



PRELIMINARY DRAFT NO. 1
October 19, 2020

APPENDIX A


WATER BUSINESS CASE EVALUATIONS

CIP

CAPITAL IMPROVEMENT PLAN
2022 - 2026



Project Title: Lake Huron Water Treatment Plant, Low-Lift, High Lift and Filter Backwash Pumping System Improvements

<p>Project Status: Project Execution - Design</p> <p>CIP Type: Project</p> <p>Class Lvl 1: Water</p> <p>Class Lvl 2: Treatment Plants and Facilities</p> <p>Class Lvl 3: Lake Huron</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 checked="" 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>Representative Switchgear to be Replaced under CIP 111001</p>
<p>Project Engineer/Manager: Eric Kramp</p> <p>Director: Grant Gartrell</p> <p>Managing Dept.: Water Eng</p>	<p>Date Original Business Case Prepared: 3/3/2010</p> <p>Year Project Added to CIP: 2010</p> <p>CIP Budget: Water</p>	<p>Project Jurisdiction: Saint Clair County</p> <p>Lookup Location: Lake Huron WTP</p> <p>Funds and Cost Center: Water - 5519-882111</p>

Problem Statement:

Improvements needed to align the existing low lift pumping rate with the Lake Huron WTP production rate per the 2015 Water Master Plan Update.

Currently, constant speed pumping at the low-lift portion of the plant can force it to operate in a semi-batch mode during night-time, low-demand periods. Existing electrical gear for low- and high-lift pumping units and filter backwash pumps are original to plant, beyond useful service life and need to be replaced to improve reliability, serviceability, maintainability, and efficiency.

Similarly, phosphoric acid chemical storage tanks and associated fill piping are also past their useful service life and in the case of the piping has had leaks and many repairs.

Scope of Work/Project Alternatives:

This CIP will be delivered using a design-bid-build project delivery method. The project's scope of improvements will generally include rehabilitation or replacement of the following systems and equipment:

1. High and medium voltage electrical system at the facility
2. Low-lift pumps, right-sized to current and projected demands.
3. High-lift pumping units, right-sized to current and projected demands.
4. Filter wash water pumps and related equipment.
5. Phosphoric acid storage tanks and fill piping.
6. Update instrumentation, controls and supervisory, control and data acquisition (SCADA) systems related to the above-mentioned pumping system equipment.

Other Important Info:

*Innovation note: Ensure energy efficiency. Coordination between existing pumping unit and motor required during design. Critical speed analysis may show pump improvements needed to operate at reduced speeds. Uncovering an innovative rehabilitation design to minimize maintenance of existing drives.

Primary Driver: 2 - Performance

Driver Explanation:

Right-sizing the low- and high-lift pumping systems at Lake Huron will improve the reliability of pumping as it will eliminate the semi-batch mode operation. Condition/age is another driver for the project.

Project Title: Lake Huron Water Treatment Plant, Low-Lift, High Lift and Filter Backwash Pumping System Improvements

Scoring**Project Manager Weighted Score:** 71.60

Criteria Name	Score	Comment
Condition	5	Review of "Red Tag" reports from the plant indicate HL VFD systems are driving operation flexibility.
Performance (Service Level/Reliability)	5	
Regulatory (Environmental/Legal)	2	
Operations and Maintenance	4	
Public Health and Safety	2	
Public Benefit	3	
Financial	4	
Efficiency and Innovation	5	Continual Wire to Water analytics on the High Lift and simplified Low Lift operation with greatly improve operations

Risk Committee Weighted Score: 71.60

Criteria Name	Score	Comment
Condition	5	
Performance (Service Level/Reliability)	5	
Regulatory (Environmental/Legal)	1	
Operations and Maintenance	5	
Public Health and Safety	2	
Public Benefit	5	
Financial	4	
Efficiency and Innovation	4	

Project Title: Lake Huron Water Treatment Plant, Low-Lift, High Lift and Filter Backwash Pumping System Improvements

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Water

Start Date: 8/15/2018

Phase Status: Project Execution

End Date: 6/30/2029

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: CDM Smith

Cost Est. Date: 1/1/2015

Cost Est. Prepared By: Water Master Plan Update

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	\$268	\$48	\$48	\$57	\$27	\$26	\$21	\$22	\$22	\$117	\$45

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	8/15/2018	6/30/2029

Project Title: Lake Huron Water Treatment Plant, Low-Lift, High Lift and Filter Backwash Pumping System Improvements

Phase: Design & Construction Assistance # 1

Phase Title: Design/Construction Administration

Phase Budget:	Water	Start Date:	3/13/2020
Phase Status:	Project Execution	End Date:	2/20/2028
Cost Allocation:	CTA	Fund:	Construction Bond Fund
Funding Source:	Bond Proceeds	Usefull Life > Yrs:	Yes
		Tot. Federal Loan Amout:	\$0.00

Phase Comments/Description:

Existing LL Pumps: 2 - 100 mgd and 2 - 200 mgd; firm = 400 mgd

Future LL Pumps: 2 - 150 mgd and 2 - 100 mgd; firm = 350 mgd

Future: LL Pumps 1 - 150 mgd pump will have VFD. 1 - 100 mgd pump will have a VFD by the time this project is started via another contract being executed by plant O&M staff.

Cost Est. Class: Class 5

Cost Est. Source: CDM Smith

Cost Est. Date: 1/1/2015

Cost Est. Prepared By: Water Master Plan Update

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	\$10,466	\$164	\$164	\$1,935	\$1,935	\$1,656	\$793	\$791	\$791	\$5,966	\$2,400

Phase Dates

Activity Name	Start Date	End Date
Design - Pre-Procurement	8/15/2018	4/24/2019
Design - Procurement	4/24/2019	3/12/2020
Design - Project Execution	3/13/2020	4/2/2023
Construction Assistance - Project Execution	4/3/2023	2/20/2028
Construction Assistance - Project Closeout	11/22/2027	2/20/2028

Project Title: Lake Huron Water Treatment Plant, Low-Lift, High Lift and Filter Backwash Pumping System Improvements

Phase: Construction (Build) # 1

Phase Title: Construction

Phase Budget:	Water	Start Date:	8/11/2022
Phase Status:	Future Planned Start	End Date:	3/28/2027
Cost Allocation:	CTA	Fund:	Construction Bond Fund
Funding Source:	Bond Proceeds	Usefull Life > Yrs:	Yes
		Tot. Federal Loan Amout:	\$0.00

Phase Comments/Description:

Existing LL Pumps: 2 - 100 mgd and 2 - 200 mgd; firm = 400 mgd

Future LL Pumps: 2 - 150 mgd and 2 - 100 mgd; firm = 350 mgd

Future: LL Pumps 1 - 150 mgd pump will have VFD. 1 - 100 mgd pump will have a VFD by the time this project is started via another contract being executed by plant O&M staff.

Cost Est. Class: Class 5

Cost Est. Source: CDM Smith

Cost Est. Date: 1/1/2015

Cost Est. Prepared By: Water Master Plan Update

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

	Total Costs	Actual Costs	Prior FYs	FY23	FY24	FY25	FY26	5 Year Total	FY27+
Construction (Build) # 1	\$46,444	\$0	\$0	\$2,899	\$8,052	\$10,025	\$10,025	\$31,001	\$15,443

Phase Dates

Activity Name	Start Date	End Date
Construction - Pre-Procurement	10/13/2021	2/10/2022
Construction - Procurement	2/11/2022	8/10/2022
Construction - Project Execution	8/11/2022	3/28/2027
Construction - Closeout	4/1/2029	6/30/2029

Project Title: Lake Huron Water Treatment Plant, Low-Lift, High Lift and Filter Backwash Pumping System Improvements


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	\$5,500	\$200	\$2,500	\$3,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$5,700
2019	\$9,631	\$0	\$0	\$0	\$401	\$1,611	\$3,169	\$4,450	\$42,757	\$0	\$0	\$52,388
2020	\$19,631	\$0	\$0	\$0	\$401	\$1,611	\$3,169	\$4,450	\$10,000	\$32,757	\$0	\$52,388
2021	\$42,719	\$0	\$0	\$14	\$1,236	\$1,636	\$1,749	\$13,725	\$12,768	\$12,841	\$11,121	\$55,090

Description of CIP Changes:

From the last CIP, Phase I (GLWA - Direct Labor) remains active and Phase II (D/CA) has moved to active. Updated project expenses to account for actual valves uploaded. ECK 7/13/2020

Project Title: Lake Huron Water Treatment Plant, Miscellaneous Mechanical HVAC Improvements

<p>Project Status: Pending Closeout</p> <p>CIP Type: Project</p> <p>Class Lvl 1: Water</p> <p>Class Lvl 2: Treatment Plants and Facilities</p> <p>Class Lvl 3: Lake Huron</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>Mechanical Room - New WCHP and Boilers</p>
<p>Project Engineer/Manager: Brian VanHall</p> <p>Director: Grant Gartrell</p> <p>Managing Dept.: Water Eng</p>	<p>Date Original Business Case Prepared: 6/26/2014</p> <p>Year Project Added to CIP: 2014</p> <p>CIP Budget: Water</p>	<p>Project Jurisdiction: Saint Clair County</p> <p>Lookup Location: Lake Huron WTP</p> <p>Funds and Cost Center: Water - 5519-882111</p>

Problem Statement:

Existing heating, ventilating and air-conditioning systems Lake Huron are 40 years old and are either not operable or are energy-inefficient. Ventilation is inadequate in the filter areas of the plant. Indoor summer-time temperatures exceed 90F in the administration building and process control laboratory due to no air conditioning in this building. These elevated temperatures make for very uncomfortable working conditions for the chemists stationed in the laboratory full-time and plant team member who work in this building.

Scope of Work/Project Alternatives:

This CIP project is being delivered using a design-bid-build project delivery model. The scope of work generally includes installing:

1. High-efficiency, natural gas-fired hot-water boilers, hot-water radiators, and hot-water and cold-water return piping throughout the facility.
2. Air-conditioning system for the administration building, including the process control laboratory and control room.
3. Roof-top mounted air handlers to ventilate the filter building.
4. Heating and ventilating system for the high-voltage electrical switchgear room.
5. Heating and ventilating system for the chlorine storage and feeder rooms.
6. Dehumidification system for the filter piping galleries.
7. Doors and vestibules to segregate areas of different indoor air control - zones.
8. Back flow preventers to protect water quality in potable water systems at the plant from non-

Other Important Info:

There are three contracts associated with this CIP, including:

- CS-1732 Engineering Design and Construction Administration Contract (active)
- CON-182 Backflow Preventer Construction Contract (closed)
- CON-212 HVAC Construction Contract (active)

Primary Driver: 1 - Condition

Driver Explanation:

Existing HVAC equipment is original (1976) to the plant and is either not functioning or is energy inefficient.

Project Title: Lake Huron Water Treatment Plant, Miscellaneous Mechanical HVAC Improvements

potable uses.

Project Title: Lake Huron Water Treatment Plant, Miscellaneous Mechanical HVAC Improvements

Scoring**Project Manager Weighted Score:** 78.60

Criteria Name	Score	Comment
Condition	5	
Performance (Service Level/Reliability)	5	
Regulatory (Environmental/Legal)	4	
Operations and Maintenance	4	
Public Health and Safety	4	
Public Benefit	1	
Financial	3	
Efficiency and Innovation	4	

Risk Committee Weighted Score: 78.60

Criteria Name	Score	Comment
Condition	5	
Performance (Service Level/Reliability)	5	
Regulatory (Environmental/Legal)	4	
Operations and Maintenance	4	
Public Health and Safety	4	
Public Benefit	1	The score was 0 last year but rule states it has to be greater than zero.
Financial	3	
Efficiency and Innovation	4	

Project Title: Lake Huron Water Treatment Plant, Miscellaneous Mechanical HVAC Improvements

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Water

Start Date: 4/18/2017

Phase Status: Active

End Date: 10/23/2020

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 5

Cost Est. Source: GLWA

Cost Est. Date: 1/1/2016

Cost Est. Prepared By: GLWA

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	\$146	\$126	\$126	\$20	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	4/18/2017	10/23/2020
Capital Delivery Salary	4/18/2017	10/23/2020

Project Title: Lake Huron Water Treatment Plant, Miscellaneous Mechanical HVAC Improvements

Phase: Study & Design & Construction Assistance # 1

Phase Title: Study/Design/Construction Administration

Phase Budget: Water	Start Date: 2/14/2018
Phase Status: Active	End Date: 10/23/2020
Cost Allocation: CTA	Fund: Construction Bond Fund
Funding Source: Bond Proceeds	Usefull Life > Yrs: Yes
	Tot. Federal Loan Amout: \$0.00

Phase Comments/Description:

Engineering Services Contract No. CS-1732 with TetraTech (active)

Cost Est. Class: Class 1

Cost Est. Source: GLWA

Cost Est. Date: 1/1/2016

Cost Est. Prepared By: GLWA

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+
Study & Design & Construction Assistance # 1	\$746	\$746	\$746	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Design - Pre-Procurement	6/1/2020	6/30/2020
Design - Procurement	6/1/2020	6/30/2020
Design - Project Execution	6/1/2020	6/30/2020
Construction Assistance - Project Execution	2/14/2018	10/23/2020
Construction Assistance - Project Closeout	7/25/2020	10/23/2020

Project Title: Lake Huron Water Treatment Plant, Miscellaneous Mechanical HVAC Improvements

Phase: Construction (Build) # 2

Phase Title: Construction Contract No. CON-212

Phase Budget:	Water	Start Date:	8/17/2017
Phase Status:	Active	End Date:	5/14/2020
Cost Allocation:	CTA	Fund:	Construction Bond Fund
Funding Source:	Bond Proceeds	Usefull Life > Yrs:	Yes
		Tot. Federal Loan Amout:	\$0.00

Phase Comments/Description:

HVAC Construction Contract CON-212, Detroit Contracting, Inc. (active)

Cost Est. Class: Class 1	Cost Est. Source: TetraTech
Cost Est. Date: 1/1/2016	Cost Est. Prepared By: TetraTech

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) # 2	\$7,813	\$7,813	\$7,813	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Construction - Pre-Procurement	4/18/2017	8/16/2017
Construction - Procurement	8/17/2017	2/13/2018
Construction - Project Execution	2/14/2018	5/14/2020
Construction - Closeout	2/14/2020	5/14/2020

Project Title: Lake Huron Water Treatment Plant, Miscellaneous Mechanical HVAC Improvements


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	Total
2018	\$7,632	\$270	\$1,030	\$3,130	\$3,050	\$422	\$7,902
2019	\$7,552	\$309	\$781	\$3,666	\$3,873	\$13	\$8,642
2020	\$1,882	\$0	\$2,020	\$4,422	\$1,882	\$0	\$8,324
2021	\$41	\$0	\$0	\$6,991	\$1,972	\$41	\$9,004

Description of CIP Changes:

CON-182 changed to pending close out, CS-1732 contract time and value increased to align with construction contract CON-212: BPV 8/6/2019
Overall status pending closeout, CON-182 and CON-212 closed, CS-1732 pending close out: BPV 8/19/2020

Project Title: Lake Huron Water Treatment Plant, Electrical Tunnel Rehabilitation

<p>Project Status: Closed</p> <p>CIP Type: Project</p> <p>Class Lvl 1: Water</p> <p>Class Lvl 2: Treatment Plants and Facilities</p> <p>Class Lvl 3: Lake Huron</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 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>New staircase well access to Tunnel</p>
<p>Project Engineer/Manager: Jorge Nicolas</p> <p>Director: Grant Gartrell</p> <p>Managing Dept.: Water Eng</p>	<p>Date Original Business Case Prepared: 6/26/2014</p> <p>Year Project Added to CIP: 2014</p> <p>CIP Budget: Water</p>	<p>Project Jurisdiction: Saint Clair County</p> <p>Lookup Location: Lake Huron WTP</p> <p>Funds and Cost Center: Water - 5519-882111</p>

Problem Statement:

Existing electrical tunnel concrete has failed in the past and has seen emergency repairs. This project will provide permanent concrete and structural improvements to this tunnel that carries the primary electrical feed to the entire plant. The existing medium voltage two electrical feeders are old and beyond their 30-years service life. This project will replace the two electrical feeders with new.

Scope of Work/Project Alternatives:

This CIP project is being delivered using a design -bid-build project delivery model. The scope of work generally includes restoring concrete within the medium-voltage feeder electrical tunnel to prevent water intrusion and further damage to concrete, electrical cables, conduits, duct banks, and cable trays. The work also includes replacing the medium-voltage electrical feeders between the site's primary transformers and the low-lift pumping plant.

Other Important Info:

Moved construction start to FY2019, added GLWA costs. JN 2019

Primary Driver: 1 - Condition

Driver Explanation:

Tunnel structural conditions and electrical feeders beyond their service life.

Project Title: Lake Huron Water Treatment Plant, Electrical Tunnel Rehabilitation

Scoring**Project Manager Weighted Score:** 53.80

Criteria Name	Score	Comment
Condition	4	
Performance (Service Level/Reliability)	4	
Regulatory (Environmental/Legal)	2	
Operations and Maintenance	2	
Public Health and Safety	4	
Public Benefit	2	
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: Lake Huron Water Treatment Plant, Electrical Tunnel Rehabilitation

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget:	Water	Start Date:	10/31/2016
Phase Status:	Future Planned Start	End Date:	2/29/2020
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 5	Cost Est. Source: GLWA
Cost Est. Date: 1/1/2017	Cost Est. Prepared By: GLWA

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	\$106	\$106	\$106	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	10/31/2016	2/29/2020

Project Title: Lake Huron Water Treatment Plant, Electrical Tunnel Rehabilitation

Phase: Design & Construction Assistance # 1

Phase Title: Design/Construction Administration

Phase Budget: Water	Start Date: 1/29/2017
Phase Status: Active	End Date: 2/28/2020
Cost Allocation: CTA	Fund: Construction Bond Fund
Funding Source: Bond Proceeds	Usefull Life > Yrs: Yes
	Tot. Federal Loan Amout: \$0.00

Phase Comments/Description:

Engineering Services Contract, Benesch (active)

Cost Est. Class: Class 3

Cost Est. Source: consultant

Cost Est. Date: 12/1/2017

Cost Est. Prepared By: consultant Benesch

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	\$159	\$159	\$159	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Design - Pre-Procurement	10/31/2016	1/29/2017
Design - Procurement	1/30/2017	1/12/2018
Design - Project Execution	1/16/2018	5/3/2018
Construction Assistance - Project Execution	10/29/2018	2/28/2020
Construction Assistance - Project Closeout	2/29/2020	2/28/2020
Construction Assistance - Cost Correction	1/29/2017	11/1/2019

Project Title: Lake Huron Water Treatment Plant, Electrical Tunnel Rehabilitation

Phase: Construction (Build) # 1

Phase Title: Construction

Phase Budget: Water

Start Date: 9/30/2017

Phase Status: Active

End Date: 2/29/2020

Cost Allocation: CTA

Fund: Construction Bond Fund

Funding Source: Bond Proceeds

Usefull Life > Yrs: Yes

Tot. Federal Loan Amout: \$0.00

Phase Comments/Description:

Construction Contract CON-288, Clark Construction (active)

Cost Est. Class: Class 1

Cost Est. Source: Benesch

Cost Est. Date: 1/1/2017

Cost Est. Prepared By: Benesch

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	\$3,627	\$3,627	\$3,627	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Construction - Pre-Procurement	9/30/2017	5/4/2018
Construction - Procurement	5/4/2018	10/26/2018
Construction - Project Execution	10/29/2018	2/28/2020
Construction - Closeout	2/29/2020	2/29/2020

Project Title: Lake Huron Water Treatment Plant, Electrical Tunnel Rehabilitation

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

CIP	5 Year Total	FY18	FY19	FY20	FY21	Total
2018	\$5,600	\$1,000	\$3,000	\$1,600	\$0	\$5,600
2019	\$4,716	\$116	\$414	\$4,296	\$6	\$4,832
2020	\$4,302	\$63	\$384	\$4,296	\$6	\$4,749
2021	\$0	\$0	\$2,764	\$1,372	\$0	\$4,136

Description of CIP Changes:

The replacement of the medium voltage feeders was missing from the original scope of work description. Also, changed project delivery method from Design-Build to Design-Bid-Build. JN 7/29/2019

Project Title: Lake Huron Water Treatment Plant, Filter Instrumentation and Raw Water Flow Metering Improvements

Project Status: Active - Pre-Procurement
- Construction

CIP Type: Project

Class Lvl 1: Water

Class Lvl 2: Treatment Plants and
Facilities

Class Lvl 3: Lake Huron

☐ **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: Ariadna Risher

Director: Grant Gartrell

Managing Dept.: Water Eng

Date Original Business Case Prepared:
6/26/2014

Year Project Added to CIP: 2014

CIP Budget: Water

Project Jurisdiction: Saint Clair County

Lookup Location: Lake Huron WTP

Funds and Cost Center: Water - 5519-882111

Problem Statement:

The filter instrumentation and raw water metering at the Lake Huron WTP is not functioning and is in need of replacement.

Scope of Work/Project Alternatives:

Contract is being redeveloped for full integration with CS-108 guidelines.

Other Important Info:

Contract is being redeveloped for full integration with CS-108 guidelines.

Primary Driver: 1 - Condition

Driver Explanation:

The instrumentation is past end of life.

Project Title: Lake Huron Water Treatment Plant, Filter Instrumentation and Raw Water Flow Metering Improvements

Scoring**Project Manager Weighted Score:** 65.00

Criteria Name	Score	Comment
Condition	5	The central processor for LHWTP -- it's iFix System -- is twenty years old, and failing
Performance (Service Level/Reliability)	4	Individual PLCs have no central library, contrary to common practice.
Regulatory (Environmental/Legal)	4	
Operations and Maintenance	5	
Public Health and Safety	1	
Public Benefit	3	
Financial	1	
Efficiency and Innovation	3	Opportunity exists to perform greater analytics on chemical and electrical usage, etc., at the plant after implementation of project.

Risk Committee Weighted Score: 62.20

Criteria Name	Score	Comment
Condition	4	
Performance (Service Level/Reliability)	3	
Regulatory (Environmental/Legal)	3	
Operations and Maintenance	3	
Public Health and Safety	2	
Public Benefit	4	
Financial	2	
Efficiency and Innovation	5	

Project Title: Lake Huron Water Treatment Plant, Filter Instrumentation and Raw Water Flow Metering Improvements

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Water

Start Date: 9/21/2015

Phase Status: Active

End Date: 6/30/2024

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: GLWA

Cost Est. Date: 1/1/2016

Cost Est. Prepared By: GLWA

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	\$520	\$66	\$66	\$190	\$117	\$143	\$3	\$1	\$0	\$264	\$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	9/21/2015	6/30/2024
Capital Delivery Salary	9/21/2015	6/30/2024

Project Title: Lake Huron Water Treatment Plant, Filter Instrumentation and Raw Water Flow Metering Improvements

Phase: Study & Design & Construction Assistance # 1

Phase Title: Study/Design/Construction Administration

Phase Budget: Water

Start Date: 4/11/2016

Phase Status: Active

End Date: 7/1/2021

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:

Cost Est. Class: Class 1

Cost Est. Source: GLWA

Cost Est. Date: 1/1/2016

Cost Est. Prepared By: GLWA

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+
Study & Design & Construction Assistance # 1	\$1,007	\$1,007	\$1,007	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Design - Pre-Procurement	9/21/2015	4/11/2016
Design - Procurement	4/11/2016	12/19/2016
Design - Project Execution	12/20/2016	6/30/2020
Design - Cost Correction	4/11/2016	5/1/2019
Construction Assistance - Project Execution	7/1/2021	7/1/2021
Construction Assistance - Project Closeout	7/1/2020	6/30/2021

Project Title: Lake Huron Water Treatment Plant, Filter Instrumentation and Raw Water Flow Metering Improvements

Phase: Future Design Build**Phase Title:** Future Design Build

Phase Budget:	Start Date:	7/1/2020
Phase Status:	End Date:	6/30/2024
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	FY21	FY22	FY23	FY24	5 Year Total
Future Design Build	\$15,262	\$0	\$0	\$25	\$5,079	\$5,079	\$5,079	\$15,237

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering	7/1/2020	6/30/2024
Construction	7/1/2021	6/30/2024

Project Title: Lake Huron Water Treatment Plant, Filter Instrumentation and Raw Water Flow Metering Improvements

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	Total
2018	\$24,530	\$100	\$600	\$12,150	\$11,780	\$0	\$0	\$0	\$0	\$0	\$24,630
2019	\$25,419	\$253	\$643	\$43	\$8,647	\$9,816	\$6,909	\$4	\$0	\$0	\$26,315
2020	\$9,999	\$0	\$735	\$55	\$3,333	\$3,333	\$3,333	\$0	\$0	\$0	\$10,789
2021	\$15,612	\$0	\$0	\$778	\$236	\$235	\$235	\$2,330	\$6,184	\$6,628	\$16,626

Description of CIP Changes:

Contract is being redeveloped for full integration with CS-108 guidelines.

Project Title: Lake Huron Water Treatment Plant, Raw Sludge Clarifier and Raw Sludge Pumping System Improvements

Project Status: Project Execution - Construction

CIP Type: Project

Class Lvl 1: Water

Class Lvl 2: Treatment Plants and Facilities

Class Lvl 3: Lake Huron

☐ **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)**



Overall progress photo that shows new WWRB, JS1, JS2 and SPS 8/20/20

Project Engineer/Manager: Brian VanHall

Director: Grant Gartrell

Managing Dept.: Water Eng

Date Original Business Case Prepared: 8/7/2015

Year Project Added to CIP: 2016

CIP Budget: Water

Project Jurisdiction: Saint Clair County

Lookup Location: Lake Huron WTP

Funds and Cost Center: Water - 5519-882111

Problem Statement:

The existing WWRB and clarifiers have noticeable deteriorating concrete and walls that have permanently deflected. There is also concrete deterioration in the sludge pumping station as well as difficulties with maintenance and operation of the existing pumps. For example, the existing pumps are not equipped with permanent lifting mechanisms. A truck with a crane has to be mobilized to the plant to pull an existing pump when maintenance or repairs are needed. The new sludge pumping units will be equipped with permanent lifting mechanisms so that pumps can be pulled by plant staff without mobilizing a specialty crew to perform these types of tasks.

Spent filter backwash is conveyed to the Waste Wash Water Retention Basin (WWRB) that was constructed in the early 1970s. Twice yearly, as part of the settling

Scope of Work/Project Alternatives:

This project will be delivered using a design-bid-build project delivery method. GLWA retained an engineering consultant under GLWA Contract No. CS-171 "Raw Sludge Clarifiers and Raw Sludge Pumping Station Improvements" to conduct a condition assessment and design improvements for LH raw sludge handling. The WWRB, Clarifier Nos. 1 and 2, and the sludge pumping station all require improvement. The scope of construction involves:

1. Demolish existing clarifiers and sludge pumping station
2. Construct new cast-in-place reinforced concrete waste wash water retention basin
3. Construct new cast-in-place reinforced concrete sludge pumping station equipped with new pump lifting mechanisms
4. Install new diversion gate structures between sludge drying lagoons
5. Install new junction structures between

Other Important Info:

This project should be completed prior to cessation of treatment at the Northeast WTP.

Project History: The clarifier/backwash structure is original to the plant. The tank walls appear to have been inadequately designed and/or constructed to withstand the loading of the surround soils.

Challenges: Improvements will require coordination with plant operations (filter backwashing, sedimentation basin cleaning) and requires bypass pumping due to significant leakage from filter outlet valves.

Primary Driver: 1 - Condition

Driver Explanation:

The existing raw sludge clarifier has significant structural concrete deterioration and wall deflections to the point where it is beyond repair. Existing raw sludge pumping station not adequately sized.

Project Title: Lake Huron Water Treatment Plant, Raw Sludge Clarifier and Raw Sludge Pumping System Improvements

basin cleaning, the flush water and alum sludge from the Lake Huron Water Treatment Plant settling basins are drained to the clarifiers that are adjacent to the WWRB. Clarifiers Nos. 1 and 2 were constructed at the same time as the WWRB. Sludge is discharged from these clarifiers to drying lagoons using a sludge pumping station. The clarifiers also serve as redundant waste wash water retention volume during normal plant operations.

existing and new waste wash water retention basins
6. Install new yard lighting around the WWRB and clarifiers

Project Title: Lake Huron Water Treatment Plant, Raw Sludge Clarifier and Raw Sludge Pumping System Improvements

Scoring**Project Manager Weighted Score:** 62.40

Criteria Name	Score	Comment
Condition	5	
Performance (Service Level/Reliability)	5	
Regulatory (Environmental/Legal)	2	
Operations and Maintenance	4	
Public Health and Safety	3	
Public Benefit	1	
Financial	2	
Efficiency and Innovation	2	

Risk Committee Weighted Score: 53.20

Criteria Name	Score	Comment
Condition	5	
Performance (Service Level/Reliability)	5	
Regulatory (Environmental/Legal)	1	
Operations and Maintenance	2	
Public Health and Safety	2	
Public Benefit	1	
Financial	4	
Efficiency and Innovation	1	

Project Title: Lake Huron Water Treatment Plant, Raw Sludge Clarifier and Raw Sludge Pumping System Improvements

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Water

Start Date: 4/9/2016

Phase Status: Active

End Date: 12/2/2021

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: GLWA

Cost Est. Date: 1/1/2016

Cost Est. Prepared By: GLWA

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	\$171	\$58	\$58	\$100	\$13	\$0	\$0	\$0	\$0	\$13	\$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	4/9/2016	12/2/2021
Capital Delivery Salary	4/9/2016	12/2/2021

Project Title: Lake Huron Water Treatment Plant, Raw Sludge Clarifier and Raw Sludge Pumping System Improvements

Phase: Study & Design & Construction Assistance # 1

Phase Title: Study, Design and Construction Administration

Phase Budget: Water

Start Date: 3/7/2017

Phase Status: Active

End Date: 12/2/2021

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:

Cost Est. Class: Class 1

Cost Est. Source: GLWA

Cost Est. Date: 1/1/2016

Cost Est. Prepared By: GLWA

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+
Study & Design & Construction Assistance # 1	\$1,556	\$1,049	\$1,049	\$430	\$76	\$0	\$0	\$0	\$0	\$76	\$0

Phase Dates

Activity Name	Start Date	End Date
Design - Pre-Procurement	4/9/2016	7/8/2016
Design - Procurement	7/9/2016	3/6/2017
Design - Project Execution	3/7/2017	12/2/2021
Construction Assistance - Project Execution	6/1/2020	6/30/2020
Construction Assistance - Project Closeout	6/1/2020	6/30/2020

Project Title: Lake Huron Water Treatment Plant, Raw Sludge Clarifier and Raw Sludge Pumping System Improvements

Phase: Construction (Build) # 1

Phase Title: Construction

Phase Budget: Water	Start Date: 12/28/2018
Phase Status: Active	End Date: 10/10/2021
Cost Allocation: CTA	Fund: Construction Bond Fund
Funding Source: Federal Loan Programs	Usefull Life > Yrs: Yes
	Tot. Federal Loan Amout: \$0.00

Phase Comments/Description:

1803823 awarded to Weiss with NTP 6/12/19

Cost Est. Class: Class 1	Cost Est. Source: Weiss
Cost Est. Date: 3/8/2019	Cost Est. Prepared By: Weiss

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	5 Year Total
Construction (Build) # 1	\$7,454	\$4,780	\$4,780	\$2,579	\$95	\$95

Phase Dates

Activity Name	Start Date	End Date
Construction - Procurement	6/30/2018	12/27/2018
Construction - Project Execution	12/28/2018	10/10/2021
Construction - Closeout	7/12/2021	10/10/2021

Project Title: Lake Huron Water Treatment Plant, Raw Sludge Clarifier and Raw Sludge Pumping System Improvements

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	\$7,133	\$0	\$50	\$920	\$6,163	\$0	\$0	\$7,133
2019	\$6,653	\$9	\$422	\$212	\$1,612	\$3,608	\$1,221	\$7,084
2020	\$9,321	\$0	\$284	\$194	\$4,660	\$4,661	\$0	\$9,799
2021	\$3,392	\$0	\$0	\$649	\$4,896	\$3,392	\$0	\$8,937

Description of CIP Changes:

Construction contract 1803823 was awarded and the CIP was updated this year to reflect the actual contract value for the construction contract. In addition, funds have been added to this CIP this year for additional resident project representation (RPR) and project management services under the consulting engineering services contract CS-171. BPV 8/1/2019

Construction contract 1803823 was updated to check redundancy since it improves system reliability due to the existing condition of the wash water retention basin that is critical to allow for filter backwashing. Contract 1803823 was revised to reflect new value with approved Change Order 1. Spend projections were revised to capture actuals to date and updated forecasting. BPV 8/20/20

Project Title: Lake Huron Water Treatment Plant, Architectural Programming for Laboratory and Admin Building Improvements

Project Status: Future Planned - Within 5 Year Plan

CIP Type: Project

Class Lvl 1: Water

Class Lvl 2: Treatment Plants and Facilities

Class Lvl 3: Lake Huron

☐ **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: TBD

Director: Grant Gartrell

Managing Dept.: Water Eng

Date Original Business Case Prepared:
9/27/2017

Year Project Added to CIP: 2017

CIP Budget: Water

Project Jurisdiction: Saint Clair County

Lookup Location:

Funds and Cost Center: Water - 5519-882111

Problem Statement:

The Lake Huron Water Treatment Plant was constructed in the early 1970s and started operating in 1976. The existing process control laboratory and administration building interiors are original construction, including but not limited to flooring, wall coverings, ceilings, lab cabinetry, control room boards, bathroom fixtures, and lighting fixtures. The original control room board is still located in the laboratory and consumes a large amount of space that is not used and inefficient. The architectural layout of the laboratory and administration building is designed around the early 1970s workflows and technology.

Scope of Work/Project Alternatives:

This will be a study phase project that will involve architectural programming to determine the most efficient architectural layout that meets current process laboratory control technology and administrative workflow practices; and that can be provided through a construction renovation project within the existing building footprint.

Other Important Info:

Primary Driver: 1 - Condition

Driver Explanation:

Laboratory and Administration Building are original to plant construction.

Project Title: Lake Huron Water Treatment Plant, Architectural Programming for Laboratory and Admin Building Improvements

Scoring**Project Manager Weighted Score:** 33.40

Criteria Name	Score	Comment
Condition	3	
Performance (Service Level/Reliability)	2	
Regulatory (Environmental/Legal)	1	
Operations and Maintenance	2	
Public Health and Safety	2	
Public Benefit	1	
Financial	1	
Efficiency and Innovation	1	

Risk Committee Weighted Score: 40.60

Criteria Name	Score	Comment
Condition	4	
Performance (Service Level/Reliability)	2	
Regulatory (Environmental/Legal)	2	
Operations and Maintenance	1	
Public Health and Safety	2	
Public Benefit	2	
Financial	1	
Efficiency and Innovation	2	

Project Title: Lake Huron Water Treatment Plant, Architectural Programming for Laboratory and Admin Building Improvements

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Water

Start Date: 7/1/2025

Phase Status: Future Planned Start

End Date: 6/30/2030

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: GLWA

Cost Est. Date: 1/1/2016

Cost Est. Prepared By: GLWA

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	\$256	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$27	\$27	\$229

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	7/1/2025	6/30/2030

Project Title: Lake Huron Water Treatment Plant, Architectural Programming for Laboratory and Admin Building Improvements

Phase: Study # 1

Phase Title: LH WTP Architectural Programming - Laboratory and Admin Building Architectural Improvements Study

Phase Budget:	Water	Start Date:	7/1/2025
Phase Status:	Future Planned Start	End Date:	6/30/2030
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 5	Cost Est. Source: GLWA
Cost Est. Date: 1/1/2016	Cost Est. Prepared By: GLWA

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

	Total Costs	Actual Costs	Prior FYs	FY26	5 Year Total	FY27+
Study # 1	\$940	\$0	\$0	\$50	\$50	\$890

Phase Dates

Activity Name	Start Date	End Date
Study - Pre-Procurement	5/3/2026	8/1/2026
Study - Procurement	8/2/2026	1/29/2027
Study - Project Execution	1/30/2027	2/3/2029
Study - Closeout	11/5/2028	2/3/2029
Study - Project Allocation	7/1/2025	6/30/2030

Project Title: Lake Huron Water Treatment Plant, Architectural Programming for Laboratory and Admin Building Improvements

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

CIP	FY24	FY25	FY26	Total
2019	\$300	\$0	\$0	\$300
2020	\$0	\$300	\$0	\$300
2021	\$0	\$0	\$1,299	\$1,299

Description of CIP Changes:

Project Title: Lake Huron Water Treatment Plant - High Lift Pumping, Water Production Flow Metering and Yard Piping Improvements

Project Status: Active - Procurement - Board Approved - Construction

CIP Type: Project

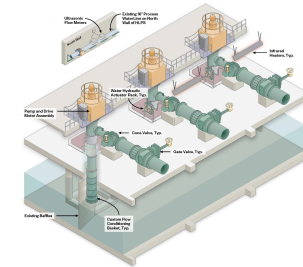
Class Lvl 1: Water

Class Lvl 2: Treatment Plants and Facilities

Class Lvl 3: Lake Huron

☐ **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)**



Conceptual new h/L pump arrangement

Project Engineer/Manager: Brian VanHall

Director: Grant Gartrell

Managing Dept.: Water Eng

Date Original Business Case Prepared: 9/26/2018

Year Project Added to CIP: 2018

CIP Budget: Water

Project Jurisdiction: Saint Clair County

Lookup Location: Lake Huron WTP

Funds and Cost Center: Water - 5519-882111

Problem Statement:

Three new, smaller capacity, high-lift pumping units are needed to provide reduced finished water flows out of Lake Huron WTP to accommodate the relocation of the 96-inch transmission main south of Dorsey-Dickenson valve and to accommodate the installation of a new water production flow meter at the Lake Huron WTP. The three, new smaller capacity high-lift pumping units will also serve a longer term need to better match lower diurnal demands seen at the Lake Huron WTP. Installation of the new water production flow meter can only occur after the three new smaller high-lift pumping units are installed.

Scope of Work/Project Alternatives:

This project will be delivered using a design-build project delivery method. The scope of work involves designing and building a new water production flow meter and associated meter vault to more accurately measure finished water production flows from the facility. This work will also entail constructing additional high-lift, finished water header piping, valves and appurtenances to facilitate construction of the new metering infrastructure. The scope also includes installing three new 35 million-gallon-per day (MGD) high-lift pumping units, including pumps, motors, instrumentation, control, and electrical work.

Other Important Info:

N/A

Primary Driver: 6 - Public Benefit

Driver Explanation:

This project is a predecessor project to relocating the 96-inch transmission main outside the closed G&H Industrial landfill, as well as to improve the accuracy of water production flow metering.

Project Title: Lake Huron Water Treatment Plant - High Lift Pumping, Water Production Flow Metering and Yard Piping Improvements

Scoring

Project Manager Weighted Score: 63.20

Criteria Name	Score	Comment
Condition	3	
Performance (Service Level/Reliability)	3	
Regulatory (Environmental/Legal)	2	
Operations and Maintenance	3	
Public Health and Safety	3	
Public Benefit	5	
Financial	3	
Efficiency and Innovation	5	

Risk Committee Weighted Score: 62.20

Criteria Name	Score	Comment
Condition	3	
Performance (Service Level/Reliability)	4	
Regulatory (Environmental/Legal)	2	
Operations and Maintenance	2	
Public Health and Safety	3	
Public Benefit	5	
Financial	3	
Efficiency and Innovation	4	

Project Title: Lake Huron Water Treatment Plant - High Lift Pumping, Water Production Flow Metering and Yard Piping Improvements

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Water

Start Date: 1/1/2019

Phase Status: Active

End Date: 7/15/2025

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 5

Cost Est. Source: GLWA

Cost Est. Date: 1/1/2016

Cost Est. Prepared By: GLWA

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	\$458	\$117	\$117	\$140	\$61	\$60	\$60	\$21	\$0	\$201	\$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	1/1/2019	7/15/2025
Capital Delivery Salary	1/1/2019	7/15/2025

Project Title: Lake Huron Water Treatment Plant - High Lift Pumping, Water Production Flow Metering and Yard Piping Improvements

Phase: Design-Build # 1

Phase Title: Design-Build

Phase Budget:	Water	Start Date:	1/1/2019
Phase Status:	Under Procurement	End Date:	7/15/2025
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: GLWA/Tetra Tech
Cost Est. Date: 7/31/2019	Cost Est. Prepared By: GLWA/Tetra Tech

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
Design-Build # 1	\$30,023	\$0	\$0	\$500	\$1,000	\$7,000	\$7,523	\$7,000	\$7,000	\$29,523

Phase Dates

Activity Name	Start Date	End Date
Design - Pre-Procurement	6/1/2020	6/30/2020
Design - Procurement	6/1/2020	6/30/2020
Design - Project Execution	6/1/2020	6/30/2020
Design-Build - Project Execution	1/1/2019	7/15/2025
Construction - Closeout	4/16/2025	7/15/2025

Project Title: Lake Huron Water Treatment Plant - High Lift Pumping, Water Production Flow Metering and Yard Piping Improvements

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

CIP	5 Year Total	FY19	FY20	FY21	FY22	FY23	FY24	FY25	Total
2020	\$26,090	\$16	\$9,030	\$10,030	\$7,030	\$0	\$0	\$0	\$26,106
2021	\$28,648	\$30	\$548	\$1,856	\$3,554	\$8,991	\$10,561	\$3,686	\$29,226

Description of CIP Changes:

Revised project title, added a third smaller high lift pumping unit, and increased the overall estimated cost of work associated with this CIP due to the greater detail of the design.

Spend projections were revised to capture final negotiated cost on 1803990. Future Contract 1803990 is being assembled and finalized for board approval.
BPV 8/20/20

Project Title: Filtration Improvements

Project Status: Future Planned - Within 5 Year Plan

CIP Type: Project

Class Lvl 1: Water

Class Lvl 2: Treatment Plants and Facilities

Class Lvl 3: Lake Huron

☐ **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: Eric Kramp

Director: Grant Gartrell

Managing Dept.: Water Eng

Date Original Business Case Prepared:
7/25/2019

Year Project Added to CIP: 2019

CIP Budget: Water

Project Jurisdiction: Saint Clair County

Lookup Location: Lake Huron WTP

Funds and Cost Center: Water - 5519-882111

Problem Statement:

Significant issues exist in the filtration process of the LHWTP:
Filter influent and drain valves do not seal well, creating water loss
Filter underdrains and media have not been evaluated and require confirmation of condition
Isolation valves between the filters, filtered water conduit, filter to drain, and clearwells are known to leak heavily

Scope of Work/Project Alternatives:

This project will be delivered using a design-bid-build project delivery method. The scope of work will generally include the following:
2. Construct filtration improvements, including filter media, filter auxiliary scoring equipment, filter wash water troughs, and other filter tank work.
3. Replace the existing filter control valves and valve operators with new.
4. Rehabilitate concrete associated with the filters.

Replace isolation and valves as necessary
Repaint WW Conduit
Replace underdrain and/or media as necessary

Other Important Info:

n/a

Primary Driver: 1 - Condition

Driver Explanation:

Existing filters are original construction, including filter media and associated mechanical equipment and are nearing their useful service life.

Project Title: Filtration Improvements

Scoring**Project Manager Weighted Score:** 64.00

Criteria Name	Score	Comment
Condition	4	
Performance (Service Level/Reliability)	4	
Regulatory (Environmental/Legal)	3	
Operations and Maintenance	4	
Public Health and Safety	3	
Public Benefit	2	
Financial	2	
Efficiency and Innovation	3	

Risk Committee Weighted Score: 71.00

Criteria Name	Score	Comment
Condition	4	
Performance (Service Level/Reliability)	4	
Regulatory (Environmental/Legal)	4	
Operations and Maintenance	4	
Public Health and Safety	4	
Public Benefit	2	
Financial	2	
Efficiency and Innovation	3	

Project Title: Filtration Improvements

Phase: GLWA Salaries**Phase Title:** GLWA PM Work

Phase Budget: Water**Start Date:** 8/2/2024**Phase Status:** Future Planned Start**End Date:** 3/30/2036**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:**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	\$470	\$0	\$0	\$9	\$38	\$38	\$85	\$386

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	8/2/2024	3/30/2036

Project Title: Filtration Improvements

Phase: Design & Construction Assistance # 1

Phase Title: Design and Construction Administration

Phase Budget:	Water	Start Date:	6/30/2025
Phase Status:	Future Planned Start	End Date:	3/30/2036
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:	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 & Construction Assistance # 1	\$4,298	\$0	\$0	\$0	\$23	\$23	\$4,275

Phase Dates

Activity Name	Start Date	End Date
Design - Pre-Procurement	8/2/2024	10/31/2024
Design - Procurement	11/1/2024	6/29/2025
Design - Project Execution	6/30/2025	6/30/2029
Construction Assistance - Project Execution	7/1/2029	3/30/2036
Construction Assistance - Project Closeout	12/31/2035	3/30/2036

Project Title: Filtration Improvements

Phase: Construction (Build) # 1

Phase Title: Construction

Phase Budget:	Water	Start Date:	7/1/2029
Phase Status:	Future Planned Start	End Date:	3/30/2036
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:	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	FY27+
Construction (Build) # 1	\$37,438	\$0	\$0	\$37,438

Phase Dates

Activity Name	Start Date	End Date
Construction - Pre-Procurement	9/2/2028	12/31/2028
Construction - Procurement	1/1/2029	6/30/2029
Construction - Project Execution	7/1/2029	3/30/2036
Construction - Closeout	12/31/2035	3/30/2036

Project Title: Filtration Improvements

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

CIP	5 Year Total	FY24	FY25	FY26	Total
2021	\$60	\$12	\$48	\$5,572	\$5,632

Description of CIP Changes:

Flocculation work has been split from this CIP and given a priority.

Project Title: Lake Huron WTP Pilot Plant

Project Status: Active - Procurement - Negotiation Phase - Design

CIP Type: Project

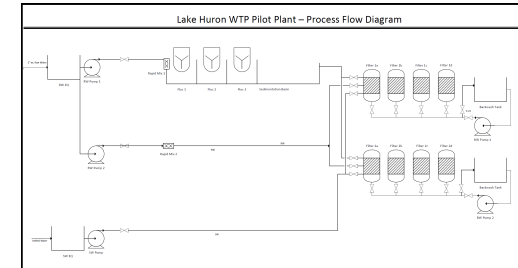
Class Lvl 1: Water

Class Lvl 2: Treatment Plants and Facilities

Class Lvl 3: Lake Huron

☐ **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)**



Lake Huron WTP Pilot Plant - Process Flow Diagram

Project Engineer/Manager: Nichole Sajdak

Director: John Norton

Managing Dept.: Energy Management

Date Original Business Case Prepared: 8/22/2019

Year Project Added to CIP: 2019

CIP Budget: Water

Project Jurisdiction: Saint Clair County

Lookup Location: Lake Huron WTP

Funds and Cost Center: Water - 5519-882111

Problem Statement:

Water Operations staff at Lake Huron would benefit from the ability to test potential changes to existing water treatment practices and investigate new and innovative treatment advances.

Scope of Work/Project Alternatives:

A small scale pilot plant provides opportunity for testing and investigation without disruption to the full scale facility. Skid mounted units mimicking treatment at Lake Huron: Chemical addition, modified direct filtration facilities and data monitoring and recording would be provided for team education and training.

Other Important Info:

Scope of work to include engineering services for planning, construction and training.

Primary Driver: Varies

Driver Explanation:

Project Title: Lake Huron WTP Pilot Plant

Scoring**Project Manager Weighted Score:** 80.80

Criteria Name	Score	Comment
Condition	5	
Performance (Service Level/Reliability)	5	
Regulatory (Environmental/Legal)	5	
Operations and Maintenance	5	
Public Health and Safety	3	
Public Benefit	2	
Financial	3	
Efficiency and Innovation	3	

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: Lake Huron WTP Pilot Plant

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget:	Water	Start Date:	10/15/2019
Phase Status:	Future Planned Start	End Date:	6/30/2023
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:	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	FY26	5 Year Total	FY27+
GLWA Salaries	\$91	\$0	\$0	\$58	\$23	\$10	\$0	\$33	\$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	10/15/2019	6/30/2023

Project Title: Lake Huron WTP Pilot Plant

Phase: Design-Build # 1

Phase Title: Design Build: Lake Huron WTP Pilot Plant

Phase Budget:	Water	Start Date:	11/15/2020
Phase Status:	Active - Procurement - Negotiation Phase	End Date:	6/30/2023
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	FY26	5 Year Total	FY27+
Design-Build # 1	\$3,157	\$0	\$0	\$0	\$1,697	\$1,460	\$0	\$3,157	\$0

Phase Dates

Activity Name	Start Date	End Date
Design - Pre-Procurement	10/15/2019	2/15/2020
Design - Procurement	2/24/2020	6/30/2021
Design - Project Execution	11/15/2020	12/15/2021
Construction - Project Execution	2/15/2021	2/15/2022
Construction - Closeout	4/1/2023	6/30/2023

Project Title: Lake Huron WTP Pilot Plant

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

CIP	FY26	Total
2021	\$1,794	\$1,794

Description of CIP Changes:

Change to DB format with Master Planning component and pulled forward in schedule.
The project has moved forward to FY 21 utilizing I/E funding. NS 8/26/20.

Project Title: LHWTP-Flocculation Improvements

Project Status: Active - Pre-Procurement
- Design

CIP Type: Project

Class Lvl 1: Water

Class Lvl 2: Treatment Plants and
Facilities

Class Lvl 3: Lake Huron

☒ **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: Eric Kramp

Director: Grant Gartrell

Managing Dept.: Water Eng

Date Original Business Case Prepared:
8/14/2020

Year Project Added to CIP: 2021

CIP Budget: Water

Project Jurisdiction: Saint Clair County

Lookup Location: Lake Huron

Funds and Cost Center: Water - 5519-882111

Problem Statement:

The flocculators at the Lake Huron Water Treatment Plant are non-functional. While the plant has been able to maintain water quality, the State of Michigan has flagged this a serious issue. This CIP Project corrects this issue and addresses other issues around the flocculation systems such as any found defects in process and structure.

Scope of Work/Project Alternatives:

The project will be executed on a traditional design/bid/build delivery process. Design/build would be ineffective as the selection of flocculation technology will be the primary driver of overall cost, and is unknown.

Other Important Info:

The contract will also correct a process defect in the plant, where a section of the station conduits can never be taken out of service without loss of the entire station. This will entail the construction of approximately 150 lineal feet of new parallel raw water conduit

Primary Driver: 1 - Condition

Driver Explanation:

The flocculators at site are currently non-functional.

Project Title: LHWTP-Flocculation Improvements

Scoring
Project Manager Weighted Score: 72.00

Criteria Name	Score	Comment
Condition	5	Many shafts have pulled out of true, and their replacement would be required.
Performance (Service Level/Reliability)	4	More than 50% of the devices are currently out of service.
Regulatory (Environmental/Legal)	5	The State of Michigan has indicated that this flocculator system must be addressed immediately
Operations and Maintenance	4	Repairs necessary would be approximately 75% of the device's replacement cost. All shafts, bearings, and lubrication systems would have to be redone.
Public Health and Safety	2	The loss of flocculation at the plant would necessitate increased chemical use, but not necessarily impact water quality because of the plant's diligence.
Public Benefit	2	This project will not be obvious outside the station
Financial	2	The proper lubrication of the existing seals and bearings is approximately .5 FTEs. Adapting a water lubricated, hydraulic flocculation, or other means may save this time
Efficiency and Innovation	4	Of the three proposed solutions to the flocculators at Lake Huron Water Treatment Plant, one eliminates lubrication and the other greatly simplifies it.

Risk Committee Weighted Score: 72.00

Criteria Name	Score	Comment
Condition	5	
Performance (Service Level/Reliability)	4	
Regulatory (Environmental/Legal)	5	
Operations and Maintenance	4	
Public Health and Safety	2	
Public Benefit	2	
Financial	2	
Efficiency and Innovation	4	

Project Title: LHWTP-Flocculation Improvements

Phase: GLWA Salaries**Phase Title:** GLWA Salaries

Phase Budget:**Start Date:** 9/1/2021**Phase Status:****End Date:** 7/31/2026**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	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
GLWA Salaries	\$228	\$0	\$0	\$46	\$38	\$38	\$35	\$28	\$28	\$167	\$15

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	9/1/2021	7/31/2026

Project Title: LHWTP-Flocculation Improvements

Phase: Design & Construction Assistance

Phase Title: Design & Construction Assistance

Phase Budget:
Start Date: 9/1/2021

Phase Status:
End Date: 7/31/2026

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+
Design & Construction Assistance	\$2,212	\$0	\$0	\$500	\$431	\$431	\$400	\$400	\$2,162	\$50

Phase Dates

Activity Name	Start Date	End Date
Design - Project Execution	9/1/2021	9/30/2023
Construction Assistance - Procurement	10/1/2023	3/31/2024
Construction Assistance - Project Execution	4/1/2024	7/31/2026

Project Title: LHWTP-Flocculation Improvements

Phase: Construction (Build)**Phase Title:** Construction (Build)

Phase Budget:	Start Date:	4/1/2024
Phase Status:	End Date:	7/31/2026
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	FY24	FY25	FY26	5 Year Total	FY27+
Construction (Build)	\$24,097	\$0	\$0	\$5,097	\$5,000	\$5,000	\$15,097	\$9,000

Phase Dates

Activity Name	Start Date	End Date
Construction - Project Execution	4/1/2024	7/31/2026

Project Title: LHWTP-Flocculation Improvements


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

CIP

Description of CIP Changes:

New Project

Project Title: Northeast Water Treatment Plant, Low-Lift Pumping Plant Caisson Rehabilitation

<p>Project Status: Closed</p> <p>CIP Type: Project</p> <p>Class Lvl 1: Water</p> <p>Class Lvl 2: Treatment Plants and Facilities</p> <p>Class Lvl 3: Northeast</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: Govind Patel</p> <p>Director: Grant Gartrell</p> <p>Managing Dept.: Water Eng</p>	<p>Date Original Business Case Prepared: 6/26/2014</p> <p>Year Project Added to CIP: 2014</p> <p>CIP Budget: Water</p>	<p>Project Jurisdiction: City of Detroit</p> <p>Lookup Location: Northeast WTP</p> <p>Funds and Cost Center: Water - 5519-882111</p>

Problem Statement:

Low Lift Pump Discharge flumes were leaking and had significant concrete deterioration within the Low-Lift Pumping Plant Caisson at the Northeast WTP. Water leaks posed hazards to nearby electrical equipment as well as presented potential slip hazards for employees. Additionally, the glazed tile at the upper elevations of the low-lift motor floor were unstable which presented a safety hazard to those working on the low lift pump motor floor.

