



PRELIMINARY DRAFT NO. 1

October 19, 2020

APPENDIX C

CENTRALIZED SERVICES BUSINESS CASE
EVALUATIONS


CIP

CAPITAL IMPROVEMENT PLAN

2022 - 2026



Project Title: Roofing Systems Replacement at GLWA WRRF, CSO Retention Treatment Basins (RTB) and Screening Disinfection Facilities (SDF)

<p>Project Status: Project Execution - Construction</p> <p>CIP Type: Program</p> <p>Class Lvl 1: Centralized Services</p> <p>Class Lvl 2: Programs</p> <p>Class Lvl 3: Programs</p> <p><input type="checkbox"/> Project New to CIP</p>	<p><input checked="" type="checkbox"/> Innovation</p> <p><input type="checkbox"/> WW Master Plan</p> <p><input type="checkbox"/> Water Master Plan Right Sizing</p> <p><input checked="" type="checkbox"/> Redundancy</p> <p><input type="checkbox"/> NE WTP Repurposing</p> <p><input type="checkbox"/> Linear Assets Outside of Facilities</p> <p><input type="checkbox"/> Predecessor Project(s)</p>	
<p>Project Engineer/Manager: Chris Wilson</p> <p>Director: Dan Alford</p> <p>Managing Dept.: WW Design Eng</p>	<p>Date Original Business Case Prepared: 8/8/2016</p> <p>Year Project Added to CIP: 2017</p> <p>CIP Budget: Wastewater</p>	<p>Project Jurisdiction: City of Detroit</p> <p>Lookup Location: WRRF</p> <p>Funds and Cost Center: Wastewater - 5421-892211</p>

Problem Statement:

Some of the roofs at GLWA WRRF facilities are near its end of useful life. The roofs help to protect the expensive equipment by preventing rain water entering through roofs into the facilities.

Scope of Work/Project Alternatives:

Inspect the roofing system conditions and assess drainage conditions on all the GLWA wastewater related facility buildings. Document the roofing systems inspections by taking and submitting high-quality photographs, scaled drawings, sketches, and inspection notes to adequately describe the conditions and deficiencies of the roofing systems and their drainage facilities. Recommend the extent of the roofing repairs and replacements required. Document the roof for each building inspected on the project. Classify the roofs into three (3) main categories, such as, 1) Roofs that require complete replacement, 2) Roofs that only require repair, and 3) Roofs that require no action within the next 10 years. Develop a recommended implementation/planning schedule with budgetary costs tied to the schedule for roofing system repairs and replacements that GLWA should plan for over the next 10 years. Provide preventative care suggestions for the GLWA's roofing systems

Project Title: Roofing Systems Replacement at GLWA WRRF, CSO Retention Treatment Basins (RTB) and Screening Disinfection Facilities (SDF)

evaluated under this contract. Provide any OSHA compliance suggestions that may be applicable for the GLWA's roofing systems evaluated under this contract.

Other Important Info:

*Innovation note: Use cool roofs. Complex – II Incinerator (\$1.8M) and Complex – II Dewatering (\$1.0 M) replacement are under consideration to be part of fire remediation project.

Challenges: Roof material testing for asbestos before demolition and flashing will be challenge to manage as low levels of asbestos are very common in the GLWA's old roof type systems.

Project History: Majority of GLWA WRRF facilities have Built-Up-Roof (BUR) membranes systems commonly referred as "tar and gravel" roofs. The old Administration buildings and the Newer Administration buildings have tar and gravel type of roof systems. The CSO RTB's and SDF's have metal and shingle type of roof systems. Majority of the roofs are over 15 years old and few are even older up to 30 years. These roof systems has been maintained through regular maintenance and repair or patch work performed to fix the leaking roof spots.

Primary Driver: 1 - Condition

Driver Explanation:

GLWA wastewater roof systems are old and some are near end of its useful life.

Project Title: Roofing Systems Replacement at GLWA WRRF, CSO Retention Treatment Basins (RTB) and Screening Disinfection Facilities (SDF)

Scoring

Project Manager Weighted Score: 0.00

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

Risk Committee Weighted Score: 0.00

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

Project Title: Roofing Systems Replacement at GLWA WRRF, CSO Retention Treatment Basins (RTB) and Screening Disinfection Facilities (SDF)

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Wastewater

Start Date: 8/1/2018

Phase Status: Active

End Date: 6/30/2027

Cost Allocation: CTA

Fund: Construction Bond Fund

Funding Source: Bond Proceeds

Usefull Life > Yrs: No

Tot. Federal Loan Amout: \$0.00

Phase Comments/Description:

Cost Est. Class: Class 5

Cost Est. Source:

Cost Est. Date:

Cost Est. Prepared By:

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
GLWA Salaries	\$298	\$8	\$8	\$57	\$46	\$46	\$46	\$46	\$46	\$230	\$4

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	8/1/2018	6/30/2027

Project Title: Roofing Systems Replacement at GLWA WRRF, CSO Retention Treatment Basins (RTB) and Screening Disinfection Facilities (SDF)

Phase: Design & Construction Assistance # 1

Phase Title: Roofing Systems Replacement at GLWA Wastewater Treatment Plant CSO Retention Treatment Basins (RTB) and Screening Disinfection Facilities (SDF)

Phase Budget: Wastewater

Start Date: 7/1/2020

Phase Status: Active

End Date: 6/30/2027

Cost Allocation: CTA

Fund: Construction Bond Fund

Funding Source: Bond Proceeds

Usefull Life > Yrs: Yes

Tot. Federal Loan Amout: \$0.00

Phase Comments/Description:

Cost Est. Class: Class 3

Cost Est. Source:

Cost Est. Date: 10/1/2017

Cost Est. Prepared By:

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
Design & Construction Assistance # 1	\$469	\$0	\$0	\$91	\$63	\$63	\$63	\$63	\$63	\$315	\$63

Phase Dates

Activity Name	Start Date	End Date
Design - Pre-Procurement	8/1/2018	10/30/2018
Design - Procurement	10/31/2018	3/31/2019
Design - Project Execution	7/1/2020	6/30/2027
Construction Assistance - Project Execution	8/31/2020	7/29/2026

Project Title: Roofing Systems Replacement at GLWA WRRF, CSO Retention Treatment Basins (RTB) and Screening Disinfection Facilities (SDF)

Phase: Construction (Build) # 1

Phase Title: Roofing Systems Replacement at GLWA Wastewater Treatment Plant CSO Retention Treatment Basins (RTB) and Screening Disinfection Facilities (SDF)

Phase Budget: Wastewater	Start Date: 4/1/2019
Phase Status: Future Planned Start	End Date: 6/30/2027
Cost Allocation: CTA	Fund: Construction Bond Fund
Funding Source: Bond Proceeds	Usefull Life > Yrs: Yes
	Tot. Federal Loan Amout: \$0.00

Phase Comments/Description:

Cost Est. Class: Class 4	Cost Est. Source:
Cost Est. Date: 10/2/2017	Cost Est. Prepared By: Ali Khraizat

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
Construction (Build) # 1	\$8,121	\$1,115	\$1,115	\$0	\$1,168	\$1,168	\$1,168	\$1,168	\$1,168	\$5,838	\$1,168

Phase Dates

Activity Name	Start Date	End Date
Construction - Procurement	1/1/2019	3/31/2019
Construction - Project Execution	4/1/2019	6/30/2027
Construction - Closeout	7/3/2019	9/30/2019


Project Title: Roofing Systems Replacement at GLWA WRRF, CSO Retention Treatment Basins (RTB) and Screening Disinfection Facilities (SDF)

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

CIP	5 Year Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	Total
2018	\$6,910	\$2,200	\$2,060	\$1,060	\$1,050	\$540	\$2,140	\$0	\$0	\$0	\$9,050
2019	\$11,684	\$0	\$286	\$709	\$5,575	\$5,114	\$0	\$0	\$0	\$0	\$11,684
2020	\$9,431	\$0	\$278	\$1,092	\$4,142	\$4,114	\$41	\$42	\$0	\$0	\$9,709
2021	\$6,970	\$0	\$802	\$321	\$91	\$1,745	\$1,724	\$1,708	\$1,702	\$1,652	\$9,745

Description of CIP Changes:

Project Title: Masonry Replacement and Rehabilitation

<p>Project Status: Future Planned - Ten-Year CIP</p> <p>CIP Type: Program</p> <p>Class Lvl 1: Water</p> <p>Class Lvl 2: General Purpose</p> <p>Class Lvl 3: General Purpose</p> <p><input checked="" type="checkbox"/> Project New to CIP</p>	<p><input type="checkbox"/> Innovation</p> <p><input type="checkbox"/> WW Master Plan</p> <p><input type="checkbox"/> Water Master Plan Right Sizing</p> <p><input type="checkbox"/> Redundancy</p> <p><input type="checkbox"/> NE WTP Repurposing</p> <p><input type="checkbox"/> Linear Assets Outside of Facilities</p> <p><input type="checkbox"/> Predecessor Project(s)</p>	 <p style="text-align: center;">Northeast Facility</p>
<p>Project Engineer/Manager: Douglas Atkinson</p> <p>Director: Paula Anderson</p> <p>Managing Dept.: Fleet and Facilities</p>	<p>Date Original Business Case Prepared:</p> <p>Year Project Added to CIP: 2020</p> <p>CIP Budget: Water</p>	<p>Project Jurisdiction: Multiple Counties</p> <p>Lookup Location:</p> <p>Funds and Cost Center: Water - 5519-882111</p>

Problem Statement:

Cracks and deterioration in masonry walls, exterior concrete, retaining walls, concrete decks and floors needing repair or replacement causing concern for safety due to poor conditions.

