASSIFICATION)	4/15/2019	4/23/2022

CIP Number: 341001

Project Title: Security Infrastructure Improvements on Water Facilities

Phase: Construction (Water) (CS-201)

Phase Title: Construction (Water) (CS-201)

Phase Budget: Water

Phase Status:

Start Date: 7/1/2018

End Date: 6/30/2021

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	FY23
Construction (Water) (CS-201)	($2,379)	($2,379)	($2,379)	$0

Phase Dates

Activity Name	Start Date	End Date
Construction (Water) (CS-201)	7/1/2018	6/30/2019
Construction (Water) (RECLASSIFICATION)	7/1/2018	6/30/2021

CIP Number: 341001

Project Title: Security Infrastructure Improvements on Water Facilities

Phase: Miscellaneous

Phase Title: Miscellaneous

Phase Budget: Water

Phase Status:

Start Date: 5/1/2010

End Date: 6/30/2015

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	FY23
Miscellaneous	($6,081)	($6,081)	($6,081)	$0

Phase Dates

Activity Name	Start Date	End Date
Pre-CAFR Actuals - Water	5/1/2010	6/30/2015
Pre-CAFR Actuals - Sewer	5/1/2010	6/30/2015

CIP Number: 341001

Project Title: Security Infrastructure Improvements on Water Facilities

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

CIP	5 Year Total	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	Total
2021	$6,621	$4,029	$4,018	$2,603	$0	$0	$0	$0	$0	$0	$10,650
2022	$569	$3,944	$4,656	$567	$2	$0	$0	$0	$0	$0	$9,170
2023	$0	$3,945	$5,300	$60	$0	$0	$0	$0	$0	$0	$4,238

Reporting Period 49: Ending FY23 M04 Oct

Total Costs	Prior FYs	FY23	FY24	FY25	FY26	FY27	FY28	5 Year Total	FY29-33
$5,258,441	$5,258,068	$373	$0	$0	$0	$0	$0	$0	$0

Description of CIP Changes:

NA

CIP Number: 341002

Project Title: Security Infrastructure Improvements for Wastewater Facilities

Project Status: Closed

CIP Type: Project

Class Lvl 1: Centralized Services

Class Lvl 2: Security

Class Lvl 3: General Purpose

- [ ] 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
- [ ] Redundancy
- [ ] NE WTP Repurposing
- [ ] Predecessor Project(s)
- [ ] Linear Assets Outside of Facilities
- [ ] CSO
- [ ] Pumps
- [ ] Storage
- [x] Treatment

Project Photo

Project Manager: Charnele Sanders

Director: W. Barnett Jones

Managing Dept.: Security and Integrity

Date Original Business Case Prepared: 8/28/2019

Year Project Added to CIP: 2019

CIP Budget: Wastewater

Project Jurisdiction: Multiple Counties

Lookup Location: System Wide

Funds and Cost Center: Wastewater - 5421-892211

- [ ] 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: 341002

Project Title: Security Infrastructure Improvements for Wastewater Facilities

Problem Statement:

GLWA facilities have been designated as "Critical Infrastructure" by the United States Department of Homeland Security (OHS). Critical Infrastructure is considered exposed to constant threat. GLWA is engaged in a continual process of threat and vulnerability assessment to our facilities, operations, and staff. Using several assessment tools including, OHS Site Assessments, incorporating
AWWA security recommendations, and utilizing GLWA's historical assessment data, provides the basis for initiating a strategic plan for security infrastructure improvements. The resulting data from these assessments helps formulate recommendations for mitigating vulnerabilities. The implementation of these recommendations requires an efficient and effective design, procurement, and construction process.

Scope of Work/Project Alternatives:

AWWA security recommendations, and utilizing GLWA's historical assessment data, provides the basis for initiating a strategic plan for security infrastructure improvements. The resulting data from these assessments helps formulate recommendations for mitigating vulnerabilities.

Other Important Info:

GLWA has a responsibility in the layered approach to critical infrastructure security; partnering with Federal, State, and Local law enforcement entities to minimize and respond to threats. This partnership required GLWA to maintain a minimum security posture equating to the Critical Infrastructure designation. Implementation of the security protocols where none existent, and improving the GLWA security foot print can reduce our vulnerabilities and enhance our response to known threats.