Scope of Work/Project Alternatives:

The low lift pump discharge flumes have been lined with stainless steel plates to stop water leakage into the low lift pump station operating floors. The unstable glazed tile blocks were replaced with new.

Other Important Info:

The project is under construction and is substantially complete.

Primary Driver: 1 - Condition

Driver Explanation:

Existing low lift discharge flumes were leaking excessively due to poor condition.

Project Title: Northeast Water Treatment Plant, Low-Lift Pumping Plant Caisson Rehabilitation

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: Northeast Water Treatment Plant, Low-Lift Pumping Plant Caisson Rehabilitation

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Water

Start Date: 8/18/2015

Phase Status: Active

End Date: 3/31/2021

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 1

Cost Est. Source: GLWA

Cost Est. Date: 1/1/2016

Cost Est. Prepared By: GLWA

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	\$63	\$63	\$63	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	8/18/2015	3/31/2021
Capital Delivery Salary	8/18/2015	3/31/2021

Project Title: Northeast Water Treatment Plant, Low-Lift Pumping Plant Caisson Rehabilitation

Phase: Study & Design & Construction Assistance # 1

Phase Title: Study/Design/Construction Administration

Phase Budget: Water	Start Date: 11/17/2016
Phase Status: Active	End Date: 3/31/2021
Cost Allocation: CTA	Fund: Construction Bond Fund
Funding Source: Bond Proceeds	Usefull Life > Yrs: Yes
	Tot. Federal Loan Amout: \$0.00

Phase Comments/Description:

CS-1744, FKE

Cost Est. Class: Class 1

Cost Est. Source: GLWA

Cost Est. Date: 1/1/2016

Cost Est. Prepared By: GLWA

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+
Study & Design & Construction Assistance # 1	\$277	\$277	\$277	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Design - Pre-Procurement	8/18/2015	11/16/2015
Design - Procurement	11/17/2015	11/16/2016
Design - Project Execution	11/17/2016	7/15/2018
Construction Assistance - Project Execution	5/25/2018	3/31/2021
Construction Assistance - Project Closeout	12/31/2020	3/31/2021

Project Title: Northeast Water Treatment Plant, Low-Lift Pumping Plant Caisson Rehabilitation

Phase: Construction (Build) # 1

Phase Title: Construction

Phase Budget: Water	Start Date: 11/16/2015
Phase Status: Active	End Date: 11/1/2019
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 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+
Construction (Build) # 1	\$833	\$833	\$833	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Construction - Pre-Procurement	8/1/2017	11/15/2017
Construction - Procurement	11/16/2017	5/24/2018
Construction - Project Execution	5/25/2018	8/1/2019
Construction - Closeout	7/1/2018	11/1/2019
Construction - Cost Correction	11/16/2015	5/1/2019

Project Title: Northeast Water Treatment Plant, Low-Lift Pumping Plant Caisson Rehabilitation

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	\$1,183	\$150	\$1,183	\$0	\$0	\$0	\$0	\$1,333
2019	\$1,484	\$163	\$70	\$831	\$619	\$30	\$4	\$1,717
2020	\$203	\$0	\$473	\$889	\$203	\$0	\$0	\$1,565
2021	\$0	\$0	\$0	\$1,135	\$210	\$0	\$0	\$1,345

Description of CIP Changes:

Updated construction phase to reflect actual construction contract award amount and award dates and completion time. GP 8/1/2019
 Project is complete. GP 8/26/20.

Project Title: Northeast Water Treatment Plant High-Lift Pumping Station Improvements

Project Status: Future Planned - Within 5 Year Plan

CIP Type: Project

Class Lvl 1: Water

Class Lvl 2: Treatment Plants and Facilities

Class Lvl 3: Northeast

☐ **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: Ariadna Risher

Director: Grant Gartrell

Managing Dept.: Water Eng

Date Original Business Case Prepared:
9/27/2017

Year Project Added to CIP: 2017

CIP Budget: Water

Project Jurisdiction: City of Detroit

Lookup Location: Northeast WTP

Funds and Cost Center: Water - 5519-882111

Problem Statement:

Existing mechanical, electrical, instrumentation, and control system equipment within the high-lift pumping plant at the Northeast Water Treatment Plant is mostly original (i.e. 1956). Both medium-voltage and low-voltage switchgear are beyond their useful service life. Stock replacement parts are no longer available. When repairs are needed to the switchgear, then either un-used redundant gear are used for parts or custom-manufactured gear is obtained at a high cost with long lead times. In some cases, certain medium-voltage switchgear cubicles are irreparable. All medium-voltage cables are beyond their useful life especially with respect to insulation properties and therefore require replacement. Primary service transformers are beyond their useful service life and will be evaluated for replacement. An existing, former City of Detroit Public Lighting

Scope of Work/Project Alternatives:

This project will be delivered using a design-bid-build project delivery method. The scope of work generally includes:

- 1) Replace medium voltage switchgear, Unit Substation 1, all motor control centers (MCCs), power panels, transformers, and lighting panels.
- 2) Replace HL Pumps and size according to projected demands.
- 3) Replace pump motor controls to accommodate remote operation.
- 4) Replace primary transformers and test/replace feeders to property lines. Coordinate with DTE to ensure that all 3 remaining medium-voltage transformers are capable of delivering the required power.
- 5) Replace all heating equipment in high lift area and install new boiler.
- 6) Replace windows, doors, handrails and grating systems.

Other Important Info:

Primary Driver: 1 - Condition

Driver Explanation:

MV Switchgear is past its serviceable lifespan. Replacement parts are no longer available. Some cubicles are beyond repair.

Project Title: Northeast Water Treatment Plant High-Lift Pumping Station Improvements

Department (PLD) transformer is not used because it is incapable of delivering adequate power to its connected bus. Removal of this former PLD feed will be evaluated. DTE primary feeder cables will be evaluated and replaced as needed. Mechanically, the existing high-lift pumping units are also beyond their useful service life and in addition pump motors noise levels are approaching the maximum 8-hour time-weighted average for noise levels per OSHA regulations. Likewise, the steam heating system is past its useful service life, and there is no redundancy in the heating system. New heating for the high-lift pumping plant is needed and will be separated from the rest facility's heating system. Lastly, the interior and exterior windows, doors, handrails, and grating systems are original to the plant and need to be replaced with new, more energy efficient styles.

Project Title: Northeast Water Treatment Plant High-Lift Pumping Station Improvements

Scoring**Project Manager Weighted Score:** 74.40

Criteria Name	Score	Comment
Condition	5	
Performance (Service Level/Reliability)	5	
Regulatory (Environmental/Legal)	2	
Operations and Maintenance	4	
Public Health and Safety	5	
Public Benefit	2	
Financial	2	
Efficiency and Innovation	4	

Risk Committee Weighted Score: 68.00

Criteria Name	Score	Comment
Condition	5	
Performance (Service Level/Reliability)	4	
Regulatory (Environmental/Legal)	2	
Operations and Maintenance	4	
Public Health and Safety	4	
Public Benefit	2	
Financial	2	
Efficiency and Innovation	4	

Project Title: Northeast Water Treatment Plant High-Lift Pumping Station Improvements

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget:	Water	Start Date:	2/3/2023
Phase Status:	Future Planned Start	End Date:	10/1/2031
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 5	Cost Est. Source: GLWA
Cost Est. Date: 1/1/2016	Cost Est. Prepared By: GLWA

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	\$701	\$6	\$6	\$279	\$173	\$215	\$5	\$3	\$3	\$398	\$18

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	2/3/2023	10/1/2031

Project Title: Northeast Water Treatment Plant High-Lift Pumping Station Improvements

Phase: Design & Construction Assistance # 1**Phase Title:** Design/Construction Administration

Phase Budget:	Water	Start Date:	1/1/2024
Phase Status:	Future Planned Start	End Date:	10/1/2031
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 5**Cost Est. Source:** GLWA**Cost Est. Date:** 1/1/2016**Cost Est. Prepared By:** GLWA

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+
Design & Construction Assistance # 1	\$10,845	\$0	\$0	\$857	\$1,928	\$1,718	\$4,503	\$6,342

Phase Dates

Activity Name	Start Date	End Date
Design - Pre-Procurement	2/3/2023	5/4/2023
Design - Procurement	5/5/2023	12/31/2023
Design - Project Execution	1/1/2024	10/6/2026
Construction Assistance - Project Execution	10/7/2026	10/1/2031
Construction Assistance - Project Closeout	7/3/2031	10/1/2031

Project Title: Northeast Water Treatment Plant High-Lift Pumping Station Improvements

Phase: Construction (Build) # 1

Phase Title: Construction

Phase Budget:	Water	Start Date:	10/7/2026
Phase Status:	Future Planned Start	End Date:	10/1/2031
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 5	Cost Est. Source: GLWA
Cost Est. Date: 11/16/2018	Cost Est. Prepared By: GLWA

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

	Total Costs	Actual Costs	Prior FYs	FY27+
Construction (Build) # 1	\$60,000	\$0	\$0	\$60,000

Phase Dates

Activity Name	Start Date	End Date
Construction - Pre-Procurement	12/9/2025	4/8/2026
Construction - Procurement	4/9/2026	10/6/2026
Construction - Project Execution	10/7/2026	10/1/2031
Construction - Closeout	7/3/2031	10/1/2031

Project Title: Northeast Water Treatment Plant High-Lift Pumping Station Improvements


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

CIP	5 Year Total	FY23	FY24	FY25	FY26	Total
2019	\$0	\$0	\$62,265	\$0	\$0	\$62,265
2020	\$0	\$0	\$0	\$62,234	\$0	\$62,234
2021	\$3,651	\$40	\$1,228	\$2,383	\$53,914	\$57,565

Description of CIP Changes:

Expanded the scope of work to include a complete, multi-disciplinary upgrade to the high-lift pumping plant. The scope of work in last fiscal year's CIP was limited to medium- and low-voltage electrical system improvements. However, it would be best from a sequence of construction standpoint to upgrade the mechanical equipment (i.e. pumping and HVAC) at the same time that electrical improvements are made to the station. Likewise, architectural work involving doors, windows, handrails and grating systems is best done concurrent with the mechanical and electrical work. Due to the deteriorating condition of the station's mechanical and electrical gear, implementation of this CIP has been moved ahead. Although the cost of this CIP has been updated to account for the expanded scope, it will likely change again between now and next year because GLWA staff will work refining the scope and associated estimated costs over the next year. MAG 7/26/2019

Project Title: Northeast Water Treatment Plant - Replacement of Covers for Process Water Conduits

<p>Project Status: Project Execution - Construction</p> <p>CIP Type: Project</p> <p>Class Lvl 1: Water</p> <p>Class Lvl 2: Treatment Plants and Facilities</p> <p>Class Lvl 3: Northeast</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: 10/1/2018</p> <p>Year Project Added to CIP: 2018</p> <p>CIP Budget: Water</p>	<p>Project Jurisdiction: City of Detroit</p> <p>Lookup Location: Northeast WTP</p> <p>Funds and Cost Center: Water - 5519-882111</p>

Problem Statement:

The existing steel covers that cover the entry openings into filtered water conduits at the plant are significantly deteriorated to the point where the covers are not water-tight and require replacement. Therefore, these covers are unsafe and have been identified by the EGLE in the most recent sanitary survey as requiring replacement. Temporary barricades are in place to prevent injury and further damage.

Scope of Work/Project Alternatives:

Replace steel covers, frames and associated structural support beams over the filtered water conduits.

Other Important Info:

Challenges: Temporary support of sluice gate operators and partial shutdown of certain portions of the plant to facilitate replacement of the existing steel covers, frames, and associated structural supports that are located immediately above the filtered water conduits.

Primary Driver: 5 - Public Health and Safety

Driver Explanation:

Inadequate covers over filtered and finished water conduits pose potential risks to water quality.

Project Title: Northeast Water Treatment Plant - Replacement of Covers for Process Water Conduits

Scoring**Project Manager Weighted Score:** 79.20

Criteria Name	Score	Comment
Condition	5	
Performance (Service Level/Reliability)	5	
Regulatory (Environmental/Legal)	4	
Operations and Maintenance	2	
Public Health and Safety	5	
Public Benefit	2	
Financial	3	
Efficiency and Innovation	4	

Risk Committee Weighted Score: 61.00

Criteria Name	Score	Comment
Condition	5	
Performance (Service Level/Reliability)	5	
Regulatory (Environmental/Legal)	3	
Operations and Maintenance	1	
Public Health and Safety	4	
Public Benefit	1	
Financial	2	
Efficiency and Innovation	1	

Project Title: Northeast Water Treatment Plant - Replacement of Covers for Process Water Conduits

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget:	Water	Start Date:	2/1/2019
Phase Status:	Future Planned Start	End Date:	6/30/2021
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 5	Cost Est. Source: GLWA
Cost Est. Date: 1/1/2018	Cost Est. Prepared By: GLWA

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	\$74	\$26	\$26	\$43	\$5	\$0	\$0	\$0	\$0	\$5	\$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	2/1/2019	6/30/2021

Project Title: Northeast Water Treatment Plant - Replacement of Covers for Process Water Conduits

Phase: Construction (Build) # 1

Phase Title: Construction

Phase Budget: Water	Start Date: 2/1/2019
Phase Status: Under Procurement	End Date: 6/30/2021
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 5	Cost Est. Source: GLWA
Cost Est. Date: 1/1/2018	Cost Est. Prepared By: GLWA

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	\$1,015	\$413	\$413	\$602	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Design - Project Execution	2/1/2019	6/30/2020
Construction - Pre-Procurement	3/1/2019	6/4/2019
Construction - Procurement	6/4/2019	1/5/2020
Construction - Project Execution	1/6/2020	6/30/2021
Construction - Closeout	4/1/2021	6/30/2021

Project Title: Northeast Water Treatment Plant - Replacement of Covers for Process Water Conduits

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

CIP	5 Year Total	FY19	FY20	FY21	FY22	Total
2020	\$813	\$0	\$166	\$647	\$0	\$813
2021	\$1,110	\$14	\$269	\$1,096	\$14	\$1,393

Description of CIP Changes:

Changed status to active. PF 8/8/2019

Changed status to Project Execution- Construction. Updated the problem statement, scope of work, related project, and predecessor project name(s). PF 8/13/2020

Project Title: Northeast Water Treatment Plant Flocculator Replacements

Project Status: Project Execution - Design

CIP Type: Project

Class Lvl 1: Water

Class Lvl 2: Treatment Plants and Facilities

Class Lvl 3: Northeast

☐ **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: Peter Fromm

Director: Grant Gartrell

Managing Dept.: Water Eng

Date Original Business Case Prepared: 10/1/2018

Year Project Added to CIP: 2018

CIP Budget: Water

Project Jurisdiction: City of Detroit

Lookup Location: Northeast WTP

Funds and Cost Center: Water - 5519-882111

Problem Statement:

Most of the existing flocculators are not operable and are beyond repair, which reduces sedimentation effectiveness and creates a greater load on the filtration process. It should be noted that treatment at the Northeast Water Treatment Plant is planned to be decommissioning, as recommended in the 2015 Water Master Plan Update, in order to align overall system water treatment capacity with current as well as 20-year projected water demands. As such, the scope of improvements to flocculation under this CIP will replace the existing flocculators.

Scope of Work/Project Alternatives:

This CIP project is being delivered under a design-bid-build project delivery method and generally includes the following scope of work:

1. Demolition of all existing flocculators including drives, motors, shafts, and paddles.
2. Installation of all the flocculators including drives, motors, shafts, and paddles.
3. Associated architectural, structural, and electrical upgrades within both of the flocculator buildings.

Other Important Info:

All existing flocculators will be replaced under this CIP because the treatment works at Northeast are slated for decommissioning.

Challenges: Water production during construction.

Primary Driver: 1 - Condition

Driver Explanation:

Most of the existing flocculators are not operating and are beyond repair.

Project Title: Northeast Water Treatment Plant Flocculator Replacements

Scoring**Project Manager Weighted Score:** 74.80

Criteria Name	Score	Comment
Condition	5	
Performance (Service Level/Reliability)	5	
Regulatory (Environmental/Legal)	3	
Operations and Maintenance	4	
Public Health and Safety	3	
Public Benefit	3	
Financial	3	
Efficiency and Innovation	4	

Risk Committee Weighted Score: 67.40

Criteria Name	Score	Comment
Condition	5	
Performance (Service Level/Reliability)	5	
Regulatory (Environmental/Legal)	3	
Operations and Maintenance	4	
Public Health and Safety	3	
Public Benefit	3	
Financial	2	
Efficiency and Innovation	1	

Project Title: Northeast Water Treatment Plant Flocculator Replacements

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget:	Water	Start Date:	3/8/2019
Phase Status:	Active	End Date:	9/1/2024
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 5	Cost Est. Source: GLWA
Cost Est. Date: 1/1/2018	Cost Est. Prepared By: GLWA

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	\$316	\$186	\$186	\$55	\$22	\$22	\$22	\$9	\$0	\$75	\$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	3/8/2019	9/1/2024
Capital Delivery Salary	3/8/2019	9/1/2024

Project Title: Northeast Water Treatment Plant Flocculator Replacements

Phase: Construction (Build) # 1

Phase Title: Construction

Phase Budget:	Water	Start Date:	4/12/2021
Phase Status:	Future Planned Start	End Date:	9/1/2024
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 5	Cost Est. Source: GLWA
Cost Est. Date: 1/1/2018	Cost Est. Prepared By: GLWA

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
Construction (Build) # 1	\$11,000	\$0	\$0	\$0	\$2,500	\$3,000	\$3,000	\$2,500	\$11,000

Phase Dates

Activity Name	Start Date	End Date
Construction - Pre-Procurement	3/8/2019	12/31/2020
Construction - Procurement	1/1/2021	6/30/2021
Construction - Project Execution	4/12/2021	9/1/2024
Construction - Closeout	6/3/2024	9/1/2024

Project Title: Northeast Water Treatment Plant Flocculator Replacements

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


CIP	5 Year Total	FY19	FY20	FY21	FY22	FY23	Total
2020	\$2,715	\$3	\$1,356	\$1,356	\$3	\$0	\$2,718
2021	\$6,648	\$3	\$460	\$2,773	\$3,026	\$849	\$7,111

Description of CIP Changes:

New project to the CIP. PF 2018

The cost of this CIP increased this fiscal year from last to account for

Project Title: Southwest Water Treatment Plant, High-Lift Pump Discharge Valve Actuators Replacement

<p>Project Status: Pending Closeout</p> <p>CIP Type: Project</p> <p>Class Lvl 1: Water</p> <p>Class Lvl 2: Treatment Plants and Facilities</p> <p>Class Lvl 3: Southwest</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: Shakil Ahmed</p> <p>Director: Terry Daniel</p> <p>Managing Dept.: Water Eng</p>	<p>Date Original Business Case Prepared: 6/26/2014</p> <p>Year Project Added to CIP: 2014</p> <p>CIP Budget: Water</p>	<p>Project Jurisdiction: Wayne County - Outside Detroit</p> <p>Lookup Location: Southwest WTP</p> <p>Funds and Cost Center: Water - 5519-882111</p>

Problem Statement:

Existing oil hydraulic high lift valve actuators are leaking oil and at the end of service life. The leaking actuators pose safety concerns and replacement of valve actuators is needed.

Scope of Work/Project Alternatives:

This project involves replacement of the existing oil hydraulic actuators on the high lift pumping units with electric motor operators. A new gas-fired generator is being installed to provide backup power to the electric motor operators. In addition, a section of new high lift header is being installed along with header isolation valves for the high lift pumps.

Other Important Info:

The construction contract, CON-281, for this CIP project was awarded to Weiss Construction and the notice to proceed issued on October 1, 2018. The project is scheduled for completion by November 2021.

Challenges: Sequencing the demolition and replacement of the existing oil hydraulic power system will require shutdown of individual high lift pumping units.

Primary Driver: 1 - Condition

Driver Explanation:

High-lift pumps were equipped with original (circa 1962) oil hydraulic actuators and related equipment, which was leaking oil and was beyond repair.

Project Title: Southwest Water Treatment Plant, High-Lift Pump Discharge Valve Actuators Replacement

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: Southwest Water Treatment Plant, High-Lift Pump Discharge Valve Actuators Replacement

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Water

Start Date: 4/2/2016

Phase Status: Active

End Date: 6/30/2024

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 5

Cost Est. Source: GLWA

Cost Est. Date: 1/1/2016

Cost Est. Prepared By: GLWA

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	\$202	\$175	\$175	\$23	\$4	\$0	\$0	\$0	\$0	\$4	\$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	4/2/2016	6/30/2024

Project Title: Southwest Water Treatment Plant, High-Lift Pump Discharge Valve Actuators Replacement

Phase: Design & Construction Assistance # 1

Phase Title: Design/Construction Administration

Phase Budget: Water	Start Date: 7/16/2017
Phase Status: Active	End Date: 11/1/2021
Cost Allocation: CTA	Fund: Construction Bond Fund
Funding Source: Bond Proceeds	Usefull Life > Yrs: Yes
	Tot. Federal Loan Amout: \$0.00

Phase Comments/Description:

Design contract is Contract No. CS-034 with Tetra Tech

Cost Est. Class: Class 5

Cost Est. Source: GLWA

Cost Est. Date: 1/1/2016

Cost Est. Prepared By: GLWA

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	\$1,074	\$584	\$584	\$0	\$124	\$366	\$0	\$0	\$0	\$491	\$0

Phase Dates

Activity Name	Start Date	End Date
Design - Pre-Procurement	4/2/2016	7/1/2016
Design - Procurement	7/2/2016	7/15/2017
Design - Project Execution	7/16/2017	10/1/2018
Construction Assistance - Project Execution	10/1/2018	11/1/2021
Construction Assistance - Project Closeout	4/1/2023	6/30/2023
Construction Assistance - Cost Correction	7/1/2018	7/30/2018

Project Title: Southwest Water Treatment Plant, High-Lift Pump Discharge Valve Actuators Replacement

Phase: Construction (Build) # 1

Phase Title: Construction

Phase Budget:	Water	Start Date:	2/8/2017
Phase Status:	Active	End Date:	6/30/2024
Cost Allocation:	CTA	Fund:	Construction Bond Fund
Funding Source:	Bond Proceeds	Usefull Life > Yrs:	Yes
		Tot. Federal Loan Amout:	\$0.00

Phase Comments/Description:

Construction contract No. CON-281 was awarded to Weiss Construction this past year.

Cost Est. Class: Class 3	Cost Est. Source: TetraTech
Cost Est. Date: 1/1/2017	Cost Est. Prepared By: TetraTech

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	\$5,452	\$4,514	\$4,514	\$0	\$373	\$283	\$283	\$0	\$0	\$938	\$0

Phase Dates

Activity Name	Start Date	End Date
Construction - Pre-Procurement	2/8/2017	5/14/2018
Construction - Procurement	5/15/2018	10/1/2018
Construction - Project Execution	10/1/2018	11/1/2021
Construction - Closeout	4/1/2024	6/30/2024

Project Title: Southwest Water Treatment Plant, High-Lift Pump Discharge Valve Actuators Replacement

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	\$1,960	\$160	\$160	\$900	\$900	\$0	\$0	\$2,120
2019	\$5,183	\$115	\$186	\$1,157	\$2,876	\$1,144	\$6	\$5,484
2020	\$4,026	\$0	\$249	\$1,157	\$2,876	\$1,144	\$6	\$5,432
2021	\$1,094	\$0	\$0	\$2,479	\$2,313	\$1,094	\$0	\$5,886

Description of CIP Changes:

Increased CIP budget this year due to Change Order No. 1 which involved the construction of additional header piping and related isolation valves in the high-lift pumping plant header vault. This additional work provided greater flexibility for replacing the high-lift pump discharge control valves and therefore providing more reliable maintenance of plant operations during construction. SAA 8/8/2019

Project Title: Southwest Water Treatment Plant, Low- and High-Lift Pumping Station, Flocculation and Filtration System Improvements

Project Status: Future Planned - Within 5 Year Plan

CIP Type: Project

Class Lvl 1: Water

Class Lvl 2: Treatment Plants and Facilities

Class Lvl 3: Southwest

☐ **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: Shakil Ahmed

Director: Grant Gartrell

Managing Dept.: Water Eng

Date Original Business Case Prepared: 8/19/2014

Year Project Added to CIP: 2014

CIP Budget: Water

Project Jurisdiction: Wayne County - Outside Detroit

Lookup Location: Southwest WTP

Funds and Cost Center: Water - 5519-882111

Problem Statement:

Most of the plant's process mechanical, building mechanical and electrical systems are original to the plant (circa 1962) and are nearing or are past end of useful service life. As a result, additional plant maintenance effort is necessary to meet plant operational needs.

Scope of Work/Project Alternatives:

The work includes design and construction services for the replacement of numerous large-diameter butterfly valves and water-control gates throughout the low-lift, high-lift, filtration, and flocculator buildings. The low- and high-lift pumping units, flocculators and filters will all be improved considered the current and 20-year projected demands so that they are all right sized.

Other Important Info:

This work is included in the 2015 water master plan update. The aforementioned water master plan update also recommends that GLWA consider decommissioning treatment at the Southwest Water Treatment Plant if water demand continues to trend in a downward direction, which has been the case.

Primary Driver: 1 - Condition

Driver Explanation:

The existing low- and high-lift pumping equipment and filtration system need to be replaced in order to provide continued reliable operation of these critical plant systems.

Project Title: Southwest Water Treatment Plant, Low- and High-Lift Pumping Station, Flocculation and Filtration System 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: Southwest Water Treatment Plant, Low- and High-Lift Pumping Station, Flocculation and Filtration System Improvements

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget:	Water	Start Date:	7/1/2028
Phase Status:	Future Planned Start	End Date:	7/1/2031
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 5	Cost Est. Source: GLWA
Cost Est. Date: 1/1/2016	Cost Est. Prepared By: GLWA

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	\$342	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$341

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	7/1/2028	7/1/2031

Project Title: Southwest Water Treatment Plant, Low- and High-Lift Pumping Station, Flocculation and Filtration System Improvements

Phase: Design & Construction Assistance # 1

Phase Title: Design/Construction Administration

Phase Budget:	Water	Start Date:	7/1/2028
Phase Status:	Future Planned Start	End Date:	7/1/2031
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 5	Cost Est. Source: GLWA
Cost Est. Date: 1/1/2016	Cost Est. Prepared By: GLWA

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

	Total Costs	Actual Costs	Prior FYs	FY27+
Design & Construction Assistance # 1	\$21,470	\$0	\$0	\$21,470

Phase Dates

Activity Name	Start Date	End Date
Construction Assistance - Project Allocation	7/1/2028	7/1/2031

Project Title: Southwest Water Treatment Plant, Low- and High-Lift Pumping Station, Flocculation and Filtration System Improvements

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

CIP	FY23	FY24	FY25	FY26	Total
2018	\$2,940	\$0	\$0	\$0	\$2,940
2019	\$0	\$148,286	\$0	\$0	\$148,286
2020	\$0	\$0	\$148,286	\$0	\$148,286
2021	\$0	\$0	\$0	\$14,314	\$14,314

Description of CIP Changes:

All work that was formerly in CIP 113008 is now included in the scope of this CIP 113003. S. Ahmed 8/6/2019

Project Title: Southwest Water Treatment Plant Chlorine Scrubber, Raw Water Screens & Related Improvements

Project Status: Active - Procurement - Construction

CIP Type: Project

Class Lvl 1: Water

Class Lvl 2: Treatment Plants and Facilities

Class Lvl 3: Southwest

☐ **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: Erich Klun

Director: Grant Gartrell

Managing Dept.: Water Eng

Date Original Business Case Prepared: 9/27/2017

Year Project Added to CIP: 2017

CIP Budget: Water

Project Jurisdiction: Wayne County - Outside Detroit

Lookup Location: Southwest WTP

Funds and Cost Center: Water - 5519-882111

Problem Statement:

The existing chlorine gas scrubber is nearing its end of useful service life and its absorption media will be expiring within the next few years; and therefore requires replacement. Similarly, the existing raw water screening system are original to the plant (circa 1962), are not functional, and are beyond repair. As a result, this system also requires replacement. Both the chlorine gas scrubber and raw water screening systems will require ancillary equipment improvements related to electrical, alarms, instrumentation, and controls.

Scope of Work/Project Alternatives:

This project will be delivered under a design-build project delivery model. The existing gas chlorine scrubber and raw water screens will be replaced with new system equipment meeting current building codes and industry best practices. The new gas chlorine scrubber and raw water screens that will be installed will be designed for current and projected water demands in accordance with the recommendations of the 2015 Water Master Plan Update project; therefore this new equipment will be right-sized.

Other Important Info:

GLWA intends to use the services of AECOM under its CIP program management contract to implement this design-build project.

E. Klun 8/27/20 update as follows:

1. RFP for DB contract delivery underway by AECOM under CS-272 Task 71011A.

Primary Driver: 5 - Public Health and Safety

Driver Explanation:

As chlorine gas is acutely toxic to human health, chlorine gas scrubbing equipment is needed to prevent gas chlorine leaks that occur in the chlorine storage and feeder rooms from exhausting to the outside environment.

Project Title: Southwest Water Treatment Plant Chlorine Scrubber, Raw Water Screens & Related Improvements

Scoring**Project Manager Weighted Score:** 68.20

Criteria Name	Score	Comment
Condition	4	
Performance (Service Level/Reliability)	3	
Regulatory (Environmental/Legal)	4	
Operations and Maintenance	2	
Public Health and Safety	5	
Public Benefit	4	
Financial	1	
Efficiency and Innovation	3	

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: Southwest Water Treatment Plant Chlorine Scrubber, Raw Water Screens & Related Improvements

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Water	Start Date: 1/28/2020
Phase Status: Future Planned Start	End Date: 10/15/2025
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: GLWA
Cost Est. Date: 1/1/2016	Cost Est. Prepared By: GLWA

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
GLWA Salaries	\$702	\$130	\$130	\$245	\$115	\$34	\$57	\$78	\$42	\$327

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	1/28/2020	10/15/2025
Capital Delivery Salary	1/28/2020	10/15/2025

Project Title: Southwest Water Treatment Plant Chlorine Scrubber, Raw Water Screens & Related Improvements

Phase: Study

Phase Title: Study

Phase Budget:

Start Date: 1/28/2020

Phase Status:

End Date: 9/16/2022

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	FY21	FY22	FY23	5 Year Total
Study	\$629	\$0	\$0	\$0	\$568	\$61	\$629

Phase Dates

Activity Name	Start Date	End Date
Study - Project Execution	1/28/2020	9/16/2022

Project Title: Southwest Water Treatment Plant Chlorine Scrubber, Raw Water Screens & Related Improvements

Phase: Design-Build # 1

Phase Title: Design-Build

Phase Budget:	Water	Start Date:	3/16/2021
Phase Status:	Future Planned Start	End Date:	10/15/2025
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 5	Cost Est. Source: GLWA
Cost Est. Date: 1/1/2016	Cost Est. Prepared By: GLWA

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
Design-Build # 1	\$6,000	\$0	\$0	\$0	\$4,000	\$1,500	\$500	\$0	\$0	\$6,000

Phase Dates

Activity Name	Start Date	End Date
Design - Pre-Procurement	1/28/2020	2/17/2022
Design - Procurement	2/18/2022	10/16/2022
Design - Project Execution	10/17/2022	10/15/2025
Design-Build - Project Execution	3/16/2021	9/16/2022
Construction - Closeout	4/1/2024	6/30/2024

Project Title: Southwest Water Treatment Plant Chlorine Scrubber, Raw Water Screens & Related Improvements

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

CIP	5 Year Total	FY21	FY22	FY23	FY24	FY25	Total
2019	\$0	\$0	\$0	\$0	\$7,032	\$0	\$7,032
2020	\$0	\$0	\$0	\$0	\$0	\$7,032	\$7,032
2021	\$4,753	\$260	\$2,238	\$2,238	\$17	\$0	\$4,753

Description of CIP Changes:

Due to the limited remaining service life of the gas chlorine scrubbing system and condition of the raw water screens, this project has been moved ahead in the CIP schedule from last year. SA 8/8/2019

Project Title: Southwest Water Treatment Plant Architectural and Building Mechanical Improvements

Project Status: Future Planned - Within 5 Year Plan

CIP Type: Project

Class Lvl 1: Water

Class Lvl 2: Treatment Plants and Facilities

Class Lvl 3: Southwest

☐ **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: Shakil Ahmed

Director: Grant Gartrell

Managing Dept.: Water Eng

Date Original Business Case Prepared: 9/27/2017

Year Project Added to CIP: 2017

CIP Budget: Water

Project Jurisdiction: Wayne County - Outside Detroit

Lookup Location: Southwest WTP

Funds and Cost Center: Water - 5519-882111

Problem Statement:

Most of the existing low- and high- lift pumping station and administration buildings' mechanical equipment (HVAC, dehumidification, plumbing) and architectural components such as doors, windows, floors, and furnishings, are over 50 years old; and therefore are beyond their normal useful service life. Additional architectural improvements at Southwest Water Treatment Plant will include renovation of staff locker rooms and bathrooms, including a restroom designed for female staff.

Scope of Work/Project Alternatives:

This project would be delivered using a design-bid-build project delivery method. The scope of work would generally include:

1. Design of the project.
2. Remove existing building mechanical and architectural systems.
3. Install new heating and ventilating systems process and administration areas.
4. Install new air-conditioning systems for administration areas.
5. Install new dehumidification systems for the high-lift header vault.
6. Install new interior and exterior doors and windows.
7. Install new lockers, bath fixtures, water closets, flooring, ceiling, and related items in men's locker rooms and bathrooms
8. Construct new locker room and related bath facility for women's changing and bathing facilities.
9. Provide new furnishings for administration

Other Important Info:

CS-1528 water master plan update included these improvements.

Primary Driver: 1 - Condition

Driver Explanation:

Existing building mechanical and architectural componets are mainly original to the plant, which dates back to 1962.

Project Title: Southwest Water Treatment Plant Architectural and Building Mechanical Improvements

offices.

Project Title: Southwest Water Treatment Plant Architectural and Building Mechanical 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: Southwest Water Treatment Plant Architectural and Building Mechanical Improvements

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget:	Water	Start Date:	9/12/2028
Phase Status:	Future Planned Start	End Date:	8/3/2035
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: GLWA
Cost Est. Date: 1/1/2016	Cost Est. Prepared By: GLWA

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

	Total Costs	Actual Costs	Prior FYs	FY27+
GLWA Salaries	\$123	\$0	\$0	\$123

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	9/12/2028	8/3/2035

Project Title: Southwest Water Treatment Plant Architectural and Building Mechanical Improvements

Phase: Design & Construction Assistance # 1

Phase Title: Design/Construction Administration

Phase Budget:	Water	Start Date:	8/10/2029
Phase Status:	Future Planned Start	End Date:	8/3/2035
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 5	Cost Est. Source: GLWA
Cost Est. Date: 1/1/2016	Cost Est. Prepared By: GLWA

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

	Total Costs	Actual Costs	Prior FYs	FY27+
Design & Construction Assistance # 1	\$3,044	\$0	\$0	\$3,044

Phase Dates

Activity Name	Start Date	End Date
Design - Pre-Procurement	9/12/2028	12/11/2028
Design - Procurement	12/12/2028	8/9/2029
Design - Project Execution	8/10/2029	8/19/2032
Construction Assistance - Project Execution	8/20/2032	8/3/2035
Construction Assistance - Project Closeout	5/5/2035	8/3/2035

Project Title: Southwest Water Treatment Plant Architectural and Building Mechanical Improvements


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

CIP	FY24	FY25	FY26	Total
2019	\$37,336	\$0	\$0	\$37,336
2020	\$0	\$37,336	\$0	\$37,336
2021	\$0	\$0	\$98	\$98

Description of CIP Changes:

Engaged AECOM under its CIP program management contract to review and validate the estimated capital cost of this CIP. 8/2019 NH
No change FY 22 SA 8/28/20

Project Title: Springwells Water Treatment Plant, 1958 Filter Rehabilitation and Auxiliary Facilities Improvements

<p>Project Status: Pending Closeout</p> <p>CIP Type: Project</p> <p>Class Lvl 1: Water</p> <p>Class Lvl 2: Treatment Plants and Facilities</p> <p>Class Lvl 3: Springwells</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: Erich Klun</p> <p>Director: Grant Gartrell</p> <p>Managing Dept.: Water Eng</p>	<p>Date Original Business Case Prepared: 3/29/2004</p> <p>Year Project Added to CIP: 2002</p> <p>CIP Budget: Water</p>	<p>Project Jurisdiction: Wayne County - Outside Detroit</p> <p>Lookup Location: Springwells WTP</p> <p>Funds and Cost Center: Water - 5519-882111</p>

Problem Statement:

The existing filtration system equipment (i.e. filter media, surface wash sweeps, filter piping, filter control valves & operators, electrical, lighting, instrumentation and controls) in the 1958 Filter Plant are original to construction and are all well beyond their useful service life. Reconstruction of the 40 filters in the 1958 Filter Plant and 19 filters in the 1930 Filter Plant that have experienced failures to their plastic-block underdrains is required to maintain reliable water production from Springwells. The existing HVAC and dehumidification system serving both the 1958 and 1930 Filter Buildings is inadequate to maintain an environment suitable for modern electrical and controls equipment. The Administration Building Laboratory requires renovation to its facilities and HVAC to meet modern code and to provide an adequate space for laboratory functions.

Scope of Work/Project Alternatives:

This project includes the study, design (CS-1425) and construction assistance (CS-1425 and CS-200) of improvements to the Springwells WTP that includes the rehabilitation of the 1958 Filters, rehabilitation of failed 1930s Filters, update of Operation and Maintenance Manuals, and replacement of Phosphoric Acid feed system. Provide construction services to furnish and install new filter media, underdrains, filter valves, and rate controllers; replace the existing filter control consoles, hydraulic control valves with electric control valves, enclosures; add appurtenances to enable automatic backwashing of the filters; provide a Filter Aid Polymer System to the 1930 and 1958 filter complexes; Programmable Logic Controller-based controls for automatic control of the polymer system. Conversion of the overhead bridge cranes and elevators from DC to AC power, and upgrades to meet modern codes..

Other Important Info:

There are a total of 108 filters at the Springwells Water Treatment Plant. This project has reconstructed 59 of these filters, including all 40 filters at the 1958 filter building and 19 filters at the 1930 filter building. The 19 filters at the 1930 filter building were previously equipped with plastic-block underdrains with porous plates. These underdrains failed and were replaced with low-profile type 316 stainless steel, slotted direct-media retaining underdrains.

Primary Driver: 1 - Condition

Driver Explanation:

Existing 1958 filtration system equipment, including filter media, surface wash sweeps, filter piping, filter control valves, valve operators, electrical, lighting, and controls were original 1958 construction all well beyond their useful service life

Project Title: Springwells Water Treatment Plant, 1958 Filter Rehabilitation and Auxiliary Facilities Improvements

Scoring**Project Manager Weighted Score:** 62.20

Criteria Name	Score	Comment
Condition	4	
Performance (Service Level/Reliability)	4	
Regulatory (Environmental/Legal)	3	
Operations and Maintenance	4	
Public Health and Safety	2	
Public Benefit	3	
Financial	2	
Efficiency and Innovation	3	

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: Springwells Water Treatment Plant, 1958 Filter Rehabilitation and Auxiliary Facilities Improvements

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Water

Start Date: 10/8/2010

Phase Status: Active

End Date: 6/30/2020

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 1

Cost Est. Source: CDM Smith

Cost Est. Date: 1/1/2013

Cost Est. Prepared By: CDM Smith

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	\$1,192	\$1,192	\$1,192	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	10/8/2010	6/30/2020
Capital Delivery Salary	10/8/2010	6/30/2020

Project Title: Springwells Water Treatment Plant, 1958 Filter Rehabilitation and Auxiliary Facilities Improvements

Phase: Design & Construction Assistance # 1

Phase Title: Construction Administration, CS-200

Phase Budget: Water	Start Date: 7/8/2013
Phase Status: Active	End Date: 6/30/2020
Cost Allocation: CTA	Fund: Construction Bond Fund
Funding Source: Bond Proceeds	Usefull Life > Yrs: Yes
	Tot. Federal Loan Amout: \$0.00

Phase Comments/Description:

CS-200 Contract with CDM Smith

Cost Est. Class: Class 1

Cost Est. Source: CDM Smith

Cost Est. Date: 1/1/2013

Cost Est. Prepared By: CDM Smith

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	\$2,788	\$2,788	\$2,788	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Design - Pre-Procurement	10/8/2010	1/6/2011
Design - Procurement	1/7/2011	1/7/2012
Design - Project Execution	1/8/2012	7/7/2013
Construction Assistance - Project Execution	7/8/2013	6/30/2020
Construction Assistance - Project Closeout	4/1/2020	6/30/2020

Project Title: Springwells Water Treatment Plant, 1958 Filter Rehabilitation and Auxiliary Facilities Improvements

Phase: Construction (Build) # 1

Phase Title: Construction

Phase Budget: Water

Start Date: 10/8/2010

Phase Status: Active

End Date: 6/30/2020

Cost Allocation: CTA

Fund: Construction Bond Fund

Funding Source: Bond Proceeds

Usefull Life > Yrs: Yes

Tot. Federal Loan Amout: \$0.00

Phase Comments/Description:

Walsh Contract

Cost Est. Class: Class 1

Cost Est. Source: CDM Smith

Cost Est. Date: 1/1/2013

Cost Est. Prepared By: CDM Smith

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	\$76,848	\$76,848	\$76,848	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Construction - Pre-Procurement	6/30/2015	9/28/2015
Construction - Procurement	9/29/2015	4/4/2016
Construction - Project Execution	4/5/2016	6/30/2020
Construction - Closeout	4/1/2020	6/30/2020
Construction - Cost Correction	10/8/2010	5/1/2019

Project Title: Springwells Water Treatment Plant, 1958 Filter Rehabilitation and Auxiliary Facilities Improvements

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	\$310	\$56,759	\$20,353	\$310	\$0	\$0	\$77,422
2019	\$3,501	\$0	\$82,682	\$7,281	\$3,501	\$0	\$93,464
2020	\$0	\$0	\$0	\$89,310	\$7,978	\$0	\$97,288
2021	\$0	\$0	\$0	\$0	\$96,174	\$5,794	\$101,968

Description of CIP Changes:


Updated to reflect projected substantial and final completion dates for the SP-563 construction contract. KH 2019

Updated wording of detailed project information to make it more succinct. JRK 8/12/2019

E. Klun 8/20/20 updates as follows:

1. Updates per status of contracts CS-200 and SP-563. Both have reached final completion status and pending closeout.

Project Title: Springwells Water Treatment Plant, Low-Lift and High-Lift Pumping Station Improvements

<p>Project Status: Project Execution - Design</p> <p>CIP Type: Project</p> <p>Class Lvl 1: Water</p> <p>Class Lvl 2: Treatment Plants and Facilities</p> <p>Class Lvl 3: Springwells</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 checked="" type="checkbox"/> Water Master Plan Right Sizing</p> <p><input checked="" type="checkbox"/> Redundancy</p> <p><input checked="" 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: Erich Klun</p> <p>Director: Grant Gartrell</p> <p>Managing Dept.: Water Eng</p>	<p>Date Original Business Case Prepared: 3/29/2004</p> <p>Year Project Added to CIP: 2004</p> <p>CIP Budget: Water</p>	<p>Project Jurisdiction: Wayne County - Outside Detroit</p> <p>Lookup Location: Springwells WTP</p> <p>Funds and Cost Center: Water - 5519-882111</p>

Problem Statement:

Existing low- and high-lift pumping system electrical switchgear is original (1930s) and are well beyond their useful service life. This switchgear is unsafe, not reliable and is oversized for current and projected demands. In addition, the existing pumping units are a mix of 1930s and 1950s units and are also in need of either replacement or in the case of the pumps rehabilitation. The exterior windows on the pumping plant building are also original (1930s), are in poor condition and are not well insulated. As a result, all of the exterior windows on the pumping plant building need to be replaced with new, energy efficient windows.

Scope of Work/Project Alternatives:

This CIP project will be delivered under a design-bid-build project delivery using a single-prime engineering consultant and multiple prime construction contracts to deliver the entire built project. The scope of work generally includes:

1. Replacement of low- and high-lift pumping units, including pumps, motors, valves, and piping.
2. Replacement of exterior windows in the pump house, turbine house, boiler house, and switch house.
3. Replacement of medium-voltage electrical system.
4. Replacement of all pump isolation gates.

E. Klun 8/19/20 updates:

5. Replacement of the existing three (3) primary 24 kV transformers and existing three (3) DTE 24kV feeders. DTE/ITC will bring 120 kV feeders to Springwells and GLWA to own three (3) new 120 kV transformers. Collectively this is referred

Project Title: Springwells Water Treatment Plant, Low-Lift and High-Lift Pumping Station Improvements

to as the new 120 kV Substation.

6. Since there is not enough property on the existing Springwells site, GLWA is pursuing acquisition of Conrail property to the east of the existing Springwells property on which the new 120 kV substation will be built. At this time, and offer has been made to Conrail.

7. Replacement of six (6) 84-inch gate valves in the High Lift Station that did not provide adequate isolation during execution of SP-563. 84-inch gate valves are needed to replace the high lift pumping units.

8. New Utility Bridge to carry medium voltage cabling between the 120 kV Substation and new switchgear. The bridge will allow all demolition of all underground ductbanks such that yard piping can be replaced under CIP#114010 without the threat of power interruption.

9. Addition of preparation of equipment procurement contracts for pumping units and process valves.

10. Additional instrumentation scope to meet the automation requirements of CS-108 Water Treatment Plant Automation Needs Assessment.

Other Important Info:

E. Klun 8/19/20 updates:

1. Scope updates are being added to the design being completed under Contract CS-103 via Amendment No. 2 that is expected to go for approval in September of October 2020. Cashflow and schedule updates herein reflect both the engineering and construction impacts of an approved CS-103 Amendment No. 2.

Primary Driver: 1 - Condition

Driver Explanation:

Existing low- and high-lift pumps are original to plant construction with most of them nearing 90 years old.

E. Klun 8/19/20 Updates:

1. CS-103 coordination with DTE resulted in DTE noting that the existing feeders could not reliably supply power to Springwells under the new proposed operating conditions due to capacity issues and age of the existing feeders. Existing feeders are the same age as the pumping units.

Project Title: Springwells Water Treatment Plant, Low-Lift and High-Lift Pumping Station Improvements

Scoring**Project Manager Weighted Score:** 92.60

Criteria Name	Score	Comment
Condition	5	
Performance (Service Level/Reliability)	5	
Regulatory (Environmental/Legal)	4	
Operations and Maintenance	5	
Public Health and Safety	5	
Public Benefit	5	
Financial	4	
Efficiency and Innovation	4	

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: Springwells Water Treatment Plant, Low-Lift and High-Lift Pumping Station Improvements

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Water

Start Date: 11/2/2016

Phase Status: Active

End Date: 6/30/2031

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 5

Cost Est. Source: GLWA

Cost Est. Date: 1/1/2016

Cost Est. Prepared By: GLWA

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	\$2,668	\$357	\$357	\$248	\$184	\$197	\$132	\$132	\$132	\$777	\$1,286

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	11/2/2016	6/30/2031
Capital Delivery Salary	11/2/2016	6/30/2031

Project Title: Springwells Water Treatment Plant, Low-Lift and High-Lift Pumping Station Improvements

Phase: Study & Design & Construction Assistance # 1

Phase Title: Study/Design/Construction Administration

Phase Budget: Water	Start Date: 1/2/2018
Phase Status: Under Procurement	End Date: 6/30/2030
Cost Allocation: CTA	Fund: Construction Bond Fund
Funding Source: Bond Proceeds	Usefull Life > Yrs: Yes
Tot. Federal Loan Amout: \$0.00	

Phase Comments/Description:

Engineering Services Contract, Contract No. CS-103, CDM Smith (active)

Cost Est. Class: Class 1

Cost Est. Source: GLWA

Cost Est. Date: 1/1/2016

Cost Est. Prepared By: GLWA

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+
Study & Design & Construction Assistance # 1	\$18,492	\$3,292	\$3,292	\$2,859	\$3,362	\$1,938	\$1,822	\$451	\$750	\$8,324	\$4,017

Phase Dates

Activity Name	Start Date	End Date
Design - Pre-Procurement	11/2/2016	3/27/2019
Design - Procurement	2/1/2017	6/30/2019
Design - Project Execution	1/2/2018	6/30/2030
Construction Assistance - Project Execution	6/2/2021	9/30/2029
Construction Assistance - Project Closeout	2/26/2025	12/30/2029

Project Title: Springwells Water Treatment Plant, Low-Lift and High-Lift Pumping Station Improvements

Phase: Design-Build # 1 (Contract A)

Phase Title: Design-Build

Phase Budget: Water	Start Date: 7/1/2019
Phase Status: Active	End Date: 6/30/2031
Cost Allocation: CTA	Fund: Construction Bond Fund
Funding Source: Bond Proceeds	Usefull Life > Yrs: Yes
	Tot. Federal Loan Amout: \$0.00

Phase Comments/Description:

DB Contract No. 1900134, Low-Lift Suction Isolation Gate Replacement

Cost Est. Class: Class 3	Cost Est. Source: CDM Smith
Cost Est. Date: 7/24/2018	Cost Est. Prepared By: CDM Smith

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 (Contract A)	\$203,062	\$1,847	\$1,847	\$8,706	\$13,000	\$16,000	\$18,000	\$18,000	\$17,509	\$82,509	\$110,000

Phase Dates

Activity Name	Start Date	End Date
Design - Project Execution	7/1/2019	6/30/2020
Construction Assistance - Project Execution	7/1/2019	6/30/2031
Construction - Pre-Procurement	1/1/2019	4/15/2019
Construction - Procurement	4/16/2019	9/1/2019
Construction (DB) - Project Execution	7/1/2019	6/30/2031
Construction - Closeout	4/1/2031	6/30/2031

Project Title: Springwells Water Treatment Plant, Low-Lift and High-Lift Pumping Station Improvements

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	\$59,500	\$0	\$1,500	\$2,000	\$12,500	\$22,000	\$21,500	\$26,500	\$0	\$0	\$0	\$86,000
2019	\$25,270	\$22	\$463	\$1,433	\$2,481	\$1,453	\$11,228	\$8,675	\$59,748	\$0	\$0	\$85,503
2020	\$68,880	\$0	\$498	\$2,607	\$5,985	\$9,302	\$13,724	\$13,724	\$26,145	\$42,831	\$0	\$114,816
2021	\$76,776	\$0	\$0	\$2,080	\$3,039	\$7,113	\$12,893	\$18,905	\$18,690	\$19,175	\$92,940	\$174,835


Description of CIP Changes:

- (1) Updated construction cost based on design development and OPCC by CS-103 consultant; (2.) Moved construction expenditure forward to FY20 to execute a DB contract to install Low Lift pump suction isolation gates (valued at \$8M based on CS-103 OPCC). Extended the duration for construction by one year to be more conservative and realistic for the completion of this work based on the progress of the design currently being performed. E. Klun 2018
- (2) CO-01 to CS-103 executed to split the CS-103 design into three (3) different contracts. 1900134 is a DB contract administered internally by GLWA. Medium voltage electrical replacement and pumping unit replacement are the other two design being completed by the CS-103 Consultant. 6/12/19 E. Klun -
- (3) Project split into three construction contracts to reduce construction sequencing complexity, reduce GLWA risk exposure during construction, and expedite the overall construction schedule. The three construction contracts include Project A, Low Lift Suction Gate Replacement; Project B, Medium Voltage Electrical System Replacement; and Project C, Low- and High-Lift Pumping System Improvements. 8/9/19 E. Klun

E. Klun 8/19/20 updates:

1. Addition of Contract D, 120 kV Substation.
2. Addition of project scope changes described above under Scope of Work.
3. Updated schedule, cost and cashflow for development of equipment procurement contracts by CDM Smith under Contract CS-103. Procurement needed to secure delivery of long-lead equipment to maintain CIP spend.
3. Project schedule, cost and cashflow are updated to reflect an approved Contract CS-103 Amendment No. 2 and the current OPCCs and schedules of the four
- (4) associated construction contracts.