Scope of Work/Project Alternatives:

For NE WTP: Assess, solve 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/restore rusted steel members.

For Imlay City: Remove or rebuild retaining walls to withstand soils pressure.

Other Important Info:

3 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.

Project Title: Masonry Replacement and Rehabilitation

Scoring
Project Manager Weighted Score: 68.20

Criteria Name	Score	Comment
Condition	4	Deterioration and cracking will continue to get worse if not repaired. Walls and copings in the worse condition, Stone/concrete floors cracked or worn-out causing hazards
Performance (Service Level/Reliability)	3	Moderate effect. Beyond these walls, roof decks and coping is our water purifying system tanks, pumps and technology. A major leak may cause disruption of service.
Regulatory (Environmental/Legal)	4	Risk of health and safety to staff. Water penetration could be causing moisture issues within walls, trip hazards, falling masonry pieces.
Operations and Maintenance	4	High Levels of O/M. Some repairs/replacements beyond scope of plant maintenance. Window replacement needed but masonry walls need to be fixed. Floors and walls cracked, causing leaks. Repair and or replacement wil reduce maintance costs
Public Health and Safety	4	High probability of Public Health and Safety issues. Retaining walls failing, cracks in stone copings and walls is allowing water to penetrate wall cavities
Public Benefit	2	Low Impact. Weather tighness required.
Financial	3	Moderate to Significant finacial burden for repairs, will continue to worsen.
Efficiency and Innovation	2	Repair/Replacement will also be an oppotunity to create a more energy efficient envelope. Moderate

Risk Committee Weighted Score: 0.00

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

Project Title: Masonry Replacement and Rehabilitation

Phase: TBD / Future Allocation / General Holding

Phase Title: TBD / Future Allocation / General Holding

Phase Budget:
Start Date: 7/1/2021

Phase Status:
End Date: 6/30/2026

Cost Allocation:
Fund:
Funding Source:
Usefull Life > Yrs: No

Tot. Federal Loan Amout: \$0.00

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	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
TBD / Future Allocation / General Holding	\$25,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$25,000

Phase Dates

Activity Name	Start Date	End Date
TBD/Unallocated	7/1/2021	6/30/2026

Project Title: Masonry Replacement and Rehabilitation

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

CIP

Description of CIP Changes:

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

Project Title: Security Infrastructure Improvements on Water Facilities

Project Status: Project Execution - Construction

CIP Type: Project

Class Lvl 1: Centralized Services

Class Lvl 2: Security

Class Lvl 3: General Purpose

Project New to CIP

- Innovation**
- WW Master Plan**
- Water Master Plan Right Sizing**
- Redundancy**
- NE WTP Repurposing**
- Linear Assets Outside of Facilities**
- Predecessor Project(s)**



Project Photo

Project Engineer/Manager: Michael Lewis

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

Problem Statement:

GLWA facilities have been designated as "Critical Infrastructure" by the United States Department of Homeland Security (OHS). Critical Infrastructure is under constant threat by malicious people intent on disruption and destruction. GLWA staff 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, we have the basis for initiating a strategic plan for security infrastructure improvements. The resulting data from these assessments formulate recommendations for mitigating vulnerabilities. The implementation of these recommendations requires an efficient and effective design, procurement, and

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 to chlorine room. Secure transformer enclosures -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.

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 were 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:

Project Title: Security Infrastructure Improvements on Water Facilities

construction process.

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 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.

Project Title: Security Infrastructure Improvements on Water Facilities

Scoring
Project Manager Weighted Score: 77.80

Criteria Name	Score	Comment
Condition	5	The age of the perimeter intrusion detection systems, fencing systems, and interior detections systems have exceeded 15 years of service, far beyond the service life of the individual components. Some components are not repairable.
Performance (Service Level/Reliability)	5	Based on service records. System component are routinely out of service. Maintenance of these systems is excessive. Failure of systems is eminent.
Regulatory (Environmental/Legal)	2	There is a legal expectation that property and facilities are secure, and access limited to the general public.
Operations and Maintenance	4	Since we are replacing or enhancing existing equipment the effect on O&M would be moderate as service requests would decrease.
Public Health and Safety	5	Security systems are preventative in nature. It only takes one security breach to effect operations, cast a cloud over GLWA and create a negative view of the Authority.
Public Benefit	3	The completion of this project will instill confidence in continued operations of the Authority and a positive view of GLWA.
Financial	2	The value of security systems is to provide preventative measures for the continuity of GLWA Operations. No immediate financial benefit. The systems involved will assist in maintaining a secure environment for operations minimizing disruptions and down time.
Efficiency and Innovation	5	Project directly impacts O&M budget. As systems are replaced less service is required and PM programs can be implemented to prolong equipment shelf life.