Primary Driver: 5 - Public Health and Safety

Driver Explanation:

NA

CIP Number: 341002

Project Title: Security Infrastructure Improvements for Wastewater Facilities

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: 341002

Project Title: Security Infrastructure Improvements for Wastewater Facilities

Phase: GLWA Salaries

Phase Title: Salaries-WW

Phase Budget: Wastewater

Phase Status: Active

Start Date: 2/26/2018

End Date: 9/27/2021

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	FY23	FY24	FY25	FY26	FY27	FY28	5 Year Total	FY29-33
GLWA Salaries	$7	$7	$7	$0	$0	$0	$0	$0	$0	$0	$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	2/26/2018	9/27/2021
Capital Delivery Salary	2/26/2018	9/27/2021

CIP Number: 341002

Project Title: Security Infrastructure Improvements for Wastewater Facilities

Phase: Professional Services

Phase Title: Professional Services

Phase Budget: Wastewater

Start Date: 2/26/2018

Phase Status:

End Date: 7/1/2022

Phase Comments/Description:

Cost Est. Class:

Cost Est. Source:

Cost Est. Date:

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	FY23
Professional Services	$95	$95	$91	$4

Phase Dates

Activity Name	Start Date	End Date
Professional Services (CS-272 - 71004A.02 / 71004B.02 / 71004C.02)	2/26/2018	7/1/2022

CIP Number: 341002

Project Title: Security Infrastructure Improvements for Wastewater Facilities

Phase: Design-Build # 1 (SOQ-135A)

Phase Title: DB-WW

Phase Budget: Wastewater

Phase Status: Active

Start Date: 2/26/2018

End Date: 9/27/2021

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	FY23	FY24	FY25	FY26	FY27	FY28	5 Year Total	FY29-33
Design-Build # 1 (SOQ-135A)	$2,247	$2,247	$2,247	$0	$0	$0	$0	$0	$0	$0	$0

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering	2/26/2018	4/12/2019
Construction (SOQ-135A)	4/15/2019	9/27/2021
Interlocal Agreement	4/15/2019	9/27/2021

CIP Number: 341002

Project Title: Security Infrastructure Improvements for Wastewater Facilities

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

CIP	5 Year Total	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	Total
2021	$1,051	$1,579	$1,051	$0	$0	$0	$0	$0	$0	$0	$2,630
2022	$722	$1,015	$1,797	$722	$0	$0	$0	$0	$0	$0	$3,534
2023	$0	$0	$1,900	$0	$0	$0	$0	$0	$0	$0	$1,900

Reporting Period 49: Ending FY23 M04 Oct

Total Costs	Prior FYs	FY23	FY24	FY25	FY26	FY27	FY28	5 Year Total	FY29-33
$2,349,169	$2,345,407	$3,762	$0	$0	$0	$0	$0	$0	$0

Description of CIP Changes:

NA

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**
- [ ] **NE WTP Repurposing**
- [ ] **Predecessor Project(s)**
- [x] **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:	**20**		
Criteria Name	**Score**	**Score Criteria**	**Comment**
Condition	1	D. Does not impact performance, meets all expected future requirements	
Performance (Service Level/Reliability)	1	D. Project will have low to no measurable positive impact on service levels and/or system reliability / decreased overall risk	
Regulatory (Environmental/Legal)	1	A. No risk of causing	
Operations and Maintenance	1	A. O&M levels are routine;	
Health and Safety	1	A. No failure reasonably expected to occur, C. Staff/public safety/hazard issues not a concern	
Public Benefit	1	A. Low/no measurable impact on City/regional/neighborhood growth; will not impact a GLWA strategic plan* area	
Financial	1	A. Minimal to no impact to GLWA	
Efficiency and Innovation	1	A. Minimal/no impact on operational efficiencies; energy use (<1% reduction), conservation, environmental responsibility/sustainability; GLWA strategic initiatives* related to efficiency	

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: Water

Phase Status:

Start Date: 10/2/2021

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	FY23
GLWA Salaries	$0	$0	$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	10/2/2021	6/15/2023
Capital Delivery Salary	10/2/2021	6/15/2023
Other Capital Improvement Costs	10/2/2021	6/15/2023
Capitalized Interest	10/2/2021	6/15/2023

CIP Number: 380700

Project Title: As-Needed Geotechnical and Related Engineering Services

Phase: Professional Services

Phase Title: Professional Services

Phase Budget: Water

Start Date: 10/2/2021

Phase Status:

End Date: 6/15/2023

Phase Comments/Description:

Cost Est. Class:

Cost Est. Source:

Cost Est. Date:

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	FY23
Professional Services	$0	$0	$0

Phase Dates

Activity Name	Start Date	End Date
Contractual Professional Services	10/2/2021	6/15/2023

CIP Number: 380700

Project Title: As-Needed Geotechnical and Related Engineering Services

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

Phase Title: Design/Construction Administration

Phase Budget: Water

Phase Status: Active

Start Date: 10/2/2021

End Date: 6/15/2023

Phase Comments/Description:
Engineering Services Contract CS-259, Somat Engineering (active)

Cost Est. Class: Class 2

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	FY23	FY24	FY25	FY26	FY27	FY28	5 Year Total	FY29-33
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	10/2/2021	6/15/2023