Project Title: Water Production Flow Metering Improvements at Northeast, Southwest and Springwells Water Treatment Plants

<p>Project Status: Pending Closeout</p> <p>CIP Type: Project</p> <p>Class Lvl 1: Water</p> <p>Class Lvl 2: Treatment Plants and Facilities</p> <p>Class Lvl 3: Springwells</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 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: Jorge Nicolas</p> <p>Director: Grant Gartrell</p> <p>Managing Dept.: Water Eng</p>	<p>Date Original Business Case Prepared: 6/26/2014</p> <p>Year Project Added to CIP: 2014</p> <p>CIP Budget: Water</p>	<p>Project Jurisdiction: Multiple Counties</p> <p>Lookup Location: Springwells, Northeast and Southwest WTP</p> <p>Funds and Cost Center: Water - 5519-882111</p>
<p>Problem Statement: Existing water production flow meters need to be rehabilitated to place back into reliable and accurate service.</p>	<p>Scope of Work/Project Alternatives: Northeast Water Plant: rehabilitate 4 venturi meters, associated vaults, and replace 4 isolation gate valves. Springwells Water Plant: rehabilitate 7 venturi meters and associated vaults. Southwest Water Plant replace 4 venturi meters with new, including rehabilitation of the existing vaults.</p>	<p>Other Important Info: Challenges: Removing and replacing existing meters in original piping requires isolation using existing yard piping and valving.</p> <p>Primary Driver: 2 - Performance</p> <p>Driver Explanation: New water production flow metering will provide accurate flow measurement of finished water flows from these plants.</p>

Project Title: Water Production Flow Metering Improvements at Northeast, Southwest and Springwells Water Treatment Plants

Scoring**Project Manager Weighted Score:** 65.40

Criteria Name	Score	Comment
Condition	5	
Performance (Service Level/Reliability)	5	
Regulatory (Environmental/Legal)	2	
Operations and Maintenance	3	
Public Health and Safety	2	
Public Benefit	4	
Financial	3	
Efficiency and Innovation	3	

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: Water Production Flow Metering Improvements at Northeast, Southwest and Springwells Water Treatment Plants

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Water

Start Date: 4/1/2015

Phase Status: Active

End Date: 9/15/2020

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: GLWA

Cost Est. Date: 1/1/2016

Cost Est. Prepared By: GLWA

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	\$169	\$169	\$169	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	4/1/2015	9/15/2020
Capital Delivery Salary	4/1/2015	9/15/2020

Project Title: Water Production Flow Metering Improvements at Northeast, Southwest and Springwells Water Treatment Plants

Phase: Design & Construction Assistance # 1

Phase Title: Design/Construction Administration

Phase Budget: Water	Start Date: 7/21/2017
Phase Status: Active	End Date: 9/15/2020
Cost Allocation: CTA	Fund: Construction Bond Fund
Funding Source: Bond Proceeds	Usefull Life > Yrs: Yes
	Tot. Federal Loan Amout: \$0.00

Phase Comments/Description:

Applied Science, Inc. (ASI) under Contract No. CS-1656 is the engineering design consultant.

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 & Construction Assistance # 1	\$1,141	\$1,141	\$1,141	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Design - Closeout	8/1/2020	9/15/2020
Construction Assistance - Project Execution	7/21/2017	6/30/2020
Construction Assistance - Cost Correction	7/21/2017	5/1/2019

Project Title: Water Production Flow Metering Improvements at Northeast, Southwest and Springwells Water Treatment Plants

Phase: Construction (Build) # 1

Phase Title: Construction

Phase Budget: Water

Start Date: 7/21/2017

Phase Status: Active

End Date: 5/31/2020

Cost Allocation: CTA

Fund: Construction Bond Fund

Funding Source: Bond Proceeds

Usefull Life > Yrs: Yes

Tot. Federal Loan Amout: \$0.00

Phase Comments/Description:

LCG Global is contractor

Cost Est. Class: Class 1

Cost Est. Source: consultant

Cost Est. Date:

Cost Est. Prepared By: Consultant Applied Science

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	\$6,846	\$6,846	\$6,846	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Construction - Pre-Procurement	4/1/2015	6/30/2015
Construction - Procurement	7/1/2015	7/17/2017
Construction - Project Execution	7/21/2017	5/31/2020
Construction - Closeout	3/2/2020	5/31/2020

Project Title: Water Production Flow Metering Improvements at Northeast, Southwest and Springwells Water Treatment Plants


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	Total
2018	\$11,900	\$1,000	\$8,800	\$2,100	\$1,000	\$0	\$12,900
2019	\$6,269	\$186	\$704	\$2,506	\$2,506	\$1,257	\$7,159
2020	\$99	\$0	\$3,445	\$3,561	\$80	\$19	\$7,105
2021	\$0	\$0	\$0	\$6,333	\$2,149	\$0	\$8,482

Description of CIP Changes:

Design engineering Contract number changed from CS-1656 to contract no. 4000679. JN 7/29/2019

Project Title: Springwells Water Treatment Plant, Administration Building Improvements & Underground Fire Protection Loop

<p>Project Status: Project Execution - Design</p> <p>CIP Type: Project</p> <p>Class Lvl 1: Water</p> <p>Class Lvl 2: Treatment Plants and Facilities</p> <p>Class Lvl 3: Springwells</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: 6/26/2014</p> <p>Year Project Added to CIP: 2014</p> <p>CIP Budget: Water</p>	<p>Project Jurisdiction: Wayne County - Outside Detroit</p> <p>Lookup Location: Springwells WTP</p> <p>Funds and Cost Center: Water - 5519-882111</p>

Problem Statement:

Existing administration building is nearly 90 years old with many of its facilities being original. The building needs architectural, plumbing and electrical improvements. Improvements will provide reliable fire protection to all plant facilities, replace non-functioning isolation valves and hydrants, provide fire system backflow protection, and bring the fire system into conformance with the requirements of the Dearborn Fire Marshal.

Scope of Work/Project Alternatives:

The work includes, but not necessarily limited to, removal and replacement of the existing plumbing piping, fittings, valves, plumbing fixtures, and any other necessary accessories. The existing underground fire protection line loops the Pump, Switch, Boiler and Turbine houses and is supplied water off the high lift headers in the Pump House Header Vault. The supply does not currently have backflow prevention and several branches off the loop used to feed an irrigation system serving the grassy areas covering the reservoirs, 1930 Sed. Basin and 1958 Sed. Basin. Isolation valves and fire hydrants are non-functioning and are beyond their useful life, and the old cast iron piping is susceptible to frequent breaks.

Project Title: Springwells Water Treatment Plant, Administration Building Improvements & Underground Fire Protection Loop

Other Important Info:

The project was first identified in the November 2002 Needs Assessment completed by Hazen & Sawyer under CS-1304. The opinion of probable construction at that time for just replacing the existing piping was \$1,076,400.

Project History: The fire loop and appurtenances are original to the existing plant commissioned around 1930. The loop crosses the construction staging area (blue tarps shown in the Project Map from Contract SP-563) in the northeast corner of the site and has been exposed to heavy construction traffic over the years.

Challenges: . All plumbing needs to be replaced, the majority of which is existing walls. The underground facilities (e.g., electrical duct banks, gas service mains, fiber optic, tunnels, conduits, major pipelines, etc.) at Springwells have been modified several times since initially being commissioned around 1930. The new fire loop will cross a lot of buried utilities and structures, and identification of these facilities and showing them accurately in Contract Documents will be critical to minimizing interruptions/complications during construction. Even then, with all of the underground utilities between the Pump House and Administration Building, and between the Machine Shop/Garage and the 1930 Mixing Chamber, surprises during construction will be difficult to avoid.

Primary Driver: 1 - Condition

Driver Explanation:

Existing fire protection loop piping and building plumbing are nearly 90 years old and have known leaks. Piping and plumbing have been repaired numerous times and now require complete replacement with new.

Project Title: Springwells Water Treatment Plant, Administration Building Improvements & Underground Fire Protection Loop

Scoring**Project Manager Weighted Score:** 67.40

Criteria Name	Score	Comment
Condition	4	
Performance (Service Level/Reliability)	4	
Regulatory (Environmental/Legal)	4	
Operations and Maintenance	4	
Public Health and Safety	4	
Public Benefit	2	
Financial	2	
Efficiency and Innovation	1	

Risk Committee Weighted Score: 67.40

Criteria Name	Score	Comment
Condition	4	
Performance (Service Level/Reliability)	4	
Regulatory (Environmental/Legal)	4	
Operations and Maintenance	4	
Public Health and Safety	4	
Public Benefit	2	
Financial	2	
Efficiency and Innovation	1	

Project Title: Springwells Water Treatment Plant, Administration Building Improvements & Underground Fire Protection Loop

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Water

Start Date: 2/24/2018

Phase Status: Active

End Date: 6/30/2024

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: GLWA

Cost Est. Date: 1/1/2018

Cost Est. Prepared By: GLWA

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	\$367	\$68	\$68	\$154	\$66	\$79	\$0	\$0	\$0	\$145	\$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	2/24/2018	6/30/2024

Project Title: Springwells Water Treatment Plant, Administration Building Improvements & Underground Fire Protection Loop

Phase: Study & Design & Construction Assistance # 1

Phase Title: Study/Design/Construction Administration

Phase Budget: Water	Start Date: 6/10/2019
Phase Status: Active	End Date: 1/10/2023
Cost Allocation: CTA	Fund: Construction Bond Fund
Funding Source: Bond Proceeds	Usefull Life > Yrs: Yes
	Tot. Federal Loan Amout: \$0.00

Phase Comments/Description:

Engineering Services Contract No. CS-282, WSP (active)

Cost Est. Class: Class 5

Cost Est. Source: GLWA

Cost Est. Date: 1/1/2018

Cost Est. Prepared By: GLWA

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	5 Year Total
Study & Design & Construction Assistance # 1	\$1,893	\$876	\$876	\$222	\$344	\$451	\$795

Phase Dates

Activity Name	Start Date	End Date
Study - Pre-Procurement	2/24/2018	6/7/2018
Design - Procurement	6/8/2018	6/10/2019
Design - Project Execution	6/10/2019	12/30/2020
Construction Assistance - Project Execution	12/31/2020	1/10/2023
Construction Assistance - Project Closeout	10/12/2022	1/10/2023

Project Title: Springwells Water Treatment Plant, Administration Building Improvements & Underground Fire Protection Loop

Phase: Construction (Build) # 1

Phase Title: Construction

Phase Budget:	Water	Start Date:	12/31/2020
Phase Status:	Future Planned Start	End Date:	11/2/2022
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 5	Cost Est. Source: GLWA
Cost Est. Date: 1/1/0818	Cost Est. Prepared By: GLWA

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	5 Year Total
Construction (Build) # 1	\$7,000	\$0	\$0	\$0	\$3,250	\$3,250	\$500	\$7,000

Phase Dates

Activity Name	Start Date	End Date
Construction - Pre-Procurement	9/2/2020	12/31/2020
Construction - Procurement	1/1/2021	6/30/2021
Construction - Project Execution	12/31/2020	11/2/2022
Construction - Closeout	4/1/2024	6/30/2024

Project Title: Springwells Water Treatment Plant, Administration Building Improvements & Underground Fire Protection Loop

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

CIP	5 Year Total	FY19	FY20	FY21	FY22	FY23	Total
2018	\$2,000	\$300	\$1,700	\$0	\$0	\$0	\$2,000
2019	\$8,125	\$30	\$413	\$2,258	\$3,820	\$1,604	\$8,125
2020	\$8,095	\$30	\$413	\$2,258	\$3,820	\$1,604	\$8,125
2021	\$8,015	\$264	\$417	\$2,302	\$4,198	\$1,515	\$8,696

Description of CIP Changes:

Up-dated the Scope development and procurement dates.

Up-dated the "scope of work and other important info" under the "Detailed Project Information". Changed the score.

Project Title: Springwells Water Treatment Plant Powdered Activated Carbon System Improvements

Project Status: Future Planned - Within 5 Year Plan

CIP Type: Project

Class Lvl 1: Water

Class Lvl 2: Treatment Plants and Facilities

Class Lvl 3: Springwells

☐ **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)**



Picture

Project Engineer/Manager: Justin Kietur

Director: Grant Gartrell

Managing Dept.: Water Eng

Date Original Business Case Prepared:
6/26/2014

Year Project Added to CIP: 2014

CIP Budget: Water

Project Jurisdiction: Wayne County - Outside Detroit

Lookup Location: Springwells WTP

Funds and Cost Center: Water - 5519-882111

Problem Statement:

Powdered activated carbon (PAC) is added to the treatment process to control taste and odor issues in the raw water supply. Taste and odor issues are infrequent, but the existing PAC system is difficult to operate and maintain when called upon for use. A more operator friendly and easier to maintain system is needed. The plant is only able to feed PAC through extraordinary measures due to deficiencies in the system. These extraordinary measures create additional operations and maintenance expense and inefficiencies that should be corrected in the long term. If raw water quality deteriorates unexpectedly and taste and odor causing compound concentrations steadily increase replacement of the PAC system at an earlier date would be warranted.

Scope of Work/Project Alternatives:

Replacement of the existing powdered activated carbon system with a new system of a design that provides improved operations and maintainability when PAC dosing is needed. The scope of work will generally include the following:

- 1)Repair of concrete and piping at the dry carbon delivery station and replacement of dust collectors.
- 2)Inspection of underground carbon slurry tanks and repair of damage to concrete and fiberglass lining.
- 3)Replacement of PAC transfer pumps and associated piping, valves and controls.
- 4)Replacement of PAC metering pumps and associated piping, valves and controls.

Other Important Info:

Primary Driver: 2 - Performance

Driver Explanation:

Existing PAC system is cumbersome and difficult to operate and maintain, however it is functional and rarely needed.

Project Title: Springwells Water Treatment Plant Powdered Activated Carbon System Improvements

Scoring**Project Manager Weighted Score:** 29.40

Criteria Name	Score	Comment
Condition	3	
Performance (Service Level/Reliability)	2	
Regulatory (Environmental/Legal)	1	
Operations and Maintenance	1	
Public Health and Safety	1	
Public Benefit	2	
Financial	1	
Efficiency and Innovation	1	

Risk Committee Weighted Score: 46.60

Criteria Name	Score	Comment
Condition	3	
Performance (Service Level/Reliability)	2	
Regulatory (Environmental/Legal)	3	
Operations and Maintenance	4	
Public Health and Safety	2	
Public Benefit	2	
Financial	1	
Efficiency and Innovation	1	

Project Title: Springwells Water Treatment Plant Powdered Activated Carbon System Improvements

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Water

Start Date: 1/8/2026

Phase Status: Future Planned Start

End Date: 6/30/2031

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: CDM Smith

Cost Est. Date: 1/1/2015

Cost Est. Prepared By: CDM Smith

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

	Total Costs	Actual Costs	Prior FYs	FY25	FY26	5 Year Total	FY27+
GLWA Salaries	\$201	\$0	\$0	\$0	\$0	\$0	\$201

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	1/8/2026	6/30/2031

Project Title: Springwells Water Treatment Plant Powdered Activated Carbon System Improvements

Phase: Study & Design & Construction Assistance # 1

Phase Title: SPW WTP Powdered Activated Carbon System Improvements

Phase Budget:	Water	Start Date:	1/8/2026
Phase Status:	Future Planned Start	End Date:	4/18/2028
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 5	Cost Est. Source: CDM Smith
Cost Est. Date: 1/1/2015	Cost Est. Prepared By: CDM Smith

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

	Total Costs	Actual Costs	Prior FYs	FY26	5 Year Total	FY27+
Study & Design & Construction Assistance # 1	\$820	\$0	\$0	\$0	\$0	\$820

Phase Dates

Activity Name	Start Date	End Date
Design - Pre-Procurement	8/4/2027	11/2/2027
Design - Procurement	11/3/2027	6/30/2028
Design - Project Execution	1/8/2026	4/23/2027
Construction Assistance - Project Execution	4/23/2027	4/18/2028
Construction Assistance - Project Closeout	4/1/2030	6/30/2030

Project Title: Springwells Water Treatment Plant Powdered Activated Carbon System Improvements

Phase: Construction (Build) # 1

Phase Title: SPW WTP Powdered Activated Carbon System Improvements

Phase Budget:	Water	Start Date:	4/23/2027
Phase Status:	Future Planned Start	End Date:	4/18/2028
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 5	Cost Est. Source: CDM Smith
Cost Est. Date: 1/1/2015	Cost Est. Prepared By: CDM Smith

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

	Total Costs	Actual Costs	Prior FYs	FY27+
Construction (Build) # 1	\$3,000	\$0	\$0	\$3,000

Phase Dates

Activity Name	Start Date	End Date
Construction - Pre-Procurement	9/2/2028	12/31/2028
Construction - Procurement	1/1/2029	6/30/2029
Construction - Project Execution	4/23/2027	4/18/2028
Construction - Closeout	4/1/2031	6/30/2031

Project Title: Springwells Water Treatment Plant Powdered Activated Carbon System Improvements

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


CIP	5 Year Total	FY20	FY21	FY24	FY25	FY26	Total
2018	\$2,900	\$900	\$2,000	\$0	\$0	\$0	\$2,900
2019	\$0	\$0	\$0	\$3,939	\$0	\$0	\$3,939
2020	\$0	\$0	\$0	\$0	\$3,938	\$0	\$3,938
2021	\$63	\$0	\$0	\$0	\$63	\$4,125	\$4,188

Description of CIP Changes:

Revised project scoring & changed project status to 10-year CIP to coincide with current condition and functionality of the PAC system, which is now tested and operable. Updated detailed project information tab. 08/12/2019 JRK

No changes are needed for FY 22 update. JK 08/26/20

Project Title: Springwells Water Treatment Plant 1930 Sedimentation Basin Sluice Gates, Guides & Hoists Improvements

<p>Project Status: Project Execution - Construction</p> <p>CIP Type: Project</p> <p>Class Lvl 1: Water</p> <p>Class Lvl 2: Treatment Plants and Facilities</p> <p>Class Lvl 3: Springwells</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>Updated project photo</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: 6/26/2014</p> <p>Year Project Added to CIP: 2014</p> <p>CIP Budget: Water</p>	<p>Project Jurisdiction: Wayne County - Outside Detroit</p> <p>Lookup Location: Springwells WTP</p> <p>Funds and Cost Center: Water - 5519-882111</p>

Problem Statement:

Existing sedimentation basin gates, guides and hoists are early 1930s and are in need of replacement. Also, operation of the sluice gates in their existing condition and design does not meet current best practices for safe maintenance and operation.

Scope of Work/Project Alternatives:

This CIP project is being delivered under a design-build project delivery method and generally includes the following scope of work:

1. Demolition of the existing eight (8) 1930 sedimentation basins gates, guides, and hoist.
2. Installation of the new eight (8) 1930 sedimentation basins gates, guides, and actuators.
3. Concrete restoration within the four (4) 1930 sedimentation basins.
4. Concrete repairs to the air vents, access ramp, access hatches on top of the 1930 sedimentation basin.
5. Electrical upgrades to the four (4) sedimentation basin gate houses.

Other Important Info:

Challenges: Work will require the 1930's plant to be shutdown during three low demand seasons to complete the work. This contractor will need to coordination with CON-170: Sludge Removal and Disposal for cleaning the sedimentation basins, SP-563, CON-253, and other construction projects to ensure that the system can handle the long duration shutdown.

Primary Driver: 5 - Public Health and Safety

Driver Explanation:

The existing sluice gates are unsafe to operate. In addition, the condition of the guides is poor.

Project Title: Springwells Water Treatment Plant 1930 Sedimentation Basin Sluice Gates, Guides & Hoists Improvements

Scoring**Project Manager Weighted Score:** 72.60

Criteria Name	Score	Comment
Condition	5	
Performance (Service Level/Reliability)	5	
Regulatory (Environmental/Legal)	3	
Operations and Maintenance	4	
Public Health and Safety	5	
Public Benefit	1	
Financial	1	
Efficiency and Innovation	3	

Risk Committee Weighted Score: 52.80

Criteria Name	Score	Comment
Condition	5	
Performance (Service Level/Reliability)	2	
Regulatory (Environmental/Legal)	1	
Operations and Maintenance	4	
Public Health and Safety	5	
Public Benefit	1	
Financial	1	
Efficiency and Innovation	1	

Project Title: Springwells Water Treatment Plant 1930 Sedimentation Basin Sluice Gates, Guides & Hoists Improvements

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Water	Start Date: 1/24/2018
Phase Status: Active	End Date: 8/4/2022
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: GLWA
Cost Est. Date: 1/1/2015	Cost Est. Prepared By: GLWA

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	\$387	\$112	\$112	\$138	\$70	\$67	\$0	\$0	\$0	\$137	\$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	1/24/2018	8/4/2022

Project Title: Springwells Water Treatment Plant 1930 Sedimentation Basin Sluice Gates, Guides & Hoists Improvements

Phase: Design # 1

Phase Title: Design

Phase Budget: Water

Start Date: 1/24/2018

Phase Status: Active

End Date: 8/24/2018

Cost Allocation: CTA

Fund: Construction Bond Fund

Funding Source: Bond Proceeds

Usefull Life > Yrs: Yes

Tot. Federal Loan Amout: \$0.00

Phase Comments/Description:

Ruby+associates designed the project to 30% under CS-289

Cost Est. Class: Class 5

Cost Est. Source: GLWA

Cost Est. Date: 1/1/2015

Cost Est. Prepared By: GLWA

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

	Total Costs	Actual Costs	Prior FYs	FY21
Design # 1	\$11	\$0	\$0	\$11

Phase Dates

Activity Name	Start Date	End Date
Design - Project Execution	1/24/2018	8/24/2018
Design - Cost Correction	7/1/2018	7/30/2018

Project Title: Springwells Water Treatment Plant 1930 Sedimentation Basin Sluice Gates, Guides & Hoists Improvements

Phase: Design-Build # 1

Phase Title: Design-Build

Phase Budget: Water	Start Date: 5/28/2019
Phase Status: Active	End Date: 8/4/2022
Cost Allocation: CTA	Fund: Construction Bond Fund
Funding Source: Bond Proceeds	Usefull Life > Yrs: Yes
	Tot. Federal Loan Amout: \$0.00

Phase Comments/Description:

Kokosing Industrial and Alfred Benesch is the design-build team under 1802774.

Cost Est. Class: Class 5	Cost Est. Source: GLWA
Cost Est. Date: 1/1/2015	Cost Est. Prepared By: GLWA

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	\$13,526	\$3,270	\$3,270	\$7,841	\$2,415	\$0	\$0	\$0	\$0	\$2,415	\$0

Phase Dates

Activity Name	Start Date	End Date
Design - Pre-Procurement	1/24/2018	8/24/2018
Design - Procurement	8/24/2018	5/28/2019
Design - Project Execution	5/28/2019	8/4/2022
Construction - Project Execution	7/2/2020	5/27/2022
Construction - Closeout	2/26/2022	5/27/2022

Project Title: Springwells Water Treatment Plant 1930 Sedimentation Basin Sluice Gates, Guides & Hoists 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	\$7,500	\$1,200	\$2,000	\$4,000	\$300	\$0	\$0	\$7,500
2019	\$17,107	\$0	\$424	\$4,153	\$6,830	\$5,697	\$3	\$17,107
2020	\$16,683	\$0	\$442	\$4,153	\$6,830	\$5,697	\$3	\$17,125
2021	\$10,677	\$0	\$178	\$3,386	\$10,327	\$331	\$19	\$14,241


Description of CIP Changes:

Up-dated the scope development and procurement dates. Add the Ruby CS-289 Contract for the 30% design.

Up-dated the "Scope of work and other information" under the "Detailed Project Information" tab.

8/13/2020: Up-dated the project status, related project, and predecessor project name(s).

Project Title: Springwells Water Treatment Plant, Yard Piping and High-Lift Header Improvements

<p>Project Status: Active - Pre-Procurement - Design</p> <p>CIP Type: Project</p> <p>Class Lvl 1: Water</p> <p>Class Lvl 2: Treatment Plants and Facilities</p> <p>Class Lvl 3: Springwells</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 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: Erich Klun</p> <p>Director: Grant Gartrell</p> <p>Managing Dept.: Water Eng</p>	<p>Date Original Business Case Prepared: 9/8/2016</p> <p>Year Project Added to CIP: 2012</p> <p>CIP Budget: Water</p>	<p>Project Jurisdiction: Wayne County - Outside Detroit</p> <p>Lookup Location: Springwells WTP</p> <p>Funds and Cost Center: Water - 5519-882111</p>

Problem Statement:

Six (6) of the seven (7) 72-inch mains leaving the site are original to the 1930 plant construction and consist of riveted steel pipe material. Main No. 7 is a prestressed concrete cylinder pipe material installed in 1958. The steel mains are known to be leaking and are in need of replacement to maintain system reliability. Additionally, isolation valves associated with the 72-inch mains need to be replaced because several are known to leak to the point where they are unable to isolate flow. It is suspected that the other large-diameter isolation valves are in similar poor condition. Other yard piping, including gravity sewers and miscellaneous utility piping are also 1930 and 1958 vintage and therefore require rehabilitation/renewal or replacement.

Scope of Work/Project Alternatives:

"This project consists of removal and replacement of the HPZ and IPZ discharge header piping and yard piping with additional replacement occurring outside the Springwell's Property to locations that minimize the number of isolation points required for work to be completed. The scope will be divided between IPZ and HPZ to maintain operations during construction. This project also includes misc. site infrastructure improvements such as the 12" Fire Loop, new guardhouse, secondary entrance off of Tireman Ave, contractor trailer and lay down yard with utilities, replacement of access drives, sewer investigation and rehab, and misc. site electrical."

Other Important Info:

Project Title: Springwells Water Treatment Plant, Yard Piping and High-Lift Header Improvements

E. Klun 8/28/20 update based on the outcome of AECOM's effort on CS-272 Task 71013A, Phase I is as follows:

The project will be delivered by multiple projects comprised of equipment procurement, DB construction, consultant services, and DBB construction contracts as follows:

- 1.Contract A, Procurement Contract for Header Sectional/Isolation Butterfly Valves – includes the procurement of large diameter, high-performance butterfly valves to be installed under Contract D.
- 2.Contract B, Procurement Contract for Pressure Regulating Valves – includes procurement of pressure regulating/flow control valves to be installed under Contract E.
- 3.Contract C, Procurement of Isolation Gate Valves – includes procurement of isolation gate valves for both head and yard piping isolation valves to be installed under Contracts E and F.
- 4.Contract D, Installation of Header Sectional/Isolation Butterfly Valves, includes installation of the butterfly valves procured under Contract A.
- 5.Contract E, DB Contract for Intermediate Pressure System Piping Replacement, includes intermediate pressure system header and yard piping replacement, installation of valves procured under Contracts B and C, and replacement of mains in Central Ave. and Indiana Ave.
- 6.Contract F, DBB Contract for High Pressure System Piping Replacement, includes high pressure system header and yard piping replacement, installation of valves procured under Contract C, Header Vault rehabilitation, various miscellaneous yard/site improvements, and site restoration.

Primary Driver: 1 - Condition

Driver Explanation:

E. Klun 8/28/20 update as follows:

- 1.Experiences on CON-133 and CON-253

Project Title: Springwells Water Treatment Plant, Yard Piping and High-Lift Header Improvements

demonstrated that isolating mains with existing transmission system valves is difficult, and sometimes not possible. Condition of the the valve is such that if not addressed prior to piping replacement, contractor delays and change order can be expected. This further clarifies that condition of the existing infrastructure is the driver. Furthermore, segments of leaking and badly corroded mains were repaired under CON-133, again demonstrating condition as being problematic.

Project Title: Springwells Water Treatment Plant, Yard Piping and High-Lift Header Improvements

Scoring**Project Manager Weighted Score:** 71.40

Criteria Name	Score	Comment
Condition	5	
Performance (Service Level/Reliability)	4	
Regulatory (Environmental/Legal)	2	
Operations and Maintenance	4	
Public Health and Safety	3	
Public Benefit	5	
Financial	3	
Efficiency and Innovation	4	

Risk Committee Weighted Score: 72.20

Criteria Name	Score	Comment
Condition	5	
Performance (Service Level/Reliability)	5	
Regulatory (Environmental/Legal)	2	
Operations and Maintenance	3	
Public Health and Safety	3	
Public Benefit	5	
Financial	3	
Efficiency and Innovation	4	

Project Title: Springwells Water Treatment Plant, Yard Piping and High-Lift Header Improvements

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget:	Water	Start Date:	8/3/2020
Phase Status:	Future Planned Start	End Date:	6/30/2031
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: CDM Smith
Cost Est. Date: 1/1/2019	Cost Est. Prepared By: CDM Smith

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	\$1,472	\$241	\$241	\$267	\$68	\$114	\$57	\$57	\$57	\$354	\$610

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	8/3/2020	6/30/2031
Capital Delivery Salary	8/3/2020	6/30/2031

Project Title: Springwells Water Treatment Plant, Yard Piping and High-Lift Header Improvements

Phase: Design & Construction Assistance # 1

Phase Title: Design-Build Assistance

Phase Budget:	Water	Start Date:	7/1/2021
Phase Status:	Future Planned Start	End Date:	6/30/2031
Cost Allocation:	CTA	Fund:	Construction Bond Fund
Funding Source:	Bond Proceeds	Usefull Life > Yrs:	Yes
		Tot. Federal Loan Amout:	\$0.00

Phase Comments/Description:

AECOM CIP Program Management Contract

Cost Est. Class: Class 5	Cost Est. Source: CDM Smith
Cost Est. Date: 1/1/2015	Cost Est. Prepared By: CDM Smith

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+
Design & Construction Assistance # 1	\$18,000	\$0	\$0	\$500	\$2,500	\$3,000	\$1,000	\$1,000	\$8,000	\$10,000

Phase Dates

Activity Name	Start Date	End Date
Design - Pre-Procurement	8/3/2020	11/1/2020
Design - Procurement	11/2/2020	6/30/2021
Design/Engineering	7/1/2021	6/30/2031
Construction Assistance - Project Execution	11/12/2021	6/30/2031

Project Title: Springwells Water Treatment Plant, Yard Piping and High-Lift Header Improvements

Phase: Construction (Build) # 1

Phase Title: Design Build

Phase Budget:	Water	Start Date:	11/12/2021
Phase Status:	Future Planned Start	End Date:	6/30/2031
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 5	Cost Est. Source: CDM Smith
Cost Est. Date: 1/1/2015	Cost Est. Prepared By: CDM Smith

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+
Construction (Build) # 1	\$181,000	\$0	\$0	\$1,000	\$2,000	\$10,000	\$15,000	\$15,000	\$43,000	\$138,000

Phase Dates

Activity Name	Start Date	End Date
Construction - Pre-Procurement	1/14/2021	5/14/2021
Construction - Procurement	5/15/2021	11/11/2021
Construction	11/12/2021	6/30/2031
Construction - Closeout	4/1/2031	6/30/2031

Project Title: Springwells Water Treatment Plant, Yard Piping and High-Lift Header Improvements

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

CIP	5 Year Total	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	Total
2018	\$25,000	\$2,000	\$7,000	\$8,000	\$8,000	\$0	\$0	\$0	\$0	\$25,000
2019	\$0	\$0	\$0	\$0	\$0	\$0	\$110,129	\$0	\$0	\$110,129
2020	\$72	\$0	\$0	\$0	\$0	\$0	\$72	\$110,578	\$0	\$110,650
2021	\$22,022	\$4	\$0	\$1	\$46	\$608	\$9,409	\$11,958	\$90,587	\$112,613

Description of CIP Changes:

- (1) Moved start of contract expenditures from FY24 to FY25. JPM 8/8/2019
- (2) Mains 1,2,3,4 could not be isolated during work under CON-133 and pose a risk to member communities in the event of a system pipe breach. JPM 8/8/2019
- (3) CIP cost estimate updated to reflect pricing from an engineer's opinion of cost for WWP CS-055 Yard Pipe Replacement a Class 3 estimate. JPM 8/8/2019
- (4) CIP Cost updated to reflect replacement of all 72 inch yard piping within the Springwells fence line and out to the first valve outside the fence line as well as the 1930 pipe along Warren from Indiana to McDonald Avenue. JPM 8/8/2019
- (5) Planned project using multiple DB contracts predicated on using the services of AECOM under its CIP program management services contract. 8/16/19 GAG

Although the cost of this CIP has been increased significantly from last fiscal year, the estimated cost of this total project will continue to be refined over the next fiscal year as more cost information is gathered. JPM 8/8/2019

E. Klun 8/28/20 update as follows:

1. Revised scope, schedule and costs based on CS-272 Task 71013A study report.
2. Schedule and spend moved up approximately 5 years to offset spend delay on CIP#114010 and to ensure the high lift pumping units can be isolated and replaced under CIP#114002

Project Title: Springwells Water Treatment Plant Steam, Condensate Return, and Compressed Air Piping Improvements

<p>Project Status: Project Execution - Construction</p> <p>CIP Type: Project</p> <p>Class Lvl 1: Water</p> <p>Class Lvl 2: Treatment Plants and Facilities</p> <p>Class Lvl 3: Springwells</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>Maintenance building photo 1 of finished section of piping</p>
<p>Project Engineer/Manager: Brian VanHall</p> <p>Director: Grant Gartrell</p> <p>Managing Dept.: Water Eng</p>	<p>Date Original Business Case Prepared: 3/6/2012</p> <p>Year Project Added to CIP: 2012</p> <p>CIP Budget: Water</p>	<p>Project Jurisdiction: Wayne County - Outside Detroit</p> <p>Lookup Location: Springwells WTP</p> <p>Funds and Cost Center: Water - 5519-882111</p>

Problem Statement:

The steam, condensate return, compressed air, and natural gas piping systems at the Springwells Water Treatment Plant need to be replaced to ensure overall reliability of the plant. These systems are original to the plant (i.e. from 1930s or 1950s) and are beyond their useful life. These existing steam and condensate systems are in poor condition and require multiple repairs each heating season due to frequent failures. These repairs often require taking the entire steam system out of service which places equipment at risk of freezing due to exposure to low temperatures. Some failures have occurred in difficult areas to access and have not been repaired over many seasons because they are cost prohibitive to repair. The active steam, condensate, and air leaks require that the steam generators and air compressors run at higher loads to keep up with demand,

Scope of Work/Project Alternatives:

This project is being delivered using a design-bid-build project delivery method. This engineering services contract involves designing a new, more energy-efficient steam heating system for the entire Springwells Water Treatment Plant, including all steam unit heaters, steam piping, condensate return piping, condensate return pumping stations, steam pressure reducing valves, and appurtenances. This project also involves replacing the compressed air piping in the plant used for service air. Once completed, the project will provide energy savings by eliminating extensive steam and condensate leaking currently inherent in the antiquated system. This project includes design and construction administration (CS-1671) and construction (CON-252) to replace the leaking steam piping, condensate return piping and compressed air piping throughout the Springwells WTP. The scope of work includes replacing unit heaters, radiators, condensate return pump

Other Important Info:

Many components of the existing system are original to the existing heating system, are not functioning and need to be demolished/removed. Seasonal work and sequencing with the heating season is required.

Primary Driver: 1 - Condition

Driver Explanation:

Frequent failures with steam and condensate piping that cannot be maintained, which reduces the heating effectiveness of the entire heating system and places heavy burdens on plant staff to repair leaks.

Project Title: Springwells Water Treatment Plant Steam, Condensate Return, and Compressed Air Piping Improvements

resulting in additional stress on this equipment and is not energy efficient. Leaking steam and condensate contribute to significant moisture and condensation within the facility, which creates ideal conditions for corrosion of other aging plant infrastructure critical for continued water production. Failure of these lines is unsafe to nearby personnel since steam and condensate could cause severe burns, and high pressure lines would result in fast moving air that can cause injury.

stations, pressure reducing valves, regulators, and heating system appurtenances throughout the plant. Once completed, the project will provide energy savings by eliminating extensive steam and condensate leaking currently inherent in the antiquated system.

Project Title: Springwells Water Treatment Plant Steam, Condensate Return, and Compressed Air Piping Improvements

Scoring**Project Manager Weighted Score:** 69.20

Criteria Name	Score	Comment
Condition	5	
Performance (Service Level/Reliability)	5	
Regulatory (Environmental/Legal)	1	
Operations and Maintenance	4	
Public Health and Safety	5	
Public Benefit	1	
Financial	2	
Efficiency and Innovation	4	

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: Springwells Water Treatment Plant Steam, Condensate Return, and Compressed Air Piping Improvements

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Water

Start Date: 6/21/2015

Phase Status: Active

End Date: 6/30/2023

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: Metco

Cost Est. Date: 1/1/2017

Cost Est. Prepared By: Metco

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	\$526	\$115	\$115	\$206	\$101	\$105	\$0	\$0	\$0	\$206	\$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	6/21/2015	6/30/2023
Capital Delivery Salary	6/21/2015	6/30/2023

Project Title: Springwells Water Treatment Plant Steam, Condensate Return, and Compressed Air Piping Improvements

Phase: Study & Design & Construction Assistance # 1

Phase Title: CS-1671 Steam, Condensate Return, and Compressed Air Piping Improvements at Springwells WTP

Phase Budget: Water	Start Date: 5/18/2016
Phase Status: Active	End Date: 6/30/2023
Cost Allocation: CTA	Fund: Construction Bond Fund
Funding Source: Bond Proceeds	Usefull Life > Yrs: Yes
	Tot. Federal Loan Amout: \$0.00

Phase Comments/Description:

METCO

Cost Est. Class: Class 1

Cost Est. Source: Metco

Cost Est. Date: 1/1/2017

Cost Est. Prepared By: Metco

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+
Study & Design & Construction Assistance # 1	\$1,385	\$765	\$765	\$258	\$289	\$73	\$0	\$0	\$0	\$362	\$0

Phase Dates

Activity Name	Start Date	End Date
Design - Pre-Procurement	6/21/2015	9/19/2015
Design - Procurement	9/20/2015	5/17/2016
Design - Project Execution	5/18/2016	6/30/2023
Construction Assistance - Project Execution	6/1/2020	6/30/2020
Construction Assistance - Project Closeout	6/1/2020	6/30/2020

Project Title: Springwells Water Treatment Plant Steam, Condensate Return, and Compressed Air Piping Improvements

Phase: Construction (Build) # 1

Phase Title: Steam, Condensate Return, and Compressed Air Piping Improvements at Springwells WTP

Phase Budget: Water	Start Date: 4/5/2018
Phase Status: Active	End Date: 6/30/2023
Cost Allocation: CTA	Fund: Construction Bond Fund
Funding Source: Bond Proceeds	Usefull Life > Yrs: Yes
	Tot. Federal Loan Amout: \$0.00

Phase Comments/Description:

NTP 2/1/2019

Cost Est. Class: Class 1	Cost Est. Source: Clark
Cost Est. Date: 8/1/2019	Cost Est. Prepared By: Clark

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	\$23,629	\$9,204	\$9,204	\$9,292	\$4,983	\$150	\$0	\$0	\$0	\$5,133	\$0

Phase Dates

Activity Name	Start Date	End Date
Construction - Pre-Procurement	4/5/2018	8/3/2018
Construction - Procurement	8/4/2018	1/31/2019
Construction - Project Execution	2/1/2019	6/30/2023
Construction - Closeout	4/1/2023	6/30/2023

Project Title: Springwells Water Treatment Plant Steam, Condensate Return, and Compressed Air Piping Improvements


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	Total
2018	\$5,950	\$300	\$3,450	\$2,500	\$0	\$0	\$0	\$0	\$6,250
2019	\$10,891	\$280	\$450	\$1,406	\$4,824	\$4,654	\$7	\$0	\$11,621
2020	\$21,407	\$0	\$473	\$3,109	\$5,392	\$7,754	\$8,261	\$0	\$24,989
2021	\$14,577	\$0	\$0	\$2,373	\$6,948	\$6,932	\$6,932	\$713	\$23,898

Description of CIP Changes:

Construction contract CON-252 was awarded and the CIP was updated this year to reflect the actual contract value and cash flow for the construction contract. In addition, funds have been added to this CIP this year for additional resident project representation (RPR), construction administration and project management services under the consulting engineering services contract CS-1671. BPV 8-6-19
Spend projections were revised to capture actuals to date and updated forecasting. BPV 8/20/20

Project Title: SPW WTP Water Treatment Plant 1930 Filter Building-Roof Replacement

<p>Project Status: Closed</p> <p>CIP Type: Project</p> <p>Class Lvl 1: Water</p> <p>Class Lvl 2: Treatment Plants and Facilities</p> <p>Class Lvl 3: Springwells</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: Paula Anderson</p> <p>Managing Dept.: Water Eng</p>	<p>Date Original Business Case Prepared: 10/11/2016</p> <p>Year Project Added to CIP: 2016</p> <p>CIP Budget: Water</p>	<p>Project Jurisdiction: Wayne County - Outside Detroit</p> <p>Lookup Location: Springwells WTP</p> <p>Funds and Cost Center: Water - 5519-882111</p>

Problem Statement:

The existing roof over the 1930 filters is leaking in places and poses water quality concerns due to roof leaks.

Scope of Work/Project Alternatives:

This project encompasses replacement of the existing 1930 Filter Building roofing system, including the built-up roofing material, flashing, roof drains/conductors and sealing cap stones to prevent water from penetrating the building envelop and causing water damage. Construction activity under Contract SP-563 in 2014-2015 revealed that water damage has been on-going and is causing clerestory window lintel deterioration. Additionally, construction traffic under Contract SP-563 has shown the built-up material to be blistering and spongy.

Other Important Info:

Challenges: Seasonal construction work, and construction will require working around new rooftop equipment installed under SP-563.

Primary Driver: 1 - Condition

Driver Explanation:

Not provided.

Project Title: SPW WTP Water Treatment Plant 1930 Filter Building-Roof Replacement

Scoring**Project Manager Weighted Score:** 70.60

Criteria Name	Score	Comment
Condition	5	
Performance (Service Level/Reliability)	4	
Regulatory (Environmental/Legal)	4	
Operations and Maintenance	4	
Public Health and Safety	2	
Public Benefit	2	
Financial	4	
Efficiency and Innovation	3	

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: SPW WTP Water Treatment Plant 1930 Filter Building-Roof Replacement

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Water

Start Date: 8/1/2017

Phase Status: Closed Out

End Date: 6/10/2019

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 4

Cost Est. Source: Testing Engineers and Consultants

Cost Est. Date: 1/1/2016

Cost Est. Prepared By: Testing Engineers and Consultants

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

	Total Costs	Actual Costs	Prior FYs
GLWA Salaries	\$11	\$11	\$11

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	8/1/2017	6/10/2019

Project Title: SPW WTP Water Treatment Plant 1930 Filter Building-Roof Replacement

Phase: Design-Build # 1

Phase Title: Springwells Water Treatment Plant 1930 Filter Building-Roof Replacement

Phase Budget: Water	Start Date: 8/1/2017
Phase Status: Closed Out	End Date: 5/14/2019
Cost Allocation: CTA	Fund: Construction Bond Fund
Funding Source: Bond Proceeds	Usefull Life > Yrs: Yes
	Tot. Federal Loan Amout: \$0.00

Phase Comments/Description:

DB093

Cost Est. Class: Class 4	Cost Est. Source: Testing Engineers and Consultants
Cost Est. Date: 1/1/2016	Cost Est. Prepared By: Testing Engineers and Consultants

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

	Total Costs	Actual Costs	Prior FYs
Design-Build # 1	\$3,900	\$3,900	\$3,900

Phase Dates

Activity Name	Start Date	End Date
Design - Pre-Procurement	8/1/2017	10/12/2017
Design - Procurement	10/16/2017	4/12/2018
Design - Project Execution	4/18/2018	5/14/2019
Design-Build - Cost Period Correction	8/1/2017	5/1/2019
Construction - Project Execution	5/18/2018	4/17/2019
Construction - Closeout	6/1/2019	6/10/2019

Project Title: SPW WTP Water Treatment Plant 1930 Filter Building-Roof Replacement

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

CIP	5 Year Total	FY17	FY18	FY19	Total
2018	\$0	\$3,000	\$0	\$0	\$3,000
2019	\$2,420	\$0	\$486	\$2,420	\$2,906
2020	\$0	\$0	\$1,124	\$2,788	\$3,912
2021	\$0	\$0	\$0	\$3,911	\$3,911

Description of CIP Changes:

updated Prior Year actuals expenses

Project Title: Springwells Water Treatment Plant, Reservoir Fill Line Improvements

Project Status: Project Execution - Construction

CIP Type: Project

Class Lvl 1: Water

Class Lvl 2: Treatment Plants and Facilities

Class Lvl 3: Springwells

☐ **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: Erich Klun

Director: Grant Gartrell

Managing Dept.: Water Eng

Date Original Business Case Prepared: 10/11/2016

Year Project Added to CIP: 2016

CIP Budget: Water

Project Jurisdiction: Wayne County - Outside Detroit

Lookup Location: SPW WTP

Funds and Cost Center: Water - 5519-882111

Problem Statement:

A new reservoir fill line to the Springwells Water Treatment Plant is needed to provide finished water to the Springwells high service area from the GLWA Southwest and Waterworks Park treatment plants while the Springwells raw water tunnel is rehabilitated under a separate contract. The new reservoir fill line will allow the Springwells high-lift pumping facility to operate and feed its high-pressure district while the treatment works at Springwells are temporarily out of service. For example, there are times when the low-lift pumps need to be shutdown to allow for underwater inspection of the low-lift pump isolation gates and other raw water conveyance infrastructure upstream of the low-lift pumping station at Springwells.

Scope of Work/Project Alternatives:

This project is being delivered under a design-bid-build project delivery method. The scope of work generally includes:

1. Designing the project.
2. Constructing the new reservoir fill piping, flow control energy dissipating valves, valve vault, and appurtenances.
3. Connecting new piping to existing 72-inch diameter steel water transmission main.
4. Commissioning and testing the new reservoir filling facility.
5. Restoring the site.

E. Klun 8/20/20 updates as follows:

1. Add system water quality modeling and SPP reservoir system CFD modeling to the scope of CS-038 via Amendment No. 3.
2. Add filter washwater vent piping replacement to the scope of CON-253 via CO-02.
3. Add chemical feed system control panel CP-3 improvements to the scope of CON-253 via CO-

Other Important Info:

Potential delays due to isolation of 1926 main and coordination with CON-133 (WTP metering) requiring exercising and using old valves. Control of the reservoir filling operation by SCC with significant roles played by SWP, WWP, NEP and SPP operators.

Primary Driver: 2 - Performance

Driver Explanation:

Project provides needed system redundancy and reliability in the event treatment, SPP low lift pumping or the raw water supply system is interrupted.

Project Title: Springwells Water Treatment Plant, Reservoir Fill Line Improvements

02.

Project Title: Springwells Water Treatment Plant, Reservoir Fill Line Improvements

Scoring**Project Manager Weighted Score:** 77.80

Criteria Name	Score	Comment
Condition	5	
Performance (Service Level/Reliability)	5	
Regulatory (Environmental/Legal)	3	
Operations and Maintenance	3	
Public Health and Safety	3	
Public Benefit	5	
Financial	4	
Efficiency and Innovation	4	

Risk Committee Weighted Score: 77.20

Criteria Name	Score	Comment
Condition	5	
Performance (Service Level/Reliability)	5	
Regulatory (Environmental/Legal)	4	
Operations and Maintenance	1	
Public Health and Safety	3	
Public Benefit	4	
Financial	4	
Efficiency and Innovation	5	

Project Title: Springwells Water Treatment Plant, Reservoir Fill Line Improvements

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Water

Start Date: 8/9/2015

Phase Status: Active

End Date: 3/1/2021

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 4

Cost Est. Source: CDM Smith

Cost Est. Date: 1/1/2015

Cost Est. Prepared By: CDM Smith

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	\$295	\$233	\$233	\$62	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	8/9/2015	3/1/2021
Capital Delivery Salary	8/9/2015	3/1/2021

Project Title: Springwells Water Treatment Plant, Reservoir Fill Line Improvements

Phase: Design & Construction Assistance # 1

Phase Title: SCP-CS-038 Springwells Reservoir Fill Line Improvements

Phase Budget: Water	Start Date: 11/8/2016
Phase Status: Active	End Date: 3/1/2021
Cost Allocation: CTA	Fund: Construction Bond Fund
Funding Source: Bond Proceeds	Usefull Life > Yrs: Yes
	Tot. Federal Loan Amout: \$0.00

Phase Comments/Description:

AECOM

Cost Est. Class: Class 4

Cost Est. Source: CDM Smith

Cost Est. Date: 1/1/2015

Cost Est. Prepared By: CDM Smith

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	\$359	\$335	\$335	\$24	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Design - Pre-Procurement	8/9/2015	11/7/2015
Design - Procurement	11/8/2015	11/7/2016
Design - Project Execution	11/8/2016	4/25/2018
Construction Assistance - Project Execution	4/27/2018	3/1/2021
Construction Assistance - Project Closeout	12/1/2020	3/1/2021

Project Title: Springwells Water Treatment Plant, Reservoir Fill Line Improvements

Phase: Construction (Build) # 1

Phase Title: SPW WTP Reservoir Fill Line Improvements

Phase Budget: Water	Start Date: 10/31/2017
Phase Status: Active	End Date: 10/17/2019
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: CDM Smith
Cost Est. Date: 1/1/2015	Cost Est. Prepared By: CDM Smith

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	\$4,271	\$3,018	\$3,018	\$1,252	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Construction - Pre-Procurement	10/31/2017	1/31/2018
Construction - Procurement	1/22/2018	4/25/2018
Construction - Project Execution	4/25/2018	10/17/2019
Construction - Closeout	10/18/2019	10/17/2019

Project Title: Springwells Water Treatment Plant, Reservoir Fill Line Improvements

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	\$7,300	\$200	\$3,300	\$4,000	\$0	\$0	\$0	\$7,500
2019	\$6,207	\$120	\$181	\$2,469	\$3,656	\$61	\$21	\$6,508
2020	\$1,551	\$0	\$332	\$2,849	\$1,551	\$0	\$0	\$4,732
2021	\$0	\$0	\$0	\$2,830	\$1,991	\$0	\$0	\$4,821


Description of CIP Changes:

(1.) Revised construction cost to reflect CON-253 value and schedule for closeout; (2.) Revised consulting expenditure to reflect pending Amend. No. 1 to extend CS-038 for time and no money (time needed to complete as-builts after construction completion)
 (2.) Revised both CS-038 and CON-253 schedules to reflect current status of both contracts due to inability to isolate and connect to existing 1926 72" main. CON-253 CO-01 added 410 days to final completion. CS-038 (original completion date of 4/10/19) Amend. No. 1 and No. 2 added time to align the CS-038 timeline with the CON-253 timeline. E. Klun 8/15/19.

E. Klun 8/20/20 updates as follows:

1. Add scope to CON-253 via CO-02 to include SPP WW vent piping replacement and CP-3 improvements. WW vent piping to be replaced in-kind. No engineering required. CP-3 improvements are being made to align with CS-108 requirements for WTP automation and cyber security.
2. Extend overall project schedule to reflect CON-253 CO-02 improvements.
3. Update costs and scope resulting from CS-038 Amendment No. 3.

Project Title: Springwells Water Treatment Plant 1958 Settled Water Conduits and Loading Dock Concrete Pavement Replacement

<p>Project Status: Project Execution - Design</p> <p>CIP Type: Project</p> <p>Class Lvl 1: Water</p> <p>Class Lvl 2: Treatment Plants and Facilities</p> <p>Class Lvl 3: Springwells</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: 10/1/2018</p> <p>Year Project Added to CIP: 2018</p> <p>CIP Budget: Water</p>	<p>Project Jurisdiction: Wayne County - Outside Detroit</p> <p>Lookup Location: Springwells WTP</p> <p>Funds and Cost Center: Water - 5519-882411</p>

Problem Statement:

The existing concrete pavement that covers the 1958 settled water conduits has failed with significant concrete deterioration and corrosion of the reinforcement embedded steel. The condition of the concrete pavement has become much worse over the past 12 months. The condition of the concrete is poor and is crumbling in many major areas. The conditions in certain areas are such that there are now potential safety hazards to those who have to walk on the pavement. The plant chemists have to walk some of the areas to obtain settled water samples at times. The concrete pavement over the 1958 settled water conduits also serves as a service road that provides vehicular access to the 1958 filter building. This paved service road also serves as the roof to the settled water conduit that conveys settled water to the 1958 filter train at Springwells.

Scope of Work/Project Alternatives:

This CIP project is being delivered under a design-bid-build project delivery method and generally includes the following scope of work:

1. Demolition of the existing concrete pavement that covers the 1958 settled water conduit and the loading dock.
2. Placement of new concrete pavement that covers the 1958 settled water conduit and the loading dock.
3. Demolition and installation of handrail around the 1958 settled water conduit.
4. Demolition of the existing concrete loading dock.
5. Placement of new concrete loading dock.

Other Important Info:

Challenge: Equipment limitations on the settled water conduit and not damaging the structure concrete of the settled water conduit.

Primary Driver: 1 - Condition

Driver Explanation:

The condition of the existing concrete pavement has failed in multiple areas and is large in its extent of failure.