Risk Committee Weighted Score: 0.00

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

Project Title: Security Infrastructure Improvements on Water Facilities

Phase: GLWA Salaries

Phase Title: Salaries-Wtr

Phase Budget: Water

Start Date: 6/1/2017

Phase Status: Active

End Date: 4/23/2022

Cost Allocation: CTA

Fund: Improvement and Extension Fund

Funding Source: Revenue Financed Capital

Usefull Life > Yrs: Yes

Tot. Federal Loan Amout: \$0.00

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	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
GLWA Salaries	\$696	\$334	\$334	\$330	\$30	\$2	\$0	\$0	\$0	\$32	\$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	6/1/2017	4/23/2022
Capital Delivery Salary	6/1/2017	4/23/2022

Project Title: Security Infrastructure Improvements on Water Facilities

Phase: Design-Build # 1

Phase Title: DB-Wtr

Phase Budget: Water

Start Date: 4/15/2019

Phase Status: Active

End Date: 4/23/2022

Cost Allocation: CTA

Fund: Improvement and Extension Fund

Funding Source: Revenue Financed Capital

Usefull Life > Yrs: Yes

Tot. Federal Loan Amout: \$0.00

Phase Comments/Description:
Cost Est. Class: Class 1

Cost Est. Source:
Cost Est. Date:
Cost Est. Prepared By:
Phase Total Expenses By FY (All figures are in \$1,000's)

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
Design-Build # 1	\$8,474	\$3,610	\$3,610	\$4,326	\$537	\$0	\$0	\$0	\$0	\$537	\$0

Phase Dates

Activity Name	Start Date	End Date
Design - Pre-Procurement	6/1/2017	8/29/2017
Design - Procurement	8/30/2017	2/21/2018
Design - Project Execution	2/26/2018	4/12/2019
Construction - Project Execution	4/15/2019	4/23/2022
Construction - Closeout	1/23/2022	4/23/2022

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	Total
2021	\$6,621	\$4,029	\$4,018	\$2,603	\$10,650

Description of CIP Changes:

Project Title: Security Infrastructure Improvements for Wastewater Facilities

Project Status: Project Execution - Construction

CIP Type: Project

Class Lvl 1: Centralized Services

Class Lvl 2: Security

Class Lvl 3: General Purpose

Project New to CIP

- Innovation**
- WW Master Plan**
- Water Master Plan Right Sizing**
- Redundancy**
- NE WTP Repurposing**
- Linear Assets Outside of Facilities**
- Predecessor Project(s)**



Project Photo

Project Engineer/Manager: Michael Lewis

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

Problem Statement:

GLWA facilities have been designated as "Critical Infrastructure" by the United States Department of Homeland Security (OHS). Critical Infrastructure is under constant threat by malicious people intent on disruption and destruction. GLWA staff 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, we have the basis for initiating a strategic plan for security infrastructure improvements. The resulting data from these assessments formulate recommendations for mitigating vulnerabilities. The implementation of these recommendations requires an efficient and effective design, procurement, and

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 to chlorine room. Secure transformer enclosures -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.

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 were none existent, and improving the GLWA security footprint can reduce our vulnerabilities and enhance our response to known threats.

Primary Driver: 5 - Public Health and Safety

Driver Explanation:

Project Title: Security Infrastructure Improvements for Wastewater Facilities

construction process.

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 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.