CIP Number: 380700

Project Title: As-Needed Geotechnical and Related Engineering Services

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	Total
2018	$1,906	$650	$907	$333	$333	$333	$0	$0	$0	$0	$0	$0	$0	$2,556
2019	$1,669	$230	$238	$477	$477	$477	$238	$0	$0	$0	$0	$0	$0	$2,137
2020	$0	$0	$0	$620	$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	$2,130
2022	$456	$0	$0	$0	$771	$904	$456	$0	$0	$0	$0	$0	$0	$2,131
2023	$0	$0	$0	$0	$0	$0	$602	$0	$0	$0	$0	$0	$0	$602

Reporting Period 49: Ending FY23 M04 Oct

Total Costs	Prior FYs	FY23	FY24	FY25	FY26	FY27	FY28	5 Year Total	FY29-33
$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
- [ ] NE WTP Repurposing
- [ ] 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 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:	**66.8**		
Criteria Name	**Score**	**Score Criteria**	**Comment**
Condition	4	D. Replacement or major rehab needed in the short term	Existing meters beyond designed service life or missing and need replacement
Performance (Service Level/Reliability)	4	D. Project will have a significant positive impact on service levels and/or system reliability; related to GLWA strategic goals*	See condition
Regulatory (Environmental/Legal)	3	B. Project will have a moderate positive impact on reg. issues, D. Project not part of mandated or enforceable program but directly or indirectly related to expected future requirements	
Operations and Maintenance	4	D. Project significant positive impact on O&M; will alleviate most ongoing O&M issues	To be correlated with operational and asset management KPIs
Health and Safety	2	C. Canceling project unlikely to impact staff/public H&S‡	
Public Benefit	3	C. Moderate additional revenue/savings for GLWA ($100K-$499K/yr)	Power monitoring allows better decisions on rate structure and potential operational improvement
Financial	3	A. Implementing the project will generate moderate increase revenue or savings for GLWA., C. Moderate positive financial implications of $250,000 - $999,999 or a ROI of 10-15 years	
Efficiency and Innovation	5	A. Right-sizing system results in substantial operational efficiencies, significantly increasing revenue/savings., D. efficiency; Water use, effluent reuse/recycling or other GLWA strategic initiatives*; Business process optimization and institutional knowledge; Process efficiency for a more robust system and less O&M; knowledge capture; or time & cost savings	

CIP Number: 381000

Project Title: Power Quality: Electric Metering Improvement Program

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:

Start Date: 9/1/2022

End Date: 3/31/2026

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	FY23	FY24	FY25	FY26	FY27	FY28	5 Year Total
GLWA Salaries	$125	$0	$0	$24	$37	$37	$28	$0	$0	$101

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	9/1/2022	3/31/2026
Capital Delivery Salary	9/1/2022	3/31/2026

CIP Number: 381000

Project Title: Power Quality: Electric Metering Improvement Program

Phase: Design/Engineering

Phase Title: Energy Management: Wtr - Electric Metering Improvement Program

Phase Budget: Water

Phase Status: Future Planned Start

Start Date: 9/1/2022

End Date: 3/31/2026

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	FY23	FY24	FY25	FY26	FY27	5 Year Total
Design/Engineering	$2,498	$0	$0	$131	$643	$985	$740	$0	$2,367

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering	9/1/2022	3/31/2023
Construction (DB)	4/1/2023	3/31/2026

CIP Number: 381000

Project Title: Power Quality: Electric Metering Improvement Program

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	Total
2018	$5,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$0	$0	$0	$0	$0	$0	$6,000
2019	$1,628	$0	$0	$0	$120	$120	$510	$878	$4,372	$0	$0	$0	$0	$6,000
2020	$0	$0	$0	$0	$0	$0	$0	$0	$0	$5,000	$0	$0	$0	$5,000
2021	$3,880	$0	$0	$0	$86	$446	$1,540	$1,337	$112	$445	$2,904	$0	$0	$6,870
2022	$1,379	$0	$0	$0	$0	$0	$0	$0	$27	$223	$1,129	$1,153	$92	$2,624
2023	$2,623	$0	$0	$0	$0	$0	$0	$567	$1,298	$759	$0	$0	$0	$2,623

Reporting Period 49: Ending FY23 M04 Oct

Total Costs	Prior FYs	FY23	FY24	FY25	FY26	FY27	FY28	5 Year Total
$2,623,926	$0	$155,336	$679,554	$1,021,907	$767,129	$0	$0	$2,468,590

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 - Ten Year CIP

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
- [ ] NE WTP Repurposing
- [ ] 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:

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	FY23	FY24	FY25	FY26	FY27	FY28	5 Year Total	FY29-33
GLWA Salaries	$230	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	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:

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	FY23	FY27	FY28	5 Year Total	FY29-33
TBD/Unallocated	$24,770	$0	$0	$0	$0	$0	$0	$0

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

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

CIP	FY28	Total
2023	$4,997	$25,000

Reporting Period 49: Ending FY23 M04 Oct

Total Costs	Prior FYs	FY23	FY24	FY25	FY26	FY27	FY28	5 Year Total	FY29-33
$25,000,001	$0	$0	$0	$0	$0	$0	$0	$0	$0

Description of CIP Changes:

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