Project Title: Springwells Water Treatment Plant 1958 Settled Water Conduits and Loading Dock Concrete Pavement Replacement

Scoring

Project Manager Weighted Score: 52.00

Criteria Name	Score	Comment
Condition	5	
Performance (Service Level/Reliability)	3	
Regulatory (Environmental/Legal)	1	
Operations and Maintenance	3	
Public Health and Safety	4	
Public Benefit	1	
Financial	1	
Efficiency and Innovation	2	

Risk Committee Weighted Score: 52.00

Criteria Name	Score	Comment
Condition	5	
Performance (Service Level/Reliability)	3	
Regulatory (Environmental/Legal)	1	
Operations and Maintenance	3	
Public Health and Safety	4	
Public Benefit	1	
Financial	1	
Efficiency and Innovation	2	

Project Title: Springwells Water Treatment Plant 1958 Settled Water Conduits and Loading Dock Concrete Pavement Replacement

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget:	Water	Start Date:	5/1/2019
Phase Status:	Future Planned Start	End Date:	6/30/2023
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 5	Cost Est. Source: GLWA
Cost Est. Date: 1/1/2018	Cost Est. Prepared By: GLWA

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	\$411	\$91	\$91	\$189	\$66	\$65	\$0	\$0	\$0	\$131	\$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	5/1/2019	6/30/2023
Capital Delivery Salary	5/1/2019	6/30/2023

Project Title: Springwells Water Treatment Plant 1958 Settled Water Conduits and Loading Dock Concrete Pavement Replacement

Phase: Construction (Build) # 1

Phase Title: Construction

Phase Budget:	Water	Start Date:	11/30/2020
Phase Status:	Future Planned Start	End Date:	6/30/2023
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 5	Cost Est. Source: GLWA
Cost Est. Date: 1/1/2018	Cost Est. Prepared By: GLWA

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	5 Year Total
Construction (Build) # 1	\$1,870	\$0	\$0	\$0	\$500	\$1,370	\$1,870

Phase Dates

Activity Name	Start Date	End Date
Construction - Pre-Procurement	5/1/2019	12/31/2020
Construction - Procurement	1/1/2021	6/30/2021
Construction - Project Execution	11/30/2020	11/30/2021
Construction - Closeout	4/1/2023	6/30/2023

Project Title: Springwells Water Treatment Plant 1958 Settled Water Conduits and Loading Dock Concrete Pavement Replacement

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

CIP	5 Year Total	FY20	FY21	FY22	Total
2020	\$862	\$206	\$656	\$0	\$862
2021	\$1,670	\$94	\$1,663	\$7	\$1,764

Description of CIP Changes:

Updated the "primary driver" under the "Detailed project Information" tab and adjusted the "Public health and Safety" score under the "Project Scoring"

Project Title: Springwells Water Treatment Plant Flocculator Drive Replacements

Project Status: Active - Procurement - Board Approved - Design

CIP Type: Project

Class Lvl 1: Water

Class Lvl 2: Treatment Plants and Facilities

Class Lvl 3: Springwells

☐ **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: Peter Fromm

Director: Grant Gartrell

Managing Dept.: Water Eng

Date Original Business Case Prepared: 10/1/2018

Year Project Added to CIP: 2018

CIP Budget: Water

Project Jurisdiction: Wayne County - Outside Detroit

Lookup Location: Springwells WTP

Funds and Cost Center: Water - 5519-882111

Problem Statement:

The existing flocculator drives, motors, and control panels are beyond useful service life.

Scope of Work/Project Alternatives:

This CIP will be delivered under a design-bid-build project delivery model. The scope of work will generally include the following:

1. Replacement of the existing flocculator drives, motors, and control panels.
2. Replacement of all drive shaft bearings and associated grease lines.
3. Replacement of access doors between the flocculator chambers
4. Replacement of ladder rungs into all flocculators.
5. Improvement of flocculation system related instrumentation and controls.

Other Important Info:

Implementation of this CIP project is being sequenced and coordinated with another Springwells WTP CIP project, namely the 1930 Sedimentation Basins Sluice Gate Improvements Project.

Primary Driver: 1 - Condition

Driver Explanation:

Existing flocculator drivers are beyond the useful service life

Project Title: Springwells Water Treatment Plant Flocculator Drive Replacements

Scoring**Project Manager Weighted Score:** 48.40

Criteria Name	Score	Comment
Condition	4	
Performance (Service Level/Reliability)	3	
Regulatory (Environmental/Legal)	2	
Operations and Maintenance	3	
Public Health and Safety	1	
Public Benefit	2	
Financial	2	
Efficiency and Innovation	3	

Risk Committee Weighted Score: 47.00

Criteria Name	Score	Comment
Condition	4	
Performance (Service Level/Reliability)	2	
Regulatory (Environmental/Legal)	2	
Operations and Maintenance	3	
Public Health and Safety	2	
Public Benefit	2	
Financial	2	
Efficiency and Innovation	2	

Project Title: Springwells Water Treatment Plant Flocculator Drive Replacements

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget:	Water	Start Date:	1/28/2020
Phase Status:	Future Planned Start	End Date:	5/1/2024
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 5	Cost Est. Source: GLWA
Cost Est. Date: 1/1/2018	Cost Est. Prepared By: GLWA

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	\$340	\$1	\$1	\$154	\$77	\$85	\$20	\$2	\$185

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	1/28/2020	5/1/2024

Project Title: Springwells Water Treatment Plant Flocculator Drive Replacements

Phase: Design & Construction Assistance # 1

Phase Title: Design/Construction Administration

Phase Budget:	Water	Start Date:	12/1/2020
Phase Status:	Future Planned Start	End Date:	5/1/2024
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:	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 & Construction Assistance # 1	\$1,893	\$0	\$0	\$413	\$244	\$618	\$618	\$0	\$1,480

Phase Dates

Activity Name	Start Date	End Date
Design - Pre-Procurement	1/28/2020	2/17/2020
Design - Procurement	2/18/2020	11/30/2020
Design - Project Execution	12/1/2020	5/1/2022
Construction Assistance - Project Execution	6/1/2022	5/1/2024
Construction Assistance - Project Closeout	2/1/2024	5/1/2024

Project Title: Springwells Water Treatment Plant Flocculator Drive Replacements

Phase: Construction (Build) # 1

Phase Title: Construction

Phase Budget:	Water	Start Date:	6/1/2022
Phase Status:	Future Planned Start	End Date:	5/1/2024
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 5	Cost Est. Source: GLWA
Cost Est. Date: 1/1/2018	Cost Est. Prepared By: GLWA

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

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	5 Year Total
Construction (Build) # 1	\$10,125	\$0	\$0	\$50	\$5,771	\$4,304	\$0	\$10,125

Phase Dates

Activity Name	Start Date	End Date
Construction - Pre-Procurement	8/3/2021	12/1/2021
Construction - Procurement	12/2/2021	5/31/2022
Construction - Project Execution	6/1/2022	5/1/2024
Construction - Closeout	2/1/2024	5/1/2024

Project Title: Springwells Water Treatment Plant Flocculator Drive Replacements

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	Total
2020	\$2,328	\$0	\$0	\$10	\$2,314	\$4	\$0	\$2,328
2021	\$9,267	\$29	\$315	\$635	\$2,265	\$6,035	\$17	\$9,296

Description of CIP Changes:

New project added to the CIP. PF 2018

The cost of this CIP was increased from last fiscal year because the cost of consulting engineering services was added this fiscal year, and the estimated cost for construction was increased because the concept design of the project was advanced from last year. In addition, the schedule to implement this CIP was expanded to account for procurement of engineering services, conducting the detailed design, and to coordinate with another project at Springwells related to replacement of the 1930 sedimentation basin sluice gates. PF 8/9/2019

Cost for engineering services was updated with contract value. The cost for construction increased to include full replacement of flocculator equipment.

Project Title: Springwells Water Treatment Plant - Service Building Electrical Substation and Miscellaneous Improvements

Project Status: Future Planned - Within 5 Year Plan

CIP Type: Project

Class Lvl 1: Water

Class Lvl 2: Treatment Plants and Facilities

Class Lvl 3: Springwells

☐ **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)**



Picture

Project Engineer/Manager: Justin Kietur

Director: Terry Daniel

Managing Dept.: Water Eng

Date Original Business Case Prepared:
8/12/2019

Year Project Added to CIP: 2019

CIP Budget: Water

Project Jurisdiction: Wayne County - Outside Detroit

Lookup Location: Water Treatment Plants

Funds and Cost Center:
Problem Statement:

The electrical substation located inside the Service Building provides electrical service to the entire service building including the filter wash water pumping units. The existing electrical substation is a double-ended unit that has experienced corrosion to its interior components and electrical cables. As a result the substation does not automatically switch-over during power trips and requires manual switch-over, which defeats the purpose of the automatic switch-over feature of the substation. This substation provides power to the filter wash water pumps and as a result when there are power disruptions associated with the substation, the plant is not able to wash filters. This situation causes water production issues at the plant whenever there are failures of the substation. Although certain components (e.g. breakers) of the electrical substation can be replaced, there are corroded internal

Scope of Work/Project Alternatives:

Project will be delivered using a design-build project delivery. The scope of improvements will generally include:

1. Replacement of the electrical substation in the 1958 Service Building
2. Connection of replacement electrical substation to Ovation for status monitoring
3. Replacement of electrical panel in 1930 plant and new conduit and cable runs to the associated equipment
4. Rehab of masonry on exterior of phosphoric acid fill station
5. Insulation of piping and pipe chase behind phosphoric acid fill station
6. Installation of tank level gauges and alarms at fill station to prevent overfilling of chemical storage tanks

Other Important Info:
Primary Driver: 1 - Condition

Driver Explanation:

Project Title: Springwells Water Treatment Plant - Service Building Electrical Substation and Miscellaneous Improvements

electrical circuits, cables and contactors that cannot be replaced and are still causing problems with the substation's performance.

The electrical breaker panel located in the 1930 filter building is original construction and is severely corroded. This panel supplies power to a portion of the 1930 Filter Building and its failure would result in loss of water production capacity.

The concrete area of the phosphoric acid outdoor fill station is deteriorated and the water service to the associated emergency eye-wash station suffers frequent breaks. The eye wash station is required to be in service for phosphoric acid deliveries and repair requires working in the tight confines of a pipe chase.

Project Title: Springwells Water Treatment Plant - Service Building Electrical Substation and Miscellaneous Improvements

Scoring**Project Manager Weighted Score:** 46.40

Criteria Name	Score	Comment
Condition	4	
Performance (Service Level/Reliability)	3	
Regulatory (Environmental/Legal)	1	
Operations and Maintenance	3	
Public Health and Safety	3	
Public Benefit	1	
Financial	2	
Efficiency and Innovation	1	

Risk Committee Weighted Score: 53.00

Criteria Name	Score	Comment
Condition	4	
Performance (Service Level/Reliability)	4	
Regulatory (Environmental/Legal)	2	
Operations and Maintenance	3	
Public Health and Safety	3	
Public Benefit	1	
Financial	2	
Efficiency and Innovation	1	

Project Title: Springwells Water Treatment Plant - Service Building Electrical Substation and Miscellaneous Improvements

Phase: GLWA Salaries

Phase Title: GLWA salaries

Phase Budget:	Water	Start Date:	9/30/2021
Phase Status:	Future Planned Start	End Date:	6/30/2025
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:	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	5 Year Total
GLWA Salaries	\$282	\$0	\$0	\$100	\$80	\$95	\$7	\$182

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	9/30/2021	6/30/2025

Project Title: Springwells Water Treatment Plant - Service Building Electrical Substation and Miscellaneous Improvements

Phase: Design-Build # 1

Phase Title: Design-Build

Phase Budget:	Water	Start Date:	7/2/2022
Phase Status:	Future Planned Start	End Date:	6/26/2023
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:	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	FY23	FY25	5 Year Total
Design-Build # 1	\$1,263	\$0	\$0	\$0	\$1,263	\$1,263

Phase Dates

Activity Name	Start Date	End Date
Design - Pre-Procurement	9/30/2021	12/28/2021
Design - Procurement	12/29/2021	7/1/2022
Design - Project Execution	7/2/2022	9/29/2022
Construction - Project Execution	12/29/2022	6/26/2023
Construction - Closeout	4/1/2025	6/30/2025

Project Title: Springwells Water Treatment Plant - Service Building Electrical Substation and Miscellaneous Improvements

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

CIP	5 Year Total	FY22	FY23	FY24	Total
2021	\$1,508	\$90	\$1,378	\$40	\$1,508

Description of CIP Changes:

No changes needed for FY 22 CIP update. JK 08/26/2020

Project Title: Water Works Park Water Treatment Plant Yard Piping, Valves and Venturi Meters Replacement

Project Status: Project Execution - Construction

CIP Type: Project

Class Lvl 1: Water

Class Lvl 2: Treatment Plants and Facilities

Class Lvl 3: Water Works Park

☐ **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: Timothy Kuhns

Director: Grant Gartrell

Managing Dept.: Water Eng

Date Original Business Case Prepared:
4/23/2007

Year Project Added to CIP: 2007

CIP Budget: Water

Project Jurisdiction: City of Detroit

Lookup Location: Waterworks Park WTP

Funds and Cost Center: Water - 5519-882111

Problem Statement:

The existing yard piping is 80-140 years old and requires replacement with new piping installed in a more efficient configuration.

Scope of Work/Project Alternatives:

This project is being delivered using a design-bid-build project delivery method. The scope of work generally includes:

1. Designing the project.
2. Removing existing yard piping, valves and buried venturi meters and related vaults.
3. Constructing new yard piping, valves, water production flow meters, buried valve and meter vaults, and related system equipment.
4. Connecting to existing transmission main piping.
5. Testing and commissioning the new main, valves and water production flow metering equipment.
6. Restoring the site.

Project Title: Water Works Park Water Treatment Plant Yard Piping, Valves and Venturi Meters Replacement

Other Important Info:

This project is being coordinated with the new Waterworks Park to Northeast Transmission Main.

Challenges: Complicated sequence of construction, and demands of DWSD must be maintained along with coordination transmission system between Water Works Park and Northeast WTPs. Condition of existing valves required to complete the work is unknown. Complex construction staging is accounted for in the design to avoid loss of service and delays to the construction contract. Multiple line stops are included as contingency to construction contract in case existing valves do not provide isolation.

Primary Driver: 1 - Condition

Driver Explanation:

Yard piping is long past its design service life and there is a history of leaks and breaks. The yard piping is critical for delivery of finished water when Northeast treatment is taken offline.

Project Title: Water Works Park Water Treatment Plant Yard Piping, Valves and Venturi Meters Replacement

Scoring**Project Manager Weighted Score:** 66.20

Criteria Name	Score	Comment
Condition	5	
Performance (Service Level/Reliability)	5	
Regulatory (Environmental/Legal)	1	
Operations and Maintenance	5	
Public Health and Safety	2	
Public Benefit	4	
Financial	3	
Efficiency and Innovation	3	

Risk Committee Weighted Score: 65.40

Criteria Name	Score	Comment
Condition	5	
Performance (Service Level/Reliability)	5	
Regulatory (Environmental/Legal)	2	
Operations and Maintenance	3	
Public Health and Safety	2	
Public Benefit	4	
Financial	3	
Efficiency and Innovation	3	

Project Title: Water Works Park Water Treatment Plant Yard Piping, Valves and Venturi Meters Replacement

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Water

Start Date: 3/26/2016

Phase Status: Active

End Date: 6/30/2028

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 4

Cost Est. Source: CDM Smith

Cost Est. Date: 1/1/2015

Cost Est. Prepared By: CDM Smith

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	\$206	\$57	\$57	\$51	\$22	\$22	\$21	\$22	\$13	\$99	\$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	3/26/2016	6/30/2028
Capital Delivery Salary	3/26/2016	6/30/2028

Project Title: Water Works Park Water Treatment Plant Yard Piping, Valves and Venturi Meters Replacement

Phase: Study & Design & Construction Assistance # 1

Phase Title: Study/Design/Construction Administration

Phase Budget: Water	Start Date: 6/26/2017
Phase Status: Active	End Date: 10/31/2025
Cost Allocation: CTA	Fund: Construction Bond Fund
Funding Source: Bond Proceeds	Usefull Life > Yrs: Yes
Tot. Federal Loan Amout: \$0.00	

Phase Comments/Description:

CS-055, AECOM, WWP WTP Yard Piping, Valves and Venturi Meters Replacement

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+
Study & Design & Construction Assistance # 1	\$5,041	\$2,333	\$2,333	\$321	\$300	\$300	\$300	\$300	\$150	\$1,350	\$1,037

Phase Dates

Activity Name	Start Date	End Date
Design - Pre-Procurement	3/26/2016	6/24/2016
Design - Procurement	6/25/2016	6/25/2017
Design - Project Execution	6/26/2017	10/31/2025
Construction Assistance - Project Execution	12/1/2020	10/31/2025
Construction Assistance - Project Closeout	8/2/2025	10/31/2025

Project Title: Water Works Park Water Treatment Plant Yard Piping, Valves and Venturi Meters Replacement

Phase: Construction (Build) # 1

Phase Title: Construction

Phase Budget: Water	Start Date: 12/1/2020
Phase Status: Future Planned Start	End Date: 10/31/2025
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:	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	\$49,568	\$0	\$0	\$4,000	\$6,000	\$6,000	\$6,000	\$6,000	\$6,000	\$30,000	\$15,568

Phase Dates

Activity Name	Start Date	End Date
Construction - Pre-Procurement	1/8/2020	4/6/2020
Construction - Procurement	4/7/2020	11/30/2020
Construction - Project Execution	12/1/2020	10/31/2025
Construction - Closeout	4/1/2028	6/30/2028

Project Title: Water Works Park Water Treatment Plant Yard Piping, Valves and Venturi Meters Replacement


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	Total
2018	\$53,900	\$0	\$5,500	\$27,900	\$20,500	\$0	\$0	\$0	\$0	\$0	\$53,900
2019	\$70,630	\$9	\$412	\$968	\$20,771	\$34,466	\$14,397	\$28	\$0	\$0	\$71,051
2020	\$51,999	\$0	\$682	\$899	\$17,333	\$17,333	\$17,333	\$0	\$0	\$0	\$53,580
2021	\$70,008	\$0	\$0	\$1,760	\$251	\$5,462	\$13,349	\$21,478	\$20,883	\$8,836	\$72,019

Description of CIP Changes:

Project costs updated based on actual bid costs.

Project Title: Water Works Park Water Treatment Plant Comprehensive Condition Assessment

<p>Project Status: Closed</p> <p>CIP Type: Project</p> <p>Class Lvl 1: Water</p> <p>Class Lvl 2: Treatment Plants and Facilities</p> <p>Class Lvl 3: Water Works Park</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: Michael Dunne</p> <p>Director: Grant Gartrell</p> <p>Managing Dept.: Water Eng</p>	<p>Date Original Business Case Prepared: 6/26/2014</p> <p>Year Project Added to CIP: 2014</p> <p>CIP Budget: Water</p>	<p>Project Jurisdiction: City of Detroit</p> <p>Lookup Location: Waterworks Park WTP</p> <p>Funds and Cost Center: Water - 5519-882111</p>

Problem Statement:

A condition assessment of Waterworks Park Water Treatment Plant has not been completed since the 2004 reconstruction. Condition assessment is needed to identify critical assets in need of repair or replacement.

Scope of Work/Project Alternatives:

A condition assessment of Waterworks Park Water Treatment Plant has not been completed since the 2004 reconstruction. Continued and periodic inspection of the Water Treatment Plant is needed to maintain a reliable production system, especially given the reliance on Waterworks Park to provide finish water to the Northeast Service Area.

Other Important Info:

Contract No. 147 with Hubbell, Roth & Clark is underway.

Challenges: Coordinating shutdowns required for condition assessment inspections.

Primary Driver: 1 - Condition

Driver Explanation:

Not provided.

Project Title: Water Works Park Water Treatment Plant Comprehensive Condition Assessment

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: Water Works Park Water Treatment Plant Comprehensive Condition Assessment

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Water

Start Date: 9/30/2016

Phase Status: Active

End Date: 12/31/2019

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: GLWA

Cost Est. Date: 1/1/2016

Cost Est. Prepared By: GLWA

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	\$19	\$19	\$19	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	9/30/2016	12/31/2019

Project Title: Water Works Park Water Treatment Plant Comprehensive Condition Assessment

Phase: Study # 1

Phase Title: Study

Phase Budget: Water

Start Date: 7/5/2017

Phase Status: Active

End Date: 12/31/2019

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:

WWP Comprehensive Condition Assessment Project

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+
Study # 1	\$495	\$495	\$495	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Study - Pre-Procurement	9/30/2016	12/31/2016
Study - Procurement	1/1/2017	7/4/2017
Study - Project Execution	7/5/2017	12/31/2019
Study - Closeout	1/1/2020	12/31/2019
Study - Cost Correction	7/5/2017	5/1/2019

Project Title: Water Works Park Water Treatment Plant Comprehensive Condition Assessment


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

CIP	5 Year Total	FY17	FY18	FY19	FY20	Total
2018	\$375	\$200	\$375	\$0	\$0	\$575
2019	\$415	\$0	\$131	\$262	\$153	\$546
2020	\$153	\$0	\$440	\$262	\$153	\$855
2021	\$0	\$0	\$0	\$514	\$68	\$582

Description of CIP Changes:

None.

Project Title: Water Works Park Water Treatment Plant Chlorine System Upgrade

<p>Project Status: Pending Closeout</p> <p>CIP Type: Project</p> <p>Class Lvl 1: Water</p> <p>Class Lvl 2: Treatment Plants and Facilities</p> <p>Class Lvl 3: Water Works Park</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: Michael Dunne</p> <p>Director: Grant Gartrell</p> <p>Managing Dept.: Water Eng</p>	<p>Date Original Business Case Prepared: 3/17/2017</p> <p>Year Project Added to CIP: 2017</p> <p>CIP Budget: Water</p>	<p>Project Jurisdiction: City of Detroit</p> <p>Lookup Location: Waterworks Park WTP</p> <p>Funds and Cost Center: Water - 5519-882111</p>

Problem Statement:

The existing gas chlorine feed system has experienced numerous leaks and has compromised the safety of plant personnel. In addition, the chlorine gas leaks caused significant damage to all equipment inside the chlorine storage room. Secondary damage also occurred to equipment in adjacent rooms.

Scope of Work/Project Alternatives:

This project is being delivered under a design-bid-build project delivery method. The scope of work generally includes the following:

1. Removal of existing chlorine feed system, including evaporators, feeders and associated electrical, instrumentation and control equipment.
2. Installation of new chlorine evaporators, feeders, and associated electrical, instrumentation and control equipment.
3. Installation of new heating, ventilating and air-conditioning system equipment in the chlorine storage, feeder and adjacent electrical equipment room.
4. Installation of new gas chlorine scrubbing system.
5. Installation of new Ovation monitoring and control system for the entire chlorine disinfection system at WWP.

Other Important Info:

Project History: The WWP facility began serving customers with finished water in 2003. More recently, the chlorine system has had one major leak and several minor leaks on a recurring and more frequent basis. Since chlorine is a highly toxic material, yet integral for providing finished water in accordance with the Safe Drinking Water Act, a study and design project was initiated under the CIP allowance as project CS-1721. This construction project will be based on the study and design conducted under that work. In addition, the original design was oversized relative to the current operating conditions and resulted in operational problems due to the turndown required.

Primary Driver: 1 - Condition

Driver Explanation:

The condition of the equipment leaves plant personnel at risk of exposure to leaking chlorine.

Project Title: Water Works Park Water Treatment Plant Chlorine System Upgrade

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: Water Works Park Water Treatment Plant Chlorine System Upgrade

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Water

Start Date: 4/6/2015

Phase Status: Active

End Date: 10/31/2019

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: GLWA

Cost Est. Date: 1/1/2016

Cost Est. Prepared By: GLWA

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	\$61	\$61	\$61	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	4/6/2015	10/31/2019
Capital Delivery Salary	4/6/2015	10/31/2019

Project Title: Water Works Park Water Treatment Plant Chlorine System Upgrade

Phase: Design & Construction Assistance # 1

Phase Title: Design and Construction Assistance

Phase Budget: Water	Start Date: 7/5/2015
Phase Status: Active	End Date: 10/31/2019
Cost Allocation: CTA	Fund: Construction Bond Fund
Funding Source: Bond Proceeds	Usefull Life > Yrs: Yes
	Tot. Federal Loan Amout: \$0.00

Phase Comments/Description:

CS-1721 CDM Smith

Cost Est. Class: Class 5

Cost Est. Source: GLWA

Cost Est. Date: 1/1/2016

Cost Est. Prepared By: GLWA

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	\$924	\$924	\$924	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Design - Pre-Procurement	4/6/2015	7/5/2015
Design - Procurement	7/6/2015	7/5/2016
Design - Project Execution	7/1/2016	1/25/2018
Construction Assistance - Project Execution	1/10/2018	10/31/2019
Construction Assistance - Project Closeout	11/1/2019	10/31/2019
Construction Assistance - Cost Correction	7/5/2015	5/1/2019

Project Title: Water Works Park Water Treatment Plant Chlorine System Upgrade

Phase: Construction (Build) # 1

Phase Title: Construction

Phase Budget: Water	Start Date: 1/10/2018
Phase Status: Pending Close-out	End Date: 10/31/2019
Cost Allocation: CTA	Fund: Construction Bond Fund
Funding Source: Bond Proceeds	Usefull Life > Yrs: Yes
	Tot. Federal Loan Amout: \$0.00

Phase Comments/Description:
CON-208, Detroit Contracting, Inc.

Cost Est. Class: Class 1	Cost Est. Source: CDM Smith
Cost Est. Date: 1/1/2017	Cost Est. Prepared By: CDM Smith

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	\$5,908	\$5,908	\$5,908	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Construction - Pre-Procurement	8/1/2017	10/11/2017
Construction - Procurement	10/11/2017	1/10/2018
Construction - Project Execution	1/10/2018	10/31/2019
Construction - Closeout	11/1/2019	10/31/2019

Project Title: Water Works Park Water Treatment Plant Chlorine System Upgrade

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	Total
2018	\$9,400	\$290	\$700	\$8,700	\$0	\$0	\$9,690
2019	\$6,006	\$371	\$672	\$3,124	\$2,878	\$4	\$7,049
2020	\$2,048	\$0	\$2,527	\$4,196	\$2,047	\$1	\$8,771
2021	\$0	\$0	\$0	\$6,686	\$754	\$0	\$7,440

Description of CIP Changes:

Updated FY2020 CIP costs based on active construction (CON-208) and consultant (CS-1721) contract progress and projected completion times. 2018
 Updated FY2021 CIP costs based on progress of work under contracts CS-1721 and CON-208. Update detailed project information. MD 8/2019

Project Title: WWP WTP Building Ventilation Improvements

Project Status: Project Execution - Design

CIP Type: Project

Class Lvl 1: Water

Class Lvl 2: Treatment Plants and Facilities

Class Lvl 3: Water Works Park

☐ **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: Michael Dunne

Director: Terry Daniel

Managing Dept.: Water Eng

Date Original Business Case Prepared: 8/1/2018

Year Project Added to CIP: 2018

CIP Budget: Water

Project Jurisdiction: City of Detroit

Lookup Location: Waterworks Park WTP

Funds and Cost Center: Water - 5519-882111

Problem Statement:

The existing ventilation systems are not adequate for the chemical storage rooms, the ozone generator room, ozone destruct room, laboratory rooms, pilot plant rooms, flocculation and sedimentation rooms, and filter galleries at the Water Works Park Water Treatment Plant. Inadequate ventilation poses safety hazards to employees and visitors alike.

Scope of Work/Project Alternatives:

This project will be delivered using a design-bid-build project delivery method. The scope of work will generally include the following:

- 1) Design of the improved, new ventilation systems for the facility.
- 2) Selective removal of existing ventilation system equipment.
- 3) Construction of new mechanical ventilation systems.
- 4) Installation of electrical feeders for new mechanical ventilation equipment.
- 5) Installation of new instrumentation equipment for monitoring and alarms, including necessary interlocks with the process control network.

Other Important Info:

Operational components may be identified to reduce staff exposure and reduce complexity of ventilation system.

Primary Driver: 5 - Public Health and Safety

Driver Explanation:

Inadequate ventilation system poses potential health and safety hazards to employees and visitors.

Project Title: WWP WTP Building Ventilation Improvements

Scoring**Project Manager Weighted Score:** 84.40

Criteria Name	Score	Comment
Condition	4	
Performance (Service Level/Reliability)	5	
Regulatory (Environmental/Legal)	5	
Operations and Maintenance	4	
Public Health and Safety	5	
Public Benefit	4	
Financial	3	
Efficiency and Innovation	2	

Risk Committee Weighted Score: 76.00

Criteria Name	Score	Comment
Condition	3	
Performance (Service Level/Reliability)	5	
Regulatory (Environmental/Legal)	5	
Operations and Maintenance	2	
Public Health and Safety	5	
Public Benefit	3	
Financial	3	
Efficiency and Innovation	2	

Project Title: WWP WTP Building Ventilation Improvements

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Water

Start Date: 1/1/2019

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 5

Cost Est. Source: HRC

Cost Est. Date: 1/1/2018

Cost Est. Prepared By: HRC

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	\$155	\$1	\$1	\$80	\$36	\$30	\$7	\$0	\$0	\$73	\$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	1/1/2019	6/30/2027

Project Title: WWP WTP Building Ventilation Improvements

Phase: Design & Construction Assistance # 1

Phase Title: Design and Construction Administration

Phase Budget: Water	Start Date: 1/1/2019
Phase Status: Active	End Date: 5/23/2024
Cost Allocation: CTA	Fund: Construction Bond Fund
Funding Source: Bond Proceeds	Usefull Life > Yrs: Yes
	Tot. Federal Loan Amout: \$0.00

Phase Comments/Description:

Engineering Services Contract to be retained

Cost Est. Class: Class 5

Cost Est. Source: HRC

Cost Est. Date: 1/1/2018

Cost Est. Prepared By: HRC

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	\$926	\$0	\$0	\$300	\$449	\$92	\$86	\$0	\$0	\$626	\$0

Phase Dates

Activity Name	Start Date	End Date
Design - Pre-Procurement	1/1/2019	9/27/2019
Design - Procurement	9/28/2019	9/28/2020
Design - Project Execution	9/29/2020	5/23/2024
Construction Assistance - Project Execution	9/29/2020	5/23/2024
Construction Assistance - Project Closeout	2/23/2024	5/23/2024
Construction Assistance - Project Allocation	1/1/2019	6/30/2021

Project Title: WWP WTP Building Ventilation Improvements

Phase: Construction (Build) # 1

Phase Title: Construction

Phase Budget: Water

Start Date: 7/1/2021

Phase Status: Future Planned Start

End Date: 6/30/2023

Cost Allocation: CTA

Fund:

Funding Source: Bond Proceeds

Usefull Life > Yrs: Yes

Tot. Federal Loan Amout: \$0.00

Phase Comments/Description:

Construction contract to be determined

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+
Construction (Build) # 1	\$3,843	\$0	\$0	\$38	\$1,499	\$1,499	\$400	\$100	\$3,536	\$307

Phase Dates

Activity Name	Start Date	End Date
Construction - Pre-Procurement	9/2/2020	12/31/2020
Construction - Procurement	1/1/2021	6/30/2021
Construction - Project Execution	7/1/2021	6/30/2023
Construction - Closeout	4/1/2027	6/30/2027

Project Title: WWP WTP Building Ventilation Improvements

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

CIP	5 Year Total	FY19	FY20	FY21	FY22	FY23	FY24	Total
2020	\$5,064	\$7	\$507	\$3,907	\$650	\$0	\$0	\$5,071
2021	\$8,527	\$0	\$1,614	\$1,999	\$3,610	\$2,539	\$379	\$10,141

Description of CIP Changes:

Updated requested CIP budget based on final recommendations of the Contract CS-147 condition assessment report. Also, updated the detailed project information again based on the final CS-147 recommendations relative to the scope of work. 8/15/2019 MD

Project Title: Water Works Park Site/Civil Improvements

Project Status: Future Planned - Within 5 Year Plan

CIP Type: Project

Class Lvl 1: Water

Class Lvl 2: Treatment Plants and Facilities

Class Lvl 3: Water Works Park

☐ **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: Michael Dunne

Director: Grant Gartrell

Managing Dept.: Water Eng

Date Original Business Case Prepared:
8/15/2019

Year Project Added to CIP: 2019

CIP Budget: Water

Project Jurisdiction: City of Detroit

Lookup Location: Waterworks Park WTP

Funds and Cost Center:

Problem Statement:

Many of the existing roadways and pedestrian sidewalks have substantial cracking, crumbling concrete and un-even surfaces whose condition becomes worse every year. The concrete bases for several portions of the site perimeter security fencing are also heavily deteriorated with crumbling concrete. Additionally, there is not sufficient employee and visitor parking space for the facility and new parking areas are needed to meet the needs of employees and visitors alike. Furthermore, there is no truck vehicle weight scale on site to verify the quantities of chemicals delivered to the site from suppliers, as well as to verify quantities of dewatered sludge transported off site for disposal. Currently, vendor-generated quantities are used solely for payment purposes putting GLWA at a disadvantage whenever disputes arise regarding amounts invoiced. Lastly, there

Scope of Work/Project Alternatives:

This project will be delivered using a design-build project delivery. The schedule is predicated on using AECOM's design build assistance services under its CIP Program Management Contract CS -272. The scope of work for this project generally includes the following:

1. Construct 30 car parking lot adjacent to plant employee lot.
2. Construct 20 car parking lot across from maintenance garage to serve as GLWA vehicle parking.
3. Construct 10 car parking lot across from engineering building to serve as visitor parking.
4. Construct 20 car parking lot adjacent to current engineering building lot.
5. Install sidewalk from new proposed security entrance to flagpole.
6. Install hardscape, softscape, and signage on engineering building.
7. Install truck weigh scale.
8. Repair perimeter fencing and support

Other Important Info:

Primary Driver: 1 - Condition

Driver Explanation:

Many of the existing roadways, sidewalks and other structures have deteriorated concrete conditions that require rehabilitation

Project Title: Water Works Park Site/Civil Improvements

are several areas throughout the grounds with concrete in a poor condition that requires rehabilitation to extend its service life.

structures.

9. Install access hatch for screen house catch basin.

10. Repair misc. concrete defects by shallow spall repair and crack injections.

11. Remove and replace areas of failing roadway.

Project Title: Water Works Park Site/Civil Improvements

Scoring**Project Manager Weighted Score:** 46.80

Criteria Name	Score	Comment
Condition	4	
Performance (Service Level/Reliability)	3	
Regulatory (Environmental/Legal)	1	
Operations and Maintenance	3	
Public Health and Safety	2	
Public Benefit	1	
Financial	3	
Efficiency and Innovation	2	

Risk Committee Weighted Score: 39.40

Criteria Name	Score	Comment
Condition	2	
Performance (Service Level/Reliability)	3	
Regulatory (Environmental/Legal)	1	
Operations and Maintenance	2	
Public Health and Safety	3	
Public Benefit	1	
Financial	2	
Efficiency and Innovation	1	

Project Title: Water Works Park Site/Civil Improvements

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Water

Start Date: 1/1/2026

Phase Status: Future Planned Start

End Date: 6/30/2030

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: GLWA

Cost Est. Date: 8/23/2019

Cost Est. Prepared By: GLWA

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

	Total Costs	Actual Costs	Prior FYs	FY26	5 Year Total	FY27+
GLWA Salaries	\$239	\$0	\$0	\$6	\$6	\$233

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	1/1/2026	6/30/2030

Project Title: Water Works Park Site/Civil Improvements

Phase: Design & Construction Assistance # 1

Phase Title: Design and Construction Administration

Phase Budget:	Water	Start Date:	1/1/2026
Phase Status:	Future Planned Start	End Date:	9/30/2028
Cost Allocation:	CTA	Fund:	Construction Bond Fund
Funding Source:	Bond Proceeds	Usefull Life > Yrs:	Yes
		Tot. Federal Loan Amout:	\$0.00

Phase Comments/Description:

AECOM is the Contract No. CS-272 vendor

Cost Est. Class: Class 5	Cost Est. Source: GLWA
Cost Est. Date: 8/23/2019	Cost Est. Prepared By: GLWA

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

	Total Costs	Actual Costs	Prior FYs	FY26	5 Year Total	FY27+
Design & Construction Assistance # 1	\$1,321	\$0	\$0	\$0	\$0	\$1,321

Phase Dates

Activity Name	Start Date	End Date
Design - Project Execution	1/1/2026	5/29/2027
Construction Assistance - Project Execution	5/30/2027	9/30/2028
Construction Assistance - Project Closeout	4/1/2030	6/30/2030

Project Title: Water Works Park Site/Civil Improvements

Phase: Construction (Build) # 1

Phase Title: Construction

Phase Budget:	Water	Start Date:	5/30/2027
Phase Status:	Future Planned Start	End Date:	9/30/2028
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 5	Cost Est. Source: GLWA
Cost Est. Date: 8/23/2019	Cost Est. Prepared By: GLWA

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

	Total Costs	Actual Costs	Prior FYs	FY27+
Construction (Build) # 1	\$4,322	\$0	\$0	\$4,322

Phase Dates

Activity Name	Start Date	End Date
Construction - Pre-Procurement	9/2/2026	12/31/2026
Construction - Procurement	1/1/2027	6/30/2027
Construction - Project Execution	5/30/2027	9/30/2028
Construction - Closeout	4/1/2030	6/30/2030

Project Title: Water Works Park Site/Civil Improvements

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

CIP	FY26	Total
2021	\$5,643	\$5,643

Description of CIP Changes:

No changes needed to this CIP. MD 08/26/2020.

Project Title: Water Works Park High Lift Pumping Station Modernization

Project Status: Future Planned - Within 5 Year Plan

CIP Type: Project

Class Lvl 1: Water

Class Lvl 2: Treatment Plants and Facilities

Class Lvl 3: Water Works Park

☒ **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)**



High Lift Photo

Project Engineer/Manager: Michael Dunne

Director: Grant Gartrell

Managing Dept.: Water Eng

Date Original Business Case Prepared: 8/20/2020

Year Project Added to CIP: 2021

CIP Budget: Water

Project Jurisdiction: City of Detroit

Lookup Location: Waterworks Park WTP

Funds and Cost Center: Water - 5519-882111

Problem Statement:

In accordance with GLWA's Master Plan, the Northeast Water Treatment Plant is scheduled to be repurposed. Most of the water production and pumping burdens will be shifted to the Water Works Park Water Treatment Plant. There is an apparent need to identify opportunities and improve configurations, capacity, redundancy, electrical efficiency, instrumentation, monitoring and controls of the High Lift pumping system at Water Works Park.

Scope of Work/Project Alternatives:

This project will be delivered under a design-bid-build delivery method. In general, the scope will contain the following items:

1. Replace or re-engineer pumps and motors based on an evaluation of contemporary and future flow, pressure, and energy needs.
2. Replace or improve the current high-pressure water system to create a more robust process.
3. Improve ventilation in the pump room to allow pumping units to operate at proper working temperatures.
4. Replace or repair isolation gates in the High Lift suction well.
5. Convert current DC excitation system with modern AC excitation system.
6. Systematic upgrades to the low voltage electrical equipment.
7. Improvements to the instrumentation related to water quality, pump operating parameters, water pressures, and valving.

Other Important Info:

The current pumping system in the High Lift building at Water Works Park was constructed in the early 1960s. Now, 60 years later, it is necessary to realign Water Works Park's pumping system with contemporary and future flow, pressure, and energy requirements.

Primary Driver: 2 - Performance

Driver Explanation:

With the re-purposing of the Northeast Water Treatment plant, a greater responsibility will be placed on the High Lift Pump Station at Water Works Park. The pump station will need to have the right number of the properly sized pumps to meet the demand needs during low and high flow seasons and have the appropriate redundancy measures to ensure efficient and uninterrupted pumping at all times.

Project Title: Water Works Park High Lift Pumping Station Modernization

Scoring**Project Manager Weighted Score:** 52.20

Criteria Name	Score	Comment
Condition	3	
Performance (Service Level/Reliability)	3	
Regulatory (Environmental/Legal)	2	
Operations and Maintenance	2	
Public Health and Safety	3	
Public Benefit	3	
Financial	2	
Efficiency and Innovation	3	

Risk Committee Weighted Score: 54.40

Criteria Name	Score	Comment
Condition	3	
Performance (Service Level/Reliability)	3	
Regulatory (Environmental/Legal)	2	
Operations and Maintenance	2	
Public Health and Safety	3	
Public Benefit	2	
Financial	3	
Efficiency and Innovation	4	

Project Title: Water Works Park High Lift Pumping Station Modernization

Phase: Design-Build**Phase Title:** 115007: Design-Build

Phase Budget:**Start Date:** 7/1/2021**Phase Status:****End Date:** 6/30/2031**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+
Design-Build	\$88,444	\$0	\$0	\$250	\$500	\$500	\$750	\$11,645	\$13,645	\$74,799

Phase Dates

Project Title: Water Works Park High Lift Pumping Station Modernization

Activity Name	Start Date	End Date
Design - Pre-Procurement	8/3/2020	11/1/2020
Design - Procurement	11/2/2020	6/30/2021
Design - Project Execution	7/1/2021	6/30/2026
Design - Closeout	4/1/2026	6/30/2026
Construction Assistance - Project Closeout	4/1/2029	6/30/2029
Construction Assistance - Procurement	11/2/2024	6/30/2025
Construction Assistance - Project Execution	7/1/2025	6/30/2029
Construction - Pre-Procurement	9/2/2024	12/31/2024
Construction - Procurement	1/1/2025	6/30/2025
Construction - Project Execution	7/1/2025	6/30/2031
Construction - Closeout	4/1/2031	6/30/2031

Project Title: Water Works Park High Lift Pumping Station Modernization

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

CIP

Description of CIP Changes:

none.

Project Title: Pennsylvania and Springwells Raw Water Supply Tunnel Improvements

Project Status: Project Execution - Design

CIP Type: Project

Class Lvl 1: Water

Class Lvl 2: Treatment Plants and Facilities

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 Engineer/Manager: Nick Hoffman

Director: Grant Gartrell

Managing Dept.: Water Eng

Date Original Business Case Prepared:
8/11/2015

Year Project Added to CIP: 2016

CIP Budget: Water

Project Jurisdiction: City of Detroit

Lookup Location: Springwells, Northeast, & Pennsylvania raw water tunnels

Funds and Cost Center: Water - 5519-882111

Problem Statement:

Significant structural distress in the form of cracking and ovality have been detected in the Pennsylvania, Northeast and Springwells raw water tunnels that deliver raw water to the Northeast and Springwells Water Treatment Plants. The extent and magnitude of the distress requires that these segments of tunnel be rehabilitated and restored to provide renewed structural integrity and consequently reliability.

Scope of Work/Project Alternatives:

This project is being delivered using a progressive design-build project delivery method. The scope of work generally includes supplemental remove operated vehicle (ROV) and personnel diver underwater, detailed investigations to determine the nature, magnitude and extent of total tunnel rehabilitation required. The detailed investigations are also used to collect sufficient information and data to determine the preferred design and construction approach best suited to the conditions identified during the detailed underwater investigations. The investigation work of DB-150 focused on those sections of tunnel where concerns were observed during the condition assessment work conducted under former DWSD Contract No. CS-1623. Three areas were identified including the Pennsylvania Tunnel at Water Works Park (non-structural rehab), Northeast Raw Water Tunnel (structural rehab) located in the Outer Drive greenbelt and the highest concern being a

Project Title: Pennsylvania and Springwells Raw Water Supply Tunnel Improvements

portion of the Springwells Tunnel near the Springwells WTP (structural rehab). Project alternatives evaluated included tunnel dewatering with rehab done in dry conditions along with tunnel bypass pumping; new tunnel construction, and tunnel rehab in the wet using underwater diver teams. The DB-150 project approach will involve the latter alternative to rehab the tunnel sections of concern.

Other Important Info:

The tunnels are approximately 80 to 100 feet below ground surface. Dewatering the tunnels to repair them will create extensive stresses that must be considered prior to performing the work. Maintaining a supply of raw water to Springwells, Northeast and Water Works Park throughout construction to meet finished water production requirements/demands of the system. Specialized/complicated construction.

Project History: Portions of the Raw Water Tunnel system are approaching 100 years of service. The Northeast Tunnel failed catastrophically in the late 80s due to infiltration of sand through cracking. This project is based on the recommendations of CS-1623, currently underway, which is inspecting all GLWA raw water tunnels.

Primary Driver: 2 - Performance

Driver Explanation:

Failure of the affected raw water tunnels could impact as much as 50% of the GLWA customers.

Project Title: Pennsylvania and Springwells Raw Water Supply Tunnel Improvements

Scoring**Project Manager Weighted Score:** 82.00

Criteria Name	Score	Comment
Condition	5	
Performance (Service Level/Reliability)	5	
Regulatory (Environmental/Legal)	2	
Operations and Maintenance	5	
Public Health and Safety	5	
Public Benefit	5	
Financial	5	
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: Pennsylvania and Springwells Raw Water Supply Tunnel Improvements

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget:	Water	Start Date:	11/15/2016
Phase Status:	Active	End Date:	6/30/2026
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 4	Cost Est. Source: FKE
Cost Est. Date: 1/1/2016	Cost Est. Prepared By: FKE

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	\$202	\$76	\$76	\$46	\$22	\$22	\$21	\$16	\$0	\$81	\$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	11/15/2016	6/30/2026
Capital Delivery Salary	11/15/2016	6/30/2026

Project Title: Pennsylvania and Springwells Raw Water Supply Tunnel Improvements

Phase: Design-Build # 1

Phase Title: Design -Build

Phase Budget: Water	Start Date: 2/14/2017
Phase Status: Active	End Date: 6/30/2026
Cost Allocation: CTA	Fund: Construction Bond Fund
Funding Source: Bond Proceeds	Usefull Life > Yrs: Yes
	Tot. Federal Loan Amout: \$0.00

Phase Comments/Description:

DB-150 is a progresive design build contract (active)

Cost Est. Class: Class 4	Cost Est. Source: FKE
Cost Est. Date: 1/1/2016	Cost Est. Prepared By: FKE

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	\$94,678	\$15,335	\$15,335	\$6,978	\$8,338	\$17,373	\$23,282	\$18,000	\$5,372	\$72,365	\$0

Phase Dates

Activity Name	Start Date	End Date
Design - Pre-Procurement	11/15/2016	2/13/2017
Design - Procurement	2/14/2017	1/26/2018
Design - Project Execution	1/29/2018	6/30/2023
Construction - Project Execution	12/22/2018	6/30/2026
Construction - Closeout	4/1/2026	6/30/2026

Project Title: Pennsylvania and Springwells Raw Water Supply Tunnel Improvements


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	Total
2018	\$31,900	\$500	\$2,000	\$10,000	\$15,000	\$4,900	\$0	\$0	\$0	\$32,400
2019	\$29,444	\$10	\$3,625	\$9,042	\$5,468	\$5,468	\$5,468	\$3,998	\$0	\$33,079
2020	\$20,399	\$0	\$2,178	\$7,513	\$5,467	\$5,467	\$5,467	\$3,998	\$0	\$30,090
2021	\$50,392	\$0	\$0	\$10,200	\$653	\$14,138	\$21,917	\$8,810	\$5,527	\$61,245

Description of CIP Changes:

The detailed tunnel investigation/inspection was completed this past fiscal year under the active progressive design-build contract (DB-150) and determined that the scope of required tunnel rehabilitation was expanded by about 40% beyond that previously discovered during the CS-1623 condition assessment work. Note that the extent and magnitude of tunnel rehabilitation work estimated under CS-1623 was merely based on a cursory tunnel inspection. The DB-150 contract work has involved significantly more detailed tunnel inspection to quantify the required rehabilitation. NAH 8/26/19

Project Title: Belle Isle Seawall Rehabilitation

<p>Project Status: Future Planned - Within 5 Year Plan</p> <p>CIP Type: Project</p> <p>Class Lvl 1: Water</p> <p>Class Lvl 2: Treatment Plants and Facilities</p> <p>Class Lvl 3: Water Works Park</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>Aerial image of Belle Isle intake structure and lagoon.</p>
<p>Project Engineer/Manager: Michael Dunne</p> <p>Director: Terry Daniel</p> <p>Managing Dept.: Water Eng</p>	<p>Date Original Business Case Prepared: 7/23/2020</p> <p>Year Project Added to CIP: 2020</p> <p>CIP Budget: Water</p>	<p>Project Jurisdiction: City of Detroit</p> <p>Lookup Location: Belle Isle Intake</p> <p>Funds and Cost Center: Water - 5519-882111</p>

Problem Statement:

The Belle Isle intake system is the source water entry point for three of the five GLWA water treatment plants. The intake is surrounded by a man-made dike system that creates a large lagoon on the northeast tip of Belle Isle. The dike system is showing signs of substantial erosion on the tip of the southern dike. Other areas on the southern dike are showing signs of erosion to a lesser degree. On the northern dike, vegetation is prominent that is likely to cause premature failures, if not abated.

Scope of Work/Project Alternatives:

This design/build project will evaluate and recommend solutions to permanently correct ongoing erosion issues and current deficiencies that may result in future dike erosion and/or failure. The general scope will include.

1. Installing sheet piling, tie backs, and rip rap at the tip of the lagoon.
2. Removal of vegetation on north dike to prevent future damage.
3. Install armor stone where erosion is beginning, but not yet significant.
4. Grade and dress lagoon access road.

Other Important Info:

The Belle Isle lagoon, formed by the man-made dikes, was designed to prevent frazil ice from impeding water flow into the raw water tunnels. Continued erosion of the dike system will lead to short circuiting of the intake lagoon. The design intent of the lagoon, and its benefits, will be compromised and leave the raw water intake for three water treatment plants vulnerable.

Primary Driver: 1 - Condition

Driver Explanation:

If a permanent solution to the erosion issues on the Belle Isle dike system are not implemented, failure of the dike will ultimately occur.

Project Title: Belle Isle Seawall Rehabilitation

Scoring**Project Manager Weighted Score:** 49.40

Criteria Name	Score	Comment
Condition	3	
Performance (Service Level/Reliability)	2	
Regulatory (Environmental/Legal)	4	Since a former radioactive site collapsed into the Detroit Rive in December 2019, the City of Detroit has begun enforcing regulations on the structural integrity of seawalls.
Operations and Maintenance	1	
Public Health and Safety	3	
Public Benefit	1	
Financial	3	
Efficiency and Innovation	1	

Risk Committee Weighted Score: 39.20

Criteria Name	Score	Comment
Condition	4	
Performance (Service Level/Reliability)	2	
Regulatory (Environmental/Legal)	2	
Operations and Maintenance	1	
Public Health and Safety	2	
Public Benefit	1	
Financial	2	
Efficiency and Innovation	1	

Project Title: Belle Isle Seawall Rehabilitation

Phase: GLWA Salaries**Phase Title:** GLWA Salaries

Phase Budget:**Start Date:** 7/30/2021**Phase Status:****End Date:** 6/30/2024**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	5 Year Total
GLWA Salaries	\$92	\$0	\$0	\$29	\$31	\$31	\$92

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	7/30/2021	6/30/2024

Project Title: Belle Isle Seawall Rehabilitation

Phase: Design-Build**Phase Title:** Design-Build

Phase Budget:	Start Date: 7/30/2021
Phase Status:	End Date: 6/30/2024
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	5 Year Total
Design-Build	\$1,740	\$0	\$0	\$290	\$1,200	\$250	\$1,740

Phase Dates

Activity Name	Start Date	End Date
Design - Project Execution	7/30/2021	2/1/2022
Construction Assistance - Project Execution	2/1/2022	6/30/2024
Design-Build - Pre-Procurement	7/1/2022	6/30/2024
Design-Build - Procurement	7/1/2022	6/30/2024
Design-Build - Project Execution	7/1/2022	6/30/2024
Design-Build - Closeout	7/1/2022	6/30/2024
Construction - Project Execution	7/1/2022	6/30/2024

Project Title: Belle Isle Seawall Rehabilitation


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

CIP

Description of CIP Changes:

N/A

Project Title: Belle Isle Intake System Rehabilitation and Improvements

<p>Project Status: Future Planned - Within 5 Year Plan</p> <p>CIP Type: Project</p> <p>Class Lvl 1: Water</p> <p>Class Lvl 2: Treatment Plants and Facilities</p> <p>Class Lvl 3: Water Works Park</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>Belle Isle Photo</p>
<p>Project Engineer/Manager: Michael Dunne</p> <p>Director: Terry Daniel</p> <p>Managing Dept.: Water Eng</p>	<p>Date Original Business Case Prepared: 8/19/2020</p> <p>Year Project Added to CIP: 2021</p> <p>CIP Budget: Water</p>	<p>Project Jurisdiction: City of Detroit</p> <p>Lookup Location: Belle Isle</p> <p>Funds and Cost Center: Water - 5519-882411</p>

Problem Statement:

The Belle Isle Intake structure and man-made lagoon were constructed in the 1930s. Periodic maintenance and improvements have taken place over the years to keep the building and lagoon in operating condition. As a result of recommendations from the State and CS-187 - Raw Water Condition Assessment, another such project is needed. The intake system has experienced a buildup of sediment in critical areas that needs to be removed, miscellaneous vegetation has grown on the dike system and needs to be removed to prevent future damage, and the emergency poppet valves needs operating and possible reconditioning. Additional improvements should be done to the raw water monitoring system, electrical infrastructure, and the chemical delivery system.

Scope of Work/Project Alternatives:

This CIP project will be delivered under a design-bid-build project delivery method and will generally include the following:

1. Removal of accumulated sediment in the intake building, emergency intake system, and tunnel system.
2. Electrical modernization on the intake grounds.
3. Architectural repairs to the intake building superstructure including, painting, masonry tuck-pointing, roofing, and stonework.
4. A code compliant emergency eyewash and shower station.
5. Roof structure to protect the sodium hypochlorite tank and system from UV damage.
6. Civil work to improve lagoon access road and lagoon dikes.
7. Tech memo recommending removal methods and time frame for sediment that has accumulated in the lagoon over the past 90 years.
8. Evaluation for repair or replacement of

Other Important Info:

The intake system is the very first step in the water treatment process. A fully reliable and modern intake system is crucial in maintaining superior drinking water.

Primary Driver: 1 - Condition

Driver Explanation:

Maintaining reliability of the Belle Isle Intake and modernizing its features to align with today's water treatment technologies is paramount to the GLWA water treatment system.

Project Title: Belle Isle Intake System Rehabilitation and Improvements

emergency intake poppet valves - allowance is budgeted for design if needed.

9. Assessment of early warning water quality monitoring system and its integration with the Ovation control system - allowance is budgeted for design if needed.

10. Evaluation and recommendations for improvement of the hypochlorination system on Belle Isle - allowance is budgeted for design if needed.

Project Title: Belle Isle Intake System Rehabilitation and Improvements

Scoring
Project Manager Weighted Score: 46.80

Criteria Name	Score	Comment
Condition	3	Minor issues exist around the grounds that need addressing before they escalate into larger problems.
Performance (Service Level/Reliability)	2	The accumulation of sediment in the emergency intake tunnel may not prevent the use of it hydraulically, but it is expected that a large increase in turbidity will occur if it is used.
Regulatory (Environmental/Legal)	3	The emergency poppet valves are to be tested once a year per the State. Testing has been discontinued due to sediment build up in the emergency intake tunnel causing a severe spike in turbidity. A code compliant eyewash/shower station is needed.
Operations and Maintenance	3	The hypochlorination system has frequent leaks and maintenance issues. During the two weeks of operation and the weeks prior to and after operation, many man hours are spent repairing the system.
Public Health and Safety	1	
Public Benefit	1	
Financial	2	
Efficiency and Innovation	4	A robust early warning water quality monitoring system can be designed and installed to make GLWA an industry leader in this area.