Project Title: Security Infrastructure Improvements for Wastewater Facilities

Scoring
Project Manager Weighted Score: 77.80

Criteria Name	Score	Comment
Condition	5	The age of the perimeter intrusion detection systems, fencing systems, and interior detections systems have exceed 15 years of service, far beyond the service life of the individual components. Some components are not repairable.
Performance (Service Level/Reliability)	5	Based on service records. System component are routinely out of service. Maintenance of these systems is excessive. Failure of systems is eminent.
Regulatory (Environmental/Legal)	2	There is a legal expectation that property and facilities are secure, and access limited to the general public.
Operations and Maintenance	4	Since we are replacing or enhancing existing equipment the effect on O&M would be moderate as service requests would decrease.
Public Health and Safety	5	Security systems are preventative in nature. It only takes one security breach to effect operations, cast a cloud over GLWA and create a negative view of the Authority.
Public Benefit	3	The completion of this project will instill confidence in continued operations of the Authority and a positive view of GLWA
Financial	2	The value of security systems is to provide preventative measures for the continuity of GLWA Operations. No immediate financial benefit. The systems involved will assist in maintaining a secure environment for operations minimizing disruptions and down time.
Efficiency and Innovation	5	Project directly impacts O&M budget. As systems are replaced less service is required and PM programs can be implemented to prolong equipment shelve life.

Risk Committee Weighted Score: 0.00

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

Project Title: Security Infrastructure Improvements for Wastewater Facilities

Phase: GLWA Salaries

Phase Title: Salaries-WW

Phase Budget: Wastewater

Start Date: 6/1/2017

Phase Status: Active

End Date: 4/23/2022

Cost Allocation: CTA

Fund: Improvement and Extension Fund

Funding Source: Revenue Financed Capital

Usefull Life > Yrs: Yes

Tot. Federal Loan Amout: \$0.00

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	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
GLWA Salaries	\$58	\$0	\$0	\$29	\$29	\$0	\$0	\$0	\$0	\$29	\$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	6/1/2017	4/23/2022

Project Title: Security Infrastructure Improvements for Wastewater Facilities

Phase: Design-Build # 1

Phase Title: DB-WW

Phase Budget: Wastewater

Start Date: 4/15/2019

Phase Status: Active

End Date: 4/23/2022

Cost Allocation: CTA

Fund: Improvement and Extension Fund

Funding Source: Revenue Financed Capital

Usefull Life > Yrs: Yes

Tot. Federal Loan Amout: \$0.00

Phase Comments/Description:
Cost Est. Class: Class 1

Cost Est. Source:
Cost Est. Date:
Cost Est. Prepared By:
Phase Total Expenses By FY (All figures are in \$1,000's)

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
Design-Build # 1	\$3,476	\$1,015	\$1,015	\$1,768	\$693	\$0	\$0	\$0	\$0	\$693	\$0

Phase Dates

Activity Name	Start Date	End Date
Design - Pre-Procurement	6/1/2017	8/29/2017
Design - Procurement	8/30/2017	2/21/2018
Design - Project Execution	2/26/2018	4/12/2019
Construction - Project Execution	4/15/2019	4/23/2022
Construction - Closeout	1/23/2022	4/23/2022

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	Total
2021	\$1,051	\$1,579	\$1,051	\$2,630

Description of CIP Changes:

Project Title: LED Lighting and Lighting Control Improvements

Project Status: Active - Pre-Procurement
 - Construction

CIP Type: Program

Class Lvl 1: Centralized Services

Class Lvl 2: Energy Management

Class Lvl 3: General Purpose

 Project New to CIP

- Innovation**
- WW Master Plan**
- Water Master Plan Right Sizing**
- Redundancy**
- NE WTP Repurposing**
- Linear Assets Outside of Facilities**
- Predecessor Project(s)**



LED Light

Project Engineer/Manager: Eric Griffin

Director: John Norton

Managing Dept.: Energy Management

Date Original Business Case Prepared:
 8/4/2016

Year Project Added to CIP: 2017

CIP Budget: Water

Project Jurisdiction: Multiple Counties

Lookup Location: System Wide

Funds and Cost Center: Water - 5519-882111

Problem Statement:

Energy savings, demand reduction improved visibility, safety, operational efficiency and worker productivity. Budget was cut to \$500,000.00 we plan on reducing scope to 4 Booster stations only under this CIP.MFG 7/25/2019

Scope of Work/Project Alternatives:

Remove identified old fixtures and replace with new LED lamps and advanced control systems.

Project Title: LED Lighting and Lighting Control Improvements

Other Important Info:

Challenges: Some outfalls are below the river elevation; installation may be challenging.

Project History: An audit was completed in 2010/2011 but little action was taken. Advancement in lighting technology since this audit has rendered it obsolete as to recent innovations, technology and cost. Across the system, equipment is in poor condition and exceeds its end of life. Some existing fixtures are antiques and compared to today's lighting, cannot meet minimum lighting standards.

A well detailed audit is to be carried out to determine the best suitable replacement lamps based on a set performance criteria, lighting controls to be incorporated and in cases where delamping might be an option, equivalent/appropriate lighting output and level is to be maintained per task/space requirements

Primary Driver: 8 - Efficiency

Driver Explanation:

Technology of LED lamps and associated fixtures will reduce electrical operating expenses and improve worker safety.

Project Title: LED Lighting and Lighting Control Improvements

Scoring
Project Manager Weighted Score: 0.00

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

Risk Committee Weighted Score: 0.00

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

Project Title: LED Lighting and Lighting Control Improvements

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Water

Start Date: 5/21/2017

Phase Status: Active

End Date: 6/30/2025

Cost Allocation: CTA

Fund: Construction Bond Fund

Funding Source: Bond Proceeds

Usefull Life > Yrs: No

Tot. Federal Loan Amout: \$0.00

Phase Comments/Description:
Cost Est. Class: Class 5

Cost Est. Source:
Cost Est. Date:
Cost Est. Prepared By:
Phase Total Expenses By FY (All figures are in \$1,000's)

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	5 Year Total
GLWA Salaries	\$150	\$7	\$7	\$0	\$38	\$38	\$38	\$30	\$143

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	5/21/2017	6/30/2025

Project Title: LED Lighting and Lighting Control Improvements

Phase: Study # 1

Phase Title: Study-Wtr

Phase Budget: Water

Start Date: 7/1/2022

Phase Status: Active

End Date: 6/30/2025

Cost Allocation: CTA

Fund: Improvement and Extension Fund

Funding Source: Revenue Financed Capital

Usefull Life > Yrs: No

Tot. Federal Loan Amout: \$0.00

Phase Comments/Description:

Cost Est. Class: Class 5

Cost Est. Source:
Cost Est. Date:
Cost Est. Prepared By:

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	5 Year Total
Study # 1	\$50	\$0	\$0	\$0	\$0	\$17	\$17	\$17	\$50

Phase Dates

Activity Name	Start Date	End Date
Study - Pre-Procurement	10/2/2021	12/31/2021
Study - Procurement	1/1/2022	6/30/2022
Study - Project Execution	7/1/2022	6/30/2025
Study - Closeout	4/1/2025	6/30/2025

Project Title: LED Lighting and Lighting Control Improvements

Phase: Design-Build # 1

Phase Title: Water Facility Lighting Renovations

Phase Budget: Water

Start Date: 7/1/2022

Phase Status: Active

End Date: 6/30/2025

Cost Allocation: CTA

Fund: Improvement and Extension Fund

Funding Source: Revenue Financed Capital

Usefull Life > Yrs: No

Tot. Federal Loan Amout: \$0.00

Phase Comments/Description:
Cost Est. Class: Class 2

Cost Est. Source:
Cost Est. Date:
Cost Est. Prepared By:
Phase Total Expenses By FY (All figures are in \$1,000's)

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	5 Year Total
Design-Build # 1	\$500	\$0	\$0	\$0	\$0	\$167	\$167	\$167	\$500

Phase Dates

Activity Name	Start Date	End Date
Design - Pre-Procurement	5/21/2017	4/2/2022
Design - Procurement	4/3/2022	11/29/2022
Design - Project Execution	11/30/2022	9/7/2023
Construction - Project Execution	7/1/2022	6/30/2025
Construction - Closeout	4/1/2025	6/30/2025

Project Title: LED Lighting and Lighting Control Improvements

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

CIP	5 Year Total	FY18	FY19	FY20	FY21	FY22	FY23	Total
2018	\$2,799	\$933	\$933	\$933	\$0	\$0	\$0	\$2,799
2019	\$2,772	\$2	\$1,172	\$1,600	\$0	\$0	\$0	\$2,774
2020	\$250	\$0	\$250	\$250	\$0	\$0	\$0	\$500
2021	\$550	\$0	\$6	\$0	\$50	\$248	\$252	\$556

Description of CIP Changes:

Budget was cut down to \$500,000.00 We plan on doing 4 Booster Stations only with this CIP. MFG 7/25/2019

Budget increased due to Sewer Pumping station add-on EG 08/25/2020

Project Title: As-Needed General Engineering Services

Project Status: Cancelled

CIP Type: Allowance

Class Lvl 1: Centralized Services

Class Lvl 2: Programs

Class Lvl 3: Programs

 Project New to CIP

- Innovation**
- WW Master Plan**
- Water Master Plan Right Sizing**
- Redundancy**
- NE WTP Repurposing**
- Linear Assets Outside of Facilities**
- Predecessor Project(s)**


Project Engineer/Manager: Grant Gartrell

Director: Grant Gartrell

Managing Dept.: Water Eng

Date Original Business Case Prepared:
Year Project Added to CIP: 2004

CIP Budget: Water

Project Jurisdiction: Multiple Counties

Lookup Location: System-wide

Funds and Cost Center:
Problem Statement:

Allowance for the study and design of critical projects throughout the system prior to bidding and construction.

Scope of Work/Project Alternatives:

As-needed engineering services for water and wastewater engineering.

Other Important Info:

Challenges: N/A - Active

Primary Driver: N/A - Active

Driver Explanation:

N/A - Active

Project Title: As-Needed General Engineering Services

Scoring
Project Manager Weighted Score: 0.00

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

Risk Committee Weighted Score: 0.00

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

Project Title: As-Needed General Engineering Services

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Wastewater

Start Date: 1/1/2019

Phase Status: Active

End Date: 6/30/2020

Cost Allocation: CTA

Fund: Improvement and Extension Fund

Funding Source: Revenue Financed Capital

Usefull Life > Yrs: No

Tot. Federal Loan Amout: \$0.00

Phase Comments/Description:

Cost Est. Class: Class 5

Cost Est. Source:
Cost Est. Date:
Cost Est. Prepared By:

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
GLWA Salaries	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	1/1/2019	6/30/2020

Project Title: As-Needed General Engineering Services

Phase: TBD / Future Allocation / General Holding TBD

Phase Title: CS-1432A Water As-Needed Engineering Services

Phase Budget: Water	Start Date: 7/1/2015
Phase Status: Active	End Date: 6/30/2020
Cost Allocation: CTA	Fund: Improvement and Extension Fund
Funding Source: Revenue Financed Capital	Usefull Life > Yrs: No
	Tot. Federal Loan Amout: \$0.00

Phase Comments/Description:

380601

Cost Est. Class: Class 5

Cost Est. Source:
Cost Est. Date:
Cost Est. Prepared By:
Phase Total Expenses By FY (All figures are in \$1,000's)

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
TBD / Future Allocation / General Holding TBD	\$55	\$0	\$0	\$55	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Design	1/1/2019	6/30/2020
TBD Project Allocation	7/1/2015	4/27/2019


Project Title: As-Needed General Engineering Services

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

CIP	5 Year Total	FY16	FY17	FY18	FY19	FY20	Total
2018	\$822	\$14,012	\$446	\$436	\$386	\$0	\$15,280
2019	\$377	\$0	\$316	\$406	\$327	\$50	\$1,099
2020	\$0	\$0	\$0	\$2	\$94	\$0	\$96
2021	\$0	\$0	\$0	\$0	\$5	\$0	\$5

Description of CIP Changes:

Project Title: As-Needed Geotechnical and Related Engineering Services

<p>Project Status: Project Execution - Design</p> <p>CIP Type: Allowance</p> <p>Class Lvl 1: Centralized Services</p> <p>Class Lvl 2: Programs</p> <p>Class Lvl 3: Programs</p> <p><input type="checkbox"/> Project New to CIP</p>	<p><input type="checkbox"/> Innovation</p> <p><input type="checkbox"/> WW Master Plan</p> <p><input type="checkbox"/> Water Master Plan Right Sizing</p> <p><input type="checkbox"/> Redundancy</p> <p><input type="checkbox"/> NE WTP Repurposing</p> <p><input type="checkbox"/> Linear Assets Outside of Facilities</p> <p><input type="checkbox"/> Predecessor Project(s)</p>	
<p>Project Engineer/Manager: Peter Fromm</p> <p>Director: Grant Gartrell</p> <p>Managing Dept.: Water Eng</p>	<p>Date Original Business Case Prepared:</p> <p>Year Project Added to CIP: 2006</p> <p>CIP Budget: Water</p>	<p>Project Jurisdiction: Multiple Counties</p> <p>Lookup Location: System-wide</p> <p>Funds and Cost Center: Water - 5519-882411</p>

Problem Statement:

GLWA engineering and operations need 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 and 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. 1802775 Park-Merriman 24-inch Water Main
2. 1803621 Wick Road 48-inch Transmission Main
3. 1804129 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.

Project Title: As-Needed Geotechnical and Related Engineering Services

Scoring

Project Manager Weighted Score: 20.00

Criteria Name	Score	Comment
Condition	1	
Performance (Service Level/Reliability)	1	
Regulatory (Environmental/Legal)	1	
Operations and Maintenance	1	
Public Health and Safety	1	
Public Benefit	1	
Financial	1	
Efficiency and Innovation	1	

Risk Committee Weighted Score: 0.00

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

Project Title: As-Needed Geotechnical and Related Engineering Services

Phase: Construction (Build) # 1

Phase Title: Design/Construction Administration

Phase Budget: Water

Start Date: 10/1/2018

Phase Status: Active

End Date: 12/31/2021

Cost Allocation: CTA

Fund: Improvement and Extension Fund

Funding Source: Revenue Financed Capital

Usefull Life > Yrs: No

Tot. Federal Loan Amout: \$0.00

Phase Comments/Description:

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

Cost Est. Class: Class 2

Cost Est. Source:
Cost Est. Date:
Cost Est. Prepared By:
Phase Total Expenses By FY (All figures are in \$1,000's)

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
Construction (Build) # 1	\$2,131	\$771	\$771	\$904	\$456	\$0	\$0	\$0	\$0	\$456	\$0

Phase Dates

Activity Name	Start Date	End Date
Construction - Project Execution	10/1/2018	12/31/2021
Construction - Closeout	10/2/2021	12/31/2021

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	Total
2018	\$1,906	\$650	\$907	\$333	\$333	\$333	\$0	\$2,556
2019	\$1,669	\$230	\$238	\$477	\$477	\$477	\$238	\$2,137
2020	\$0	\$0	\$0	\$620	\$0	\$0	\$0	\$620
2021	\$715	\$0	\$0	\$0	\$1,415	\$715	\$0	\$2,130

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

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

- Innovation**
- WW Master Plan**
- Water Master Plan Right Sizing**
- Redundancy**
- NE WTP Repurposing**
- Linear Assets Outside of Facilities**
- Predecessor Project(s)**



Power Quality Meters

Project Engineer/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

Problem Statement:

Advanced meters for measuring power usage in real-time to reduce the electrical demands and further optimize load management practices, GLWA is experiencing a lot of power outages at our facilities. The installation of the New Power Monitors will give us real wave form data to determine why we are having outages and the time period of sagging or swelling voltage which effects the integrity of our 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 allow for active demand management to reduce electricity rates. The meters can be tied to the existing data management system for data archiving and use.

The installation of the New Power Monitors will give us real wave form data to determine why we are having outages and the time period of sagging or swelling voltage which effects the integrity of our equipment. MFG 07/25/2019

Other Important Info:

Project History: Project is in the works targeting high demand (kW) sites - 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 we are having are affecting our preassurers 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

Primary Driver: 2 - Performance

Driver Explanation:

The outages we are having are affecting our preassurers 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.

Project Title: Power Quality: Electric Metering Improvement Program

Scoring

Project Manager Weighted Score: 0.00

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

Risk Committee Weighted Score: 0.00

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

Project Title: Power Quality: Electric Metering Improvement Program

Phase: GLWA Salaries # 1

Phase Title: GLWA Salaries-Wtr

Phase Budget: Water	Start Date: 9/4/2023
Phase Status: Future Planned Start	End Date: 7/29/2027
Cost Allocation: CTA	Fund: Construction Bond Fund
Funding Source: Bond Proceeds	Usefull Life > Yrs: No
	Tot. Federal Loan Amout: \$0.00

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	Actual Costs	Prior FYs	FY24	FY25	FY26	5 Year Total	FY27+
GLWA Salaries # 1	\$124	\$0	\$0	\$27	\$26	\$22	\$74	\$50

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	9/4/2023	7/29/2027

Project Title: Power Quality: Electric Metering Improvement Program

Phase: Design-Build # 1

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

Phase Budget: Water	Start Date: 8/1/2024
Phase Status: Future Planned Start	End Date: 7/29/2027
Cost Allocation: CTA	Fund: Improvement and Extension Fund
Funding Source: Revenue Financed Capital	Usefull Life > Yrs: No
	Tot. Federal Loan Amout: \$0.00

Phase Comments/Description:

Cost Est. Class: Class 1

Cost Est. Source:
Cost Est. Date:
Cost Est. Prepared By:

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

	Total Costs	Actual Costs	Prior FYs	FY25	FY26	5 Year Total	FY27+
Design-Build # 1	\$2,500	\$0	\$0	\$197	\$1,107	\$1,305	\$1,195

Phase Dates

Activity Name	Start Date	End Date
Design - Pre-Procurement	9/4/2023	12/3/2023
Design - Procurement	12/4/2023	7/31/2024
Design - Project Execution	8/1/2024	4/29/2027
Construction - Project Execution	4/27/2025	7/29/2027
Construction - Closeout	4/30/2027	7/29/2027

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	Total
2018	\$5,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$0	\$0	\$0	\$0	\$6,000
2019	\$1,628	\$0	\$0	\$0	\$120	\$120	\$510	\$878	\$4,372	\$0	\$0	\$6,000
2020	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$5,000	\$0	\$5,000
2021	\$3,880	\$0	\$0	\$0	\$86	\$446	\$1,540	\$1,337	\$112	\$445	\$2,904	\$6,870

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 project 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.