Risk Committee Weighted Score: 46.20

Criteria Name	Score	Comment
Condition	3	
Performance (Service Level/Reliability)	3	
Regulatory (Environmental/Legal)	3	
Operations and Maintenance	3	
Public Health and Safety	1	
Public Benefit	1	
Financial	2	
Efficiency and Innovation	2	

Project Title: Belle Isle Intake System Rehabilitation and Improvements

Phase: Design & Construction Assistance**Phase Title:** Design & Construction Assistance

Phase Budget:	Start Date:	7/1/2022
Phase Status:	End Date:	6/30/2025
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	FY23	FY24	5 Year Total
Design & Construction Assistance	\$350	\$0	\$0	\$300	\$50	\$350

Phase Dates

Activity Name	Start Date	End Date
Design - Project Execution	7/1/2022	6/30/2023
Construction Assistance - Project Execution	7/1/2023	6/30/2025

Project Title: Belle Isle Intake System Rehabilitation and Improvements


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

CIP

Description of CIP Changes:

none.

Project Title: Water Works Park to Northeast Transmission Main

<p>Project Status: Project Execution - Construction</p> <p>CIP Type: Project</p> <p>Class Lvl 1: Water</p> <p>Class Lvl 2: Field Services</p> <p>Class Lvl 3: Transmission System</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 checked="" type="checkbox"/> Water Master Plan Right Sizing</p> <p><input checked="" type="checkbox"/> Redundancy</p> <p><input checked="" 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: Timothy Kuhns</p> <p>Director: Grant Gartrell</p> <p>Managing Dept.: Water Eng</p>	<p>Date Original Business Case Prepared: 9/8/2016</p> <p>Year Project Added to CIP: 2014</p> <p>CIP Budget: Water</p>	<p>Project Jurisdiction: City of Detroit</p> <p>Lookup Location: WWP to NE WTP</p> <p>Funds and Cost Center: Water - 5519-882111</p>

Problem Statement:

The 2015 GLWA Water Master Plan update indicated that the regional system has significant excess capacity for water treatment compared to projected water demands. The analysis contained in the Water Master Plan update indicated that for average day demand conditions, the five WTPs typically operate between 23 percent to 35 percent of the rated treatment capacity and for maximum day demand conditions, the five WTPs typically operate between 38 percent to 67 percent of the treatment rated capacity. To address this imbalance, the Water Master Plan update recommended a program to reduce the regional treatment capacity to better align it with future system water demands. In order to align treatment capacity and projected system demands, the 2015 Water Master Plan update recommended that a new water transmission system be constructed from

Scope of Work/Project Alternatives:

This project includes three separate construction phases for the completion of the overall water transmission system from Water Works Park to Northeast:

- (1) Phase 1 - Construction of 84-inch yard piping and a Flow Control Facility at the Northeast site.
- (2) Phase 2 - Construction of 4 miles of 81-inch water transmission main (WTM) from the Northeast site to I-94.
- (3) Phase 3 - Construction of 6,000 feet of 60-inch/69-inch WTM along Hurlbut from I-94 to the intersection of Hurlbut/Sylvester.

Other Important Info:

Challenges: Construction of large diameter WTM in the road ROW north of I-94 and along Hurlbut south of I-94.

This project was recommended as part of the 2015 Water Master Plan Update to align treatment capacity with decreasing water demands.

Primary Driver: 8 - Efficiency

Driver Explanation:

This project provides for efficiencies in facilitating the decommissioning of treatment at the Northeast WTP.

Project Title: Water Works Park to Northeast Transmission Main

the Water Works Park WTP to the Northeast WTP to provide finished water to the Northeast reservoirs from the Water Works Park WTP. Under this recommendation, low lift and treatment facilities would be decommissioned at the Northeast WTP and the high-lift pumps/reservoirs at the Northeast WTP will be repurposed to function as a booster pump station to re-pump the treated, finished water delivered to the Northeast WTP site from the Water Works Park WTP through the new water transmission main system. the finished water reservoirs and high lift station at Northeast could be left in service such that the site could operate as a booster station moving forward.

Project Title: Water Works Park to Northeast Transmission Main

Scoring**Project Manager Weighted Score:** 78.40

Criteria Name	Score	Comment
Condition	4	
Performance (Service Level/Reliability)	4	
Regulatory (Environmental/Legal)	3	
Operations and Maintenance	4	
Public Health and Safety	3	
Public Benefit	5	
Financial	5	
Efficiency and Innovation	5	

Risk Committee Weighted Score: 62.40

Criteria Name	Score	Comment
Condition	1	
Performance (Service Level/Reliability)	5	
Regulatory (Environmental/Legal)	1	
Operations and Maintenance	5	
Public Health and Safety	1	
Public Benefit	5	
Financial	5	
Efficiency and Innovation	5	

Project Title: Water Works Park to Northeast Transmission Main

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Water

Start Date: 10/8/2018

Phase Status: Active

End Date: 3/4/2029

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: CDM Smith

Cost Est. Date: 1/1/2015

Cost Est. Prepared By: CDM Smith

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	\$438	\$158	\$158	\$57	\$22	\$22	\$21	\$22	\$22	\$108	\$116

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	10/8/2018	3/4/2029
Capital Delivery Salary	10/8/2018	3/4/2029

Project Title: Water Works Park to Northeast Transmission Main

Phase: Phase #1

Phase Title: Phase 3 WWP to NE Transmission Main

Phase Budget:	Water	Start Date:	10/14/2021
Phase Status:	Future Planned Start	End Date:	10/7/2028
Cost Allocation:	CTA	Fund:	
Funding Source:		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+
Phase #1	\$26,078	\$2,121	\$2,121	\$9,982	\$11,978	\$1,996	\$0	\$0	\$0	\$13,975	\$0

Phase Dates

Activity Name	Start Date	End Date
Design - Pre-Procurement	11/16/2020	2/14/2021
Design - Procurement	2/15/2021	10/13/2021
Design - Project Execution	10/14/2021	10/7/2028
Construction - Project Execution	6/13/2023	10/7/2028
Construction - Closeout	7/9/2028	10/7/2028

Project Title: Water Works Park to Northeast Transmission Main

Phase: Phase #2

Phase Title: Phase 2 WWP to NE Transmission Main - Transmission Main

Phase Budget:	Water	Start Date:	11/26/2020
Phase Status:	Future Planned Start	End Date:	3/4/2029
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 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+
Phase #2	\$88,284	\$0	\$0	\$558	\$1,500	\$4,308	\$12,348	\$11,648	\$16,648	\$46,450	\$41,275

Phase Dates

Activity Name	Start Date	End Date
Design - Pre-Procurement	12/30/2019	3/29/2020
Design - Procurement	3/30/2020	11/25/2020
Design - Project Execution	11/26/2020	3/4/2029
Construction - Project Execution	8/3/2021	3/4/2029
Construction - Closeout	12/4/2028	3/4/2029

Project Title: Water Works Park to Northeast Transmission Main

Phase: Phase #3

Phase Title: Phase 1 WWP to NE Transmission Main - Flow Control Station at NE

Phase Budget:	Water	Start Date:	9/5/2019
Phase Status:	Future Planned Start	End Date:	9/30/2028
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 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+
Phase #3	\$28,418	\$2,911	\$2,911	\$638	\$1,093	\$2,888	\$2,166	\$2,166	\$5,026	\$13,339	\$11,530

Phase Dates

Activity Name	Start Date	End Date
Design - Pre-Procurement	10/8/2018	1/6/2019
Design - Procurement	1/7/2019	9/4/2019
Design - Project Execution	9/5/2019	9/30/2028
Construction - Project Execution	6/6/2021	9/30/2028
Construction - Closeout	7/2/2028	9/30/2028

Project Title: Water Works Park to Northeast Transmission Main


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	\$92,500	\$0	\$1,500	\$5,000	\$10,000	\$74,000	\$2,000	\$37,500	\$0	\$0	\$0	\$130,000
2019	\$104,285	\$19	\$1,305	\$1,372	\$8,622	\$17,547	\$46,022	\$30,722	\$25,270	\$0	\$0	\$130,879
2020	\$100,381	\$0	\$1,655	\$1,121	\$871	\$15,786	\$24,115	\$29,615	\$29,994	\$30,115	\$0	\$133,272
2021	\$87,797	\$0	\$0	\$2,611	\$1,169	\$11,703	\$18,407	\$18,678	\$18,170	\$20,839	\$65,949	\$157,526

Description of CIP Changes:

CIP budget has been updated based on bid costs for Northeast Flow Control Facility (1803258) and part 1 (design) for phase 2 from Northeast WTP to I-94 (1904254). All Pipeline renewal costs for Hurlbut, Bewick, and Garland mains are contained in CIP 122018.

Project Title: 96-inch Water Transmission Main Relocation and Isolation Valve Installations

<p>Project Status: Project Execution - Design</p> <p>CIP Type: Project</p> <p>Class Lvl 1: Water</p> <p>Class Lvl 2: Field Services</p> <p>Class Lvl 3: Transmission System</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 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: Khader Hamad</p> <p>Director: Grant Gartrell</p> <p>Managing Dept.: Water Eng</p>	<p>Date Original Business Case Prepared: 1/1/2015</p> <p>Year Project Added to CIP: 2016</p> <p>CIP Budget: Water</p>	<p>Project Jurisdiction: Multiple Counties</p> <p>Lookup Location: Imlay Station to North Service Center</p> <p>Funds and Cost Center: Water - 5519-882411</p>

Problem Statement:

Project critical to providing isolation and redundancy to Lake Huron WTP supply, while protecting the water supply from potential contamination at the G&H Landfill. Project includes relocation around existing superfund landfill addition of isolation valves along the 96-inch water transmission main.

Scope of Work/Project Alternatives:

Relocate 2.5 miles of 96-inch transmission main currently located in an EPA NPL landfill, a portion of which is submerged in landfill leachate. Relocation includes crossing the Clinton River, coordination with many various authorities having jurisdiction and easement acquisition. Isolation valve installation portion of the project provides the ability to isolate segments of the 96-inch main between Imlay Station and North Service Center for maintenance while maintaining customer expected level of service.

Other Important Info:

Challenges: Shutdown, continued customer service, isolation valve installations while maintaining the Lake Huron WTP supply to Rochester Station. Property acquisition will be required for the chesterfield temporary booster station and East Pond Creek discharge facility for relocation around the landfill.

Primary Driver: 2 - Performance

Driver Explanation:

The 96-inch operates with no isolation or bypass valves between 33 Mile and Rochester Station. In addition, while contamination is alleviated while the pipe is under pressure, any drop in pressure or service could result in the leaching of contaminants.

Project Title: 96-inch Water Transmission Main Relocation and Isolation Valve Installations

Scoring**Project Manager Weighted Score:** 83.60

Criteria Name	Score	Comment
Condition	5	
Performance (Service Level/Reliability)	5	
Regulatory (Environmental/Legal)	4	
Operations and Maintenance	5	
Public Health and Safety	4	
Public Benefit	5	
Financial	3	
Efficiency and Innovation	2	

Risk Committee Weighted Score: 65.20

Criteria Name	Score	Comment
Condition	2	
Performance (Service Level/Reliability)	5	
Regulatory (Environmental/Legal)	2	
Operations and Maintenance	5	
Public Health and Safety	4	
Public Benefit	5	
Financial	1	
Efficiency and Innovation	2	

Project Title: 96-inch Water Transmission Main Relocation and Isolation Valve Installations

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Water	Start Date: 3/29/2017
Phase Status: Active	End Date: 1/14/2030
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: Jacobs
Cost Est. Date: 1/1/2017	Cost Est. Prepared By: Jacobs

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	\$363	\$129	\$129	\$57	\$27	\$22	\$21	\$22	\$22	\$114	\$62

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	3/29/2017	1/14/2030
Capital Delivery Salary	3/29/2017	1/14/2030

Project Title: 96-inch Water Transmission Main Relocation and Isolation Valve Installations

Phase: Study # 1

Phase Title: Study

Phase Budget: Water

Start Date: 3/29/2017

Phase Status: Closed Out

End Date: 11/6/2027

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 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+
Study # 1	\$28,321	\$1,687	\$1,687	\$2,020	\$2,550	\$2,511	\$2,511	\$2,511	\$2,511	\$12,593	\$12,022

Phase Dates

Activity Name	Start Date	End Date
Study - Project Execution	3/29/2017	11/6/2027

Project Title: 96-inch Water Transmission Main Relocation and Isolation Valve Installations

Phase: Construction (Build) # 1

Phase Title: Construction

Phase Budget:	Water	Start Date:	7/1/2021
Phase Status:	Future Planned Start	End Date:	1/14/2030
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 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	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
Construction (Build) # 1	\$116,168	\$0	\$0	\$0	\$5,080	\$8,093	\$10,049	\$10,049	\$33,271	\$82,897

Phase Dates

Activity Name	Start Date	End Date
Construction - Pre-Procurement	12/24/2021	4/23/2022
Construction - Procurement	4/24/2022	10/21/2022
Construction - Project Execution	10/22/2022	1/14/2030
Construction - Closeout	10/16/2029	1/14/2030
Construction - Project Allocation	7/1/2021	6/30/2029

Project Title: 96-inch Water Transmission Main Relocation and Isolation Valve Installations


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	\$106,800	\$500	\$1,500	\$6,000	\$35,900	\$31,700	\$31,700	\$31,700	\$0	\$0	\$0	\$139,000
2019	\$74,248	\$460	\$570	\$1,797	\$2,644	\$895	\$23,087	\$45,825	\$57,389	\$0	\$0	\$132,667
2020	\$96,792	\$0	\$1,130	\$837	\$5,000	\$6,000	\$26,453	\$35,886	\$23,453	\$33,907	\$0	\$132,666
2021	\$80,563	\$0	\$0	\$1,790	\$2,549	\$5,267	\$15,765	\$19,937	\$19,797	\$19,797	\$59,969	\$144,871

Description of CIP Changes:

Based on the conclusions made during the route study and implementation strategy development conducted under Contract No. CS-165, it has been determined by a new parallel transmission main is not required to construct this project. Therefore, a new parallel main is not included in this scope. Instead, the project scope involves installing large (i.e. about 42-inch diameter) by-passes strategically located at each master meter along the 96-inch main between the Dorsey-Dickenson Valve and North Service Center. In addition, the cost of this CIP has been increased to account for the actual bid submitted for engineering services as well as the updated, estimated cost of construction. GAG 8/26/2019. Design Contract 1900741 has been approved and awarded to Jacobs Consultant on January 22, 2020. The contract start of work is June 15, 2020, and the final completion date is November 6, 2027. KH 8/31/2020

Project Title: Schoolcraft Road Water Transmission Main

Project Status: Project Execution - Design CIP Type: Project Class Lvl 1: Water Class Lvl 2: Field Services Class Lvl 3: Transmission System <input type="checkbox"/> Project New to CIP	<input type="checkbox"/> Innovation <input type="checkbox"/> WW Master Plan <input type="checkbox"/> Water Master Plan Right Sizing <input checked="" type="checkbox"/> Redundancy <input type="checkbox"/> NE WTP Repurposing <input checked="" type="checkbox"/> Linear Assets Outside of Facilities <input type="checkbox"/> Predecessor Project(s)	
Project Engineer/Manager: Nick Hoffman Director: Grant Gartrell Managing Dept.: Water Eng	Date Original Business Case Prepared: 8/17/2015 Year Project Added to CIP: 2016 CIP Budget: Water	Project Jurisdiction: Wayne County - Outside Detroit Lookup Location: Schoolcraft water main Funds and Cost Center: Water - 5519-882411

Problem Statement:

We currently operate an existing 48-inch water transmission main on West Bound Schoolcraft Road. This existing PCCP transmission main was manufactured by Interpace Corporation which has a long-documented history of PCCP failures due to manufacturing means and methods of the pre-stressed wires. Due to excessive breaks over the years and the downstream effect on customers, we are improving the transmission system reliability and redundancy by installing a new 48-inch water transmission main on Eastbound Schoolcraft Road.

Scope of Work/Project Alternatives:

Design and Construction of approximately 12,000 linear feet of new PCCP or Carbon Steel 48-inch water transmission main along Eastbound Schoolcraft service drive between Middlebelt and Beech Daly. Including isolation valves, blowoffs, valve vaults, manhole entrances and related appurtenances. Upon completion and tie-in of the new Eastbound Schoolcraft transmission main the existing will be abandoned in place.

Other Important Info:

Designed under CS-1488 by Somat Engineering

Primary Driver: 2 - Performance

Driver Explanation:

Existing main has a track history of excessive breaks due to the pipe manufacturer. New main will help alleviate any disruption of service.

Project Title: Schoolcraft Road Water Transmission Main

Scoring**Project Manager Weighted Score:** 58.00

Criteria Name	Score	Comment
Condition	4	
Performance (Service Level/Reliability)	5	
Regulatory (Environmental/Legal)	1	
Operations and Maintenance	4	
Public Health and Safety	4	
Public Benefit	1	
Financial	2	
Efficiency and Innovation	1	

Risk Committee Weighted Score: 42.00

Criteria Name	Score	Comment
Condition	3	
Performance (Service Level/Reliability)	3	
Regulatory (Environmental/Legal)	1	
Operations and Maintenance	3	
Public Health and Safety	3	
Public Benefit	1	
Financial	1	
Efficiency and Innovation	1	

Project Title: Schoolcraft Road Water Transmission Main

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Water

Start Date: 10/1/2016

Phase Status: Active

End Date: 5/27/2022

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: Somat

Cost Est. Date: 1/1/2016

Cost Est. Prepared By: Somat

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	\$124	\$52	\$52	\$57	\$14	\$0	\$0	\$0	\$0	\$14	\$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	10/1/2016	5/27/2022

Project Title: Schoolcraft Road Water Transmission Main

Phase: Design & Construction Assistance # 1

Phase Title: Design/Construction Administration

Phase Budget: Water	Start Date: 10/1/2016
Phase Status: Active	End Date: 5/27/2022
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 5	Cost Est. Source: Somat
Cost Est. Date: 1/1/2016	Cost Est. Prepared By: Somat

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	\$711	\$189	\$189	\$330	\$192	\$0	\$0	\$0	\$0	\$192	\$0

Phase Dates

Activity Name	Start Date	End Date
Design	10/21/2019	1/8/2020
Design - Pre-Procurement	10/1/2016	12/30/2016
Design - Procurement	12/31/2016	5/23/2018
Design - Project Execution	6/4/2018	10/21/2019
Construction Assistance - Project Execution	1/9/2020	5/27/2022
Construction Assistance - Project Closeout	2/26/2022	5/27/2022
Construction Assistance - Cost Correction	10/1/2016	5/1/2019

Project Title: Schoolcraft Road Water Transmission Main

Phase: Construction (Build) # 1

Phase Title: Construction

Phase Budget:	Water	Start Date:	1/9/2020
Phase Status:	Future Planned Start	End Date:	12/9/2021
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 5	Cost Est. Source: Somat
Cost Est. Date: 1/1/2016	Cost Est. Prepared By: Somat

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	5 Year Total
Construction (Build) # 1	\$14,491	\$1,141	\$1,141	\$5,950	\$7,400	\$7,400

Phase Dates

Activity Name	Start Date	End Date
Construction - Pre-Procurement	10/1/2018	12/30/2018
Construction - Procurement	10/1/2019	1/8/2020
Construction - Project Execution	1/9/2020	12/9/2021
Construction - Closeout	9/10/2021	12/9/2021

Project Title: Schoolcraft Road Water Transmission Main


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	Total
2018	\$14,550	\$0	\$7,300	\$7,250	\$0	\$0	\$14,550
2019	\$13,789	\$16	\$50	\$6,249	\$6,899	\$591	\$13,805
2020	\$17,878	\$4	\$180	\$8,100	\$9,145	\$633	\$18,062
2021	\$14,623	\$0	\$141	\$3,342	\$13,141	\$1,482	\$18,106

Description of CIP Changes:

Updated the Engineering cost per FY to cover the RPR. Added the Engineering Contract number. NAH 8/26/2019

Project Title: Wick Road Water Transmission Main

<p>Project Status: Project Execution - Construction</p> <p>CIP Type: Project</p> <p>Class Lvl 1: Water</p> <p>Class Lvl 2: Field Services</p> <p>Class Lvl 3: Transmission System</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 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: Nick Hoffman</p> <p>Director: Grant Gartrell</p> <p>Managing Dept.: Water Eng</p>	<p>Date Original Business Case Prepared: 8/17/2015</p> <p>Year Project Added to CIP: 2016</p> <p>CIP Budget: Water</p>	<p>Project Jurisdiction: Wayne County - Outside Detroit</p> <p>Lookup Location: Romulus</p> <p>Funds and Cost Center: Water - 5519-882411</p>

Problem Statement:

Existing water main from Wick Station to Ypsilanti station has history of excessive breaks. Additionally, the main is the only primary connection between the two facilities with multiple community Master Meters along its alignment. A break in this line is disruptive to several communities dependent upon the failure location. The intent is to improve the transmission system reliability/redundancy by means of constructing a parallel 48-inch water main along Wick Road.

Scope of Work/Project Alternatives:

Design and Construction of the new 48-inch transmission main along Westbound Wick Road in Romulus, MI including isolation valves and interconnects that will tie-in with the existing main along the alignment. Completion of this project will alleviate pressures and potential transients between the two mains, as well as increase reliability/redundancies in the general area.

Other Important Info:

Primary Driver: 2 - Performance

Driver Explanation:

This project completes the remainder of the parallel main between Wick Station and Ypsilanti Station.

Project Title: Wick Road Water Transmission Main

Scoring**Project Manager Weighted Score:** 65.80

Criteria Name	Score	Comment
Condition	4	
Performance (Service Level/Reliability)	5	
Regulatory (Environmental/Legal)	2	
Operations and Maintenance	3	
Public Health and Safety	4	
Public Benefit	4	
Financial	1	
Efficiency and Innovation	3	

Risk Committee Weighted Score: 54.20

Criteria Name	Score	Comment
Condition	4	
Performance (Service Level/Reliability)	4	
Regulatory (Environmental/Legal)	1	
Operations and Maintenance	3	
Public Health and Safety	3	
Public Benefit	3	
Financial	1	
Efficiency and Innovation	3	

Project Title: Wick Road Water Transmission Main

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Water

Start Date: 10/1/2016

Phase Status: Active

End Date: 8/25/2021

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: Somat

Cost Est. Date: 1/1/2016

Cost Est. Prepared By: Somat

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	\$184	\$129	\$129	\$46	\$9	\$0	\$0	\$0	\$0	\$9	\$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	10/1/2016	8/25/2021

Project Title: Wick Road Water Transmission Main

Phase: Design # 1

Phase Title: Design Consulting Engineering Services

Phase Budget:	Water	Start Date:	11/26/2017
Phase Status:	Active	End Date:	9/8/2019
Cost Allocation:	CTA	Fund:	Construction Bond Fund
Funding Source:	Bond Proceeds	Usefull Life > Yrs:	Yes
		Tot. Federal Loan Amout:	\$0.00

Phase Comments/Description:

CS-1488 task 4

Cost Est. Class: Class 5	Cost Est. Source: Somat
Cost Est. Date: 1/1/2016	Cost Est. Prepared By: Somat

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 # 1	\$1,274	\$595	\$595	\$564	\$114	\$0	\$0	\$0	\$0	\$114	\$0

Phase Dates

Activity Name	Start Date	End Date
Design - Pre-Procurement	10/1/2016	12/30/2016
Design - Procurement	12/31/2016	11/22/2017
Design - Project Execution	11/26/2017	9/8/2019

Project Title: Wick Road Water Transmission Main

Phase: Construction (Build) # 1

Phase Title: Construction

Phase Budget:	Water	Start Date:	8/31/2019
Phase Status:	Active	End Date:	8/25/2021
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 5	Cost Est. Source: Somat
Cost Est. Date: 1/1/2016	Cost Est. Prepared By: Somat

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	5 Year Total
Construction (Build) # 1	\$20,962	\$5,179	\$5,179	\$11,133	\$4,651	\$4,651

Phase Dates

Activity Name	Start Date	End Date
Construction - Pre-Procurement	7/10/2018	5/2/2019
Construction - Procurement	5/3/2019	8/9/2019
Construction - Project Execution	8/31/2019	8/25/2021
Construction - Closeout	5/27/2021	8/25/2021

Project Title: Wick Road Water Transmission Main

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	\$9,350	\$10,000	\$9,350	\$0	\$0	\$0	\$0	\$19,350
2019	\$24,280	\$23	\$16	\$1,743	\$12,373	\$10,154	\$10	\$24,319
2020	\$30,422	\$0	\$126	\$1,370	\$18,028	\$12,334	\$60	\$31,918
2021	\$15,755	\$0	\$0	\$420	\$6,163	\$9,975	\$5,780	\$22,338

Description of CIP Changes:

CIP cost updated this year to reflect the actual construction bid pricing received. NAH 8/6/2019

Project Title: Merriman Road Water Transmission Main Loop

Project Status: Future Planned - Within 5 Year Plan

CIP Type: Project

Class Lvl 1: Water

Class Lvl 2: Field Services

Class Lvl 3: Transmission System

☐ **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: Jacob Mangum

Director: Grant Gartrell

Managing Dept.: Water Eng

Date Original Business Case Prepared: 8/11/2015

Year Project Added to CIP: 2016

CIP Budget: Water

Project Jurisdiction: Wayne County - Outside Detroit

Lookup Location: Merriman Rd, Marquette Rd to Lower Rouge River

Funds and Cost Center: Water - 5519-882411

Problem Statement:

Currently, several member partners (served by master meters WL-08, WL-03, WL-01, WL-12, WY-01, RS-01, GC-03) are fed by a single 36-inch water transmission main along Michigan Avenue. Construction of this proposed Merriman Road transmission main will provide a second feed to these member partners and therefore provide redundancy. Additionally, construction of this proposed Merriman Road transmission main improves and reinforces water service delivery to the point where the Michigan Avenue Booster Pumping Station is not needed anymore. Therefore, as was recommended in the 2015 Water Master Plan Update, this proposed project is also a predecessor project to decommissioning the Michigan Avenue Booster Station.

Scope of Work/Project Alternatives:

This project involves design and construction services associated with the installation of 2 miles of new 30-inch transmission main along Merriman Road between Lower Rouge River and Marquette Road. Alternatives evaluated included new main on either:

1. Hannon Road (rejected because of its poor route relative to other options)
2. Newburgh Road (rejected because it is not technically feasible as it will not meet contract pressures.
3. Merriman Road (accepted because it is superior in its transmission capabilities, routing and opportunity to decommission the Michigan Avenue Pump Station).

Other Important Info:

None

Primary Driver: 2 - Performance

Driver Explanation:

Allowing Michigan Avenue Pump Station and Ford Road Station to support one another will greatly improve redundancy in this portion of the transmission system.

Project Title: Merriman Road Water Transmission Main Loop

Scoring**Project Manager Weighted Score:** 61.60

Criteria Name	Score	Comment
Condition	1	Non-existent asset
Performance (Service Level/Reliability)	5	Lack of this main is causing significant capacity problems
Regulatory (Environmental/Legal)	1	Low/no impact on regulatory
Operations and Maintenance	4	Will allow for decommissioning of Michigan Ave pump station, which poses O&M issues currently
Public Health and Safety	3	Likely to address minor hazard from lack of redundancy
Public Benefit	4	Will lead to savings from decommissioning of Michigan Ave pump station
Financial	4	Will likely result in avoidance of emergency repairs
Efficiency and Innovation	4	Right-sizing system

Risk Committee Weighted Score: 61.60

Criteria Name	Score	Comment
Condition	1	
Performance (Service Level/Reliability)	5	
Regulatory (Environmental/Legal)	1	
Operations and Maintenance	4	
Public Health and Safety	3	
Public Benefit	4	
Financial	4	
Efficiency and Innovation	4	

Project Title: Merriman Road Water Transmission Main Loop

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Water

Start Date: 8/1/2019

Phase Status: Future Planned Start

End Date: 8/24/2030

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: CDM Smith

Cost Est. Date: 1/1/2015

Cost Est. Prepared By: CDM Smith

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	\$396	\$2	\$2	\$57	\$27	\$27	\$27	\$27	\$27	\$134	\$202

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	8/1/2019	8/24/2030

Project Title: Merriman Road Water Transmission Main Loop

Phase: Design & Construction Assistance # 1

Phase Title: Design/Construction Administration

Phase Budget: Water

Start Date: 3/19/2024

Phase Status: Future Planned Start

End Date: 8/24/2030

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: CDM Smith

Cost Est. Date: 1/1/2015

Cost Est. Prepared By: CDM Smith

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+
Design & Construction Assistance # 1	\$3,770	\$0	\$0	\$246	\$863	\$863	\$1,973	\$1,797

Phase Dates

Activity Name	Start Date	End Date
Design - Pre-Procurement	8/1/2019	7/21/2023
Design - Procurement	7/22/2023	3/18/2024
Design - Project Execution	3/19/2024	6/30/2026
Construction Assistance - Project Execution	7/1/2026	8/24/2030
Construction Assistance - Project Closeout	5/26/2030	8/24/2030

Project Title: Merriman Road Water Transmission Main Loop

Phase: Construction (Build) # 1

Phase Title: Construction

Phase Budget:	Water	Start Date:	7/1/2026
Phase Status:	Future Planned Start	End Date:	8/24/2030
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 5	Cost Est. Source: CDM Smith
Cost Est. Date: 1/1/2015	Cost Est. Prepared By: CDM Smith

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

	Total Costs	Actual Costs	Prior FYs	FY27+
Construction (Build) # 1	\$17,989	\$0	\$0	\$17,989

Phase Dates

Activity Name	Start Date	End Date
Construction - Pre-Procurement	9/2/2025	12/31/2025
Construction - Procurement	1/1/2026	6/30/2026
Construction - Project Execution	7/1/2026	8/24/2030
Construction - Closeout	5/26/2030	8/24/2030

Project Title: Merriman Road Water Transmission Main Loop

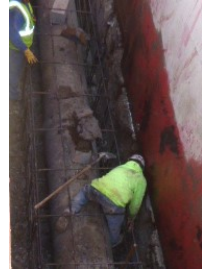
Project Total Expenses by FY Compared to Prior CIPs (All figures are in \$1,000's)

CIP	5 Year Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	Total
2018	\$4,000	\$1,800	\$2,200	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$4,000
2019	\$5,241	\$6	\$653	\$1,611	\$2,076	\$901	\$0	\$0	\$0	\$0	\$5,247
2020	\$5,239	\$0	\$0	\$0	\$0	\$0	\$30	\$5,209	\$0	\$0	\$5,239
2021	\$1,702	\$0	\$0	\$0	\$0	\$0	\$15	\$390	\$1,297	\$19,755	\$21,457

Description of CIP Changes:

Name changed to Merriman Road from Newburgh Rd. due to better route along Merriman Road (instead of Hannon Road) to create the loop. JEM 8/6/2019

Project Title: Park-Merriman Road Water Transmission Main

Project Status: Project Execution - Construction CIP Type: Project Class Lvl 1: Water Class Lvl 2: Field Services Class Lvl 3: Transmission System <input type="checkbox"/> Project New to CIP	<input type="checkbox"/> Innovation <input type="checkbox"/> WW Master Plan <input type="checkbox"/> Water Master Plan Right Sizing <input checked="" type="checkbox"/> Redundancy <input type="checkbox"/> NE WTP Repurposing <input type="checkbox"/> Linear Assets Outside of Facilities <input type="checkbox"/> Predecessor Project(s)	 Updated photo
Project Engineer/Manager: Peter Fromm Director: Grant Gartrell Managing Dept.: Water Eng	Date Original Business Case Prepared: 4/12/2017 Year Project Added to CIP: 2015 CIP Budget: Water	Project Jurisdiction: Wayne County - Outside Detroit Lookup Location: Venoy Road to Merriman Road to Michigan Ave. Booster Station. Funds and Cost Center: Water - 5519-882411

Problem Statement:

Currently, most of the wholesale master meters serving the cities of Wayne and Westland are fed off a single, "dead-end" transmission main, which provides no redundancy in service aside from customer lateral distribution opportunities. Additionally, Wayne, Westland and Inkster have deduct wholesale meters that are fed off the single, "dead-end" transmission main. Construction of this new 24-inch water main will create a loop for these member partners and thereby eliminate the single, "dead-end" main. Direct meter connections will be made to the new 24-inch transmission main so that all deduct water meters will be eliminated as part of this CIP project.

Scope of Work/Project Alternatives:

This CIP project is being delivered under a design-bid-build project delivery method and generally includes the following scope of work:

1. Construction of 7,000 linear feet of 24-inch diameter ductile iron water transmission main, which includes 2 directional drills to install this main under the lower Rouge River, and 1 jack-and-bore to install this main under Michigan Avenue.
2. Constructing two new wholesale master meters and associated vaults for the city of Wayne.
3. Associated park improvements where the new transmission main is installed through the Wayne County Venoy-Dorsey Park.

Other Important Info:

Challenges: Shutdowns to connect the two new meters with the City of Wayne. The water pressure during these two shutdowns will be reducers and coordination will need to take place with the City of Wayne, their residents and local businesses.

Primary Driver: 2 - Performance

Driver Explanation:

Completion of this loop will improve system redundancy for two member partners and eliminate deduct meters for three member partners.

Project Title: Park-Merriman Road Water Transmission Main

Scoring**Project Manager Weighted Score:** 58.00

Criteria Name	Score	Comment
Condition	4	
Performance (Service Level/Reliability)	5	
Regulatory (Environmental/Legal)	1	
Operations and Maintenance	4	
Public Health and Safety	4	
Public Benefit	1	
Financial	2	
Efficiency and Innovation	1	

Risk Committee Weighted Score: 30.20

Criteria Name	Score	Comment
Condition	1	
Performance (Service Level/Reliability)	3	
Regulatory (Environmental/Legal)	1	
Operations and Maintenance	2	
Public Health and Safety	1	
Public Benefit	1	
Financial	2	
Efficiency and Innovation	1	

Project Title: Park-Merriman Road Water Transmission Main

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Water

Start Date: 7/24/2016

Phase Status: Active

End Date: 5/4/2021

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: Somat

Cost Est. Date: 1/1/2016

Cost Est. Prepared By: Somat

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	\$188	\$134	\$134	\$46	\$8	\$0	\$0	\$0	\$0	\$8	\$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	7/24/2016	5/4/2021

Project Title: Park-Merriman Road Water Transmission Main

Phase: Design & Construction Assistance # 1

Phase Title: Design/Construction Administration

Phase Budget: Water	Start Date: 11/27/2017
Phase Status: Active	End Date: 5/4/2021
Cost Allocation: CTA	Fund: Construction Bond Fund
Funding Source: Bond Proceeds	Usefull Life > Yrs: Yes
	Tot. Federal Loan Amout: \$0.00

Phase Comments/Description:

Engineering Services Contract No. CS-259, Somat Engineering (active)

Cost Est. Class: Class 1

Cost Est. Source: Somat

Cost Est. Date: 1/1/2016

Cost Est. Prepared By: Somat

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	\$522	\$458	\$458	\$63	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Design - Pre-Procurement	7/24/2016	10/22/2016
Design - Procurement	10/23/2016	11/24/2017
Design - Project Execution	11/27/2017	3/11/2019
Construction Assistance - Project Execution	3/11/2019	5/4/2021
Construction Assistance - Project Closeout	2/3/2021	5/4/2021

Project Title: Park-Merriman Road Water Transmission Main

Phase: Construction (Build) # 1

Phase Title: Construction

Phase Budget: Water

Start Date: 3/11/2019

Phase Status: Active

End Date: 5/4/2021

Cost Allocation: CTA

Fund: Construction Bond Fund

Funding Source: Bond Proceeds

Usefull Life > Yrs: Yes

Tot. Federal Loan Amout: \$0.00

Phase Comments/Description:

Construction Contract No. 1802775, Salenbien Trucking and Excavating (active)

Cost Est. Class: Class 1

Cost Est. Source: Somat

Cost Est. Date: 1/1/2016

Cost Est. Prepared By: Somat

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	\$8,891	\$4,630	\$4,630	\$4,261	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Construction - Pre-Procurement	3/15/2018	9/29/2018
Construction - Procurement	8/27/2018	3/11/2019
Construction - Project Execution	3/11/2019	5/4/2021
Construction - Closeout	2/3/2021	5/4/2021

Project Title: Park-Merriman Road Water Transmission Main

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	Total
2018	\$4,000	\$1,800	\$2,200	\$0	\$0	\$0	\$4,000
2019	\$6,186	\$23	\$955	\$3,676	\$1,549	\$6	\$6,209
2020	\$6,980	\$156	\$1,067	\$4,737	\$2,237	\$6	\$8,203
2021	\$2,163	\$0	\$988	\$4,474	\$2,163	\$0	\$7,625


Description of CIP Changes:

Up-dated the procurement start date and the construction start/finish date. Up-dated the Contract numbers for Engineering and Construction. PF 2018

Cost of CIP updated this fiscal year to account for the actual cost of construction contract award that occurred in FY19. PF 2019

Updated project title for clarity. 8/19/2019 GAG

Project Title: 36-inch Water Main in Telegraph Road

Project Status: Closed CIP Type: Project Class Lvl 1: Water Class Lvl 2: Field Services Class Lvl 3: Transmission System <input type="checkbox"/> Project New to CIP	<input type="checkbox"/> Innovation <input type="checkbox"/> WW Master Plan <input type="checkbox"/> Water Master Plan Right Sizing <input checked="" type="checkbox"/> Redundancy <input type="checkbox"/> NE WTP Repurposing <input type="checkbox"/> Linear Assets Outside of Facilities <input type="checkbox"/> Predecessor Project(s)	
Project Engineer/Manager: Erich Klun Director: Grant Gartrell Managing Dept.: Water Eng	Date Original Business Case Prepared: 8/18/2016 Year Project Added to CIP: 2012 CIP Budget: Water	Project Jurisdiction: Wayne County - Outside Detroit Lookup Location: Telegraph Rd, Cherry Hill to Warren Ave Funds and Cost Center: Water - 5519-882411
Problem Statement: Excessive joint leaks warrant replacement; new water line to be placed in greenbelt	Scope of Work/Project Alternatives: This project includes installation of approximately 10,530 feet of 36-inch dia. water main in Telegraph Road from Cherry Hill to Warren Ave.	Other Important Info: Challenges: N/A - Active E. Klun 8/20/20 updates as follows: 1. None. Project closed out. Primary Driver: 1 - Condition Driver Explanation: N/A - Active

Project Title: 36-inch Water Main in Telegraph Road

Scoring**Project Manager Weighted Score:** 55.00

Criteria Name	Score	Comment
Condition	4	
Performance (Service Level/Reliability)	3	
Regulatory (Environmental/Legal)	1	
Operations and Maintenance	3	
Public Health and Safety	3	
Public Benefit	4	
Financial	3	
Efficiency and Innovation	2	

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: 36-inch Water Main in Telegraph Road

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget:	Water	Start Date:	7/21/2013
Phase Status:	Pending Close-out	End Date:	4/1/2019
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 1	Cost Est. Source: Somat
Cost Est. Date: 1/1/2016	Cost Est. Prepared By: Somat

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

	Total Costs	Actual Costs	Prior FYs
GLWA Salaries	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	7/21/2013	4/1/2019
TBD Project Cost Correction	7/21/2013	10/31/2018

Project Title: 36-inch Water Main in Telegraph Road

Phase: Design & Construction Assistance # 1

Phase Title: 36-inch Water Main in Telegraph Road

Phase Budget:	Water	Start Date:	2/6/2018
Phase Status:	Pending Close-out	End Date:	4/1/2019
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 1	Cost Est. Source: Somat
Cost Est. Date: 1/1/2016	Cost Est. Prepared By: Somat

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

	Total Costs	Actual Costs	Prior FYs
Design & Construction Assistance # 1	\$567	\$567	\$567

Phase Dates

Activity Name	Start Date	End Date
Design - Pre-Procurement	7/21/2013	10/19/2013
Design - Procurement	10/20/2013	10/20/2014
Design - Project Execution	10/21/2014	4/23/2016
Construction Assistance - Project Execution	4/24/2016	2/5/2018
Construction Assistance - Project Closeout	2/6/2018	4/1/2019

Project Title: 36-inch Water Main in Telegraph Road

Phase: Construction (Build) # 1**Phase Title:** WS-684A 36-inch Water Main in Telegraph Road

Phase Budget:	Water	Start Date:	4/24/2016
Phase Status:	Pending Close-out	End Date:	10/31/2018
Cost Allocation:	CTA	Fund:	Construction Bond Fund
Funding Source:	Bond Proceeds	Usefull Life > Yrs:	Yes
		Tot. Federal Loan Amout:	\$0.00

Phase Comments/Description:Ric-Man

Cost Est. Class: Class 1**Cost Est. Source:** Somat**Cost Est. Date:** 1/1/2016**Cost Est. Prepared By:** Somat

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

	Total Costs	Actual Costs	Prior FYs
Construction (Build) # 1	\$9,304	\$9,304	\$9,304

Phase Dates

Activity Name	Start Date	End Date
Construction - Pre-Procurement	7/19/2015	10/17/2015
Construction - Procurement	10/18/2015	4/23/2016
Construction - Project Execution	4/24/2016	4/27/2018
Construction - Closeout	4/30/2018	10/31/2018

Project Title: 36-inch Water Main in Telegraph Road**Project Total Expenses by FY Compared to Prior CIPs (All figures are in \$1,000's)**

CIP	5 Year Total	FY17	FY18	FY19	Total
2018	\$5,061	\$2,000	\$5,061	\$0	\$7,061
2019	\$3	\$8,125	\$2,257	\$3	\$10,385
2020	\$0	\$0	\$9,418	\$155	\$9,573
2021	\$0	\$0	\$0	\$9,959	\$9,959

Description of CIP Changes:

Project closeout delayed due to MDOT requirement for extended warranty on restoration and newly planted trees. CO-01 has been agreed to by the Contractor and GLWA for time and money and is currently being executed as of July 16, 2018.

E. Klun 8/20/20 updates as follows:

1. Final WS-684 CO-01 executed to extend contract Final Completion and to pay for extended conditions due to MDOT delays.

Project Title: 14 Mile Transmission Main Loop

Project Status: Project Execution - Design

CIP Type: Project

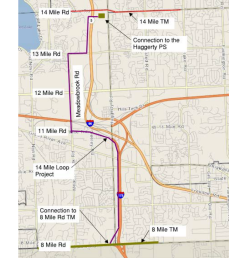
Class Lvl 1: Water

Class Lvl 2: Field Services

Class Lvl 3: Transmission System

☐ **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)**



14 Mile Loop Project Location

Project Engineer/Manager: Sara Mille

Director: Grant Gartrell

Managing Dept.: Water Eng

Date Original Business Case Prepared: 10/28/2016

Year Project Added to CIP: 2017

CIP Budget: Water

Project Jurisdiction: Oakland County

Lookup Location: 8 Mile Rd/ I-275 to 14 Mile Rd/ Haggerty PS

Funds and Cost Center: Water - 5519-882111

Problem Statement:

The 14 Mile Transmission Main that currently serves West Bloomfield Township, Farmington Hills, Commerce Township, Novi, Walled Lake, and Wixom is a single feed transmission system. If a disruption to service were to occur on this transmission main, many of the users along this main would experience a complete loss of pressure and flow. This project would provide a transmission main loop to the 14 Mile system to increase redundancy on this branch of the system.

Scope of Work/Project Alternatives:

Install approximately 8 Miles of 54-inch transmission main from 8 Mile Road to 14 Mile Road. It also includes construction of approximately 1 mile of new 24-inch parallel transmission main along 14 Mile from M-5 to west of Decker Road to reinforce the 14 Mile Transmission System.

The work will also include connections to the yard piping and reservoir fill line at the Haggerty Booster Station as well as control valves to regulate flows to and from the 14 Mile transmission main.

Other Important Info:

Project History: The 2015 Water Master Plan Update included a recommendation to evaluate options along this branch of the system to increase redundancy. Since that recommendation, GLWA Water Supply Operations Engineering performed a hydraulic analysis of redundancy alternatives for the 14 Mile Transmission System. The results of the hydraulic analysis was presented at the May 15, 2017 and September 19, 2017 Analytical Work Group Meetings and based on the discussion at these meetings, the Haggerty Loop Option described in the scope of work appears to be the preferred alternative.

Primary Driver: 2 - Performance

Driver Explanation:

Completion of the 14 Mile Road Transmission Loop will eliminate a single feed to over 250,000 people.

Project Title: 14 Mile Transmission Main Loop

Scoring**Project Manager Weighted Score:** 70.60

Criteria Name	Score	Comment
Condition	3	
Performance (Service Level/Reliability)	5	
Regulatory (Environmental/Legal)	3	
Operations and Maintenance	3	
Public Health and Safety	4	
Public Benefit	5	
Financial	2	
Efficiency and Innovation	3	

Risk Committee Weighted Score: 58.40

Criteria Name	Score	Comment
Condition	1	
Performance (Service Level/Reliability)	5	
Regulatory (Environmental/Legal)	2	
Operations and Maintenance	3	
Public Health and Safety	4	
Public Benefit	5	
Financial	1	
Efficiency and Innovation	2	

Project Title: 14 Mile Transmission Main Loop

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Water

Start Date: 12/7/2017

Phase Status:
End Date: 1/31/2024

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: GLWA

Cost Est. Date: 1/1/2017

Cost Est. Prepared By: GLWA

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	\$289	\$182	\$182	\$47	\$22	\$22	\$16	\$0	\$0	\$59	\$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	12/7/2017	1/31/2024

Project Title: 14 Mile Transmission Main Loop

Phase: Design & Construction Assistance # 1

Phase Title: Design/Construction Administration

Phase Budget:	Water	Start Date:	3/20/2019
Phase Status:	Active	End Date:	1/12/2024
Cost Allocation:	CTA	Fund:	Construction Bond Fund
Funding Source:	Bond Proceeds	Usefull Life > Yrs:	Yes
		Tot. Federal Loan Amout:	\$0.00

Phase Comments/Description:

Brown & Caldwell is the engineering consultant for the design, construction administration, and RPR services.

Cost Est. Class: Class 1	Cost Est. Source: Brown and Caldwell
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 & Construction Assistance # 1	\$7,970	\$3,576	\$3,576	\$1,242	\$1,242	\$1,242	\$667	\$0	\$0	\$3,151	\$0

Phase Dates

Activity Name	Start Date	End Date
Design - Pre-Procurement	12/7/2017	7/31/2018
Design - Procurement	7/31/2018	3/20/2019
Design - Project Execution	3/20/2019	1/12/2024
Construction Assistance - Project Execution	8/11/2020	1/31/2024
Construction Assistance - Project Closeout	11/2/2023	1/31/2024

Project Title: 14 Mile Transmission Main Loop

Phase: Construction (Build) # 1

Phase Title: Construction Contract #1- 14 Mile Transmission Main Loop

Phase Budget:	Water	Start Date:	8/11/2020
Phase Status:	Active - Procurement - Board Approved	End Date:	9/30/2021
Cost Allocation:	CTA	Fund:	Construction Bond Fund
Funding Source:	Federal Loan Programs	Usefull Life > Yrs:	Yes
		Tot. Federal Loan Amout:	\$5,797,744.00

Phase Comments/Description:

Construction of approximately 1 mile of a new parallel 24-inch transmission main along 14 Mile from M-5 to west of Decker Road to reinforce the 14 Mile Transmission Main.

Cost Est. Class: Class 1	Cost Est. Source: bid amount
Cost Est. Date: 3/1/2020	Cost Est. Prepared By: Major Cement

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	5 Year Total
Construction (Build) # 1	\$5,978	\$0	\$0	\$4,775	\$1,203	\$1,203

Phase Dates

Activity Name	Start Date	End Date
Construction - Pre-Procurement	10/1/2019	10/11/2019
Construction - Procurement	10/12/2019	8/10/2020
Construction - Project Execution	8/11/2020	9/30/2021
Construction - Closeout	7/2/2021	9/30/2021

Project Title: 14 Mile Transmission Main Loop

Phase: Construction (Build) # 2

Phase Title: Construction Contract # 2 - 14 Mile Transmission Main Loop

Phase Budget:	Water	Start Date:	7/1/2021
Phase Status:	Future Planned Start	End Date:	1/31/2024
Cost Allocation:	CTA	Fund:	Construction Bond Fund
Funding Source:	Federal Loan Programs	Usefull Life > Yrs:	Yes
		Tot. Federal Loan Amout:	\$0.00

Phase Comments/Description:

This phase involves construction of approximately 8 Miles of 54-inch transmission main from 8 Mile Road to 14 Mile Road, as well as a new flow control station at Haggerty pump station.

Cost Est. Class: Class 2	Cost Est. Source: B and C
Cost Est. Date: 7/15/2020	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	5 Year Total
Construction (Build) # 2	\$90,943	\$0	\$0	\$35,126	\$35,126	\$20,691	\$0	\$90,943

Phase Dates

Activity Name	Start Date	End Date
Construction - Project Execution	7/1/2021	1/31/2024
Construction - Closeout	11/2/2023	1/31/2024

Project Title: 14 Mile Transmission Main Loop

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	\$28,500	\$1,300	\$10,500	\$12,000	\$6,000	\$0	\$0	\$0	\$0	\$0	\$0	\$29,800
2019	\$16,993	\$0	\$0	\$0	\$751	\$1,315	\$1,507	\$13,420	\$37,433	\$0	\$0	\$54,426
2020	\$28,993	\$0	\$0	\$0	\$751	\$1,315	\$1,507	\$13,420	\$12,000	\$25,433	\$0	\$54,426
2021	\$69,534	\$0	\$0	\$638	\$3,762	\$1,194	\$17,085	\$17,085	\$17,085	\$17,085	\$7	\$73,941

Description of CIP Changes:

The engineering services contract (180244) had a change order- the CIP is updated to reflect that; Phase I construction (1903312) is awarded and now has actual contract costs; Phase II of the project is at 60% design and costs are updated based on the recent estimate.

Project Title: Downriver Transmission Main Loop

Project Status: Project Execution - Design

CIP Type: Project

Class Lvl 1: Water

Class Lvl 2: Field Services

Class Lvl 3: Transmission System

☐ **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: Vittoria Hogue

Director: Grant Gartrell

Managing Dept.: Water Eng

Date Original Business Case Prepared: 10/12/2017

Year Project Added to CIP: 2017

CIP Budget: Water

Project Jurisdiction: Wayne County - Outside Detroit

Lookup Location: Will be located on Inkster between Wick and Pennsylvania Road; on Allen Road/Dixie Highway between Pennsylvania Rd. and Ready Rd; and also at Electric Avenue.

Funds and Cost Center: Water - 5519-882411

Problem Statement:

The Downriver Transmission Main that currently serves Brownstown, Riverview, Woodhaven, Trenton, Flat Rock, Gibraltar, Rockwood, South Rockwood, Berlin Township, and Grosse Isle is a single feed transmission system. If a disruption to service were to occur on this transmission main, many of the users along this main would experience a complete loss of pressure and flow. The number of users that would experience pressure loss would depend on the location of the break. This project would provide a transmission main loop to the Downriver system to provide redundancy on this branch of the system.

Scope of Work/Project Alternatives:

This project will be delivered using a design-bid-build project delivery method. The scope of work generally includes: installing approximately 9 miles of 16-inch transmission main and 1 mile of 24-inch transmission main paralleling the existing Allen Road/Dixie Highway transmission main and install 4 miles of 30-inch transmission main along Inkster road between Wick and Pennsylvania road. This will provide redundancy to the Downriver communities of Brownstown, Riverview, Woodhaven, Trenton, Flat Rock, Gibraltar, Rockwood, South Rockwood, Berlin Township, and Grosse Isle. The project's scope will also include the demolition of the Electric Avenue Booster Pumping Station reservoirs, as well as replacement of the city of Trenton's billing meters.

Project Title: Downriver Transmission Main Loop

Other Important Info:

Completion of the Downriver Transmission main loop is predicated on acquiring ownership of a portion of 24-inch transmission main owned but not used by the City of Trenton. As of this CIP update, the acquisition of this Trenton main has been completed.

Project History: The 2015 Water Master Plan Update included a recommendation to evaluate options along this branch of the system to increase redundancy. Since that recommendation, GLWA Water Supply Operations Engineering performed a hydraulic analysis of redundancy alternatives for the Downriver Transmission System. The results of the hydraulic analysis were presented at the May 15, 2017, September 19, 2017, May 31, 2018, and February 26, 2019 Analytical Work Group Meetings and based on the discussion at these meetings the approach described in the scope of work was determined as the best alternative.

Primary Driver: 2 - Performance**Driver Explanation:**

This transmission main project will complete a loop to provide redundancy to numerous GLWA member partners.

Project Title: Downriver Transmission Main Loop

Scoring**Project Manager Weighted Score:** 70.60

Criteria Name	Score	Comment
Condition	3	
Performance (Service Level/Reliability)	5	
Regulatory (Environmental/Legal)	3	
Operations and Maintenance	3	
Public Health and Safety	4	
Public Benefit	5	
Financial	2	
Efficiency and Innovation	3	

Risk Committee Weighted Score: 58.40

Criteria Name	Score	Comment
Condition	1	
Performance (Service Level/Reliability)	5	
Regulatory (Environmental/Legal)	2	
Operations and Maintenance	3	
Public Health and Safety	4	
Public Benefit	5	
Financial	1	
Efficiency and Innovation	2	

Project Title: Downriver Transmission Main Loop

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget:	Water	Start Date:	10/24/2017
Phase Status:	Future Planned Start	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: CDM Smith
Cost Est. Date: 1/1/2015	Cost Est. Prepared By: CDM Smith

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	\$198	\$42	\$42	\$57	\$26	\$22	\$21	\$22	\$7	\$98	\$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	10/24/2017	6/30/2027

Project Title: Downriver Transmission Main Loop

Phase: Design & Construction Assistance # 1

Phase Title: Design/Construction Administration

Phase Budget:	Water	Start Date:	5/1/2020
Phase Status:	Future Planned Start	End Date:	7/2/2025
Cost Allocation:	CTA	Fund:	Construction Bond Fund
Funding Source:	Bond Proceeds	Usefull Life > Yrs:	Yes
		Tot. Federal Loan Amout:	\$0.00

Phase Comments/Description:

Award of this engineering services contract is in the negotiation stage

Cost Est. Class: Class 4

Cost Est. Source: OHM/WSP

Cost Est. Date:

Cost Est. Prepared By: GLWA

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
Design & Construction Assistance # 1	\$4,645	\$183	\$183	\$1,625	\$638	\$570	\$569	\$1,059	\$0	\$2,836

Phase Dates

Activity Name	Start Date	End Date
Design - Pre-Procurement	10/24/2017	4/5/2019
Design - Procurement	4/8/2019	6/30/2020
Design - Project Execution	5/1/2020	11/30/2021
Construction Assistance - Project Execution	12/1/2021	7/2/2025
Construction Assistance - Project Closeout	4/3/2025	7/2/2025

Project Title: Downriver Transmission Main Loop

Phase: Construction (Build) # 1

Phase Title: Construction

Phase Budget:	Water	Start Date:	6/3/2022
Phase Status:	Future Planned Start	End Date:	7/2/2025
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 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	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
Construction (Build) # 1	\$32,224	\$0	\$0	\$0	\$6,891	\$7,484	\$7,463	\$7,463	\$29,301	\$2,924

Phase Dates

Activity Name	Start Date	End Date
Construction - Pre-Procurement	9/2/2021	12/31/2021
Construction - Procurement	1/1/2022	6/30/2022
Construction - Project Execution	6/3/2022	7/2/2025
Construction - Closeout	4/1/2027	6/30/2027

Project Title: Downriver Transmission Main Loop

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

CIP	5 Year Total	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	Total
2019	\$15,075	\$0	\$297	\$964	\$3,051	\$10,763	\$22,122	\$0	\$0	\$37,197
2020	\$37,197	\$0	\$297	\$964	\$3,051	\$10,763	\$22,122	\$0	\$0	\$37,197
2021	\$29,516	\$24	\$1,398	\$1,748	\$3,793	\$7,984	\$8,007	\$7,984	\$6,806	\$37,744

Description of CIP Changes:

CIP cost increased to account for the anticipated award amount for the engineering services contract (Contract No. 1803942). In addition, the estimated cost to construct the new transmission mains to complete the loop was increased from last fiscal year based on construction cost data received on other projects over the past year. SM 8/6/2019

Project Title: 7 Mile/Nevada Transmission Main Rehab and Carrie/Nevada Flow Control Station

Project Status: Future Planned - Within 5 Year Plan

CIP Type: Project

Class Lvl 1: Water

Class Lvl 2: Field Services

Class Lvl 3: Transmission System

☐ **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: Timothy Kuhns

Director: Grant Gartrell

Managing Dept.: Water Eng

Date Original Business Case Prepared:
9/21/2018

Year Project Added to CIP: 2019

CIP Budget: Water

Project Jurisdiction: City of Detroit

Lookup Location:

Funds and Cost Center: Water - 5519-882411

Problem Statement:

The primary driver of this project is to provide back up water service from Springwells WTP to the Water Works and Northeast Service Areas in case of loss of service to the Water Works Park WTP or Northeast WTP.

The secondary driver to this project is to support Northeast WTP repurposing by providing a second finished water supply main to the Northeast site to support maximum day demands for the Northeast service area, which can be as high as 190 MGD. With the upcoming decommissioning of treatment at the Northeast WTP, Water Works Park will provide 150 MGD of finished water to the Northeast high lift pumping system to provide service to the existing Northeast service area, which means that 40 MGD must be delivered from other water treatment plants during the maximum day demand conditions. 7

Scope of Work/Project Alternatives:

Project includes inspection and rehab of the 7 Mile/Nevada Transmission Main and construction of a new flow control station at Carrie/Nevada.

Other Important Info:

This project highlights the need to reinforce the transmission system in order to reliably provide service during existing conditions and after treatment is decommissioned at the Northeast WTP. This project would be completed regardless of whether the Northeast WTP treatment is decommissioned.

Primary Driver: 2 - Performance

Driver Explanation:

This project provides redundancy to two WTP service areas.

Project Title: 7 Mile/Nevada Transmission Main Rehab and Carrie/Nevada Flow Control Station

7 Mile/Nevada Transmission Main provides transmission between the Springwells and Water Works Park Service areas and will provide needed redundancy once Northeast WTP treatment is decommissioned.

Project Title: 7 Mile/Nevada Transmission Main Rehab and Carrie/Nevada Flow Control Station

Scoring**Project Manager Weighted Score:** 87.60

Criteria Name	Score	Comment
Condition	5	
Performance (Service Level/Reliability)	5	
Regulatory (Environmental/Legal)	4	
Operations and Maintenance	5	
Public Health and Safety	4	
Public Benefit	4	
Financial	4	
Efficiency and Innovation	4	

Risk Committee Weighted Score: 84.20

Criteria Name	Score	Comment
Condition	5	
Performance (Service Level/Reliability)	4	
Regulatory (Environmental/Legal)	4	
Operations and Maintenance	4	
Public Health and Safety	4	
Public Benefit	4	
Financial	4	
Efficiency and Innovation	5	

Project Title: 7 Mile/Nevada Transmission Main Rehab and Carrie/Nevada Flow Control Station

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Water	Start Date: 3/1/2019
Phase Status: Future Planned Start	End Date: 6/30/2029
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 5	Cost Est. Source: GLWA
Cost Est. Date: 1/1/2018	Cost Est. Prepared By: GLWA

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	\$288	\$3	\$3	\$51	\$22	\$22	\$21	\$22	\$22	\$108	\$126

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	3/1/2019	6/30/2029

Project Title: 7 Mile/Nevada Transmission Main Rehab and Carrie/Nevada Flow Control Station

Phase: Design-Build # 1

Phase Title: Design-Build

Phase Budget:	Water	Start Date:	7/1/2020
Phase Status:	Future Planned Start	End Date:	6/30/2029
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 5	Cost Est. Source: GLWA
Cost Est. Date: 1/1/2018	Cost Est. Prepared By: GLWA

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	\$59,901	\$0	\$0	\$1,116	\$1,922	\$1,922	\$4,763	\$3,483	\$13,341	\$25,431	\$33,353

Phase Dates

Activity Name	Start Date	End Date
Design - Pre-Procurement	3/1/2019	4/3/2020
Design - Procurement	4/4/2020	11/30/2020
Design - Project Execution	12/1/2020	10/31/2024
Construction Assistance - Project Execution	6/1/2020	6/30/2020
Design-Build - Construction Management (RPR) Services - Project Execution	4/1/2024	3/31/2028
Construction - Project Execution	7/1/2020	6/30/2029
Construction - Closeout	4/1/2029	6/30/2029

Project Title: 7 Mile/Nevada Transmission Main Rehab and Carrie/Nevada Flow Control Station


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	Total
2020	\$20,500	\$1,040	\$6,050	\$6,910	\$3,750	\$2,750	\$0	\$0	\$20,500
2021	\$29,719	\$74	\$1,794	\$3,510	\$9,223	\$7,620	\$7,572	\$30,784	\$60,577

Description of CIP Changes:

Project costs were adjusted to account for recent bid prices received by GLWA on other pipeline projects.

Project Title: Garland, Hurlbut, Bewick Water Transmission System Rehabilitation

<p>Project Status: Future Planned - Within 5 Year Plan</p> <p>CIP Type: Project</p> <p>Class Lvl 1: Water</p> <p>Class Lvl 2: Field Services</p> <p>Class Lvl 3: Transmission System</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 checked="" 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: Timothy Kuhns</p> <p>Director: Grant Gartrell</p> <p>Managing Dept.: Water Eng</p>	<p>Date Original Business Case Prepared: 8/15/2019</p> <p>Year Project Added to CIP: 2019</p> <p>CIP Budget: Water</p>	<p>Project Jurisdiction: City of Detroit</p> <p>Lookup Location: Transmission Mains</p> <p>Funds and Cost Center: Water - 5519-882111</p>

Problem Statement:

A large proportion of the water transmission mains (WTM) within the City of Detroit were constructed between the decades of 1870 and 1930. Mains constructed during this period have exceeded their service life and will require replacement in the near term. Several WTM within this age of construction have strategic importance as they can be used to transmit flows between the Water Works Park WTP and the Northeast WTP.

Scope of Work/Project Alternatives:

This project involves rehab of WTM along Garland Street, Hurlbut Street, and Bewick Street between Jefferson Avenue and I-94 within the east side of the City of Detroit. This project will include a detailed condition assessment of these WTM to evaluate the appropriate rehabilitation method.

Other Important Info:

This project will be implemented concurrently with Phase 3 of CIP:122003 WWP to NE Transmission Main Project.

Primary Driver: 1 - Condition

Driver Explanation:

WTM described for this CIP project are aged and at the end of their service life.

Project Title: Garland, Hurlbut, Bewick Water Transmission System Rehabilitation

Scoring**Project Manager Weighted Score:** 94.60

Criteria Name	Score	Comment
Condition	5	
Performance (Service Level/Reliability)	5	
Regulatory (Environmental/Legal)	4	
Operations and Maintenance	5	
Public Health and Safety	5	
Public Benefit	5	
Financial	5	
Efficiency and Innovation	4	

Risk Committee Weighted Score: 89.00

Criteria Name	Score	Comment
Condition	5	
Performance (Service Level/Reliability)	5	
Regulatory (Environmental/Legal)	4	
Operations and Maintenance	4	
Public Health and Safety	4	
Public Benefit	5	
Financial	5	
Efficiency and Innovation	4	

Project Title: Garland, Hurlbut, Bewick Water Transmission System Rehabilitation

Phase: GLWA Salaries

Phase Title: GLWA salaries

Phase Budget: Water

Start Date: 10/1/2019

Phase Status: Active

End Date: 2/28/2027

Cost Allocation: CTA

Fund: Construction Bond Fund

Funding Source: Bond Proceeds

Usefull Life > Yrs: Yes

Tot. Federal Loan Amout: \$0.00

Phase Comments/Description:

GLWA salaries

Cost Est. Class: Class 5

Cost Est. Source: Water Engineering

Cost Est. Date: 8/15/2019

Cost Est. Prepared By: Tim Kuhns

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	\$456	\$0	\$0	\$80	\$32	\$30	\$30	\$30	\$30	\$152	\$224

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	10/1/2019	2/28/2027

Project Title: Garland, Hurlbut, Bewick Water Transmission System Rehabilitation

Phase: Design-Build # 1

Phase Title: Design Build (progressive DB)

Phase Budget:	Water	Start Date:	12/1/2020
Phase Status:	Future Planned Start	End Date:	2/28/2027
Cost Allocation:	CTA	Fund:	Construction Bond Fund
Funding Source:	Bond Proceeds	Usefull Life > Yrs:	Yes
		Tot. Federal Loan Amout:	\$0.00

Phase Comments/Description:

Progressive Design Build for design and rehab of WTM described in this CIP project.

Cost Est. Class: Class 5	Cost Est. Source: Water Engineering
Cost Est. Date: 8/15/2019	Cost Est. Prepared By: Tim Kuhns

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	\$53,646	\$0	\$0	\$1,498	\$1,498	\$1,498	\$1,498	\$3,965	\$3,965	\$12,425	\$39,723

Phase Dates

Activity Name	Start Date	End Date
Design - Pre-Procurement	10/1/2019	4/3/2020
Design - Procurement	4/4/2020	11/30/2020
Design - Project Execution	12/1/2020	5/31/2023
Design-Build - Construction Management (RPR) Services - Project Execution	3/1/2023	2/28/2027
Construction - Project Execution	3/1/2023	2/28/2027
Construction - Closeout	11/30/2026	2/28/2027

Project Title: Garland, Hurlbut, Bewick Water Transmission System Rehabilitation


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	Total
2021	\$14,456	\$121	\$1,717	\$2,037	\$2,690	\$4,006	\$4,006	\$30,000	\$44,577

Description of CIP Changes:

New project - no changes from previous versions

Project Title: West Service Center Pumping Station, Isolation Gate Valves for Line Pumps

<p>Project Status: Pending Closeout</p> <p>CIP Type: Project</p> <p>Class Lvl 1: Water</p> <p>Class Lvl 2: Systems Control Center</p> <p>Class Lvl 3: Pump Station/Reservoir</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 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: Andrew Juergens</p> <p>Director: Grant Gartrell</p> <p>Managing Dept.: Water Eng</p>	<p>Date Original Business Case Prepared: 6/26/2014</p> <p>Year Project Added to CIP: 2014</p> <p>CIP Budget: Water</p>	<p>Project Jurisdiction: Oakland County</p> <p>Lookup Location: West Service Center</p> <p>Funds and Cost Center: Water - 5519-882111</p>

Problem Statement:

There are six line pumping units in the main pump house at the West Service Center Booster Pumping Station. There are butterfly valves located on the suction side all six line pumps, and resilient seated gate valves on the discharge side of three of the six line pumps. Three of the line pumps do not have a valve on their discharge side and therefore no immediate means of isolation. The existing butterfly and resilient seated gate valves are all leaking and not reliable for isolating pumps. Moreover, as mentioned, three of the line pumps do not have an isolation valve of any kind on their discharge. The poor condition and lack of discharge isolation valves on all line pumps makes it extremely challenging to take pumps out for service, repair and maintenance. Extraordinary means are required to remove pumps out for service because the entire high-pressure or

Scope of Work/Project Alternatives:

This project is being delivered using a design-bid-build project delivery. The scope of work generally includes removing 6 existing butterfly valves from the pump suction piping and 3 existing gate valves from the high-pressure pumping system discharge piping; and providing 6 new double-disc gate valves on the pump suction piping and 6 new double disc gate valves on the pump discharge piping.

Other Important Info:

Challenges: Sequence of construction and meeting system demands will need to be coordinated with operations.

Primary Driver: 2 - Performance

Driver Explanation:

Currently there is no means to isolate the individual pumping units at the West Service Center.

Project Title: West Service Center Pumping Station, Isolation Gate Valves for Line Pumps

intermediate-pressure pumping systems
have to be temporarily shutdown.

Project Title: West Service Center Pumping Station, Isolation Gate Valves for Line Pumps

Scoring**Project Manager Weighted Score:** 58.20

Criteria Name	Score	Comment
Condition	4	
Performance (Service Level/Reliability)	5	
Regulatory (Environmental/Legal)	1	
Operations and Maintenance	5	
Public Health and Safety	2	
Public Benefit	3	
Financial	1	
Efficiency and Innovation	3	

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: West Service Center Pumping Station, Isolation Gate Valves for Line Pumps

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Water

Start Date: 7/24/2016

Phase Status: Active

End Date: 12/31/2020

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 1

Cost Est. Source: CDM Smith

Cost Est. Date: 1/1/2015

Cost Est. Prepared By: CDM Smith

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	\$56	\$50	\$50	\$6	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	7/24/2016	12/31/2020
Capital Delivery Salary	7/24/2016	12/31/2020

Project Title: West Service Center Pumping Station, Isolation Gate Valves for Line Pumps

Phase: Design & Construction Assistance # 1

Phase Title: Design/Construction Administration

Phase Budget: Water	Start Date: 7/2/2017
Phase Status: Active	End Date: 12/31/2020
Cost Allocation: CTA	Fund: Construction Bond Fund
Funding Source: Bond Proceeds	Usefull Life > Yrs: Yes
	Tot. Federal Loan Amout: \$0.00

Phase Comments/Description:

Hubbell, Roth & Clark is the consulting engineer

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 & Construction Assistance # 1	\$317	\$212	\$212	\$106	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Design - Pre-Procurement	7/24/2016	10/22/2016
Design - Procurement	10/23/2016	7/1/2017
Design - Project Execution	7/2/2017	11/27/2018
Construction Assistance - Project Execution	11/27/2018	12/31/2020
Construction Assistance - Project Closeout	10/2/2020	12/31/2020

Project Title: West Service Center Pumping Station, Isolation Gate Valves for Line Pumps

Phase: Construction (Build) # 1

Phase Title: Construction

Phase Budget:	Water	Start Date:	11/27/2018
Phase Status:	Active	End Date:	8/13/2020
Cost Allocation:	CTA	Fund:	Construction Bond Fund
Funding Source:	Bond Proceeds	Usefull Life > Yrs:	Yes
		Tot. Federal Loan Amout:	\$0.00

Phase Comments/Description:

Weiss is the construction contractor

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+
Construction (Build) # 1	\$1,589	\$1,483	\$1,483	\$106	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Construction - Pre-Procurement	11/28/2017	3/3/2018
Construction - Procurement	3/2/2018	11/27/2018
Construction - Project Execution	11/27/2018	8/13/2020
Construction - Closeout	5/15/2020	8/13/2020

Project Title: West Service Center Pumping Station, Isolation Gate Valves for Line Pumps


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	Total
2018	\$1,521	\$0	\$521	\$1,000	\$0	\$0	\$1,521
2019	\$1,325	\$66	\$147	\$1,229	\$96	\$0	\$1,538
2020	\$490	\$0	\$138	\$1,186	\$490	\$0	\$1,814
2021	\$65	\$0	\$0	\$248	\$1,666	\$65	\$1,979

Description of CIP Changes:

Construction was completed in fiscal year 2020. This CIP is pending closeout. ADJ 7/24/2020

Project Title: Ford Road Pumping Station, Pressure and Control Improvements

<p>Project Status: Project Execution - Construction</p> <p>CIP Type: Project</p> <p>Class Lvl 1: Water</p> <p>Class Lvl 2: Systems Control Center</p> <p>Class Lvl 3: Pump Station/Reservoir</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 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 checked="" type="checkbox"/> Predecessor Project(s)</p>	
<p>Project Engineer/Manager: Eric Kramp</p> <p>Director: Grant Gartrell</p> <p>Managing Dept.: Water Eng</p>	<p>Date Original Business Case Prepared: 6/26/2014</p> <p>Year Project Added to CIP: 2014</p> <p>CIP Budget: Water</p>	<p>Project Jurisdiction: Wayne County - Outside Detroit</p> <p>Lookup Location: Water Booster Pumping Stations</p> <p>Funds and Cost Center: Water - 5519-882111</p>

Problem Statement:

Design of isolation, pressure and flow control equipment for efficient delivery of consistent pressures to wholesale customers at Ford Road water booster pumping station

Scope of Work/Project Alternatives:

The project generally consists of:

- Replacing all pump suction butterfly valves with new triple offset high performance butterfly valves (10)
- Replacing all control butterfly valves with new metal seated ball valves (10)
- Replacement of the existing 16-inch cone valve-driven reservoir fill line a new 20-inch plunger valve controlled fill line
- New 75 KW generator and appurtenances and related work.

Other Important Info:

The project is currently under construction, and is predecessor to any work along the Newburgh water main and Michigan Avenue Station. The two major observed challenges (isolation and procurement) have been overcome successfully. The next major element of the work is the installation of the control valves expected to begin in September 2020.

Primary Driver: 2 - Performance

Driver Explanation:

Existing piping and valving do not allow for optimal pressure control. New system equipment will provide operations improve pressure and flow control with pump startups.

Project Title: Ford Road Pumping Station, Pressure and Control Improvements

Scoring

Project Manager Weighted Score: 70.20

Criteria Name	Score	Comment
Condition	5	Score increased as isolation valves had entirely failed for intended purposes. To service a single pump it to take out the entire station.
Performance (Service Level/Reliability)	4	
Regulatory (Environmental/Legal)	2	
Operations and Maintenance	4	The project will improve control of a very binary station. There is no availability of throttling of the control valves making it's discharge less smooth than many other stations
Public Health and Safety	3	
Public Benefit	3	
Financial	4	
Efficiency and Innovation	4	With pump discharge pressure and modern analytics, there is an opportunity to greatly improve efficiency at the station.

Risk Committee Weighted Score: 43.40

Criteria Name	Score	Comment
Condition	2	
Performance (Service Level/Reliability)	3	
Regulatory (Environmental/Legal)	1	
Operations and Maintenance	2	
Public Health and Safety	1	
Public Benefit	3	
Financial	4	
Efficiency and Innovation	3	

Project Title: Ford Road Pumping Station, Pressure and Control Improvements

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Water

Start Date: 6/6/2016

Phase Status: Active

End Date: 4/30/2021

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: CDM Smith

Cost Est. Date: 1/1/2015

Cost Est. Prepared By: CDM Smith

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	\$122	\$76	\$76	\$46	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	6/6/2016	4/30/2021
Capital Delivery Salary	6/6/2016	4/30/2021

Project Title: Ford Road Pumping Station, Pressure and Control Improvements

Phase: Design & Construction Assistance # 1

Phase Title: Design/Construction Administration

Phase Budget: Water	Start Date: 9/9/2017
Phase Status: Active	End Date: 4/30/2021
Cost Allocation: CTA	Fund: Construction Bond Fund
Funding Source: Bond Proceeds	Usefull Life > Yrs: Yes
	Tot. Federal Loan Amout: \$0.00

Phase Comments/Description:

Benesch

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 & Construction Assistance # 1	\$500	\$441	\$441	\$59	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Design - Pre-Procurement	6/6/2016	9/4/2016
Design - Procurement	9/5/2016	9/8/2017
Design - Project Execution	9/9/2017	10/1/2019
Construction Assistance - Project Execution	7/31/2019	4/30/2021
Construction Assistance - Project Closeout	1/30/2021	4/30/2021

Project Title: Ford Road Pumping Station, Pressure and Control Improvements

Phase: Construction (Build) # 1

Phase Title: Construction

Phase Budget:	Water	Start Date:	7/31/2019
Phase Status:	Active	End Date:	4/30/2021
Cost Allocation:	CTA	Fund:	Construction Bond Fund
Funding Source:	Bond Proceeds	Usefull Life > Yrs:	Yes
		Tot. Federal Loan Amout:	\$0.00

Phase Comments/Description:

Construction Contract No. 1803538 -- Ford Road Booster Station Improvements

Cost Est. Class: Class 1	Cost Est. Source: Hard Bids
Cost Est. Date: 2/14/2019	Cost Est. Prepared By: Hard Bids

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	5 Year Total
Construction (Build) # 1	\$2,742	\$1,367	\$1,367	\$1,375	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Construction - Pre-Procurement	6/6/2018	9/4/2018
Construction - Procurement	10/18/2018	9/1/2019
Construction - Project Execution	7/31/2019	4/30/2021
Construction - Closeout	1/30/2021	4/30/2021

Project Title: Ford Road Pumping Station, Pressure and Control Improvements


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	Total
2018	\$3,000	\$0	\$200	\$2,800	\$0	\$0	\$0	\$0	\$3,000
2019	\$2,495	\$8	\$106	\$245	\$1,805	\$445	\$0	\$0	\$2,609
2020	\$2,533	\$0	\$161	\$235	\$2,515	\$18	\$0	\$0	\$2,929
2021	\$1,954	\$0	\$0	\$289	\$1,036	\$987	\$959	\$8	\$3,279

Description of CIP Changes:

Projected moved from Procurement to Construction.

Project Title: Energy Management: Freeze Protection Pump Installation at Imlay Pump Station

<p>Project Status: Project Execution - Design</p> <p>CIP Type: Project</p> <p>Class Lvl 1: Water</p> <p>Class Lvl 2: Systems Control Center</p> <p>Class Lvl 3: Pump Station/Reservoir</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 checked="" 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: Vittoria Hogue</p> <p>Director: Grant Gartrell</p> <p>Managing Dept.: Water Eng</p>	<p>Date Original Business Case Prepared: 6/26/2014</p> <p>Year Project Added to CIP: 2014</p> <p>CIP Budget: Water</p>	<p>Project Jurisdiction: Lapeer County</p> <p>Lookup Location: Imlay Pumping Station</p> <p>Funds and Cost Center: Water - 5519-882111</p>

Problem Statement:

This CIP project will address two principle needs. The first is the need to replace an existing large pumping units with a smaller pumping unit for the purpose of recirculating finished water inside the station's reservoir. Recirculation of reservoir water is required during the low-demand season to maintain water quality. Recirculation of reservoir water using a smaller suitability sized pumping unit will reduce operating complexity and the possibility for damage to the larger pump units. The second need for the new smaller pumping unit is to meet the lower station demands for customers served west of Imlay Station. The lower station demands are a result of Genesee County communities (outside the city of Flint) that have left GLWA's system.

Scope of Work/Project Alternatives:

This project is being delivered using a design-build project delivery method. The scope of work generally includes replacing one of Imlay Station's 75 MGD pump's and 6,000 HP motor's with a smaller 22.5 MGD pump with 1,500 HP motor. The associated VFD, valves, piping and appurtenances will also be removed and replaced to accommodate the new smaller pump.

Other Important Info:

N/A

Primary Driver: 8 - Efficiency

Driver Explanation:

Replacement of an existing 75 MGD pumping unit with a 22.5 MGD unit right sizes the pump that normally serves communities to the west of Imlay Station.

Project Title: Energy Management: Freeze Protection Pump Installation at Imlay Pump Station

Scoring**Project Manager Weighted Score:** 57.40

Criteria Name	Score	Comment
Condition	4	
Performance (Service Level/Reliability)	3	
Regulatory (Environmental/Legal)	1	
Operations and Maintenance	4	
Public Health and Safety	2	
Public Benefit	4	
Financial	3	
Efficiency and Innovation	4	

Risk Committee Weighted Score: 37.60

Criteria Name	Score	Comment
Condition	1	
Performance (Service Level/Reliability)	1	
Regulatory (Environmental/Legal)	1	
Operations and Maintenance	3	
Public Health and Safety	1	
Public Benefit	1	
Financial	4	
Efficiency and Innovation	5	

Project Title: Energy Management: Freeze Protection Pump Installation at Imlay Pump Station

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Water

Start Date: 2/5/2018

Phase Status: Active

End Date: 6/30/2023

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: GLWA

Cost Est. Date: 1/1/2015

Cost Est. Prepared By: GLWA

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	\$187	\$121	\$121	\$46	\$20	\$0	\$0	\$0	\$0	\$20	\$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	2/5/2018	6/30/2023
Not-Applicable to Prism	10/2/2020	6/4/2021

Project Title: Energy Management: Freeze Protection Pump Installation at Imlay Pump Station

Phase: Design-Build # 1

Phase Title: Imlay Pumping Station Pump Right Sizing

Phase Budget: Water	Start Date: 2/5/2018
Phase Status: Active	End Date: 6/30/2023
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: GLWA
Cost Est. Date: 2/1/2019	Cost Est. Prepared By: GLWA

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	\$5,001	\$47	\$47	\$928	\$3,943	\$84	\$0	\$0	\$0	\$4,026	\$0

Phase Dates

Activity Name	Start Date	End Date
Design - Pre-Procurement	2/5/2018	2/15/2019
Design - Procurement	3/12/2019	6/1/2020
Design - Project Execution	6/1/2020	6/30/2020
Construction - Project Execution	10/29/2020	3/1/2022
Construction - Closeout	4/1/2023	6/30/2023

Project Title: Energy Management: Freeze Protection Pump Installation at Imlay Pump Station


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	Total
2018	\$1,000	\$200	\$500	\$300	\$0	\$0	\$1,000
2019	\$557	\$0	\$38	\$385	\$134	\$0	\$557
2020	\$2,137	\$9	\$14	\$592	\$1,315	\$230	\$2,160
2021	\$4,417	\$0	\$97	\$685	\$4,211	\$206	\$5,199

Description of CIP Changes:

Under SCC direction, the pumping unit P3 is being expanded from Freeze Protection Pump to a winter service pump. It is designed to address the entire load of the 72-inch water main during base load conditions. Consequently, the overall budget has increased. TDK 7/15/2018

Project Title: Various Pumping Stations - Needs Assessment Study

Project Status: Closed CIP Type: Project Class Lvl 1: Water Class Lvl 2: Systems Control Center Class Lvl 3: Pump Station/Reservoir <input type="checkbox"/> Project New to CIP	<input type="checkbox"/> Innovation <input type="checkbox"/> WW Master Plan <input type="checkbox"/> Water Master Plan Right Sizing <input checked="" type="checkbox"/> Redundancy <input type="checkbox"/> NE WTP Repurposing <input type="checkbox"/> Linear Assets Outside of Facilities <input type="checkbox"/> Predecessor Project(s)	
Project Engineer/Manager: Erich Klun Director: Grant Gartrell Managing Dept.: Water Eng	Date Original Business Case Prepared: 6/26/2014 Year Project Added to CIP: 2014 CIP Budget: Water	Project Jurisdiction: Multiple Counties Lookup Location: Booster Pumping Stations Funds and Cost Center: Water - 5519-882111

Problem Statement:

Existing pumping stations were constructed in the 1960s and 1970s and most of the pumping units were sized to meet maximum hydraulic condition and perceived to be inefficient.

Scope of Work/Project Alternatives:

This project includes a comprehensive condition and needs assessment study of all water booster stations, exclusive of reservoirs. System wide modelling will confirm station decommissioning as recommended by the 2015 Water Master Plan Update. The condition assessments will include all engineering disciplines, with a focus on variable speed pumping applications to meet changing station demands, DTE rate incentive identification, station metering, valve and yard piping improvements and station bypasses.

Other Important Info:

Challenges: Shutdown, operation and manpower required to cover the condition assessment inspections to complete the work.

Primary Driver: 1 - Condition

Driver Explanation:

Age and condition of stations leave potential for station improvements that yield stations that are more efficient and easier to maintain.

Project Title: Various Pumping Stations - Needs Assessment Study

Scoring**Project Manager Weighted Score:** 46.40

Criteria Name	Score	Comment
Condition	3	
Performance (Service Level/Reliability)	2	
Regulatory (Environmental/Legal)	2	
Operations and Maintenance	3	
Public Health and Safety	2	
Public Benefit	1	
Financial	1	
Efficiency and Innovation	5	

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: Various Pumping Stations - Needs Assessment Study

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Water

Start Date: 3/1/2017

Phase Status: Pending Close-out

End Date: 5/30/2019

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: GLWA

Cost Est. Date: 1/1/2016

Cost Est. Prepared By: GLWA

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

	Total Costs	Actual Costs	Prior FYs
GLWA Salaries	\$100	\$100	\$100

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	3/1/2017	5/30/2019
Capital Delivery Salary	3/1/2017	5/30/2019

Project Title: Various Pumping Stations - Needs Assessment Study

Phase: Study # 1

Phase Title: SCP-CS-052 Needs Assessment Study for all Water Booster Pumping Stations

Phase Budget:	Water	Start Date:	8/4/2017
Phase Status:	Pending Close-out	End Date:	5/30/2019
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:

Tetra Tech

Cost Est. Class: Class 5	Cost Est. Source: GLWA
Cost Est. Date: 1/1/2016	Cost Est. Prepared By: GLWA

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

	Total Costs	Actual Costs	Prior FYs
Study # 1	\$1,575	\$1,575	\$1,575

Phase Dates

Activity Name	Start Date	End Date
Study - Pre-Procurement	3/1/2017	6/29/2017
Study - Procurement	7/1/2017	8/3/2017
Study - Project Execution	8/4/2017	11/16/2018
Study - Closeout	11/19/2018	5/30/2019

Project Title: Various Pumping Stations - Needs Assessment Study

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

CIP	5 Year Total	FY17	FY18	FY19	Total
2018	\$1,200	\$500	\$1,200	\$0	\$1,700
2019	\$1,178	\$33	\$722	\$1,178	\$1,933
2020	\$0	\$0	\$913	\$764	\$1,677
2021	\$0	\$0	\$0	\$1,838	\$1,838

Description of CIP Changes:


(1.) Revised expenditures to reflect split between FY18 and FY19

(2.) Final Condition and Needs Assessment reports were delivered by consultant within contract time. Contract closeout is being negotiated, with expectation for project closeout in early FY20. E. Klun 8/15/19.

E. Klun 8/20/20 updates as follows:

1. Final cost updated to reflect final Contract CS-052A settlement.

Project Title: West Service Center Pumping Station - Reservoir, Reservoir Pumping, and Division Valve Upgrades

<p>Project Status: Project Execution - Design</p> <p>CIP Type: Project</p> <p>Class Lvl 1: Water</p> <p>Class Lvl 2: Systems Control Center</p> <p>Class Lvl 3: Pump Station/Reservoir</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 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: Andrew Juergens</p> <p>Director: Grant Gartrell</p> <p>Managing Dept.: Water Eng</p>	<p>Date Original Business Case Prepared: 10/11/2016</p> <p>Year Project Added to CIP: 2017</p> <p>CIP Budget: Water</p>	<p>Project Jurisdiction: Oakland County</p> <p>Lookup Location: West Service Center</p> <p>Funds and Cost Center: Water - 5519-882111</p>

Problem Statement:

Construction of West Service Center Division Valves is needed to convey flows originating from the Lake Huron Water Treatment Plant through the West Service Center to the Springwells high-pressure service area while the Springwells raw water tunnel is out of service for repairs. The existing reservoirs at the West Service Center are in poor condition and continue to require periodic structural repairs despite numerous past repairs. Additionally, half of the existing reservoir pumps experience suction hydraulic issues when the reservoir level falls below half full.

Scope of Work/Project Alternatives:

This project is being delivered using a design-build project delivery method. The scope of work generally involves:

1. Rehabilitating Valve Vaults #1, #4, and #7.
2. Demolishing existing Valve Vault #3.
3. Constructing a new Valve Vault #3 containing a new 30-inch cone valve.
4. Demolishing two existing 10 MG reservoirs and the associated Reservoir Pump Houses #1 and #2, and the associated yard piping.
5. Constructing two new 5 MG reservoirs.
6. Constructing a new Reservoir Pump House, including three new reservoir pumping units and two new reservoir fill valves.
7. Installing new the local valve control panel and instrumentation.
8. Testing and commissioning the new pumping facilities and finished water reservoirs.
9. Restoring the site.

Other Important Info:

Challenges: Water storage capacity and reservoir pumping capacity need to be maintained during construction. Sequence of construction and meeting system demands will need to be coordinated with operations. Construction of the new reservoirs is subject to the city of Southfield's zoning ordinances especially related to the height of the reservoirs.

Primary Driver: 2 - Performance

Driver Explanation:

This project will provide new reservoirs with a reservoir pumping system capable of pumping from the reservoirs to the station suction header under all operational conditions.

Project Title: West Service Center Pumping Station - Reservoir, Reservoir Pumping, and Division Valve Upgrades

Scoring**Project Manager Weighted Score:** 76.20

Criteria Name	Score	Comment
Condition	5	
Performance (Service Level/Reliability)	5	
Regulatory (Environmental/Legal)	3	
Operations and Maintenance	4	
Public Health and Safety	4	
Public Benefit	3	
Financial	2	
Efficiency and Innovation	4	

Risk Committee Weighted Score: 54.00

Criteria Name	Score	Comment
Condition	3	
Performance (Service Level/Reliability)	4	
Regulatory (Environmental/Legal)	1	
Operations and Maintenance	4	
Public Health and Safety	1	
Public Benefit	5	
Financial	1	
Efficiency and Innovation	5	

Project Title: West Service Center Pumping Station - Reservoir, Reservoir Pumping, and Division Valve Upgrades

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Water	Start Date: 7/17/2018
Phase Status: Future Planned Start	End Date: 2/1/2024
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: CDM Smith
Cost Est. Date: 1/1/2015	Cost Est. Prepared By: CDM Smith

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	\$242	\$111	\$111	\$48	\$32	\$32	\$19	\$0	\$0	\$84	\$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	7/17/2018	2/1/2024

Project Title: West Service Center Pumping Station - Reservoir, Reservoir Pumping, and Division Valve Upgrades

Phase: Design-Build # 1

Phase Title: Design-Build

Phase Budget:	Water	Start Date:	7/17/2018
Phase Status:	Under Procurement	End Date:	2/1/2024
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 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
Design-Build # 1	\$44,900	\$2,038	\$2,038	\$5,219	\$17,117	\$19,895	\$631	\$0	\$37,643

Phase Dates

Activity Name	Start Date	End Date
Design - Pre-Procurement	7/17/2018	4/4/2019
Design - Procurement	4/5/2019	3/15/2020
Design - Project Execution	3/16/2020	3/31/2021
Construction - Project Execution	3/1/2021	2/1/2024
Construction - Closeout	11/3/2023	2/1/2024

Project Title: West Service Center Pumping Station - Reservoir, Reservoir Pumping, and Division Valve Upgrades


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	Total
2018	\$11,800	\$7,600	\$4,200	\$0	\$0	\$0	\$0	\$0	\$11,800
2019	\$34,530	\$0	\$0	\$2,620	\$7,430	\$15,570	\$8,910	\$2,606	\$37,136
2020	\$37,136	\$0	\$0	\$2,620	\$7,430	\$15,570	\$8,910	\$2,606	\$37,136
2021	\$36,746	\$0	\$296	\$663	\$4,323	\$12,209	\$11,853	\$8,361	\$37,705

Description of CIP Changes:

Updated cost projections & schedule to align with the 60% design phase design & construction schedule. AJ - 8/19/2020

Project Title: Ypsilanti Booster Pumping Station Improvements

<p>Project Status: Project Execution - Design</p> <p>CIP Type: Project</p> <p>Class Lvl 1: Water</p> <p>Class Lvl 2: Systems Control Center</p> <p>Class Lvl 3: Pump Station/Reservoir</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 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>Existing Ypsi station</p>
<p>Project Engineer/Manager: Jorge Nicolas</p> <p>Director: Grant Gartrell</p> <p>Managing Dept.: Water Eng</p>	<p>Date Original Business Case Prepared: 9/28/2017</p> <p>Year Project Added to CIP: 2017</p> <p>CIP Budget: Water</p>	<p>Project Jurisdiction: Wayne County - Outside Detroit</p> <p>Lookup Location: Water Plants & Booster Pump Stations</p> <p>Funds and Cost Center: Water - 5519-882111</p>

Problem Statement:

The Ypsilanti Booster Pumping Station does not have backup power generation and needs one in the event of a power loss to the site so that system pressure loss is avoided during these conditions. The entire station and its pumping and electrical system equipment are original to the facility and are past their useful service life. The existing electrical system requires substantial maintenance to keep it in service. The existing pumps and motors are in poor condition and also require cumbersome maintenance to keep in service.

Scope of Work/Project Alternatives:

This project is being delivered using a design-bid-build project delivery method. The scope of work generally includes building a new booster pumping station that meets current water system demands, current building and electrical codes, and best industry practices for water pumping station design, operation and maintenance needs. The new station will be equipped with all new pumps, motors, drives, electrical switchgear, power distribution system, building mechanical, station passive bypass, and electrical backup power generation.

Other Important Info:

Impact to member partners

Primary Driver: 1 - Condition

Driver Explanation:

Existing station mechanical and electrical equipment is original and past its useful life.

Project Title: Ypsilanti Booster Pumping Station Improvements

Scoring**Project Manager Weighted Score:** 80.20

Criteria Name	Score	Comment
Condition	5	
Performance (Service Level/Reliability)	5	
Regulatory (Environmental/Legal)	3	
Operations and Maintenance	4	
Public Health and Safety	3	
Public Benefit	5	
Financial	5	
Efficiency and Innovation	3	

Risk Committee Weighted Score: 61.20

Criteria Name	Score	Comment
Condition	5	
Performance (Service Level/Reliability)	4	
Regulatory (Environmental/Legal)	1	
Operations and Maintenance	4	
Public Health and Safety	3	
Public Benefit	2	
Financial	3	
Efficiency and Innovation	3	

Project Title: Ypsilanti Booster Pumping Station Improvements

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Water

Start Date: 3/5/2018

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: CDM Smith

Cost Est. Date: 1/1/2015

Cost Est. Prepared By: CDM Smith

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	\$204	\$36	\$36	\$57	\$27	\$22	\$21	\$22	\$18	\$110	\$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	3/5/2018	6/30/2027

Project Title: Ypsilanti Booster Pumping Station Improvements

Phase: Study & Design & Construction Assistance # 1

Phase Title: Study/Design/Construction Administration

Phase Budget:	Water	Start Date:	1/15/2020
Phase Status:	Active	End Date:	9/15/2025
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 5	Cost Est. Source: CDM Smith
Cost Est. Date: 1/1/2015	Cost Est. Prepared By: CDM Smith

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+
Study & Design & Construction Assistance # 1	\$3,680	\$297	\$297	\$557	\$557	\$470	\$588	\$586	\$624	\$2,825	\$0

Phase Dates

Activity Name	Start Date	End Date
Design - Pre-Procurement	3/5/2018	5/3/2018
Design - Procurement	5/4/2018	1/14/2020
Design - Project Execution	1/15/2020	8/16/2022
Construction Assistance - Project Execution	10/26/2022	9/15/2025
Construction Assistance - Project Closeout	6/17/2025	9/15/2025

Project Title: Ypsilanti Booster Pumping Station Improvements

Phase: Construction (Build) # 1

Phase Title: Construction

Phase Budget:	Water	Start Date:	10/26/2022
Phase Status:	Future Planned Start	End Date:	9/15/2025
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 5	Cost Est. Source: CDM Smith
Cost Est. Date: 1/1/2015	Cost Est. Prepared By: CDM Smith

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

	Total Costs	Actual Costs	Prior FYs	FY23	FY24	FY25	FY26	5 Year Total	FY27+
Construction (Build) # 1	\$31,510	\$0	\$0	\$6,226	\$9,188	\$9,163	\$1,933	\$26,510	\$5,000

Phase Dates

Activity Name	Start Date	End Date
Construction - Pre-Procurement	12/28/2021	4/27/2022
Construction - Procurement	4/28/2022	10/25/2022
Construction - Project Execution	10/26/2022	9/15/2025
Construction - Closeout	4/1/2027	6/30/2027

Project Title: Ypsilanti Booster Pumping Station 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	FY24	FY25	FY26	Total
2019	\$8,247	\$0	\$93	\$606	\$820	\$2,594	\$4,134	\$900	\$0	\$0	\$9,147
2020	\$9,829	\$4	\$28	\$585	\$865	\$2,855	\$4,205	\$1,319	\$0	\$0	\$9,861
2021	\$27,176	\$0	\$21	\$712	\$846	\$846	\$3,827	\$9,721	\$11,936	\$3,708	\$31,617

Description of CIP Changes:

Updated projected expenditures based on the current status of procurement of the consultant services contract (CS 267) as of September 25, 2018.

The scope of improvements to the Ypsilanti Station in prior years only focused on rehabilitation of the existing station's mechanical and electrical equipment. Contract CS-052A, Comprehensive Booster Station Needs Assessment, was completed last fiscal year and showed that the cost to rehabilitate the existing station is comparable to building a new station. Therefore, the cost included in this fiscal year's CIP update reflects the cost of a new station. JN 8/7/2019

Project Title: Adams Road Pumping Station Improvements

Project Status: Future Planned - Within 5 Year Plan

CIP Type: Project

Class Lvl 1: Water

Class Lvl 2: Systems Control Center

Class Lvl 3: Pump Station/Reservoir

☐ **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: Timothy Kuhns

Director: Grant Gartrell

Managing Dept.: Water Eng

Date Original Business Case Prepared:
1/4/2018

Year Project Added to CIP: 2017

CIP Budget: Water

Project Jurisdiction: Oakland County

Lookup Location: Adams Road BPS

Funds and Cost Center: Water - 5519-882111

Problem Statement:

The Adams Road booster pumping station was constructed in 1971 and is nearing the end of its service life. Recent condition assessment of the station indicates that there are several needs at the site that need to be addressed due to aging infrastructure. Improvements required at the site include site drive improvements, site valve replacements, building sump replacement, site drain PS replacement, structural improvements, pumping system improvements, flow metering improvements, bypass upgrades, interior valve replacement, control valve replacement, valve actuator replacement, air-vacuum valve replacement, station piping improvements, service water system improvements, HVAC upgrades, plumbing upgrades, and various electrical system improvements. Cost estimates for these site improvements indicate construction cost to

Scope of Work/Project Alternatives:

This project will be delivered using a design-bid-build project delivery method. The scope of work generally includes reconstructing a new pumping station next to the existing station on the current site. The new station will be designed to bring it up to current building and electrical codes, industry standards, and best practices for operation and maintenance of pumping stations.

Other Important Info:

Primary Driver: 1 - Condition

Driver Explanation:

Station is approaching the end of its service life

Project Title: Adams Road Pumping Station Improvements

build a new station adjacent to the current
site may be cost comparable.

Project Title: Adams Road Pumping Station Improvements

Scoring**Project Manager Weighted Score:** 68.20

Criteria Name	Score	Comment
Condition	5	
Performance (Service Level/Reliability)	4	
Regulatory (Environmental/Legal)	2	
Operations and Maintenance	4	
Public Health and Safety	2	
Public Benefit	4	
Financial	3	
Efficiency and Innovation	5	

Risk Committee Weighted Score: 64.60

Criteria Name	Score	Comment
Condition	5	
Performance (Service Level/Reliability)	3	
Regulatory (Environmental/Legal)	2	
Operations and Maintenance	3	
Public Health and Safety	3	
Public Benefit	4	
Financial	3	
Efficiency and Innovation	4	

Project Title: Adams Road Pumping Station Improvements

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Water

Start Date: 7/4/2021

Phase Status: Future Planned Start

End Date: 6/30/2030

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: CDM Smith

Cost Est. Date: 1/1/2015

Cost Est. Prepared By: CDM Smith

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+
GLWA Salaries	\$176	\$0	\$0	\$22	\$27	\$26	\$22	\$22	\$119	\$58

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	7/4/2021	6/30/2030

Project Title: Adams Road Pumping Station Improvements

Phase: Design & Construction Assistance # 1

Phase Title: Design/Construction Administration

Phase Budget:	Water	Start Date:	6/1/2022
Phase Status:	Future Planned Start	End Date:	5/31/2027
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 5	Cost Est. Source: CS-052A
Cost Est. Date: 1/15/2015	Cost Est. Prepared By: Tim Kuhns

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+
Design & Construction Assistance # 1	\$7,840	\$83	\$83	\$181	\$1,305	\$1,131	\$1,108	\$1,108	\$4,832	\$2,925

Phase Dates

Activity Name	Start Date	End Date
Design - Pre-Procurement	7/4/2021	10/2/2021
Design - Procurement	10/3/2021	5/31/2022
Design - Project Execution	6/1/2022	5/31/2024
Construction Assistance - Project Execution	6/1/2024	5/31/2027
Construction Assistance - Project Closeout	4/1/2030	6/30/2030

Project Title: Adams Road Pumping Station Improvements

Phase: Construction (Build) # 1

Phase Title: Construction

Phase Budget: Water

Start Date: 6/1/2024

Phase Status: Future Planned Start

End Date: 5/31/2027

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 5

Cost Est. Source: CS-052 Needs Assessment

Cost Est. Date: 8/15/2019

Cost Est. Prepared By: Tim Kuhns

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+
Construction (Build) # 1	\$44,848	\$0	\$0	\$0	\$0	\$0	\$0	\$44,848

Phase Dates

Activity Name	Start Date	End Date
Construction - Pre-Procurement	9/2/2025	12/31/2025
Construction - Procurement	1/1/2026	6/30/2026
Construction - Project Execution	6/1/2024	5/31/2027
Construction - Closeout	4/1/2030	6/30/2030

Project Title: Adams Road Pumping Station Improvements

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	Total
2019	\$1,051	\$21	\$1,030	\$4,625	\$0	\$0	\$5,676
2020	\$3,362	\$21	\$1,029	\$2,312	\$2,312	\$0	\$5,674
2021	\$1,143	\$0	\$13	\$205	\$925	\$26,393	\$27,536

Description of CIP Changes:

Project costs for this project have been updated based on CS-052A Needs Assessment Report.

Project Title: Newburgh Road Booster Pumping Station Improvements

Project Status: Project Execution - Design

CIP Type: Project

Class Lvl 1: Water

Class Lvl 2: Systems Control Center

Class Lvl 3: Pump Station/Reservoir

☐ **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: Andrew Juergens

Director: Grant Gartrell

Managing Dept.: Water Eng

Date Original Business Case Prepared: 1/4/2018

Year Project Added to CIP: 2018

CIP Budget: Water

Project Jurisdiction: Wayne County - Outside Detroit

Lookup Location: Newburgh Road Booster Pumping Station

Funds and Cost Center: Water - 5519-882411

Problem Statement:

Existing pumps, motors and electrical gear are beyond useful service life. The existing pump manufacturer has discontinued maintenance support of the pumps, increasing the difficulty and cost of maintenance. Additionally, a new transmission main will be designed to allow the Newburgh Station to pump flows to the Haggerty Station reservoir. The Haggerty reservoir fill operation may require additional pumps at the Newburgh Station that are rated to higher discharge pressures.

Scope of Work/Project Alternatives:

Construct a new Newburgh Road Booster Pumping Station, including new pumps, motors, VFDs, electrical gear, building mechanical equipment, and backup power generation. Alternatives include constructing a new Newburgh Road Booster Pumping Station on the existing site, expanding the existing site to accommodate a new station, or construction of the new station on a new site.

Other Important Info:

Challenges: The existing site is not large enough to construct the new Newburgh Station. Coordination with the 14-Mile Road Transmission Main Loop Contract will be required.

Primary Driver: 2 - Performance

Driver Explanation:

New pumps at the Newburgh Road Booster Pumping Station are required to pump flows to the Haggerty Station reservoir through the new 14-Mile Transmission Main Loop.

Project Title: Newburgh Road Booster Pumping Station Improvements

Scoring**Project Manager Weighted Score:** 70.00

Criteria Name	Score	Comment
Condition	5	
Performance (Service Level/Reliability)	5	
Regulatory (Environmental/Legal)	2	
Operations and Maintenance	5	
Public Health and Safety	2	
Public Benefit	3	
Financial	3	
Efficiency and Innovation	4	

Risk Committee Weighted Score: 56.60

Criteria Name	Score	Comment
Condition	4	
Performance (Service Level/Reliability)	3	
Regulatory (Environmental/Legal)	2	
Operations and Maintenance	3	
Public Health and Safety	3	
Public Benefit	3	
Financial	1	
Efficiency and Innovation	4	

Project Title: Newburgh Road Booster Pumping Station Improvements

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget:	Water	Start Date:	1/1/2019
Phase Status:	Future Planned Start	End Date:	6/30/2027
Cost Allocation:	CTA	Fund:	Construction Bond Fund
Funding Source:	Bond Proceeds	Usefull Life > Yrs:	No
		Tot. Federal Loan Amout:	\$0.00

Phase Comments/Description:

Cost Est. Class: Class 5	Cost Est. Source: CDM Smith
Cost Est. Date: 1/1/2015	Cost Est. Prepared By: CDM Smith

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	\$161	\$10	\$10	\$57	\$27	\$25	\$21	\$20	\$0	\$93	\$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	1/1/2019	6/30/2027

Project Title: Newburgh Road Booster Pumping Station Improvements

Phase: Design & Construction Assistance # 1

Phase Title: Design/Construction Administration

Phase Budget:	Water	Start Date:	2/5/2020
Phase Status:	Future Planned Start	End Date:	2/28/2025
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 5	Cost Est. Source: 2015 WMPU
Cost Est. Date: 1/15/2015	Cost Est. Prepared By: CDM

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
Design & Construction Assistance # 1	\$3,503	\$340	\$340	\$794	\$706	\$341	\$818	\$505	\$0	\$2,369

Phase Dates

Activity Name	Start Date	End Date
Design - Pre-Procurement	1/1/2019	5/14/2019
Design - Procurement	5/15/2019	2/4/2020
Design - Project Execution	2/5/2020	2/28/2022
Construction Assistance - Project Execution	2/1/2023	2/28/2025

Project Title: Newburgh Road Booster Pumping Station Improvements

Phase: Construction (Build) # 1

Phase Title: Construction

Phase Budget:	Water	Start Date:	4/5/2022
Phase Status:	Future Planned Start	End Date:	2/28/2025
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:	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	\$41,380	\$0	\$0	\$0	\$0	\$2,000	\$8,000	\$12,000	\$12,000	\$34,000	\$7,380

Phase Dates

Activity Name	Start Date	End Date
Construction - Pre-Procurement	4/5/2022	8/3/2022
Construction - Procurement	8/4/2022	1/31/2023
Construction - Project Execution	2/1/2023	2/28/2025
Construction - Closeout	4/1/2027	6/30/2027

Project Title: Newburgh Road Booster Pumping Station Improvements


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

CIP	5 Year Total	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	Total
2019	\$7,795	\$0	\$607	\$2,396	\$2,396	\$2,396	\$4,375	\$0	\$0	\$12,170
2020	\$7,858	\$0	\$16	\$621	\$2,396	\$2,396	\$2,429	\$4,311	\$0	\$12,169
2021	\$23,203	\$3	\$581	\$973	\$1,595	\$5,216	\$6,286	\$9,133	\$6,890	\$30,677

Description of CIP Changes:

Updated the schedule and construction costs to align with the design schedule and cost estimate developed during the conceptual design phase of the new Newburgh Station. - AJ 8/17/2020

Project Title: North Service Center Pumping Station Improvements

<p>Project Status: Future Planned - Within 5 Year Plan</p> <p>CIP Type: Project</p> <p>Class Lvl 1: Water</p> <p>Class Lvl 2: Systems Control Center</p> <p>Class Lvl 3: Pump Station/Reservoir</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 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: Ariadna Risher</p> <p>Director: Grant Gartrell</p> <p>Managing Dept.: Water Eng</p>	<p>Date Original Business Case Prepared: 1/4/2018</p> <p>Year Project Added to CIP: 2017</p> <p>CIP Budget: Water</p>	<p>Project Jurisdiction: Oakland County</p> <p>Lookup Location: North Service Center</p> <p>Funds and Cost Center: Water - 5519-882111</p>

Problem Statement:

The North Service Center was constructed in 1962 and is nearing the end of its service life.

Recent condition assessment of the station indicates that there are several needs at the site that need to be addressed due to aging infrastructure. Improvements required at the site include site drive improvements, site valve replacements, valve operator replacement, abandonment of pitot tube well, belt drain replacement, septic tank and well field replacement, electric room improvements, station wall upgrades, building structure improvements, line and reservoir pump upgrades, flow meter improvements, bypass upgrades, interior valve upgrades, control valve upgrades, valve actuator upgrades, station piping improvements, service water system upgrades, sump pump upgrades, sampling

Scope of Work/Project Alternatives:

This project includes complete reconstruction of the North Service Center Pumping Station, and replacement of two ten million gallon reservoirs.

Other Important Info:

Proposed changes focus on optimization of energy efficiency in the system by removing waste and conserving energy already put into the system.

Primary Driver: 1 - Condition

Driver Explanation:

The North Service Center was constructed in 1962 and is nearing the end of its service life.

Project Title: North Service Center Pumping Station Improvements

system upgrades, and various electrical improvements. Addressing the items on the needs assessment do not address the hydraulic inefficiency of the old system. Cost estimates for these site improvements indicate construction cost to build a new station adjacent to the current site may be cost comparable and would correct the hydraulic efficiency issue. Reservoirs are also at end of useful service life and in need of significant repair. Suggest replacing reservoirs with above ground cylindrical storage units in order to increase hydraulic efficiency.

Project Title: North Service Center Pumping Station Improvements

Scoring

Project Manager Weighted Score: 69.60

Criteria Name	Score	Comment
Condition	5	facility has exceeded its design service life
Performance (Service Level/Reliability)	4	will have a significant positive impact on service levels and system reliability for several member communities.
Regulatory (Environmental/Legal)	2	no change
Operations and Maintenance	4	New facility with new equipment will reduce O&M costs and alleviate most if not all O&M issues.
Public Health and Safety	3	Domed roof on new Reservoirs will eliminate rainwater pooling and possible contamination of finished water from seepage
Public Benefit	4	no change
Financial	2	added hydraulic efficiency should realize energy cost savings approaching \$100k/yr (pumping from line pressure rather than after PRV, and adding ~35 ft head to reservoir suction)
Efficiency and Innovation	5	changing the system to operate at line pressure (~110 psi) rather than reducing to ~40 psi before Pumping to 140 psi means that we are conserving ~ 66% of the energy we put into it at LHWTP. Replacing the reservoirs with above ground storage cylinders would take Minimum head from -10 to 0 ft and Maximum head from 10 to 45ft conserving a considerable amount of energy for the reservoir pumps

Risk Committee Weighted Score: 58.20

Criteria Name	Score	Comment
Condition	4	
Performance (Service Level/Reliability)	3	
Regulatory (Environmental/Legal)	2	
Operations and Maintenance	3	
Public Health and Safety	3	
Public Benefit	4	
Financial	1	
Efficiency and Innovation	4	

Project Title: North Service Center Pumping Station Improvements

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Water

Start Date: 7/4/2021

Phase Status: Future Planned Start

End Date: 6/30/2029

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: CDM Smith

Cost Est. Date: 1/1/2015

Cost Est. Prepared By: CDM Smith

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	\$689	\$9	\$9	\$282	\$173	\$215	\$4	\$3	\$3	\$397	\$1

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	7/4/2021	6/30/2029

Project Title: North Service Center Pumping Station Improvements

Phase: Design & Construction Assistance # 1

Phase Title: North Service Center BPS Improvements

Phase Budget:	Water	Start Date:	6/1/2022
Phase Status:	Future Planned Start	End Date:	5/31/2027
Cost Allocation:	CTA	Fund:	Construction Bond Fund
Funding Source:	Bond Proceeds	Usefull Life > Yrs:	Yes
		Tot. Federal Loan Amout:	\$0.00

Phase Comments/Description:

North Service Center BPS Improvements

Cost Est. Class: Class 5

Cost Est. Source: CS-052A

Cost Est. Date: 1/1/2015

Cost Est. Prepared By: Tim Kuhns

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	\$8,150	\$257	\$257	\$0	\$500	\$1,512	\$2,347	\$1,234	\$500	\$6,093	\$1,800

Phase Dates

Activity Name	Start Date	End Date
Design - Pre-Procurement	7/4/2021	10/2/2021
Design - Procurement	10/3/2021	5/31/2022
Design - Project Execution	6/1/2022	5/31/2024
Design - Closeout	4/1/2025	6/30/2025
Construction Assistance - Project Execution	6/1/2024	5/31/2027
Construction Assistance - Procurement	11/3/2023	6/30/2024

Project Title: North Service Center Pumping Station Improvements

Phase: Construction (Build) # 1

Phase Title: North Service Center BPS Improvements

Phase Budget:	Water	Start Date:	6/1/2024
Phase Status:	Future Planned Start	End Date:	5/31/2027
Cost Allocation:	CTA	Fund:	Construction Bond Fund
Funding Source:	Bond Proceeds	Usefull Life > Yrs:	Yes
		Tot. Federal Loan Amout:	\$0.00

Phase Comments/Description:

North Service Center BPS Improvements

Cost Est. Class: Class 5	Cost Est. Source: CS-052A
Cost Est. Date: 8/15/2019	Cost Est. Prepared By: Tim Kuhns

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+
Construction (Build) # 1	\$59,415	\$0	\$0	\$0	\$1,010	\$8,000	\$9,010	\$50,405

Phase Dates

Activity Name	Start Date	End Date
Construction - Pre-Procurement	9/3/2023	1/1/2024
Construction - Procurement	1/2/2024	6/30/2024
Construction - Project Execution	6/1/2024	5/31/2027
Construction - Closeout	4/1/2029	6/30/2029

Project Title: North Service Center Pumping Station Improvements

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	Total
2019	\$4,526	\$6	\$4,520	\$20,394	\$0	\$0	\$24,920
2020	\$6,331	\$0	\$6	\$6,325	\$18,589	\$0	\$24,920
2021	\$4,517	\$21	\$279	\$2,385	\$1,832	\$40,825	\$45,342

Description of CIP Changes:

CIP 132017 entry has been deleted and the work associated with CIP 132017 has been moved to the CIP 132016 project entry. Project costs were updated based on CS-052A Needs Assessment Report.

Replacement of two ten million gallon reservoirs added to scope of work during August 2020 review by Mike Garrett per request by Grant Gartrell.

Project Title: Schoolcraft Pumping Station Improvements

Project Status: Future Planned - Within 5 Year Plan

CIP Type: Project

Class Lvl 1: Water

Class Lvl 2: Systems Control Center

Class Lvl 3: Pump Station/Reservoir

☐ **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: Eric Kramp

Director: Grant Gartrell

Managing Dept.: Water Eng

Date Original Business Case Prepared:
1/4/2018

Year Project Added to CIP: 2018

CIP Budget: Water

Project Jurisdiction: Wayne County - Outside Detroit

Lookup Location: Booster Pumping Stations

Funds and Cost Center:
Problem Statement:

Following the Pump Station Condition Survey and Needs Assessment, significant issues were observed in the Schoolcraft Pumping Station. This needs assesment has found several significant areas of necessary improvement to the station as described in the project scope fo work:

Scope of Work/Project Alternatives:

This project will be delivered using a design-bid-build project delivery method. The scope of work will generally include replacing existing pumps, motors, drives, electrical switchgear, motor control centers, valves, valve operators, yard piping, and yard valves with new infrastructure. Additionally, the underdrain system that serves the finished water reservoirs will either be rehabilitated in place or replaced with new.

Other Important Info:
Primary Driver: 2 - Performance

Driver Explanation:

Existing pumping equipment including electrical gear are nearing end of useful service life and will need to be replaced to provide continued adequate performance.

Project Title: Schoolcraft Pumping Station Improvements

Scoring**Project Manager Weighted Score:** 51.20

Criteria Name	Score	Comment
Condition	3	
Performance (Service Level/Reliability)	3	
Regulatory (Environmental/Legal)	1	
Operations and Maintenance	4	
Public Health and Safety	3	
Public Benefit	3	
Financial	2	
Efficiency and Innovation	2	

Risk Committee Weighted Score: 56.60

Criteria Name	Score	Comment
Condition	4	
Performance (Service Level/Reliability)	3	
Regulatory (Environmental/Legal)	2	
Operations and Maintenance	3	
Public Health and Safety	3	
Public Benefit	3	
Financial	1	
Efficiency and Innovation	4	

Project Title: Schoolcraft Pumping Station Improvements

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Water

Start Date: 6/30/2037

Phase Status: Future Planned Start

End Date: 9/26/2046

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: CDM Smith

Cost Est. Date: 1/1/2015

Cost Est. Prepared By: CDM Smith

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

	Total Costs	Actual Costs	Prior FYs
GLWA Salaries	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	6/30/2037	9/26/2046

Project Title: Schoolcraft Pumping Station Improvements

Phase: Design & Construction Assistance # 1

Phase Title: Design/Construction Administration

Phase Budget:	Water	Start Date:	7/2/2038
Phase Status:	Future Planned Start	End Date:	7/1/2046
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 5	Cost Est. Source: CDM Smith
Cost Est. Date: 1/1/2015	Cost Est. Prepared By: CDM Smith

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

	Total Costs	Actual Costs	Prior FYs
Design & Construction Assistance # 1	\$47	\$47	\$47

Phase Dates

Activity Name	Start Date	End Date
Design - Pre-Procurement	8/4/2037	11/2/2037
Design - Procurement	11/3/2037	7/1/2038
Design - Project Execution	7/2/2038	7/1/2040
Construction Assistance - Project Execution	7/2/2040	7/1/2046

Project Title: Schoolcraft Pumping Station Improvements

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

CIP	5 Year Total	FY21	FY22	FY23	FY24	FY25	Total
2019	\$4,011	\$10	\$1,916	\$2,085	\$6,553	\$0	\$10,564
2020	\$7,064	\$10	\$1,958	\$2,048	\$3,048	\$3,500	\$10,564

Description of CIP Changes:

On December 2018, the Booster Station Condition & Needs Assessment was published. The review of this station indicated that significant upgrades, above those listed in the FY 2020 CIP, were needed. This revised CIP captures the additional work at this site. 7/23/2019 ECK

Contract phases changed from DB to DBB. 8/15/2019 ECK

Project Title: Wick Road Pumping Station Improvements

Project Status: Future Planned - Within 5 Year Plan

CIP Type: Project

Class Lvl 1: Water

Class Lvl 2: Systems Control Center

Class Lvl 3: Pump Station/Reservoir

☐ **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: Vittoria Hogue

Director: Grant Gartrell

Managing Dept.: Water Eng

Date Original Business Case Prepared: 1/4/2018

Year Project Added to CIP: 2018

CIP Budget: Water

Project Jurisdiction: Wayne County - Outside Detroit

Lookup Location: Romulus

Funds and Cost Center: Water - 5519-882111

Problem Statement:

Wick Pump Station is currently oversized based on the demands it experiences, has poor valve isolation capabilities and much of its equipment was installed in 1981 and is passed its useful service life. This project's intent is to right size the station and replace valves and other aging equipment.

Scope of Work/Project Alternatives:

This project will be delivered under a design-bid-build delivery method. This project's scope of work will be rightsizing the station's pumping capacity, improving valve control and isolation, and replacing and/or upgrading equipment that is at the end of its useful life. The improvements intended to right size the station include replacing reservoir pumping units and installing another small line pump (jockey pump) to accommodate low flow conditions. Valve control and isolation work will involve replacing existing station bypass check valve and isolation valves, replacing interior valves, rehabbing pump control valves, replacing the cone valve on the reservoir fill line and replacing the hydraulic actuator control system with an electrically motor actuated system. The equipment that is at the end of its useful service life and will be replaced are as follows: effluent flow meter, the pressure reducing station for the service water system, the sump pumps, the service entrance transformers,

Other Important Info:

Refer to CS-052A Condition Assessment for additional details on the scope of project.

Primary Driver: 1 - Condition

Driver Explanation:

The reservoir pumping units and switchgear are at end of life.

Project Title: Wick Road Pumping Station Improvements

the grounding ring, and the medium and low voltage equipment. Other miscellaneous work that will be conducted under this project will be improving the heating and ventilation, isolating potable water supply from non-potable water supply, installing lighting improvements, upgrading the existing generators, correcting the power factors, improving site driveway to accommodate semi trucks, and reconfiguring the station's discharge piping.

Project Title: Wick Road Pumping Station Improvements

Scoring**Project Manager Weighted Score:** 66.40

Criteria Name	Score	Comment
Condition	5	
Performance (Service Level/Reliability)	4	
Regulatory (Environmental/Legal)	2	
Operations and Maintenance	4	
Public Health and Safety	3	
Public Benefit	3	
Financial	3	
Efficiency and Innovation	3	

Risk Committee Weighted Score: 68.40

Criteria Name	Score	Comment
Condition	5	
Performance (Service Level/Reliability)	4	
Regulatory (Environmental/Legal)	2	
Operations and Maintenance	4	
Public Health and Safety	3	
Public Benefit	3	
Financial	4	
Efficiency and Innovation	3	

Project Title: Wick Road Pumping Station Improvements

Phase: GLWA Salaries

Phase Title: GLWAs Salaries

Phase Budget: Water

Start Date: 5/1/2025

Phase Status: Future Planned Start

End Date: 7/1/2034

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: 2015 Water Master Plan Update

Cost Est. Date: 12/27/2017

Cost Est. Prepared By: CDM Smith

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

	Total Costs	Actual Costs	Prior FYs	FY25	FY26	5 Year Total	FY27+
GLWA Salaries	\$286	\$0	\$0	\$0	\$13	\$13	\$273

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	5/1/2025	7/1/2034

Project Title: Wick Road Pumping Station Improvements

Phase: Design & Construction Assistance # 1

Phase Title: Wick Road Booster Pumping Station - Switchgear, Control Valves and Hydropneumatic Tank Replacement Design and Construction Assistance

Phase Budget:	Water	Start Date:	5/1/2025
Phase Status:	Future Planned Start	End Date:	7/1/2034
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 5	Cost Est. Source: CS-052a (Pump Station Condition Survey and Needs Assesment)
Cost Est. Date:	Cost Est. Prepared By: Tetra Tech

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

	Total Costs	Actual Costs	Prior FYs	FY27+
Design & Construction Assistance # 1	\$2,459	\$57	\$57	\$2,402

Phase Dates

Activity Name	Start Date	End Date
Design - Pre-Procurement	8/3/2025	11/1/2025
Design - Procurement	11/2/2025	6/30/2026
Design - Project Execution	5/1/2025	6/30/2027
Construction Assistance - Project Execution	7/1/2027	7/1/2034

Project Title: Wick Road Pumping Station Improvements

Phase: Construction (Build) # 1**Phase Title:** Wick Road Booster Pumping Station - Switchgear, Control Valves and Hydropneumatic Tank Replacement Construction

Phase Budget:	Water	Start Date:	3/29/2028
Phase Status:	Future Planned Start	End Date:	7/1/2034
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 5	Cost Est. Source: CS-052a (Pump Station Condition Survey and Needs Assesment)
Cost Est. Date:	Cost Est. Prepared By: Tetra Tech

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

	Total Costs	Actual Costs	Prior FYs	FY27+
Construction (Build) # 1	\$6,613	\$0	\$0	\$6,613

Phase Dates

Activity Name	Start Date	End Date
Design - Pre-Procurement	7/1/2027	9/29/2027
Design - Procurement	9/30/2027	3/28/2028
Construction - Project Execution	3/29/2028	7/1/2034
Construction - Closeout	4/2/2034	7/1/2034

Project Title: Wick Road Pumping Station Improvements


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	Total
2019	\$1,015	\$6	\$1,009	\$4,555	\$0	\$0	\$5,570
2020	\$5,569	\$6	\$1,009	\$4,554	\$0	\$0	\$5,569
2021	\$15	\$0	\$0	\$0	\$15	\$2,925	\$2,940

Description of CIP Changes:

On December 2018, the Booster Station Condition & Needs Assessment was published under Contract CS-052a. The review of this station indicated that significant upgrades, above those listed in the FY 2020 CIP, are needed. This revised CIP captures the additional work needed the Wick Station. 7/23/2019 ECK

Project Title: Franklin Pumping Station Improvements

<p>Project Status: Future Planned - Within 5 Year Plan</p> <p>CIP Type: Project</p> <p>Class Lvl 1: Water</p> <p>Class Lvl 2: Systems Control Center</p> <p>Class Lvl 3: Pump Station/Reservoir</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: Grant Gartrell</p> <p>Director: Grant Gartrell</p> <p>Managing Dept.: Water Eng</p>	<p>Date Original Business Case Prepared: 1/4/2018</p> <p>Year Project Added to CIP: 2018</p> <p>CIP Budget: Water</p>	<p>Project Jurisdiction: Oakland County</p> <p>Lookup Location:</p> <p>Funds and Cost Center: Water - 5519-882111</p>

Problem Statement:

The Franklin Booster Pumping Station was constructed in 1968 and is nearing the end of its service life.

Recent condition assessment of the station indicates that there are several needs at the site that need to be addressed due to aging infrastructure. Improvements required at the site include site drive improvements, sanitary holding tank improvements, site valve replacements, mezzanine valve access improvements, electrical room upgrades, building structure improvements, pumping improvements, flow metering improvements, station bypass upgrades, interior valve upgrades, control valve replacement and rehabilitation, valve actuator system improvements, station piping improvements, service water system upgrades, sampling system upgrades, HVAC upgrades, plumbing upgrades, and

Scope of Work/Project Alternatives:

This project includes complete reconstruction of the Franklin Booster Station.

Other Important Info:

Primary Driver: 1 - Condition

Driver Explanation:

The Franklin Booster Pumping Station was constructed in 1968 and is nearing the end of its service life.

Project Title: Franklin Pumping Station Improvements

various electrical improvements. Cost estimates for these site improvements indicate construction cost to build a new station adjacent to the current site may be cost comparable.

Project Title: Franklin Pumping Station Improvements

Scoring**Project Manager Weighted Score:** 67.20

Criteria Name	Score	Comment
Condition	4	
Performance (Service Level/Reliability)	5	
Regulatory (Environmental/Legal)	3	
Operations and Maintenance	4	
Public Health and Safety	2	
Public Benefit	3	
Financial	3	
Efficiency and Innovation	3	

Risk Committee Weighted Score: 64.60

Criteria Name	Score	Comment
Condition	4	
Performance (Service Level/Reliability)	5	
Regulatory (Environmental/Legal)	2	
Operations and Maintenance	3	
Public Health and Safety	3	
Public Benefit	3	
Financial	2	
Efficiency and Innovation	4	

Project Title: Franklin Pumping Station Improvements

Phase: GLWA Salaries**Phase Title:** GLWA Salaries

Phase Budget: Water**Start Date:** 2/6/2027**Phase Status:** Future Planned Start**End Date:** 6/28/2035**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:** CDM Smith**Cost Est. Date:** 1/1/2015**Cost Est. Prepared By:** CDM Smith

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

	Total Costs	Actual Costs	Prior FYs	FY27+
GLWA Salaries	\$272	\$0	\$0	\$272

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	2/6/2027	6/28/2035

Project Title: Franklin Pumping Station Improvements

Phase: Design & Construction Administration # 1

Phase Title: Design/Construction Administration

Phase Budget:	Water	Start Date:	1/4/2028
Phase Status:	Future Planned Start	End Date:	6/28/2035
Cost Allocation:	CTA	Fund:	Construction Bond Fund
Funding Source:	Bond Proceeds	Usefull Life > Yrs:	Yes
		Tot. Federal Loan Amout:	\$0.00

Phase Comments/Description:

Franklin Booster Pumping Station Improvements Design and Construction Contract

Cost Est. Class: Class 5	Cost Est. Source: 2015 WMPU
Cost Est. Date: 1/15/2015	Cost Est. Prepared By: CDM

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

	Total Costs	Actual Costs	Prior FYs	FY27+
Design & Construction Administration # 1	\$2,273	\$93	\$93	\$2,179

Phase Dates

Activity Name	Start Date	End Date
Design - Pre-Procurement	2/6/2027	5/7/2027
Design - Procurement	5/8/2027	1/3/2028
Design - Project Execution	1/4/2028	6/30/2031
Construction Assistance - Project Execution	7/1/2031	6/28/2035

Project Title: Franklin Pumping Station Improvements

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	Total
2019	\$2,855	\$846	\$2,009	\$7,315	\$0	\$0	\$10,170
2020	\$0	\$0	\$0	\$0	\$10,109	\$0	\$10,109
2021	\$0	\$0	\$0	\$0	\$0	\$2,442	\$2,442

Description of CIP Changes:

Project budget updated based on CS-052A Needs Assessment Report.

Project Title: Imlay Pumping Station Improvements

Project Status: Future Planned - Within 5 Year Plan

CIP Type: Project

Class Lvl 1: Water

Class Lvl 2: Systems Control Center

Class Lvl 3: Pump Station/Reservoir

☐ **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: Eric Kramp

Director: Grant Gartrell

Managing Dept.: Water Eng

Date Original Business Case Prepared:
1/4/2018

Year Project Added to CIP: 2018

CIP Budget: Water

Project Jurisdiction: Lapeer County

Lookup Location: Imlay Pumping Station

Funds and Cost Center: Water - 5519-882411

Problem Statement:

Following completion of the 2018 Booster Station Condition Assessment, several significant issues have been documented at the Imlay Booster Station. In addition to the updates to the VFD systems identified in the FY 2020 CIP. Site/civil, mechanical, and electrical improvements have been identified far in excess of the initial 2020 CIP, including the complete replacement of all outdated electrical switchgear.

It was recently documented that approximately half of the reservoir fill system is working at less than full capacity, and this has revised this BCE accordingly.

Scope of Work/Project Alternatives:

Significant improvements to the site/civil, mechanical, and electrical systems at the Imlay Booster Station. Highlights in each discipline are identified as follows:

Site/Civil -- Replace crumbling retaining walls. Roofing rehabilitation

Pumping -- "Right size" remaining pump and motor units based on 2015 WMPU. Rehabilitate any pumping units that are determined to be correctly sized.

Mechanical -- Improvements to HVAC.

Replacement or reinforcement of all station isolation gate and butterfly valves. Rehabilitation or replacement of reservoir fill valves.

Electrical -- Additional and replacement of generators. Replacement of double-ended 13.2 KVA switch-gear. Rehabilitation or replacement of VFDs

Other Important Info:

VFD size is unusual in the marketplace and cooling systems are complex for the VFDs.

Primary Driver: 2 - Performance

Driver Explanation:

Performance of the existing station pumps, motors and drives is cumbersome and in the case of the drives reliability is costly to maintain.

Project Title: Imlay Pumping Station Improvements

Scoring**Project Manager Weighted Score:** 62.20

Criteria Name	Score	Comment
Condition	4	
Performance (Service Level/Reliability)	4	
Regulatory (Environmental/Legal)	1	
Operations and Maintenance	4	
Public Health and Safety	3	
Public Benefit	3	
Financial	3	
Efficiency and Innovation	4	

Risk Committee Weighted Score: 58.20

Criteria Name	Score	Comment
Condition	4	
Performance (Service Level/Reliability)	3	
Regulatory (Environmental/Legal)	2	
Operations and Maintenance	3	
Public Health and Safety	3	
Public Benefit	4	
Financial	1	
Efficiency and Innovation	4	

Project Title: Imlay Pumping Station Improvements

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget:	Water	Start Date:	5/31/2030
Phase Status:	Future Planned Start	End Date:	6/24/2041
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 5	Cost Est. Source: CDM Smith
Cost Est. Date: 1/1/2015	Cost Est. Prepared By: CDM Smith

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

	Total Costs	Actual Costs	Prior FYs	FY27+
GLWA Salaries	\$67	\$0	\$0	\$67

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	5/31/2030	6/24/2041

Project Title: Imlay Pumping Station Improvements

Phase: Design & Construction Assistance # 1**Phase Title:** Design/Construction Administration

Phase Budget:	Water	Start Date:	4/28/2031
Phase Status:	Future Planned Start	End Date:	6/24/2041
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 5	Cost Est. Source: 2015 WMPU
Cost Est. Date: 1/1/2015	Cost Est. Prepared By: CDM

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

	Total Costs	Actual Costs	Prior FYs	FY27+
Design & Construction Assistance # 1	\$683	\$227	\$227	\$456

Phase Dates

Activity Name	Start Date	End Date
Design - Pre-Procurement	5/31/2030	8/29/2030
Design - Procurement	8/30/2030	4/27/2031
Design - Project Execution	4/28/2031	6/24/2034
Design - Closeout	3/26/2034	6/24/2034
Construction Assistance - Project Execution	6/25/2034	6/24/2041

Project Title: Imlay Pumping Station Improvements


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

CIP	5 Year Total	FY23	FY24	FY25	FY26	Total
2019	\$6	\$6	\$12,103	\$0	\$0	\$12,109
2020	\$2,109	\$6	\$2,103	\$10,000	\$0	\$12,109
2021	\$0	\$0	\$0	\$0	\$13	\$13

Description of CIP Changes:

n/a

Project Title: Joy Road Pumping Station Improvements

<p>Project Status: Future Planned - Within 5 Year Plan</p> <p>CIP Type: Project</p> <p>Class Lvl 1: Water</p> <p>Class Lvl 2: Systems Control Center</p> <p>Class Lvl 3: Pump Station/Reservoir</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: Jacob Mangum</p> <p>Director: Grant Gartrell</p> <p>Managing Dept.: Water Eng</p>	<p>Date Original Business Case Prepared: 1/4/2018</p> <p>Year Project Added to CIP: 2018</p> <p>CIP Budget: Water</p>	<p>Project Jurisdiction: Wayne County - Outside Detroit</p> <p>Lookup Location: Joy Rd Water Pumping Station</p> <p>Funds and Cost Center: Water - 5519-882111</p>

Problem Statement:

The station is undersized with limited space for maintenance and personnel access. The main walkway inside the station is built on top of the discharge header and six stairways connected to it are non-code compliant. There is not enough room to install normal stairs. The electrical room addition was partially built on top of the pump station top slab and blocks access to the reservoir fill line valves. The pump station roof hatches leak and drip onto equipment below. The discharge header is heavily corroded and is in need of replacement. Three reservoir pumps, motors and valves are past their useful service life. Two additional VFDs and associated new motors are needed to provide operational flexibility. The station is without a flow meter and a station bypass.

Scope of Work/Project Alternatives:

Design contract will consider life-cycle costs of rehabilitating the current station versus building a new station on available land located to the south of the current station. A listing of the type of station improvements by discipline is provided below.

Site Drive Improvements - The existing site drive geometry needs to be improved to allow for a mobile crane or semi-trailer truck.

Site Drain Lift Station - Installation of a new site drain pump station next to existing with removal of the existing equipment

Electrical Room - A new electrical room addition is required for the new recommended VFD gear

Building Structures Improvements - The existing building structures require maintenance and repair. Details of the associated interior and exterior repair items are provided within this report

Pump Improvements - Rehabilitate the existing line and reservoir pumps with the addition of 2

Other Important Info:

There is space on the site for building a new pump station to the south of the existing.

Primary Driver: 1 - Condition

Driver Explanation:

Reservoir pumps and motors are beyond their service life. Discharge header is heavily corroded. Station is undersized with limited space for maintenance

Project Title: Joy Road Pumping Station Improvements

new VFD and associated motors
New Effluent Flow Meter - Construction of a new effluent flow magmeter within the existing station
Station Bypass - A station bypass is planned through replacement of existing exterior valves with motorized gate valves
Replace Interior Valves - Replace butterfly valves with metal seated gate valves and replace the Res No. 1 Fill line cone valve with a new 14" cone valve
Rehabilitate Control Valves - Rehabilitate pump control valves with new stuffing box packing and drain
Valve Actuator System - Replace the existing control valve actuator system with a new electric motor actuator system
Piping Improvements - Replacement of piping as noted and improve suction and discharge headers in compliance with ANSI/HI 9.6.6 standard
Service Water System - Updates to the service water system are required; replacement of galvanized piping, pressure reducing station and backflow preventer
Building Sump Pumps - The building sump pumps are recommended for replacement
Heating and Ventilation - Improvements are required to the existing heating and ventilation
Plumbing and Fixtures - Improvements are needed to separate the potable water supply from the service water piping as well as other misc. improvements
Grounding - Provide new grounding ring along the outside parameter of the building and transformer yard
Variable Frequency Drives - New VFD drives for all three line pumps are recommended
LED Lighting - Replace lighting with LED lighting
Instrumentation - Provide new field instruments for the station, specifically for the pumping systems
Existing Generator - Update the existing generator with new fuel and bulk storage tank as

Project Title: Joy Road Pumping Station Improvements

well as other upgrades

Project Title: Joy Road Pumping Station Improvements

Scoring
Project Manager Weighted Score: 56.60

Criteria Name	Score	Comment
Condition	4	Requires high level of maintenance
Performance (Service Level/Reliability)	4	High risk of performance failure (esp. header pipe)
Regulatory (Environmental/Legal)	1	Not part of mandated program
Operations and Maintenance	3	Will alleviate some ongoing O&M issues
Public Health and Safety	3	Moderate impact on maintenance staff health and safety (access ladders for pumps)
Public Benefit	2	Low impact
Financial	3	Canceling project leads to moderate financial consequences (repair, downtime)
Efficiency and Innovation	3	Moderate impact on energy use, wear & tear efficiency, less O&M

Risk Committee Weighted Score: 56.60

Criteria Name	Score	Comment
Condition	4	
Performance (Service Level/Reliability)	3	
Regulatory (Environmental/Legal)	2	
Operations and Maintenance	3	
Public Health and Safety	3	
Public Benefit	3	
Financial	1	
Efficiency and Innovation	4	

Project Title: Joy Road Pumping Station Improvements

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Water

Start Date: 8/3/2029

Phase Status: Future Planned Start

End Date: 12/29/2036

Cost Allocation: CTA

Fund: Construction Bond Fund

Funding Source: Bond Proceeds

Usefull Life > Yrs: No

Tot. Federal Loan Amout: \$0.00

Phase Comments/Description:

6.5 yrs.

Cost Est. Class: Class 5

Cost Est. Source: CDM Smith

Cost Est. Date: 1/1/2015

Cost Est. Prepared By: CDM Smith

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	\$261	\$0	\$0	\$57	\$27	\$27	\$27	\$22	\$21	\$124	\$80

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	8/3/2029	12/29/2036

Project Title: Joy Road Pumping Station Improvements

Phase: Design & Construction Assistance # 1

Phase Title: Design/Construction Administration

Phase Budget:	Water	Start Date:	7/1/2030
Phase Status:	Future Planned Start	End Date:	12/25/2036
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 5	Cost Est. Source: 2015 WMPU
Cost Est. Date: 1/15/2015	Cost Est. Prepared By: CDM

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+
Design & Construction Assistance # 1	\$3,352	\$71	\$71	\$250	\$500	\$500	\$100	\$53	\$1,403	\$1,877

Phase Dates

Activity Name	Start Date	End Date
Design - Pre-Procurement	8/3/2029	11/1/2029
Design - Procurement	11/2/2029	6/30/2030
Design - Project Execution	7/1/2030	6/30/2033
Design - Closeout	4/1/2033	6/30/2033
Construction Assistance - Project Execution	7/1/2033	12/25/2036

Project Title: Joy Road Pumping Station Improvements

Phase: Construction (Build) # 1**Phase Title:** Construction

Phase Budget: Water**Start Date:** 7/5/2033**Phase Status:** Future Planned Start**End Date:** 12/29/2036**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 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	FY27+
Construction (Build) # 1	\$36,000	\$0	\$0	\$36,000

Phase Dates

Activity Name	Start Date	End Date
Construction - Pre-Procurement	9/6/2032	1/4/2033
Construction - Procurement	1/5/2033	7/4/2033
Construction - Project Execution	7/5/2033	12/29/2036
Construction - Closeout	9/30/2036	12/29/2036

Project Title: Joy Road Pumping Station Improvements


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

CIP	5 Year Total	FY19	FY23	FY24	FY26	Total
2019	\$6	\$0	\$6	\$6,103	\$0	\$6,109
2020	\$6,109	\$0	\$6	\$6,103	\$0	\$6,109
2021	\$0	\$7	\$0	\$0	\$48	\$55

Description of CIP Changes:

On December 2018, the Booster Station Condition & Needs Assessment done under Contract CS-052A was published. The review of this station indicated that significant upgrades, above those listed in the FY 2020 CIP, were needed. This revised CIP captures the additional work at this site. 7/25/2018 JEM

Project Title: Franklin Pumping Station Valve Replacement

<p>Project Status: Pending Closeout</p> <p>CIP Type: Allowance</p> <p>Class Lvl 1: Water</p> <p>Class Lvl 2: Systems Control Center</p> <p>Class Lvl 3: Pump Station/Reservoir</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: Mini Panicker</p> <p>Director: Biren Saparia</p> <p>Managing Dept.: SCC</p>	<p>Date Original Business Case Prepared: 9/24/2018</p> <p>Year Project Added to CIP: 2019</p> <p>CIP Budget: Water</p>	<p>Project Jurisdiction: Oakland County</p> <p>Lookup Location: Booster Pumping Stations</p> <p>Funds and Cost Center: Water - 5519-882111</p>
<p>Problem Statement:</p> <p>The existing gate valves and butterfly (suction) valves that service the four (4) line pumps and two (2) reservoir pumps in the Franklin Pumping Station have exceeded their useful life and are in need of replacement.</p>	<p>Scope of Work/Project Alternatives:</p> <p>Scope of work is demolition and replacement of six (6) 24" manually operated gate valves, demolition and replacement of three (3) 24" and three (3) 30" manually operated butterfly (suction) valves, demolition and replacement of two (2) 30" electrically actuated butterfly (suction) valves and rebuild of the existing gate valves.</p>	<p>Other Important Info:</p> <p>Just in kind replacement of valves. There is another CIP for the complete rebuild of the station. CIP 132020</p> <p>Primary Driver: 1 - Condition</p> <p>Driver Explanation:</p> <p>Current valves that require replacement are in service for over 45 years</p>

Project Title: Franklin Pumping Station Valve Replacement

Scoring**Project Manager Weighted Score:** 66.20

Criteria Name	Score	Comment
Condition	5	
Performance (Service Level/Reliability)	5	
Regulatory (Environmental/Legal)	3	
Operations and Maintenance	4	
Public Health and Safety	1	
Public Benefit	3	
Financial	3	
Efficiency and Innovation	3	

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: Franklin Pumping Station Valve Replacement

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Water

Start Date: 2/1/2019

Phase Status:
End Date: 6/30/2021

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 1

Cost Est. Source: Bid

Cost Est. Date: 9/24/2018

Cost Est. Prepared By: FM Sylvan

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	\$43	\$11	\$11	\$32	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	2/1/2019	6/30/2021

Project Title: Franklin Pumping Station Valve Replacement

Phase: Construction (Build) # 1

Phase Title: Construction

Phase Budget:	Water	Start Date:	3/1/2019
Phase Status:	Active	End Date:	6/30/2021
Cost Allocation:	CTA	Fund:	Construction Bond Fund
Funding Source:	Bond Proceeds	Usefull Life > Yrs:	Yes
		Tot. Federal Loan Amout:	\$0.00

Phase Comments/Description:

RFB-1802146

Cost Est. Class: Class 2	Cost Est. Source: Bid Tab
Cost Est. Date: 8/12/2019	Cost Est. Prepared By: NA

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	5 Year Total
Construction (Build) # 1	\$963	\$810	\$810	\$153	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Construction - Pre-Procurement	2/1/2019	5/1/2019
Construction - Procurement	5/1/2019	10/31/2019
Construction - Project Execution	3/1/2019	6/30/2021
Construction - Closeout	4/1/2020	6/30/2021

Project Title: Franklin Pumping Station Valve Replacement


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	\$962	\$449	\$613	\$349	\$1,411

Description of CIP Changes:

Schedule Change

Project Title: Water Treatment Plant /Pump Station Allowance

Project Status: Cancelled CIP Type: Allowance Class Lvl 1: Water Class Lvl 2: Programs Class Lvl 3: Programs <input type="checkbox"/> Project New to CIP	<input type="checkbox"/> Innovation <input type="checkbox"/> WW Master Plan <input type="checkbox"/> Water Master Plan Right Sizing <input type="checkbox"/> Redundancy <input type="checkbox"/> NE WTP Repurposing <input type="checkbox"/> Linear Assets Outside of Facilities <input type="checkbox"/> Predecessor Project(s)	
Project Engineer/Manager: Grant Gartrell Director: Grant Gartrell Managing Dept.: Water Eng	Date Original Business Case Prepared: 10/11/2016 Year Project Added to CIP: 2012 CIP Budget: Water	Project Jurisdiction: Multiple Counties Lookup Location: WTPs and Boosters Funds and Cost Center: Water - 5519-882111
Problem Statement: This allowance is reserved for unplanned, emergency and critical project needs that need to be addressed quickly.	Scope of Work/Project Alternatives: This project is an allowance for unplanned, critical projects that may occur at the Water Treatment Plants and Booster Pump Stations throughout the system. These projects may include repair, replacement or rehabilitation of key assets as required to allow the Authority to provide sufficient water quality, quantity and pressure to meet customer demands in accordance with federal and state requirements under the Safe Drinking Water Act.	Other Important Info: Challenges: Close coordination with operations and ability to jump on needs. Primary Driver: Varies Driver Explanation: Not provided.

Project Title: Water Treatment Plant /Pump Station Allowance

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: Water Treatment Plant /Pump Station Allowance

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Water

Start Date: 1/1/2017

Phase Status: Active

End Date: 6/13/2020

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: GLWA

Cost Est. Date: 1/1/2018

Cost Est. Prepared By: GLWA

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

	Total Costs	Actual Costs	Prior FYs
GLWA Salaries	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	1/1/2017	6/13/2020

Project Title: Water Treatment Plant /Pump Station Allowance

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	\$82,295	\$10,000	\$10,000	\$20,000	\$20,000	\$19,650	\$12,645	\$0	\$0	\$0	\$0	\$92,295
2019	\$16,498	\$6,777	\$1,597	\$4,296	\$3,058	\$3,144	\$3,000	\$3,000	\$15,000	\$0	\$0	\$39,872
2020	\$15,000	\$0	\$6,635	\$3,176	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$15,000	\$0	\$39,811
2021	\$6,939	\$0	\$0	\$9,747	\$1,813	\$1,499	\$1,359	\$1,359	\$1,363	\$1,359	\$51,665	\$70,164

Description of CIP Changes:

Updated CIP to reflect contract costs incurred to date since last year's CIP update as well as projected expenditures since last year's CIP update. This allowance is being cancelled no longer needed. 08/26/2020.

Project Title: CS-1656: Flow Measurement**Project Status:** Reclassified**CIP Type:** Project**Class Lvl 1:** Water**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:** Jorge Nicolas**Director:** Grant Gartrell**Managing Dept.:** Water Eng**Date Original Business Case Prepared:**
5/24/2014**Year Project Added to CIP:** 2016**CIP Budget:** Water**Project Jurisdiction:** Multiple Counties**Lookup Location:****Funds and Cost Center:** Water - 5519-882111**Problem Statement:**

Design and Oversee construction of water production flow meters at Northeast, Southwest, and Springwells Water Treatment Plants.

Scope of Work/Project Alternatives:**Other Important Info:****Primary Driver:** 1 - Condition**Driver Explanation:**

Project Title: CS-1656: Flow Measurement

Scoring**Project Manager Weighted Score:** 20.00

Criteria Name	Score	Comment
Condition	1	Under a program not needed.
Performance (Service Level/Reliability)	1	Under a program not needed.
Regulatory (Environmental/Legal)	1	Under a program not needed.
Operations and Maintenance	1	Under a program not needed.
Public Health and Safety	1	Under a program not needed.
Public Benefit	1	Under a program not needed.
Financial	1	Under a program not needed.
Efficiency and Innovation	1	Under a program not needed.

Risk Committee Weighted Score: 20.00

Criteria Name	Score	Comment
Condition	1	Under a program not needed.
Performance (Service Level/Reliability)	1	Under a program not needed.
Regulatory (Environmental/Legal)	1	Under a program not needed.
Operations and Maintenance	1	Under a program not needed.
Public Health and Safety	1	Under a program not needed.
Public Benefit	1	Under a program not needed.
Financial	1	Under a program not needed.
Efficiency and Innovation	1	Under a program not needed.

Project Title: CS-1656: Flow Measurement

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget:	Start Date:	7/19/2014
Phase Status:	End Date:	5/27/2019
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	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
GLWA Salaries	\$40	\$40	\$40	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	7/19/2014	5/27/2019
Capital Delivery Salary	7/19/2014	5/27/2019

Project Title: CS-1656: Flow Measurement

Phase: Design & Construction Assistance # 1

Phase Title: Design & Construction Assistance # 1

Phase Budget:	Start Date: 10/19/2015
Phase Status:	End Date: 5/27/2019
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	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
Design & Construction Assistance # 1	\$332	\$332	\$332	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Design - Pre-Procurement	7/19/2014	10/17/2014
Design - Procurement	10/18/2014	10/18/2015
Design - Project Execution	10/19/2015	9/8/2017
Construction Assistance - Project Execution	9/9/2017	5/27/2019
Construction Assistance - Project Closeout	5/27/2019	5/27/2019

Project Title: CS-1656: Flow Measurement

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

CIP

Description of CIP Changes:

This project was reclassified to CIP 114003 and is pending close out.

Project Title: DWS-063 Adam Roads Water Isolation Gate**Project Status:** Closed**CIP Type:** Project**Class Lvl 1:** Water**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:** Mini Panicker**Director:** Biren Saparia**Managing Dept.:** SCC**Date Original Business Case Prepared:**
11/1/2017**Year Project Added to CIP:** 2016**CIP Budget:** Water**Project Jurisdiction:** Oakland County**Lookup Location:** Booster Pumping Stations**Funds and Cost Center:** Water - 5519-882111**Problem Statement:**

Renovation and Upgrade Suction and Discharge Valves for Adams Road Water Booster Station.

Scope of Work/Project Alternatives:

None

Other Important Info:

Completed under an as-needed maintenance contract

Primary Driver: 1 - Condition**Driver Explanation:**

Condition

Project Title: DWS-063 Adam Roads Water Isolation Gate

Scoring**Project Manager Weighted Score:** 20.00

Criteria Name	Score	Comment
Condition	1	Under a program not needed.
Performance (Service Level/Reliability)	1	Under a program not needed.
Regulatory (Environmental/Legal)	1	Under a program not needed.
Operations and Maintenance	1	Under a program not needed.
Public Health and Safety	1	Under a program not needed.
Public Benefit	1	Under a program not needed.
Financial	1	Under a program not needed.
Efficiency and Innovation	1	Under a program not needed.

Risk Committee Weighted Score: 20.00

Criteria Name	Score	Comment
Condition	1	Under a program not needed.
Performance (Service Level/Reliability)	1	Under a program not needed.
Regulatory (Environmental/Legal)	1	Under a program not needed.
Operations and Maintenance	1	Under a program not needed.
Public Health and Safety	1	Under a program not needed.
Public Benefit	1	Under a program not needed.
Financial	1	Under a program not needed.
Efficiency and Innovation	1	Under a program not needed.

Project Title: DWS-063 Adam Roads Water Isolation Gate

Project Title: DWS-063 Adam Roads Water Isolation Gate


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

CIP

Description of CIP Changes:

This project was not in the previous version and shall not be in this version too. This project was initiated during the budding days of GLWA as a Small Cap project, SCP-DWS-063 and was closed off later without execution.

Project Title: GLWA-CS-187: FK Eng: Raw Water Intake

<p>Project Status: Project Execution - Design</p> <p>CIP Type: Allowance</p> <p>Class Lvl 1: Water</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: Nick Hoffman</p> <p>Director: Grant Gartrell</p> <p>Managing Dept.: Water Eng</p>	<p>Date Original Business Case Prepared: 10/11/2016</p> <p>Year Project Added to CIP: 2012</p> <p>CIP Budget: Water</p>	<p>Project Jurisdiction: Multiple Counties</p> <p>Lookup Location: WTPs and Boosters</p> <p>Funds and Cost Center: Water - 5519-882111</p>

Problem Statement:

This allowance is reserved for unplanned, emergency and critical project needs that need to be addressed quickly.

Scope of Work/Project Alternatives:

This project is an allowance for unplanned, critical projects that may occur at the Water Treatment Plants and Booster Pump Stations throughout the system. These projects may include repair, replacement or rehabilitation of key assets as required to allow the Authority to provide sufficient water quality, quantity and pressure to meet customer demands in accordance with federal and state requirements under the Safe Drinking Water Act.

Other Important Info:

Challenges: Close coordination with operations and ability to jump on needs.

Primary Driver: Varies

Driver Explanation:

Not provided.

Project Title: GLWA-CS-187: FK Eng: Raw Water Intake

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: GLWA-CS-187: FK Eng: Raw Water Intake

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget:

Start Date: 7/1/2018

Phase Status:

End Date: 6/13/2020

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
GLWA Salaries	\$50	\$50	\$50

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	7/1/2018	6/13/2020
Capital Delivery Salary	7/1/2018	6/13/2020

Project Title: GLWA-CS-187: FK Eng: Raw Water Intake

Phase: Study # 1

Phase Title: GLWA-CS-187: FK Eng: Raw Water Intake

Phase Budget: Water

Start Date: 7/1/2018

Phase Status: Active

End Date: 6/13/2020

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:

Was formerly GLWA-SCP-CS-1623, change order added funds and changed contract number to GLWA-CS-187.

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+
Study # 1	\$1,606	\$1,606	\$1,606	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Design - Project Execution	7/1/2018	6/13/2020

Project Title: GLWA-CS-187: FK Eng: Raw Water Intake

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

CIP

Description of CIP Changes:

Updated CIP to reflect contract costs incurred to date since last year's CIP update as well as projected expenditures since last year's CIP update.

Project Title: Instrument Air Compressor**Project Status:** Closed**CIP Type:** Project**Class Lvl 1:** Water**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:**
7/1/2014**Year Project Added to CIP:** 2016**CIP Budget:** Water**Project Jurisdiction:** City of Detroit**Lookup Location:****Funds and Cost Center:** Water - 5519-882111**Problem Statement:**

Installation of new instrument air compressor system at Northeast Water Treatment Plant.

Scope of Work/Project Alternatives:**Other Important Info:****Primary Driver:****Driver Explanation:**

Project Title: Instrument Air Compressor

Scoring**Project Manager Weighted Score:** 20.00

Criteria Name	Score	Comment
Condition	1	Under a program not needed.
Performance (Service Level/Reliability)	1	Under a program not needed.
Regulatory (Environmental/Legal)	1	Under a program not needed.
Operations and Maintenance	1	Under a program not needed.
Public Health and Safety	1	Under a program not needed.
Public Benefit	1	Under a program not needed.
Financial	1	Under a program not needed.
Efficiency and Innovation	1	Under a program not needed.

Risk Committee Weighted Score: 20.00

Criteria Name	Score	Comment
Condition	1	Under a program not needed.
Performance (Service Level/Reliability)	1	Under a program not needed.
Regulatory (Environmental/Legal)	1	Under a program not needed.
Operations and Maintenance	1	Under a program not needed.
Public Health and Safety	1	Under a program not needed.
Public Benefit	1	Under a program not needed.
Financial	1	Under a program not needed.
Efficiency and Innovation	1	Under a program not needed.

Project Title: Instrument Air Compressor


Project Title: Instrument Air Compressor

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

CIP

Description of CIP Changes:

Project Title: Phosphoric Acid SCP-CS-1692

<p>Project Status: Closed</p> <p>CIP Type: Project</p> <p>Class Lvl 1: Water</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: Shakil Ahmed</p> <p>Director: Grant Gartrell</p> <p>Managing Dept.: Water Eng</p>	<p>Date Original Business Case Prepared: 10/1/2014</p> <p>Year Project Added to CIP: 2016</p> <p>CIP Budget: Water</p>	<p>Project Jurisdiction: Wayne County - Outside Detroit</p> <p>Lookup Location:</p> <p>Funds and Cost Center: Water - 5519-882111</p>

Problem Statement:

Engineering Design and Construction Phase Services for the replacement of the existing phosphoric acid feed system equipment, replacement of chlorine feed system valves, and concrete restoration for the phosphoric acid secondary containment area.

Scope of Work/Project Alternatives:

Other Important Info:

Primary Driver:

Driver Explanation:

Project Title: Phosphoric Acid SCP-CS-1692

Scoring**Project Manager Weighted Score:** 20.00

Criteria Name	Score	Comment
Condition	1	Under a program not needed.
Performance (Service Level/Reliability)	1	Under a program not needed.
Regulatory (Environmental/Legal)	1	Under a program not needed.
Operations and Maintenance	1	Under a program not needed.
Public Health and Safety	1	Under a program not needed.
Public Benefit	1	Under a program not needed.
Financial	1	Under a program not needed.
Efficiency and Innovation	1	Under a program not needed.

Risk Committee Weighted Score: 20.00

Criteria Name	Score	Comment
Condition	1	Under a program not needed.
Performance (Service Level/Reliability)	1	Under a program not needed.
Regulatory (Environmental/Legal)	1	Under a program not needed.
Operations and Maintenance	1	Under a program not needed.
Public Health and Safety	1	Under a program not needed.
Public Benefit	1	Under a program not needed.
Financial	1	Under a program not needed.
Efficiency and Innovation	1	Under a program not needed.

Project Title: Phosphoric Acid SCP-CS-1692

Phase: GLWA Salaries**Phase Title:** GLWA Salaries

Phase Budget:**Start Date:** 11/17/2016**Phase Status:****End Date:** 7/31/2019**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
GLWA Salaries	\$2	\$2	\$2

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	11/17/2016	7/31/2019


Project Title: Phosphoric Acid SCP-CS-1692

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

CIP

Description of CIP Changes:

Project Title: As-Needed Construction Materials, Environmental Media and Special Testing Services, Construction Inspection, and Other Technical Services

<p>Project Status: Project Execution - Design</p> <p>CIP Type: Allowance</p> <p>Class Lvl 1: Water</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: 6/26/2014</p> <p>Year Project Added to CIP: 2014</p> <p>CIP Budget: Water</p>	<p>Project Jurisdiction: Multiple Counties</p> <p>Lookup Location: System-wide</p> <p>Funds and Cost Center: Water - 5519-882111</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.

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 Construction Materials, Environmental Media and Special Testing Services, Construction Inspection, and Other Technical 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 Construction Materials, Environmental Media and Special Testing Services, Construction Inspection, and Other Technical Services

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Water

Start Date: 6/1/2017

Phase Status: Active

End Date: 7/5/2021

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:

Cost Est. Class: Class 5

Cost Est. Source: GLWA

Cost Est. Date: 1/1/2015

Cost Est. Prepared By: GLWA

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	\$27	\$0	\$0	\$27	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	6/1/2017	7/5/2021

Project Title: As-Needed Construction Materials, Environmental Media and Special Testing Services, Construction Inspection, and Other Technical Services

Phase: Study & Design & Construction Assistance # 1

Phase Title: Study/Design/Construction Administration

Phase Budget: Water	Start Date: 5/23/2018
Phase Status: Active	End Date: 7/5/2021
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 No. CS-201, PSI (active)

Cost Est. Class: Class 1

Cost Est. Source: GLWA

Cost Est. Date: 1/1/2017

Cost Est. Prepared By: GLWA

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+
Study & Design & Construction Assistance # 1	\$1,400	\$0	\$0	\$1,400	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Design - Pre-Procurement	6/1/2017	9/23/2017
Design - Procurement	9/30/2017	5/22/2018
Design - Project Execution	5/23/2018	7/5/2021
Construction Assistance - Project Execution	5/23/2018	7/5/2021
Construction Assistance - Project Closeout	4/6/2021	7/5/2021

Project Title: As-Needed Construction Materials, Environmental Media and Special Testing Services, Construction Inspection, and Other Technical Services

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	Total
2018	\$1,500	\$500	\$500	\$500	\$0	\$0	\$1,500
2019	\$1,616	\$172	\$472	\$572	\$572	\$0	\$1,788
2020	\$1,144	\$2	\$472	\$572	\$572	\$0	\$1,618
2021	\$694	\$0	\$64	\$1,057	\$685	\$9	\$1,815

Description of CIP Changes:

Updated the engineering start and finish dates. Updated the Contract Number. 2018
No changes were made to this CIP from last fiscal year. PF 8/9/2019

Project Title: Water Treatment Plant Automation Program**Project Status:** Project Execution - Construction**CIP Type:** Program**Class Lvl 1:** Water**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:** Jeffrey Dorsey**Director:** Terry Daniel**Managing Dept.:** Water Eng**Date Original Business Case Prepared:**
4/27/2017**Year Project Added to CIP:** 2017**CIP Budget:** Water**Project Jurisdiction:** Multiple Counties**Lookup Location:** Water Treatment Plants**Funds and Cost Center:** Water - 5519-882111**Problem Statement:**

The automation design and construction project comes from recommendations that identified existing station process data conditions, station needs, GLWA mission critical assets, alternative improvement options to address identified needs, recommended improvements to address the needs, prioritized projects based on the GLWA CIP scoring tool, and scheduling for making the improvements along with associated capital improvement budgets associated with each project established under CS-108.

Scope of Work/Project Alternatives:

The purpose of this project is to implement the recommendations from CS-108 that are prioritized in five (5) year increments with an estimated cost of \$1 million dollars per year over a twenty (20) year span.

Project Title: Water Treatment Plant Automation Program

Other Important Info:

Challenge: Standardization of multiple different data process equipment already installed throughout the 5 plants could be a problem.

Project History: The GLWA Water Operations division is comprised of five water treatment plants. Each plant has process areas ranging from intake, sedimentation, chlorination, filtration and distribution systems. One of the directives from the organizational objectives is to provide the treatment plants with automation. This automation would be one of the main drivers for increased efficiency in data monitoring and regulatory reporting and reduced workload and maintenance cost. The recommendations from this assessment will be the catalyst for automation projects at the pumping stations over the next 20-year planning period. In addition, the recommendations from this assessment are required to be prioritized in 5-year increments with estimated costs.

Primary Driver: 8 - Efficiency**Driver Explanation:**

This automation would be one of the main drivers for increased efficiency in data monitoring and regulatory reporting and reduced workload and maintenance cost.

Project Title: Water Treatment Plant Automation 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: Water Treatment Plant Automation Program

Phase: TBD / Future Allocation / General Holding TBD

Phase Title: TBD / Future Allocation / General Holding TBD

Phase Budget:	Start Date:	7/1/2020
Phase Status:	End Date:	6/30/2022
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	FY21	FY22	5 Year Total
TBD / Future Allocation / General Holding TBD	\$13,249	\$0	\$0	\$7,098	\$6,151	\$6,151

Phase Dates

Activity Name	Start Date	End Date
Construction	7/1/2020	6/30/2022


Project Title: Water Treatment Plant Automation 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	Total
2018	\$7,500	\$0	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500	\$0	\$0	\$0	\$7,500
2019	\$6,258	\$13	\$1,425	\$61	\$1,561	\$1,561	\$1,561	\$1,514	\$105	\$0	\$7,801
2020	\$6,302	\$0	\$1,377	\$61	\$1,561	\$1,561	\$1,561	\$1,514	\$105	\$0	\$7,740
2021	\$13,862	\$0	\$0	\$1,658	\$3,208	\$5,440	\$2,943	\$1,211	\$3,117	\$1,151	\$18,728

Description of CIP Changes:

Project Title: Water Treatment Plant Automation

<p>Project Status: Closed</p> <p>CIP Type: Project</p> <p>Class Lvl 1: Water</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: Jeffrey Dorsey</p> <p>Director: Terry Daniel</p> <p>Managing Dept.: Water Eng</p>	<p>Date Original Business Case Prepared: 1/1/2017</p> <p>Year Project Added to CIP: 2017</p> <p>CIP Budget: Water</p>	<p>Project Jurisdiction: City of Detroit</p> <p>Lookup Location:</p> <p>Funds and Cost Center: Water - 5519-882111</p>

Problem Statement:

Project was formerly 170113. This project will provide auditing and a condition assessment of process data networks at each water plant. Additionally, it will provide recommendations on the conductivity of each process area within those plants using the model of Ovation as supervisory monitoring and or control and PLC's for process control where applicable.

Scope of Work/Project Alternatives:

Other Important Info:

Primary Driver:

Driver Explanation:

Project Title: Water Treatment Plant Automation

Scoring**Project Manager Weighted Score:** 20.00

Criteria Name	Score	Comment
Condition	1	Under a program not needed.
Performance (Service Level/Reliability)	1	Under a program not needed.
Regulatory (Environmental/Legal)	1	Under a program not needed.
Operations and Maintenance	1	Under a program not needed.
Public Health and Safety	1	Under a program not needed.
Public Benefit	1	Under a program not needed.
Financial	1	Under a program not needed.
Efficiency and Innovation	1	Under a program not needed.

Risk Committee Weighted Score: 20.00

Criteria Name	Score	Comment
Condition	1	Under a program not needed.
Performance (Service Level/Reliability)	1	Under a program not needed.
Regulatory (Environmental/Legal)	1	Under a program not needed.
Operations and Maintenance	1	Under a program not needed.
Public Health and Safety	1	Under a program not needed.
Public Benefit	1	Under a program not needed.
Financial	1	Under a program not needed.
Efficiency and Innovation	1	Under a program not needed.

Project Title: Water Treatment Plant Automation

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget:
Start Date: 6/1/2020

Phase Status:
End Date: 6/30/2020

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	FY21	FY22	FY23	FY24	FY25	5 Year Total
GLWA Salaries	\$369	\$0	\$0	\$251	\$59	\$22	\$21	\$16	\$118

Phase Dates

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

Project Title: Water Treatment Plant Automation

Phase: Design**Phase Title:** Design

Phase Budget:**Start Date:** 6/1/2020**Phase Status:****End Date:** 6/30/2020**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	FY21
Design	\$1,753	\$0	\$0	\$1,753

Phase Dates

Activity Name	Start Date	End Date
Design - Project Execution	6/1/2020	6/30/2020

Project Title: Water Treatment Plant Automation


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

CIP

Description of CIP Changes:

This project is closed. JD 8/26/2020.

Project Title: SW SCADA System Upgrade

Project Status: Project Execution - Design CIP Type: Project Class Lvl 1: Water Class Lvl 2: Programs Class Lvl 3: Programs <input type="checkbox"/> Project New to CIP	<input type="checkbox"/> Innovation <input type="checkbox"/> WW Master Plan <input type="checkbox"/> Water Master Plan Right Sizing <input type="checkbox"/> Redundancy <input type="checkbox"/> NE WTP Repurposing <input type="checkbox"/> Linear Assets Outside of Facilities <input type="checkbox"/> Predecessor Project(s)	 SW SCADA System Upgrade
Project Engineer/Manager: Jeffrey Dorsey Director: Terry Daniel Managing Dept.: Water Eng	Date Original Business Case Prepared: 4/27/2017 Year Project Added to CIP: 2017 CIP Budget: Water	Project Jurisdiction: Wayne County - Outside Detroit Lookup Location: Funds and Cost Center: Water - 5519-882111
Problem Statement: This project will upgrade SW WTP SCADA system.	Scope of Work/Project Alternatives: The upgrade of network devices and removable of device net to the SCADA system.	Other Important Info: Primary Driver: 8 - Efficiency Driver Explanation: This automation would be one of the main drivers for increased efficiency in data monitoring and regulatory reporting and reduced workload and maintenance cost.

Project Title: SW SCADA System Upgrade

Scoring**Project Manager Weighted Score:** 20.00

Criteria Name	Score	Comment
Condition	1	Under a program not needed.
Performance (Service Level/Reliability)	1	Under a program not needed.
Regulatory (Environmental/Legal)	1	Under a program not needed.
Operations and Maintenance	1	Under a program not needed.
Public Health and Safety	1	Under a program not needed.
Public Benefit	1	Under a program not needed.
Financial	1	Under a program not needed.
Efficiency and Innovation	1	Under a program not needed.

Risk Committee Weighted Score: 20.00

Criteria Name	Score	Comment
Condition	1	Under a program not needed.
Performance (Service Level/Reliability)	1	Under a program not needed.
Regulatory (Environmental/Legal)	1	Under a program not needed.
Operations and Maintenance	1	Under a program not needed.
Public Health and Safety	1	Under a program not needed.
Public Benefit	1	Under a program not needed.
Financial	1	Under a program not needed.
Efficiency and Innovation	1	Under a program not needed.

Project Title: SW SCADA System Upgrade

Phase: TBD / Future Allocation / General Holding**Phase Title:** TBD / Future Allocation / General Holding

Phase Budget:**Start Date:** 1/1/2021**Phase Status:****End Date:** 6/30/2023**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	FY21	FY22	FY23	5 Year Total
TBD / Future Allocation / General Holding	\$9,000	\$0	\$0	\$1,788	\$3,606	\$3,606	\$7,212

Phase Dates

Activity Name	Start Date	End Date
TBD Study - Project Execution	1/1/2021	6/30/2023

Project Title: SW SCADA System Upgrade

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

CIP

Description of CIP Changes:

Change title to reflect correct project: SW SCADA system upgrade. JD 8/25/2020.

Project Title: Power Monitoring Installation for Water Treatment Plants

Project Status: Active - Pre-Procurement
- Design

CIP Type: Project

Class Lvl 1: Water

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: Jeffrey Dorsey

Director: Terry Daniel

Managing Dept.: Water Operations

Date Original Business Case Prepared:
Year Project Added to CIP: 2020

CIP Budget: Water

Project Jurisdiction: Multiple Counties

Lookup Location:
Funds and Cost Center: Water - 5519-882111

Problem Statement:

Looking to achieve efficiency of our power usage at our water treatment plants.

Scope of Work/Project Alternatives:

This project will install power monitoring meters on electrical switch gear for critical pumping units at Water Works Park, Northeast, and Southwest.

Other Important Info:
Primary Driver: 8 - Efficiency

Driver Explanation:

Project Title: Power Monitoring Installation for Water Treatment Plants

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 Monitoring Installation for Water Treatment Plants

Phase: TBD / Future Allocation / General Holding

Phase Title: TBD / Future Allocation / General Holding

Phase Budget:	Start Date:	12/1/2020
Phase Status:	End Date:	9/30/2021
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	FY21	FY22	5 Year Total
TBD / Future Allocation / General Holding	\$1,700	\$0	\$0	\$1,186	\$514	\$514

Phase Dates

Activity Name	Start Date	End Date
Design-Build - Project Execution	12/1/2020	9/30/2021

Project Title: Power Monitoring Installation for Water Treatment Plants


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

CIP

Description of CIP Changes:

New project from program JD 8/25/2020.

Project Title: Water Transmission Improvement Program

Project Status: Future Planned - Within 5 Year Plan CIP Type: Program Class Lvl 1: Water Class Lvl 2: Programs Class Lvl 3: Programs <input type="checkbox"/> Project New to CIP	<input type="checkbox"/> Innovation <input type="checkbox"/> WW Master Plan <input type="checkbox"/> Water Master Plan Right Sizing <input checked="" type="checkbox"/> Redundancy <input type="checkbox"/> NE WTP Repurposing <input checked="" type="checkbox"/> Linear Assets Outside of Facilities <input type="checkbox"/> Predecessor Project(s)	
Project Engineer/Manager: Todd King Director: Todd King Managing Dept.: Field Services	Date Original Business Case Prepared: 4/27/2017 Year Project Added to CIP: 2010 CIP Budget: Water	Project Jurisdiction: Multiple Counties Lookup Location: Transmission System Funds and Cost Center: Water - 5519-882111
Problem Statement: Assessing, rehabilitating or replacing aging transmission mains in the water system	Scope of Work/Project Alternatives: This project is a yearly funding allocation for the design and/or construction work for the rehabilitation or replacement/construction of aging water transmission lines and all appurtenances, connections and related structures.	Other Important Info: O&M manuals, GIS, Section Maps and Gate Books are available for reference. Project History: There are many critical assets that are required to be operated in the transmission system and this yearly allowance is needed to meet the critical needs of these assets. Challenges: May require shut down of large pumps, isolation or shutdown of large mains etc. Primary Driver: Driver Explanation:

Project Title: Water Transmission 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: Water Transmission Improvement Program

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Water

Start Date: 7/1/2018

Phase Status: Active

End Date: 9/5/2032

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: CDM Smith

Cost Est. Date: 1/1/2015

Cost Est. Prepared By: CDM Smith

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	\$580	\$0	\$0	\$49	\$34	\$34	\$34	\$34	\$34	\$170	\$362

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	7/1/2018	9/5/2032

Project Title: Water Transmission Improvement Program

Phase: Design # 2**Phase Title:** SAR Package 1

Phase Budget:	Water	Start Date:	7/26/2027
Phase Status:	Future Planned Start	End Date:	7/27/2031
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:	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	FY27+
Design # 2	\$96	\$0	\$0	\$96

Phase Dates

Activity Name	Start Date	End Date
Design - Pre-Procurement	8/28/2026	11/26/2026
Design - Procurement	11/27/2026	7/25/2027
Design - Project Execution	7/26/2027	7/25/2028
Design - Closeout	4/26/2028	7/25/2028
Construction Assistance - Project Execution	7/26/2028	7/27/2031

Project Title: Water Transmission Improvement Program

Phase: Design # 3

Phase Title: Water Transmission Improvement Program

Phase Budget:	Water	Start Date:	7/1/2018
Phase Status:	Future Planned Start	End Date:	7/1/2025
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 5	Cost Est. Source: CDM Smith
Cost Est. Date: 1/1/2015	Cost Est. Prepared By: CDM Smith

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 # 3	\$4,005	\$0	\$0	\$0	\$1,000	\$1,000	\$1,000	\$1,000	\$5	\$4,005	\$0

Phase Dates

Activity Name	Start Date	End Date
Design - Project Allocation	7/1/2018	7/1/2025

Project Title: Water Transmission Improvement Program

Phase: Construction (Build) # 2

Phase Title: ANR Package 1

Phase Budget:	Water	Start Date:	9/5/2029
Phase Status:	Future Planned Start	End Date:	9/5/2032
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:	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	FY27+
Construction (Build) # 2	\$10,900	\$0	\$0	\$10,900

Phase Dates

Activity Name	Start Date	End Date
Construction - Pre-Procurement	11/7/2028	3/7/2029
Construction - Procurement	3/8/2029	9/4/2029
Construction - Project Execution	9/5/2029	9/5/2032
Construction - Closeout	6/7/2032	9/5/2032

Project Title: Water Transmission Improvement Program

Phase: Construction (Build) # 6**Phase Title:** SAR Package 1

Phase Budget:	Water	Start Date:	7/26/2028
Phase Status:	Future Planned Start	End Date:	7/27/2031
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:	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	FY27+
Construction (Build) # 6	\$17,590	\$0	\$0	\$17,590

Phase Dates

Activity Name	Start Date	End Date
Construction - Pre-Procurement	9/28/2027	1/26/2028
Construction - Procurement	1/27/2028	7/25/2028
Construction - Project Execution	7/26/2028	7/27/2031
Construction - Closeout	4/28/2031	7/27/2031


Project Title: Water Transmission 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	\$50,000	\$0	\$10,000	\$11,000	\$9,000	\$11,000	\$9,000	\$0	\$0	\$0	\$0	\$50,000
2019	\$8,500	\$1,075	\$229	\$1,000	\$1,500	\$2,000	\$2,000	\$2,000	\$2,000	\$0	\$0	\$11,804
2020	\$9,500	\$0	\$156	\$1,000	\$1,500	\$2,000	\$2,000	\$2,000	\$2,000	\$100,000	\$0	\$110,656
2021	\$8,155	\$0	\$0	\$1,643	\$1,781	\$1,776	\$1,776	\$1,776	\$1,781	\$1,046	\$16,578	\$28,157

Description of CIP Changes:

Project Title: Transmission System Valve Rehabilitation and Replacement Program

<p>Project Status: Project Execution - Construction</p> <p>CIP Type: Program</p> <p>Class Lvl 1: Water</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 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 checked="" type="checkbox"/> Predecessor Project(s)</p>	
<p>Project Engineer/Manager: Todd King</p> <p>Director: Todd King</p> <p>Managing Dept.: Field Services</p>	<p>Date Original Business Case Prepared: 7/29/2016</p> <p>Year Project Added to CIP: 2017</p> <p>CIP Budget: Water</p>	<p>Project Jurisdiction: Multiple Counties</p> <p>Lookup Location: Transmission System Gate Valves</p> <p>Funds and Cost Center: Water - 5519-882111</p>

Problem Statement:

Replacement/Rehabilitation of GLWA Transmission System Gate Valves will aid in implementing a regular valve exercising program as recommended by AWWA as well as increase the reliability of the transmission system.

Scope of Work/Project Alternatives:

Evaluate the existing conditions, provide the necessary replacement/ rehabilitation option, design and implement them.

Other Important Info:

GIS, Section Maps and Gate Books are available for reference.

Project History: There are critical valves that are required to be closed during a main break or an emergency situation. There has not been a regular valve exercising program in past 15 years in the DWSD/GLWA System.

Challenges: May require shutdown of large transmission mains.

Primary Driver: 1 - Condition

Driver Explanation:

Conditions of many of the gate valves are unknown and unreliable.

Project Title: Transmission System Valve Rehabilitation and Replacement 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: Transmission System Valve Rehabilitation and Replacement Program

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Water

Start Date: 7/1/2018

Phase Status: Active

End Date: 7/27/2031

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: CDM Smith

Cost Est. Date: 1/1/2015

Cost Est. Prepared By: CDM Smith

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	\$510	\$0	\$0	\$91	\$42	\$42	\$42	\$42	\$26	\$196	\$223

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	7/1/2018	7/27/2031

Project Title: Transmission System Valve Rehabilitation and Replacement Program

Phase: Design # 1**Phase Title:** SAR Package 1

Phase Budget:	Water	Start Date:	7/26/2027
Phase Status:	Future Planned Start	End Date:	7/27/2031
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:	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	FY27+
Design # 1	\$1,332	\$0	\$0	\$1,332

Phase Dates

Activity Name	Start Date	End Date
Design - Pre-Procurement	8/28/2026	11/26/2026
Design - Procurement	11/27/2026	7/25/2027
Design - Project Execution	7/26/2027	7/25/2028
Design - Closeout	4/26/2028	7/25/2028
Construction Assistance - Project Execution	7/26/2028	7/27/2031

Project Title: Transmission System Valve Rehabilitation and Replacement Program

Phase: Design-Build # 1

Phase Title: Unallocated Transmission System Valve Assessment and Rehabilitation/Replacement

Phase Budget:	Water	Start Date:	10/16/2018
Phase Status:	Active	End Date:	2/25/2026
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 5	Cost Est. Source: CDM Smith
Cost Est. Date: 1/1/2015	Cost Est. Prepared By: CDM Smith

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	\$1,073	\$0	\$0	\$190	\$190	\$190	\$190	\$190	\$125	\$884	\$0

Phase Dates

Activity Name	Start Date	End Date
Design - Pre-Procurement	7/1/2018	2/16/2018
Design - Procurement	10/2/2018	10/15/2018
Design - Project Execution	10/16/2018	2/25/2026
Construction - Project Execution	10/28/2022	2/25/2026
Construction - Closeout	11/27/2025	2/25/2026

Project Title: Transmission System Valve Rehabilitation and Replacement Program

Phase: Construction (Build) # 3**Phase Title:** SAR Package 1

Phase Budget:	Water	Start Date:	7/26/2028
Phase Status:	Future Planned Start	End Date:	7/27/2031
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:	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	FY27+
Construction (Build) # 3	\$2,435	\$0	\$0	\$2,435

Phase Dates

Activity Name	Start Date	End Date
Construction - Pre-Procurement	9/28/2027	1/26/2028
Construction - Procurement	1/27/2028	7/25/2028
Construction - Project Execution	7/26/2028	7/27/2031
Construction - Closeout	4/28/2031	7/27/2031


Project Title: Transmission System Valve Rehabilitation and Replacement Program

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	\$15,330	\$2,930	\$3,100	\$3,100	\$3,100	\$3,100	\$0	\$0	\$0	\$0	\$15,330
2019	\$16,000	\$2,000	\$4,000	\$4,000	\$3,274	\$726	\$4,000	\$4,000	\$0	\$0	\$22,000
2020	\$19,274	\$3,430	\$4,000	\$4,000	\$3,274	\$4,000	\$4,000	\$4,000	\$10,000	\$0	\$36,704
2021	\$13,884	\$0	\$7,159	\$642	\$1,177	\$3,119	\$3,175	\$3,210	\$3,203	\$4,784	\$26,469

Description of CIP Changes:

Project Title: Transition System Valve Replacement

<p>Project Status: Project Execution - Construction</p> <p>CIP Type: Program</p> <p>Class Lvl 1: Water</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: Todd King</p> <p>Director: Todd King</p> <p>Managing Dept.: Field Services</p>	<p>Date Original Business Case Prepared: 7/29/2016</p> <p>Year Project Added to CIP: 2017</p> <p>CIP Budget: Water</p>	<p>Project Jurisdiction: Multiple Counties</p> <p>Lookup Location: Transmission System Gate Valves</p> <p>Funds and Cost Center: Water - 5519-882111</p>

Problem Statement:

Replacement/Rehabilitation of GLWA Transmission System Gate Valves will aid in implementing a regular valve exercising program as recommended by AWWA as well as increase the reliability of the transmission system.

Scope of Work/Project Alternatives:

Evaluate the existing conditions, provide the necessary replacement/ rehabilitation option, design and implement them.

Other Important Info:

GIS, Section Maps and Gate Books are available for reference.

Project History: There are critical valves that are required to be closed during a main break or an emergency situation. There has not been a regular valve exercising program in past 15 years in the DWSD/GLWA System.

Challenges: May require shutdown of large transmission mains.

Primary Driver: 1 - Condition

Driver Explanation:

Conditions of many of the gate valves are unknown and unreliable.

Project Title: Transition System Valve Replacement

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: Transition System Valve Replacement

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget:
Start Date: 5/1/2020

Phase Status:
End Date: 8/26/2021

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	FY21	FY22	5 Year Total
GLWA Salaries	\$72	\$0	\$0	\$64	\$7	\$7

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	5/1/2020	8/26/2021

Project Title: Transition System Valve Replacement

Phase: Construction (Build)**Phase Title:** Construction (Build)

Phase Budget:	Start Date:	5/1/2020
Phase Status:	End Date:	8/26/2021
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	FY21	FY22	5 Year Total
Construction (Build)	\$10,000	\$394	\$394	\$8,309	\$1,298	\$1,298

Phase Dates

Activity Name	Start Date	End Date
Construction - Project Execution	5/1/2020	8/26/2021
Construcction - Closeout	5/28/2021	8/26/2021

Project Title: Transition System Valve Replacement

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

CIP

Description of CIP Changes:

Project Title: Water Transmission Main Asset Assessment Program

Project Status: Future Planned - Within 5 Year Plan

CIP Type: Program

Class Lvl 1: Water

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: Todd King

Director: Todd King

Managing Dept.: Field Services

Date Original Business Case Prepared:
8/2/2016

Year Project Added to CIP: 2017

CIP Budget: Water

Project Jurisdiction: Multiple Counties

Lookup Location: Transmission Mains

Funds and Cost Center: Water - 5519-882111

Problem Statement:

Many of the water mains serving the GLWA service area were installed in the early part of the 20th century or the later part of the 19th century, and are now reaching the end of their useful life span. This project will pilot and utilize new technologies to accurately identify the condition of these buried assets by constructing access ways for inspection and the installation of sensors and fiber optic cables for real-time monitoring of condition. It's essential for cost-efficient repair and replacement programs which in turn will increase the reliability and performance of the system.

Scope of Work/Project Alternatives:

Construct access structures and utilize new technology to evaluate the existing conditions of the transmission system. Construction of in place sensors and cables may be necessary to adequately access condition. Provide the necessary recommendation for replacement and rehabilitation.

Other Important Info:

*Innovation Note: Consider new techniques for water main assessment.
GIS, Section Maps and Gate Books are available for reference.
Challenges: Gaining access to inspect buried pipes is difficult, disruptive and costly. However, there are ways to monitor and test the condition of the piping and methods of performing condition assessment.
Project History: There are many critical assets that are required to be operated in the transmission main, but the authority doesn't know the existing conditions. For planning purposes, information about the actual condition of pipes is needed and there has not been a regular condition assessment program related to the transmission System (pipes greater than 24").

Primary Driver: 1 - Condition

Driver Explanation:

Conditions of many of the gate valves are unknown and unreliable.

Project Title: Water Transmission Main Asset Assessment 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: Water Transmission Main Asset Assessment Program

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Water

Start Date: 7/1/2018

Phase Status: Active

End Date: 2/25/2027

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 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	\$431	\$0	\$0	\$52	\$24	\$24	\$24	\$24	\$24	\$121	\$258

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	7/1/2018	2/25/2027

Project Title: Water Transmission Main Asset Assessment Program

Phase: Design-Build # 1

Phase Title: Unallocated Water Transmission Main Asset Assessment Program

Phase Budget: Water	Start Date: 2/27/2023
Phase Status: Active	End Date: 2/25/2027
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 5	Cost Est. Source:
Cost Est. Date: 8/1/2018	Cost Est. Prepared By:

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

	Total Costs	Actual Costs	Prior FYs	FY23	FY24	FY25	FY26	5 Year Total	FY27+
Design-Build # 1	\$8,007	\$0	\$0	\$501	\$501	\$2,001	\$2,501	\$5,506	\$2,501

Phase Dates

Activity Name	Start Date	End Date
Design - Pre-Procurement	7/1/2018	1/1/2019
Design - Procurement	1/1/2019	2/26/2023
Design - Project Execution	2/27/2023	2/25/2027
Construction - Project Execution	10/27/2024	2/25/2027
Construction - Closeout	11/27/2026	2/25/2027


Project Title: Water Transmission Main Asset Assessment Program

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	\$10,626	\$2,626	\$2,000	\$2,000	\$2,000	\$2,000	\$0	\$0	\$0	\$0	\$10,626
2019	\$18,505	\$2,627	\$2,501	\$3,001	\$4,001	\$4,001	\$5,001	\$5,001	\$0	\$0	\$26,133
2020	\$21,000	\$0	\$2,500	\$3,000	\$4,000	\$4,000	\$5,000	\$5,000	\$25,000	\$0	\$48,500
2021	\$7,249	\$0	\$0	\$54	\$54	\$54	\$775	\$2,183	\$4,183	\$23,450	\$30,753

Description of CIP Changes:

Project Title: System-Wide Finished Water Reservoir Inspection, Design and Rehabilitation

<p>Project Status: Project Execution - Design</p> <p>CIP Type: Program</p> <p>Class Lvl 1: Water</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 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: Erich Klun</p> <p>Director: Grant Gartrell</p> <p>Managing Dept.: Water Eng</p>	<p>Date Original Business Case Prepared: 10/12/2016</p> <p>Year Project Added to CIP: 2016</p> <p>CIP Budget: Water</p>	<p>Project Jurisdiction: Multiple Counties</p> <p>Lookup Location: LHP, SPP, SWP and IMC</p> <p>Funds and Cost Center: Water - 5519-882111</p>

Problem Statement:

This project merges all CIPs associated with Reservoir Rehabilitation into a single, comprehensive CIP Project. This new project is being managed against a overall repair schedule to mitigate conflicts in the transmission system so as to minimize the impact for MDEQ Mandated inspections and repairs to GLWA Reservoirs at Booster Stations and Water Treatment Plants. ECK 7/2018

Adjust the cost of this CIP this fiscal year to account for the contract award amount for engineering services related to this CIP, as well as competitive, public bid prices received for rehabilitation work on 10 of the 33 system-wide reservoirs. JPM 8/5/2019

Scope of Work/Project Alternatives:

The project will provide inspection, rehabilitation, and maintenance for all 33 finished (potable) reservoirs in the GLWA system on a MDEQ mandated 5 year revolving inspection cycle.

Other Important Info:

Scope applies to the Lake Huron WTP (LHP), Springwells WTP (SPP), Southwest WTP (SWP) and the Imlay Pumping Station (IMC) reservoirs.

Primary Driver: 3 - Regulatory

Driver Explanation:

MDEQ requires inspection of potable water storage tanks on a fixed schedule.

Project Title: System-Wide Finished Water Reservoir Inspection, Design and Rehabilitation

Scoring**Project Manager Weighted Score:** 65.60

Criteria Name	Score	Comment
Condition	2	
Performance (Service Level/Reliability)	3	
Regulatory (Environmental/Legal)	5	
Operations and Maintenance	2	
Public Health and Safety	4	
Public Benefit	5	
Financial	3	
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: System-Wide Finished Water Reservoir Inspection, Design and Rehabilitation

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget:	Water	Start Date:	10/17/2017
Phase Status:	Active	End Date:	6/30/2031
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: CDM Smith
Cost Est. Date: 1/1/2015	Cost Est. Prepared By: CDM Smith

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	\$127	\$0	\$0	\$46	\$22	\$22	\$21	\$17	\$0	\$81	\$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	10/17/2017	6/30/2031

Project Title: System-Wide Finished Water Reservoir Inspection, Design and Rehabilitation

Phase: Study & Design & Construction Assistance # 1

Phase Title: Engineering

Phase Budget: Water	Start Date: 10/17/2017
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 5	Cost Est. Source: CDM Smith
Cost Est. Date: 1/1/2015	Cost Est. Prepared By: CDM Smith

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+
Study & Design & Construction Assistance # 1	\$2,700	\$0	\$0	\$0	\$300	\$300	\$300	\$300	\$300	\$1,500	\$1,200

Phase Dates

Activity Name	Start Date	End Date
Design - Pre-Procurement	10/17/2017	12/20/2017
Design - Procurement	12/20/2017	11/20/2018
Design - Project Execution	10/17/2017	6/30/2027
Design - Project Allocation	7/1/2024	6/30/2027
Construction Assistance - Project Execution	10/16/2019	6/30/2024
Construction Assistance - Project Closeout	4/1/2024	6/30/2024

Project Title: System-Wide Finished Water Reservoir Inspection, Design and Rehabilitation

Phase: Construction (Build) # 1

Phase Title: Construction

Phase Budget:	Water	Start Date:	11/21/2019
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 5	Cost Est. Source: CDM Smith
Cost Est. Date: 1/1/2015	Cost Est. Prepared By: CDM Smith

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	\$21,000	\$0	\$0	\$0	\$0	\$2,000	\$3,000	\$3,000	\$3,000	\$11,000	\$10,000

Phase Dates

Activity Name	Start Date	End Date
Construction - Pre-Procurement	3/11/2019	3/13/2019
Construction - Procurement	3/14/2019	11/20/2019
Construction - Project Execution	11/21/2019	6/30/2025
Construction - Closeout	4/1/2031	6/30/2031
Construction - Project Allocation	7/1/2024	6/30/2027

Project Title: System-Wide Finished Water Reservoir Inspection, Design and Rehabilitation

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	\$10,950	\$50	\$3,300	\$2,550	\$2,550	\$2,550	\$0	\$0	\$0	\$0	\$0	\$11,000
2019	\$14,415	\$0	\$39	\$472	\$753	\$4,510	\$4,340	\$4,340	\$4,645	\$0	\$0	\$19,099
2020	\$24,904	\$0	\$0	\$482	\$5,128	\$5,211	\$5,182	\$3,888	\$5,495	\$33,778	\$0	\$59,164
2021	\$33,727	\$0	\$0	\$457	\$2,160	\$6,087	\$6,087	\$6,087	\$4,100	\$11,366	\$22,732	\$59,076

Description of CIP Changes:

Redirected to J. McCallum 7/19/2019 -- ECK

CIP projected funding requirements updated to reflex actual bid pricing obtained for CS-151A (170801) JPM 8/8/2019

CIP projected funding updated to include the next cycle of inspection in 5 years for the reservoirs getting addressed under CS-151A/190744. JPM 8/8/2019

Project Title: Reservoir Inspection, Design and Construction Project at Imlay Station, Lake Huron Water Treatment Plant, Springwells Water Treatment Plant, And Southwest Water Treatment Plant

Project Status: Project Execution - Design

CIP Type: Project

Class Lvl 1: Water

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: Erich Klun

Director: Grant Gartrell

Managing Dept.: Water Eng

Date Original Business Case Prepared:

Year Project Added to CIP: 2020

CIP Budget: Water

Project Jurisdiction: Multiple Counties

Lookup Location:

Funds and Cost Center: Water - 5519-882111

Problem Statement:

CIP#170801 is the first in a series of facility improvements related to reservoirs at the water treatment plants and booster stations assigned to the System-Wide Finished Water Reservoir Inspection, Design and Rehabilitation Program under CIP#170800.

Scope of Work/Project Alternatives:

CIP#170801 is specifically related to inspection, design and construction of improvements to the reservoirs at the Springwells WTP, Southwest WTP, Lake Huron WTP and Imlay Station. CIP#170801 is currently being executed and is expected to be completed mid-FY25.

Other Important Info:

Inspection and design of improvements is being executed under Contract CS-151A held by Hazen.

Construction of improvements is being executed under Contract 1900744 held by Pullman SST, Inc.

Primary Driver: 3 - Regulatory

Driver Explanation:

Program is a requirement of the State of Michigan.

Project Title: Reservoir Inspection, Design and Construction Project at Imlay Station, Lake Huron Water Treatment Plant, Springwells Water Treatment Plant, And Southwest Water Treatment Plant

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: Reservoir Inspection, Design and Construction Project at Imlay Station, Lake Huron Water Treatment Plant, Springwells Water Treatment Plant, And Southwest Water Treatment Plant

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget:	Start Date:	11/5/2018
Phase Status:	End Date:	7/21/2023
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	FY20
GLWA Salaries	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	11/5/2018	7/21/2023
Capital Delivery Salary	11/5/2018	7/21/2023

Project Title: Reservoir Inspection, Design and Construction Project at Imlay Station, Lake Huron Water Treatment Plant, Springwells Water Treatment Plant, And Southwest Water Treatment Plant

Phase: Design/Engineering & Construction

Phase Title: Design/Engineering & Construction

Phase Budget:	Start Date:	11/5/2018
Phase Status:	End Date:	7/21/2023
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	FY20	FY21	FY22	FY23	FY24	FY25	5 Year Total	FY26+
Design/Engineering & Construction	\$15,090	\$0	\$0	\$8,420	\$463	\$2,075	\$1,000	\$1,000	\$12,958	\$1,000

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering	11/5/2018	7/21/2023
Construction	11/14/2019	4/1/2023


Project Title: Reservoir Inspection, Design and Construction Project at Imlay Station, Lake Huron Water Treatment Plant, Springwells Water Treatment Plant, And Southwest Water Treatment Plant

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

CIP

Description of CIP Changes:

Project Title: Suburban Water Meter Pit Rehabilitation and Meter Replacement

<p>Project Status: Project Execution - Construction</p> <p>CIP Type: Program</p> <p>Class Lvl 1: Water</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: Chandan Sood</p> <p>Director: Chandan Sood</p> <p>Managing Dept.: Systems Planning</p>	<p>Date Original Business Case Prepared: 1/26/2016</p> <p>Year Project Added to CIP: 2014</p> <p>CIP Budget: Water</p>	<p>Project Jurisdiction: Multiple Counties</p> <p>Lookup Location: Various meter locations in Transmission System</p> <p>Funds and Cost Center: Water - 5519-882111</p>

Problem Statement:

Improving meter data reliability, ensuring accurate billing, improving customer service and allow high quality analysis of the system

Scope of Work/Project Alternatives:

The Proposed improvements should include the following; The replacements of meters that have surpassed their life expectancy, and or the current flow rates exceed the mechanical limits of the meter. Installing entrance hatches that allow safer ingress, and egress, and that can be locked for security. Sand blasting and painting of piping and walls. Waterproofing meter vaults to keep the ground water out. Provide a proper floor slope in meter chambers that allow water to settle in puddles. Repairing damage sump pump discharge lines. Repairing any structural deficiencies in the meter chambers, loose concrete, bricks, and ladder rungs. Installing access tunnels for the meter location that require extensive traffic control, or are very dangerous to enter because of the entrance location. Upgrading and repairing damaged electrical fixtures in the meter vaults. Weather proofing the meter control cabinets, chalking, replacing rubber door seals, replacing missing foam insulation,

Other Important Info:

Challenges: Requires temporary shutdown of the water supply through the meter.

Project History: Currently GLWA provides water service to 126 communities, and measures flows and volumes by the utilization of 290 wholesale water meters now in service; 17 of these meters are venturi-orifice type meters, 26 of these are dual venturi type meters, 48 of these single venturi type meters, 97 of these are magnetic flow type meters, and 102 of these are turbine or mechanical type meters. Meters were installed between 1945 through 1975 under various projects and tasks.

Primary Driver: 2 - Performance

Driver Explanation:

Not provided.

Project Title: Suburban Water Meter Pit Rehabilitation and Meter Replacement

replacing upgrading cabinet heaters, repairing damaged locking mechanisms. Improving, or paving the access roads, and or parking for meter locations that have limited parking or get overgrown with foliage in the summer time.

Project Title: Suburban Water Meter Pit Rehabilitation and Meter Replacement

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: Suburban Water Meter Pit Rehabilitation and Meter Replacement

Phase: TBD / Future Allocation / General Holding TBD

Phase Title: TBD / Future Allocation / General Holding TBD

Phase Budget:

Start Date: 7/1/2020

Phase Status:

End Date: 6/30/2031

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	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
TBD / Future Allocation / General Holding TBD	\$43,557	\$0	\$0	\$2,535	\$3,997	\$4,112	\$4,113	\$4,113	\$4,113	\$20,448	\$20,573

Phase Dates

Activity Name	Start Date	End Date
Construction - Project Execution	7/1/2020	6/30/2031

Project Title: Suburban Water Meter Pit Rehabilitation and Meter Replacement

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	\$20,000	\$500	\$4,000	\$4,000	\$4,000	\$4,000	\$4,000	\$0	\$0	\$0	\$0	\$20,500
2019	\$20,090	\$0	\$410	\$4,613	\$3,690	\$3,690	\$3,997	\$4,100	\$0	\$0	\$0	\$20,500
2020	\$20,297	\$0	\$0	\$3,000	\$4,000	\$4,000	\$3,997	\$4,100	\$4,200	\$20,500	\$0	\$43,797
2021	\$6,450	\$0	\$0	\$1,238	\$2,542	\$2,535	\$2,535	\$1,139	\$121	\$120	\$71	\$10,301

Description of CIP Changes:

No changes to CIP per Ali email BF 2019-08-21

Corrected changes to CIP per Chandan. 2020-08-24

Project Title: Suburban Water Meter Pit Rehabilitation and Meter Replacement

<p>Project Status: Project Execution - Construction</p> <p>CIP Type: Program</p> <p>Class Lvl 1: Water</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: Chandan Sood</p> <p>Director: Chandan Sood</p> <p>Managing Dept.: Systems Planning</p>	<p>Date Original Business Case Prepared: 1/26/2016</p> <p>Year Project Added to CIP: 2014</p> <p>CIP Budget: Water</p>	<p>Project Jurisdiction: Multiple Counties</p> <p>Lookup Location: Various meter locations in Transmission System</p> <p>Funds and Cost Center: Water - 5519-882111</p>

Problem Statement:

Improving meter data reliability, ensuring accurate billing, improving customer service and allow high quality analysis of the system

Scope of Work/Project Alternatives:

The Proposed improvements should include the following; The replacements of meters that have surpassed their life expectancy, and or the current flow rates exceed the mechanical limits of the meter. Installing entrance hatches that allow safer ingress, and egress, and that can be locked for security. Sand blasting and painting of piping and walls. Waterproofing meter vaults to keep the ground water out. Provide a proper floor slope in meter chambers that allow water to settle in puddles. Repairing damage sump pump discharge lines. Repairing any structural deficiencies in the meter chambers, loose concrete, bricks, and ladder rungs. Installing access tunnels for the meter location that require extensive traffic control, or are very dangerous to enter because of the entrance location. Upgrading and repairing damaged electrical fixtures in the meter vaults. Weather proofing the meter control cabinets, chalking, replacing rubber door seals, replacing missing foam insulation,

Other Important Info:

Challenges: Requires temporary shutdown of the water supply through the meter.

Project History: Currently GLWA provides water service to 126 communities, and measures flows and volumes by the utilization of 290 wholesale water meters now in service; 17 of these meters are venturi-orifice type meters, 26 of these are dual venturi type meters, 48 of these single venturi type meters, 97 of these are magnetic flow type meters, and 102 of these are turbine or mechanical type meters. Meters were installed between 1945 through 1975 under various projects and tasks.

Primary Driver: 2 - Performance

Driver Explanation:

Not provided.

Project Title: Suburban Water Meter Pit Rehabilitation and Meter Replacement

replacing upgrading cabinet heaters, repairing damaged locking mechanisms. Improving, or paving the access roads, and or parking for meter locations that have limited parking or get overgrown with foliage in the summer time.

Project Title: Suburban Water Meter Pit Rehabilitation and Meter Replacement

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: Suburban Water Meter Pit Rehabilitation and Meter Replacement

Phase: GLWA Salaries**Phase Title:** GLWA Salaries

Phase Budget:**Start Date:** 1/1/2018**Phase Status:****End Date:** 5/23/2022**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	FY21	FY22	5 Year Total
GLWA Salaries	\$157	\$1	\$1	\$121	\$36	\$36

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	1/1/2018	5/23/2022

Project Title: Suburban Water Meter Pit Rehabilitation and Meter Replacement

Phase: Construction (Build) TBD

Phase Title: Wholesale Water Meter Pit Rehabilitation and Meter Replacement

Phase Budget: Water

Start Date: 1/1/2018

Phase Status: Active

End Date: 5/23/2022

Cost Allocation: Suburban Only

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: Previous Work

Cost Est. Date: 9/4/2018

Cost Est. Prepared By: SA and MO

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) TBD	\$10,459	\$4,529	\$4,529	\$3,128	\$2,802	\$0	\$0	\$0	\$0	\$2,802	\$0

Phase Dates

Activity Name	Start Date	End Date
Construction - Project Execution	1/1/2018	5/23/2022
Construction - Closeout	2/22/2022	5/23/2022

Project Title: Suburban Water Meter Pit Rehabilitation and Meter Replacement

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

CIP

Description of CIP Changes:

No changes to CIP per Ali email BF 2019-08-21

Project Title: Brownstown Meter Pit

Project Status: Active - Pre-Procurement
- Construction

CIP Type: Project

Class Lvl 1: Water

Class Lvl 2: Metering

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 Engineer/Manager: Peter Fromm

Director: Chandan Sood

Managing Dept.: Water Eng

Date Original Business Case Prepared:

Year Project Added to CIP: 2020

CIP Budget: Water

Project Jurisdiction: Wayne County - Outside Detroit

Lookup Location: Brownstown Township

Funds and Cost Center: Water - 5519-882411

Problem Statement:

BR-01 is a deduct meter pit that serves Brownstown Charter Township. Deduct meter pits are more difficult to track water usage. BR-01 will be abandon and BR-08 will be installed has a direct meter pit to Brownstown Charter Township.

Scope of Work/Project Alternatives:

Abandoning the existing BR-01 deduct meter pit with building a new direct meter pit BR-08 for serving Brownstown Charter Township. The new direct meter pit (BR-08) will have a new magnetic flow meter, 12-inch gate valves, and 8-inch check valve. There will be installation of 6-inch, 8-inch, and 12-inch piping for the new meter pit. There will be a new water pressure reducing valve vault for Brownstown Charter Township with only installing the piping in the vault.

Other Important Info:

None at this time.

Primary Driver: 7 - Financial

Driver Explanation:

Currently BR-01 is a deduct meter pit and this project will replace with a direct meter pit.

Project Title: Brownstown Meter Pit

Scoring**Project Manager Weighted Score:** 57.60

Criteria Name	Score	Comment
Condition	2	
Performance (Service Level/Reliability)	4	
Regulatory (Environmental/Legal)	2	
Operations and Maintenance	4	
Public Health and Safety	2	
Public Benefit	3	
Financial	3	
Efficiency and Innovation	4	

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: Brownstown Meter Pit

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget:
Start Date: 8/8/2018

Phase Status:
End Date: 6/30/2022

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	FY21	FY22	FY23	5 Year Total
GLWA Salaries	\$365	\$5	\$5	\$334	\$21	\$5	\$26

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	8/8/2018	6/30/2022
Capital Delivery Salary	8/8/2018	6/30/2022

Project Title: Brownstown Meter Pit

Phase: Design & Construction Assistance

Phase Title: Design & Construction Assistance

Phase Budget:	Start Date: 8/8/2018
Phase Status:	End Date: 6/30/2022
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	FY21	FY22	5 Year Total
Design & Construction Assistance	\$456	\$71	\$71	\$236	\$148	\$148

Phase Dates

Activity Name	Start Date	End Date
Design Project Execution	8/8/2018	9/25/2019
Construction Assistance - Project Execution	12/16/2019	6/30/2022

Project Title: Brownstown Meter Pit

Phase: Construction (Build)

Phase Title: Construction (Build)

Phase Budget:	Start Date: 12/6/2019
Phase Status:	End Date: 6/30/2022
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	FY21	FY22	FY23	5 Year Total
Construction (Build)	\$425	\$0	\$0	\$0	\$425	\$0	\$425

Phase Dates

Activity Name	Start Date	End Date
Construction - Pre-Procurement	12/6/2019	12/31/2020
Construction - Procurement	1/1/2021	6/30/2021
Construction - Project Execution	7/1/2021	6/30/2022
Construction - Closeout	4/1/2022	6/30/2022

Project Title: Brownstown Meter Pit


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

CIP

Description of CIP Changes:

Updated description and cost.

Project Title: Roof Replacement at WWP, SP, LH, NE, SW, NSC, Orion, Franklin, and Conner Creek Facilities

<p>Project Status: Project Execution - Construction</p> <p>CIP Type: Program</p> <p>Class Lvl 1: Water</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: Nick Hoffman</p> <p>Director: Grant Gartrell</p> <p>Managing Dept.: Water Eng</p>	<p>Date Original Business Case Prepared: 1/5/2018</p> <p>Year Project Added to CIP: 2018</p> <p>CIP Budget: Water</p>	<p>Project Jurisdiction: Multiple Counties</p> <p>Lookup Location:</p> <p>Funds and Cost Center:</p>

Problem Statement:

This design build project will replace roofing systems on GLWA water plants, water booster pumping stations and sewage pumping stations that were determined to need replacement over the next 5 to 7 years based on the CS-1674 Roofing Assessment Contract. Replacement is needed to protect the facilities integrity with regards to interiors, sensitive electrical equipment and process mechanical equipment vital to operations.

Scope of Work/Project Alternatives:

Tear off of existing roofing systems and replace with new roofing systems as follows:
 Water Works Park- High Lift Building, standing metal seam roof, Raw Water Booster Pump Station, built-up roof
 Springwells - Turbine House, built-up roof, 1930 Machine Room
 Conner Sewage Lift Station, built-up roof
 Franklin Water Booster Pump Station, built-up roof
 Orion Water Booster Pump Station, standing metal seam roof

Other Important Info:

The total estimated replacement value (2016 dollars) of the 1,682,727 square feet of roofing at the water treatment plants, sewage pumping stations and water booster pumping stations is \$33,142,054.

Project History: A condition assessment was performed and completed under Contract No. CS-1674 in 2016 that included all roofs located at GLWA's 5 water treatment plants, 19 water booster pumping stations and 11 sewage pumping stations. There were 268 separate roof sections totaling 1,682,727 square feet of roof inspected during this condition assessment project.

Primary Driver: 1 - Condition

Driver Explanation:

Roofs are well past their useful service life and showing significant deterioration, and in some places leaking.

Project Title: Roof Replacement at WWP, SP, LH, NE, SW, NSC, Orion, Franklin, and Conner Creek Facilities

Scoring**Project Manager Weighted Score:** 47.20

Criteria Name	Score	Comment
Condition	5	
Performance (Service Level/Reliability)	3	
Regulatory (Environmental/Legal)	1	
Operations and Maintenance	3	
Public Health and Safety	2	
Public Benefit	1	
Financial	2	
Efficiency and Innovation	2	

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: Roof Replacement at WWP, SP, LH, NE, SW, NSC, Orion, Franklin, and Conner Creek Facilities

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Water

Start Date: 1/1/2018

Phase Status:

End Date: 6/30/2031

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 4

Cost Est. Source: Testing Engineers and Consultants

Cost Est. Date: 1/1/2016

Cost Est. Prepared By: Testing Engineers and Consultants

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	\$253	\$0	\$0	\$84	\$11	\$11	\$11	\$11	\$11	\$54	\$115

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	1/1/2018	6/30/2031
TBD Project Cost Correction	1/1/2018	5/1/2019

Project Title: Roof Replacement at WWP, SP, LH, NE, SW, NSC, Orion, Franklin, and Conner Creek Facilities

Phase: Design & Bid Assistance

Phase Title: Design-Build Assistance

Phase Budget: Water

Start Date: 7/1/2022

Phase Status:

End Date: 6/30/2031

Cost Allocation: CTA

Fund: Construction Bond Fund

Funding Source: Bond Proceeds

Usefull Life > Yrs: Yes

Tot. Federal Loan Amout: \$0.00

Phase Comments/Description:

Owner's Agent Services for design-build specifications, procurement and DB contractor oversight

Cost Est. Class: Class 4

Cost Est. Source: Testing Engineers and Consultants

Cost Est. Date: 1/1/2016

Cost Est. Prepared By: Testing Engineers and Consultants

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

	Total Costs	Actual Costs	Prior FYs	FY23	FY24	FY25	FY26	5 Year Total	FY27+
Design & Bid Assistance	\$2,092	\$0	\$0	\$314	\$314	\$0	\$314	\$942	\$1,151

Phase Dates

Activity Name	Start Date	End Date
Design - Pre-Procurement	3/31/2022	6/29/2022
Design - Procurement	6/30/2022	6/30/2023
Construction Assistance - Project Execution	7/1/2022	6/30/2031
Construction Assistance - Project Closeout	4/1/2031	6/30/2031

Project Title: Roof Replacement at WWP, SP, LH, NE, SW, NSC, Orion, Franklin, and Conner Creek Facilities

Phase: Design-Build # 1

Phase Title: Design-Build Contract No. 1803483

Phase Budget: Water

Start Date: 4/24/2018

Phase Status:

End Date: 12/31/2020

Cost Allocation: CTA

Fund: Construction Bond Fund

Funding Source: Bond Proceeds

Usefull Life > Yrs: Yes

Tot. Federal Loan Amout: \$0.00

Phase Comments/Description:

Contract No. 1803483, Schreiber Corp. - SP, WWP, Orion, Franklin, and Conner Creek Facilities

Cost Est. Class: Class 4

Cost Est. Source: Testing Engineers and Consultants

Cost Est. Date: 1/1/2016

Cost Est. Prepared By: Testing Engineers and Consultants

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	\$33	\$0	\$0	\$33	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Design - Pre-Procurement	1/1/2018	4/23/2018
Design - Procurement	4/24/2018	9/8/2019
Design - Project Execution	9/9/2019	7/15/2020
Construction - Project Execution	9/23/2019	12/31/2020
Construction - Closeout	10/2/2020	12/31/2020

Project Title: Roof Replacement at WWP, SP, LH, NE, SW, NSC, Orion, Franklin, and Conner Creek Facilities

Phase: Design-Build # 2

Phase Title: Design Build - Contract TBD

Phase Budget: Water

Start Date: 12/27/2021

Phase Status:

End Date: 6/30/2031

Cost Allocation: CTA

Fund: Construction Bond Fund

Funding Source: Bond Proceeds

Usefull Life > Yrs: Yes

Tot. Federal Loan Amout: \$0.00

Phase Comments/Description:

SW, LH, SP Chemical Bldg, SP Boiler House, SP 1958 Service Bldg., NE Admin, NE Switch House, NE Filters, NE LowLift, WWP Treatment Bldg, and NSC

Cost Est. Class: Class 4

Cost Est. Source: CS-1674 roofing CA contract

Cost Est. Date: 12/9/2016

Cost Est. Prepared By: Testing Engineers and Consultants

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 # 2	\$20,333	\$0	\$0	\$269	\$0	\$2,766	\$1,483	\$359	\$2,596	\$7,203	\$12,861

Phase Dates

Activity Name	Start Date	End Date
Design - Pre-Procurement	1/29/2021	4/29/2021
Design - Procurement	4/30/2021	12/26/2021
Design - Project Execution	12/27/2021	6/30/2031
Construction - Project Execution	7/1/2022	6/29/2026
Construction - Closeout	4/1/2031	6/30/2031


Project Title: Roof Replacement at WWP, SP, LH, NE, SW, NSC, Orion, Franklin, and Conner Creek Facilities

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
2019	\$2,490	\$0	\$111	\$986	\$210	\$24	\$1,159	\$24,756	\$0	\$0	\$27,246
2020	\$4,657	\$50	\$0	\$2,657	\$0	\$0	\$0	\$2,000	\$2,000	\$0	\$6,707
2021	\$8,778	\$0	\$71	\$2,828	\$173	\$317	\$2,907	\$3,126	\$2,255	\$11,996	\$23,673

Description of CIP Changes:

Project Title: Roof Replacements at SP, WWP, Orion, Franklin, and Conner Creek

<p>Project Status: Project Execution - Construction</p> <p>CIP Type: Program</p> <p>Class Lvl 1: Water</p> <p>Class Lvl 2: Programs</p> <p>Class Lvl 3: Programs</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>Project Engineer/Manager: Nick Hoffman</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: 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:

This design build project will replace roofing systems on GLWA water plants, water booster pumping stations and sewage pumping stations that were determined to need replacement over the next 5 to 7 years based on the CS-1674 Roofing Assessment Contract. Replacement is needed to protect the facilities integrity with regards to interiors, sensitive electrical equipment and process mechanical equipment vital to operations.

Scope of Work/Project Alternatives:

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 Conner Sewage Lift Station, built-up roof
 Franklin Water Booster Pump Station, built-up roof
 Orion Water Booster Pump Station, standing metal seam roof

Other Important Info:

Primary Driver:

Driver Explanation:

Project Title: Roof Replacements at SP, WWP, Orion, Franklin, and Conner Creek

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: Roof Replacements at SP, WWP, Orion, Franklin, and Conner Creek

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget:

Start Date: 6/1/2020

Phase Status:

End Date: 6/30/2021

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
GLWA Salaries	\$32	\$32	\$32

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	6/1/2020	6/30/2021

Project Title: Roof Replacements at SP, WWP, Orion, Franklin, and Conner Creek

Phase: Design-Build

Phase Title: Design - Build

Phase Budget:

Start Date: 6/1/2020

Phase Status:

End Date: 6/30/2021

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	FY21
Design-Build	\$3,452	\$3,184	\$3,184	\$269

Phase Dates

Activity Name	Start Date	End Date
Design - Project Execution	6/1/2020	6/30/2020
Construction - Project Execution (Wastewater)	6/1/2020	6/30/2021
Construction - Project Execution (Water)	6/1/2020	6/30/2021

Project Title: Roof Replacements at SP, WWP, Orion, Franklin, and Conner Creek

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

CIP

Description of CIP Changes: